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**SENSITIVE ECOSYSTEM PROGRAM  
ORGAN PIPE CACTUS NATIONAL MONUMENT**

SPECIAL REPORT NO. 8

REPORT ON TREATIES, AGREEMENTS, AND ACCORDS AFFECTING  
NATURAL RESOURCE MANAGEMENT AT  
ORGAN PIPE CACTUS NATIONAL MONUMENT

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REPORT ON TREATIES, AGREEMENTS, AND ACCORDS  
AFFECTING NATURAL RESOURCE MANAGEMENT AT  
ORGAN PIPE CACTUS NATIONAL MONUMENT

INFORME DE LOS TRATADOS, CONVENIOS Y ACUERDOS  
QUE AFECTAN LA ADMINISTRACION DE LOS RECURSOS NATURALES  
DEL ORGAN PIPE CACTUS NATIONAL MONUMENT

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## PREFACE

Managers of natural resources at Organ Pipe Cactus National Monument see the lands they administer as being surrounded by steep ecological gradients. The gradients are generated by land uses differing from those sanctioned within National Parks. The monument is mostly surrounded by agricultural and urban development. Running through its center is the heavily traveled State Highway 85, connecting Tucson and Phoenix with the Port of Entry at Lukeville and Sonora, Mexico beyond. This highway alone brings ecological change simply through the number of wildlife that are flattened by traffic every year. In addition, the monument's ecosystems are still recovering from leased grazing that was not discontinued until 1976. Additionally, there is great potential for change to result from actions taken by the monument's neighbors.

In 1987 the superintendent of Organ Pipe Cactus National Monument formulated this objective for resource management in the park:

"To develop a management program, based on synthesis reports, to determine:

- (1) Condition of Organ Pipe National Monument ecosystems;
- (2) Alternatives available for ecosystem management;
- (3) Effectiveness of implemented action programs."

The National Park Service assembled an international panel to make recommendations for accomplishing this objective. The panel identified ninety-two tasks necessary to meet its objective. Preparation of a report on the treaties, legal agreements, and memoranda of understanding that affect the management of natural resources in and around the national monument was one of these recommendations.

When I look at the U.S. Geological Survey topographic maps that include the border between United States and Mexico, I see that drainages, roads, and even mountain ranges disappear into blankness to the south. Below the international boundary there is only white paper. Similarly, the *Sonoita carta topographica*, just opposite Organ Pipe and published by Direccion General de Geographica del Territoria Nacional, shows washes tributary to the Rio Sonoyta coming unexpectedly from the blank area labeled Estados Unidos de America. Carlos Nagel, the author of this paper which I preface, often speaks of this as the "white map syndrome." The white map syndrome illustrates one way that different cultures come together along the borders in uneasy and unknowing ways. Yet there is a great need for awareness and accommodation between cultures, particularly when dealing with transborder natural resources.



Some of the treaties and agreements documented in this report are viable but some are not. Some are honored, others are not. The long history of ignorance, misapprehension, distrust, chauvinism, and wrongs between the United States, the Tohono O'odham, and Mexico has created a situation where accommodation is difficult. This is the "white map syndrome" in human affairs. Until there is meaningful communication between the persons responsible for enforcing the treaties and agreements, cooperation will be imperfect. There are two main elements of meaningful communication (1) trust based on enlightened self-interest and (2) cultural relevance, that is, communication using concepts that are understandable in the cultural context. These are the bridges that make formal agreements work and cause the "white map syndrome" to disappear.

So far as I am aware, this report contains the only modern collection of treaties and agreements between the government of the United States and its neighbors, focussing on natural resources. It is my desire that these documents will be useful to all peoples interested in wise resource management. But beyond the documents the reader is directed to Carlos Nagel's comments about building intercultural bridges.

#### About the Author

Carlos Nagel is uniquely qualified to undertake the bridge-building task. His business, the Cultural Exchange Service, specializes in cross-cultural facilitation and translation, especially between the Hispanic and Anglo cultures. He is widely known for his travels on behalf of nature conservation and development of intercultural understanding. Recently he has expanded his activities by becoming involved in communication with the Tohono O'odham people. He excels in establishing bridges of accommodation and mutual interest between peoples.

Recently Carlos organized the Arizona input into the first international scientific symposium on the Sierra del Pinacate. The conference held in Hermosillo, Sonora, was sponsored by the Sonora-Arizona, Arizona-Sonora Bilateral Commission.

He has a deep love of, and sensitivity to, nature. In 1984, Carlos and a handful of other like-thinking people founded the Friends of PRONATURA. At the present time, Carlos is the president of this organization. He writes:

"PRONATURA emerged from the concern of a group in Mexico who recognized the need to reconcile a policy of random development, which ignores the importance of the natural resources, with the imperative to protect the biological foundations that underlie the integrity of all communities.

With the recognition that nature does not accept political boundaries, many individuals in the United States are concerned with the proper use and conservation of natural resources along the U.S./Mexico border and seek innovative solutions to problems that involve entire regions. This reciprocal interest led to discussion with the leaders of PRONATURA and culminated in the creation of Friends of PRONATURA - a bonding in friendship of those in the US and Mexico who are concerned about the natural environment. ... Friends initiates a dialogue to explore alternative ways of collaborating in creating practical programs of conservation and utilization at a time when conventional approaches are seen as less than satisfactory."

Friends of PRONATURA is presently undertaking a feasibility study for establishing a Man and the Biosphere (MAB) office in Tucson. Both Mexico and the United States have active MAB programs. This offers an exciting possibility for establishing further bridges of understanding and cooperation among the inhabitants and managers of the Sonoran Desert.

Peter S. Bennett  
January 9, 1989

## ACKNOWLEDGEMENTS

Gratitude is expressed to Roy Johnson and the group of individuals who created Friends of PRONATURA in 1984. It is through Friends of Pronatura that this report is made possible. In addition, I would like to express my appreciation to Mr. Jeff Sanders, a major contributor to this document, who provided the extremely valuable material on the Tohono O'odham. His contribution does not make him responsible for other parts of the work. I also received extremely valuable help from Robert Eaton, who recently graduated from the University of New Mexico Law School. He provided the research for the legal aspects of this work and obtained the copies of the documents that form the bulk of the Appendices. Professor Albert E. Utton, also of the University of New Mexico, has been my friend and mentor in the subject of public policy affecting transboundary resource management since the early 70's. In addition I received the continuing support of Harold Smith, Superintendent of Organ Pipe Cactus National Monument, and Bill Gregg, Director of the NPS Man in the Biosphere Program. To the many others whom I called upon for advice, I trust that they will excuse me for not listing them by name. It does not minimize my appreciation for their help.

## AGRADECIMIENTOS

Se agradece a Roy Johnson y a un grupo de personas que fundaron Friends of PRONATURA en 1984. Es por medio de Friends que se hizo posible este informe. La ayuda que he recibido para este trabajo es la de un contribuidor mayor, Jeff Sanders, quien facilitó un material de gran valor sobre la tribu Tohono O'odham. Su contribución no lo hace responsable por otras partes de este trabajo. También recibí gran ayuda de Robert Eaton, graduado recientemente de la Escuela de Leyes de la Universidad de Nuevo México. El fué quien investigó los aspectos legales y obtuvo copias de los documentos que forman el volumen de los apéndices. El profesor Albert E. Utton, también de la Universidad de Nuevo México, ha sido mi amigo y tutor en el área de política pública que afecta el manejo de recursos transfronterizos desde el inicio de la década de los 70's. Además he recibido apoyo continuo de Harold Smith, superintendente del Organ Pipe Cactus Monument y de Bill Gregg, director del Programa del Hombre en la Biósfera del National Park Service. A muchos otros quienes consulté, confío en que me disculparán por no haberlos enlistado a cada uno esto no disminuye mi aprecio porsu contribución.

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## INTRODUCCION

Las dos mil millas de frontera entre los Estados Unidos y México es una región muy especial del mundo donde dos culturas muy diferentes se reúnen en formas muchas veces incómodas.

El crecimiento de esta región en las últimas décadas y el incremento al doble en la población de esta área para el siglo veintiuno aumentará la necesidad de acomodamiento, particularmente con los recursos naturales que son independientes de la frontera política trazada en un mapa.

Esta región no es ni completamente Mexicana ni completamente Norteamericana, creando así una actitud fronteriza muy especial que está recibiendo más atención. Esta actitud fronteriza está creciendo en muchas maneras informales y resulta del consenso intuitivo alcanzado por personas en ambos lados de la frontera de que existe una necesidad de desarrollar un entendimiento más profundo unos de otros individual y culturalmente. ¿Cómo puede hacerse esto? Relaciones personales de confianza propician la oportunidad.

Este proyecto está diseñado para proporcionar a los administradores del Organ Pipe Cactus National Monument (ORPI) un compendio actualizado de acuerdos y protocolos de relaciones que afectan sus responsabilidades administrativas; y así también una lista de agencias gubernamentales y organizaciones que están involucradas con el manejo de este tipo de recursos.

Las recomendaciones que aparecen en este reporte enfatizan la forma de mejorar la comunicación entre aquellos que comparten la responsabilidad para el manejo de los recursos naturales a largo plazo.

Este informe se enfoca en los tratados, acuerdos y convenios sobre recursos naturales entre México y los Estados Unidos. Además presenta un panorama de las relaciones formales que involucran a los habitantes (americanos-indígenas) de esta región. El informe presenta dos aspectos para su consideración.

1. La existencia de relaciones formales, y
2. A grandes rasgos, una propuesta de estrategia para futuras acciones de los administradores del ORPI, sus consejeros y especialistas con los programas de la Reserva de la Biósfera que incluyen contactos en México con:
  - a. Agencias y personas a nivel nacional
  - b. Agencias y autoridades a nivel local y regional
  - c. Relaciones con el Tohono O'odham
  - d. Instituciones no gubernamentales.



## INTRODUCTION

The 2,000 mile border between the United States and Mexico is a unique region of the world where two very different cultures come together in often uneasy ways.

The growth of this region in the past few decades, and a doubling of the population in this area by the 21st Century, will intensify the need for accommodation, particularly with the natural resources that are independent of the political boundaries drawn on a map.

This region is neither totally Mexican, nor totally North American, creating a special border attitude that is receiving increasing attention. This border attitude is growing in numerous informal ways, and results from an almost intuitive consensus reached by individuals on both sides of the border that there is a need to develop a deeper understanding of each other, individually and culturally. How is this to be done? Long-term face to face relationships can pave the way.

This report is designed to provide Organ Pipe Cactus National Monument (ORPI) management with a current digest of the agreements that affect their administrative responsibilities; it is also designed to provide contact protocols and a current list of governmental agencies and organizations that are involved with resource management.

The recommendations presented in this report focus on the ways to enhance communication among those who have long-range objectives for natural resource management.

This report focuses on the treaties, agreements and accords on natural resources between Mexico and the United States. It also presents an overview of the formal relationships that have evolved with the Native American inhabitants of the region. The report presents two aspects for consideration:

1. Existing formal relations, and;
2. A proposal for a broad-based strategy for future actions by OPRI administrators, their advisors, and specialists concerned with the Biosphere Reserve programs that include contacts in Mexico with:
  - a. Agencies and individuals at the national level.
  - b. Agencies and officials at the local and regional level.
  - c. Relationships with the Tohono O'odham.
  - d. Non-governmental institutions and activities.

## **TRATADOS Y ACUERDOS MEXICO/ ESTADOS UNIDOS**

### **A. EL TRATADO DE LA UTILIZACION DEL AGUA DE 1944**

#### **1. Aguas Superficiales**

El tratado bilateral más importante relacionado con los recursos naturales es el Tratado 994 "Utilización del Río Colorado, Río Tijuana y Río Grande" firmado el 3 de Febrero de 1944. Bajo este tratado ambos gobiernos acordaron en establecer una Comisión Internacional de Límites y Aguas (IBWC) y definir las responsabilidades de la Comisión bajo la dirección de dos comisionados, uno representando a México y el otro a los Estados Unidos (Ver Apéndice I).

La Comisión tiene la responsabilidad del uso conjunto de las aguas internacionales con el siguiente rango de prioridades.

- a. Uso doméstico y para la agricultura
- b. Para la agricultura y actividad pecuaria.
- c. Energía Eléctrica
- d. Otros usos industriales
- e. Navegación
- f. Pesca y Caza
- g. Cualquier otro uso benéfico determinado por la Comisión.

El tratado preveé la distribución equitativa de agua basada en las cuencas de drenajes y velocidad de flujo con una contaduría de superavit y deficit basados en ciclos periódicos. Además, el tratado especifica la construcción de presas, obras de control, conservación y almacenamiento y canalización. Como está indicado en el título, el tratado comprende los Rios Grande, Colorado, y Tijuana. En el caso del Río Colorado cantidades muy específicas de agua de cierta calidad deben ser entregadas a México. Otras provisiones incluyen la construcción de plantas generadoras de electricidad, investigación, la administración de todos los tratados entre los dos países que estan relacionados con la Comisión, la resolución de diferencias, suministrar información, colección de datos hidrográficos, preparación de reportes y la administración general del tratado.

La importancia de este tratado radica no solo en el hecho de que és un mecanismo ejemplar para resolver conflictos que afectan un importante recurso de aguas internacional. Señala también la forma de solucionar un problema que se hace más agúdo y que no es discutido frecuentemente. Esto es la rivalidad por los acuíferos en la región fronteriza de México y los Estados Unidos.

## TREATIES AND AGREEMENTS

### MEXICO AND THE UNITED STATES

#### A. WATER UTILIZATION TREATY OF 1944

##### 1. Surface Waters

The most important bilateral treaty concerning natural resources is Treaty Number 994 "Utilization of the Colorado and Tijuana Rivers and of the Rio Grande" signed on February 3, 1944. Under this treaty both governments agreed to establish the International Boundary and Water Commission (IBWC) and spelled out the responsibilities of the Commission under the direction of two commissioners, one representing Mexico and one the United States (See Appendix I).

The Commission is assigned the responsibility for joint use of international waters with the following ranking of priority:

- a. Domestic and Agricultural use
- b. Agricultural and stock raising
- c. Electric power
- d. Other industrial uses
- e. Navigation
- f. Fishing and hunting
- g. Any other beneficial uses determined by the Commission.

The treaty makes provision for the equitable allocation of water based on drainage basins and the rate of flow, with an accounting for surpluses and deficits based on periodic cycles. In addition the Treaty specifies dam construction, control works, conservation and storage, and diversion. As indicated in the title the treaty covers the Rio Grande, the Colorado, and the Tijuana Rivers. In the case of the Colorado River very specific amounts of water of a certain quality are to be delivered to Mexico. Other provisions include the construction of electric generating plants, research, the administration of all treaties between the two countries that are entrusted to the Commission, settling differences, providing information, recording hydrographic data, preparing reports, and the general administration of the treaty.

The importance of this treaty lies not only in the fact that it is an exemplary mechanism for resolving conflicts affecting an important international water resource. It also points the way for the solution of a problem that is becoming more acute and that is seldom discussed. That is, the competition for ground water in the border region of the U.S. and Mexico.

## 2. Recursos Acuíferos Subterráneos

Algunos acuíferos subterráneos en la región fronteriza tienen un curso hacia el sur mientras que otros lo tienen hacia el norte. De hecho hay una guerra silenciosa de bombeo de agua, en la que el ganador parece ser el que alcanza primero el fondo del pozo. Además debe añadirse que esta competencia no es solo entre México y los Estados Unidos, también ocurre entre los estados adyacentes en los Estados Unidos. Los acuíferos afectados más severamente son los de Nuevo México, en el área de Las Cruces, en Arizona cerca de Yuma, las zonas de Sonoyta y Cananea en Sonora, y en varias localidades en Texas. En estos lugares se han perforado pozos que bombean grandes volúmenes de agua en uno o ambos lados de la frontera de acuíferos principalmente fósiles o de aquellos cuyo reabastecimiento es muy lento. Estos recursos se acabarán en un futuro cercano. No existe reglamento internacional, aunque se han hecho esfuerzos durante varios años para desarrollar un tratado sobre los acuíferos.

### a. Redacción del convenio de Ixtapa

La redacción mas reciente ha sido la del convenio de Ixtapa en 1985, acuerdo relativo al uso de las aguas subterráneas fronterizas (Ver Apéndice II) este acuerdo ha sido corregido en una versión conocida como "The Bellagio Conference Report."

### b. Minuta 242

Además, en 1973, México y los Estados Unidos firmaron un adendum conocido como Minuta 242, misma que provee, en su sección número 6, "el propósito de evitar futuros problemas." México y Los Estados Unidos deben consultarse mutuamente previa a la toma de acciones de nuevos desarrollos ya sea de aguas superficiales o de acuíferos o de iniciar modificaciones substanciales de los presentes desarrollos, en su propio territorio, en el área fronteriza, que puede adversamente afectar al otro país" (Ver Apéndice III).

### c. Quitobaquito

Robert Eaton, en las paginas 19-20 de un trabajo inédito titulado "Protección de Quitobaquito: Estrategias Legales" hace interesantes sugerencias sobre la posibilidad de involucrar al IBWC a la brevedad posible para resolver un conflicto potencial con respecto al uso de las aguas del Valle del Río Sonoyta.

El Dr. Eaton indica que un acuerdo en ésta materia puede convertirse en un modelo para la resolución de otros problemas mas serios de acuíferos dentro de la entera región fronteriza (Ver Apéndice IV).

Estrategias similares pueden ser aplicadas a otros programas, como en el Programa de la Biósfera y con otras instituciones y organizaciones que necesitan desarrollar relaciones de trabajo con contrapartes en México.

## 2. Ground Water Sources

Some underground aquifers in the border region have a southern flow while others flow north. Currently there is an unspoken "pumping war" in which the winner appears to be the one who reaches the bottom of the well first. It must be added that this competition is not only between Mexico and the United States, it also occurs between adjacent states in the U.S. The aquifers most acutely affected are those in New Mexico, in the Las Cruces area; in Arizona near Yuma, the Cananea and the Sonoyta area in Sonora, and in various locations in Texas. At these sites wells have been installed that are pumping large volumes of water on one or both sides of the border from mostly fossil aquifers or from those that recharge very slowly. These sources will be exhausted within the near future. No international regulation exists, although efforts have been underway for several years to develop a ground water treaty.

### a. Ixtapa Agreement Draft

The most recent accomplishment has been the 1985 Ixtapa Draft Agreement Relating to the Use of Transboundary Groundwaters (See Appendix II). This draft has been updated in a version known as the Bellagio Conference Report.

### b. Minute 242

In addition, in 1973, the United States and Mexico signed an addendum known as Minute 242, that provides, in its Section 6, for the "objective of avoiding future problems, the United States and Mexico shall consult each other prior to undertaking any new development of either the surface or the groundwater resources, or undertaking substantial modification of present developments, in its own territory in the border area that might adversely affect the other country" (See Appendix III).

### c. Quitobaquito

Robert Eaton, on pages 19-20 of an unpublished paper entitled "Protecting Quitobaquito: Legal Strategies," offers some interesting suggestions on the possibility of involving the IBWC at the earliest possible date to resolve a potential conflict concerning the use of the Sonoyta River Valley water.

Dr. Eaton indicates that an agreement on this matter could become a model for the resolution of other, larger, groundwater problems within the entire border region (See Appendix IV).

Similar strategies can be applied to other programs, such as the Biosphere program, and with other organizations and institutions that need to develop working relationships with counterparts in Mexico.

**ACUERDO ENTRE LOS ESTADOS MEXICANOS, Y LOS ESTADOS UNIDOS DE AMERICA EN LA COOPERACION POR LA PROTECCION Y MEJORAMIENTO DEL MEDIO AMBIENTE EN EL AREA FRONTERIZA. (Acuerdo de La Paz, 1984)**

El acuerdo firmado en La Páz, Baja California Sur el 14 de Agosto de 1983 por los presidentes De la Madrid y Reagan entraron en vigencia el 16 de Febrero de 1984.

Este acuerdo deriva de un memorándum de entendimiento que entró en vigencia en 1978, relacionado con la cooperación del medio ambiente. Este memorándum establece la base y refleja la preocupación por los temas ambientales desde una perspectiva global (Ver Apéndice V).

El Acuerdo de La Páz reconoce la importancia de la salud del medio ambiente y esta diseñado para elaboración en base a los acuerdos existentes entre México y los Estados Unidos y estableció las bases de cooperación para la protección y conservación del medio ambiente. El acuerdo previó la posibilidad de anexos de los cuales hay cuatro a la fecha.

El componente mas importante del Acuerdo de la Páz para los propósitos del programa de la Reserva de la Biósfera esta contenido en el artículo número uno que establece el objetivo: ("acordar que)... las medidas necesarias para controlar y prevenir la contaminación en el área fronteriza (Nótese la palabra "prevenir"). Además el Artículo IV prevee que "...la coordinación de programas nacionales, intercambios científicos y educativos, monitoreo del medio ambiente, estimación del impacto del medio ambiente, e intercambios periódicos de información y estadísticas ligados a la contaminación en sus respectivos territorios los cuales pueda producir incidentes de contaminación del medio ambiente...."

Así como el artículo IV establece: "Las partes deben estimar... proyectos que pueden tener un importante significado en el medio ambiente del área fronteriza y las medidas apropiadas que deben ser consideradas para evitar o mitigar afectos adversos en el medio ambiente."

El acuerdo prevé una coordinación nacional: la Agencia de Protección del Medio Ambiente (EPA) en los Estados Unidos, y la Secretaría de Desarrollo Urbano y Ecología (SEDUE) en México. Además permite que los coordinadores nacionales se reúnan al menos una vez al año y están autorizados para invitar a la participación de autoridades municipales y estatales así como a organizaciones internacionales y no gubernamentales para que contribuyan con su experiencia. Los cuatro anexos del Acuerdo se refieren a las aguas de desecho, los desperdicios tóxicos y a la contaminación del aire por obras de minería en la región de la frontera. Estos son importantes pero de menor relevancia para los fines de este informe.

**AGREEMENT BETWEEN THE UNITED STATES OF MEXICO AND THE UNITED STATES OF AMERICA ON COOPERATION FOR THE PROTECTION AND IMPROVEMENT OF THE ENVIRONMENT IN THE BORDER AREA. (La Paz Agreement, 1984)**

The Agreement signed at La Paz, Baja California Sur on August 14, 1983 by Presidents De la Madrid and Reagan entered into force on February 16, 1984.

This Agreement derives from a Memorandum of Understanding concerning environmental cooperation that entered into force in 1978. This memorandum set the stage and reflected the concern of environmental issues from a global perspective (See Appendix V).

The La Paz Agreement acknowledges the importance of a healthy environment and is designed to build on existing agreements between Mexico and the U.S. It establishes the basis for cooperation on environmental protection and conservation. The agreement provides for annexes, there are four to date.

The most relevant component of the La Paz Agreement, for the purposes of the Biosphere Reserve program, is contained in Article I that states the objective: "... (to agree on) the necessary measures to prevent and control pollution in the border area" (Note the word "prevent."). In addition, Article VI provides for "... coordination of national programs, scientific and educational exchanges, environmental monitoring, environmental impact assessment and periodic exchanges of information and data on likely sources of pollution in their respective territory which may produce environmentally polluting incidents...."

As well, Article VII states: "The parties shall assess... projects that may have significant impacts on the environment of the border area, so that appropriate measures may be considered to avoid or mitigate adverse environmental effects."

The agreement provides for national coordination; the Environmental Protection Agency (EPA) in the United States, and the Secretaria de Desarrollo Urbano y Ecologia (SEDUE) in Mexico. It also provides for the national coordinators to meet no less than once a year and grants them the authority to invite the participation of the state and municipal authorities and international and non-governmental organizations to contribute their expertise.

The four annexes to the Agreement that refer to sewage, toxic wastes and air contamination by mining operations in the border region are important but of less immediate relevance to the purposes of this report.

La estrategia a largo plazo puede explorar posibilidades para el uso de éste acuerdo como un vehículo de discusiones en ciertos aspectos del concepto de la reserva de la biósfera (Ver Apéndice VI).

**ACUERDO DEL SERVICIO DE PESCA Y VIDA SILVESTRE DE LOSESTADOS  
UNIDOS CON LA SECRETARIA DE DESARROLLO URBANO  
Y ECOLOGIA EN MEXICO**

Este convenio esta basado en el acuerdo de Cooperación Técnica y científica entre México y los Estados Unidos en Junio de 1972.

El convenio reconoce la responsabilidad compartida en el manejo de la vida silvestre entre los dos países por razón de los habitats compartidos y esta basado en convenciones internacionales con México y dentro del hemisferio occidental.

Se creó un comité internacional bi-lateral para establecer las prioridades; colocar recursos; definir y evaluar proyectos y promover la cooperación. Las areas principales son: conservación de especies en peligro de extinción, intercambio de especímenes silvestres, administración de aves migratorias, investigación de la flora y la fauna, administración de areas naturales protegidas, entrenamiento y apoyo educativo mutuo para el fortalecimiento de actividades.

Asi también, el acuerdo especifica los tipos de actividades, la administración de proyectos, etc. Sin embargo dado que el acuerdo depende de financiamiento de cada lado, no ha sido un instrumento efectivo en política publica bilateral (Ver Apéndice VII).

**ACUERDOS VARIOS**

1. Protección de aves migratorias - El 6 de Febrero de 1936 fué firmado un convenio entre México y los Estados Unidos para la protección de las aves migratorias y mamíferos cinegéticos. En 1972, el convenio se amplió con la inclusión de 31 especies adicionales (Ver Apéndice VIII).

2. Servicio Forestal de los Estados Unidos - Basado en el Memorandum de Entendimiento con fecha de noviembre 18, 1984, el Servicio ha negociado y convenido con SARH para la mutua asistencia en la lucha contra incendios forestales en el área fronteriza (Ver Apéndice IX). Aunque no se haya firmado hasta mayo de 1988, es un documento en funciones.

3. Convenio en el manejo de zonas áridas y semi áridas y control de desertificación Aunque este convenio expiró en 1981 representa el reconocimiento del problema global de desertificación. Provee una guía para algunas de las problemáticas manifiestas en nuestra parte del mundo (Ver Apéndice X).



The long-range strategy could explore possibilities for using this Agreement as a vehicle for discussions on certain aspects of the biosphere reserve concept (See Appendix VI).

**UNITED STATES FISH AND WILDLIFE SERVICE  
AGREEMENT WITH THE MINISTRY OF URBAN  
DEVELOPMENT AND ECOLOGY IN MEXICO**

This is an agreement that is based on the June 1972 Agreement on Scientific and Technical Cooperation between Mexico and the United States.

The agreement recognizes the shared responsibility in management of wildlife between the two countries because of the shared habitats and is based on international conventions with Mexico and within the Western Hemisphere. A bi-lateral Joint Committee is established to establish priorities, allocate resources, define and evaluate projects and promote cooperation. The principal areas are: conservation of endangered species, exchange of wildlife specimens, management of migratory birds, research of flora and fauna, management of protected natural areas, training and education and mutual support in enforcement activities.

As well, the agreement specifies the types of activities, management of projects, etc. However, given that the Agreement is contingent on funding from each side, it has not been an effective instrument on bilateral public policy (See Appendix VII).

**MISCELLANEOUS AGREEMENTS**

1. Protection of Migratory Birds - On February 6, 1936 a Convention was signed between Mexico and the United States for the Protection of Migratory Birds and Game Mammals. In 1972 the Convention was expanded with the addition of 31 species (See Appendix VIII).

2. U.S. Forest Service - The Forest Service has negotiated an agreement with the Ministry of Agriculture and Water Resources in Mexico (SARH) for mutual assistance in combating forest fires in the border region (See Appendix IX). Although not signed as of May 1988, it is a working document.

3. Agreement on Arid and Semi-Arid Lands Management and Desertification Control - Although this agreement expired in 1981 it represents a recognition of the global problem of desertification. It provides a guide for some of the concerns that are manifest in our part of the world (See Appendix X).

4. Servicio de Aduanas de los Estados Unidos - Aunque no estrictamente internacional, existe un acuerdo con el Servicio de Aduanal de los Estados Unidos, que esta relacionado con la administración de las propiedades adyacentes inmediatas al ORPI, tal como están definidas en la proclamación presidencial de la frontera México/Estados Unidos del 23 de Mayo de 1907 (35 Stat. 2136). El intento de esta proclama fué el de proveer acceso al servicio aduanal de los Estados Unidos dentro de una franja de 60 pies dentro de la frontera del lado estadounidense. La frontera internacional y la Comisión de Límites y Aguas editó una carta que a grandes rasgos garantiza el control administrativo al Servicio de Parques Nacionales sobre los 60 pies dentro de las fronteras del ORPI (Ver Apéndice XI).

5. El Arizona Nature Conservancy y el Centro Ecológico de Sonora han firmado recientemente un acuerdo de coordinación y colaboración en la investigación científica para diseñar y proponer sistemas efectivos de conservación de recursos para su eventual recomendación a sus respectivos gobiernos (Ver Apéndice XII).

## **AMERICANOS INDIGENAS/Y LOS ESTADOS UNIDOS**

### **Tohono O'odham**

ORPI está localizado en un asentamiento aborígen ocupado por el Tohono O'odham (antes Pápago). Mientras la actual reservación Tohono O'odham se ubica al noreste de ORPI existen ciertos tratados y artículos legislativos pertenecientes al Tohono O'odham en particular, y ciertos actos de legislación nacional correspondientes a los americanos nativos en general, así bien como algunos NPS directivos, que pueden afectar la administración de ORPI.

Todas las interacciones sensitivas y bien manejadas con los americanos nativos deben ser precedidas por información correspondiente a la tribu específica y conocimiento de la historia de la relación con el gobierno federal. Esta sección cubrirá brevemente: a) quiénes son los Tohono O'odham; y b) la historia de la legislación que los afecta y que puede influenciar la administración de ORPI. Las recomendaciones a seguir por los administradores de ORPI al negociar con la Tohono O'odham se encuentra detallado en la sección ESTRATEGIAS.

### **La Población**

Los aborígenes del Desierto de Sonora en el Suroeste de Arizona se autodenominan, como lo hacen casi todos los grupos de americanos nativos, con un término general de "gente". En su lenguaje esta palabra es O'odham. Por ejemplo, los indios Pima se autodenominan 'Akiel O'odham, o Gente del Río, por que la mayoría de ellos viven a lo largo del Río Salado y del Río Gila.

4. U.S. Customs Service - Although not strictly international, there is an agreement with the U.S. Customs Service that is associated with the administration of the ORPI property immediately adjacent to the U.S./Mexico border as defined in the Presidential Proclamation of May 23, 1907 (35 Stat. 2136). The intent of this proclamation was to provide access for the U. S. Customs Service within a 60 foot strip along the border. The International Boundary and Water Commission has issued a letter that, in vague terms, grants the National Park Service the administrative control over that 60 foot strip within the boundaries of the ORPI (See Appendix XI).

5. The Arizona Nature Conservancy and the Centro Ecologico de Sonora have recently signed a collaborative and coordinating agreement on scientific research for proposing and designing effective natural resource conservation systems for eventual recommendation to their respective national governments (See Appendix XII).

## **NATIVE AMERICANS AND THE UNITED STATES**

### **Tohono O'odham**

ORPI is located in the aboriginal occupancy area of the Tohono O'odham (formerly Papago) people. While the present official Tohono O'odham Reservation lies to the east and north of ORPI there are certain treaty and legislative articles pertaining to the Tohono O'odham in particular, and certain national legislative acts pertaining to native Americans in general, as well as some NPS directives, that may influence management of ORPI.

All sensitive and well meaning interactions with native Americans should be preceded by information with respect to the specific tribe and what their past history is with the federal government. This section will briefly cover: a) who the Tohono O'odham are; and b) the history of legislation affecting them that might have influence on management of ORPI. The recommendations for ORPI managers to follow when interacting with the Tohono O'odham will be found under STRATEGIES.

### **The People**

The aboriginal people of the Sonoran desert of southwestern Arizona call themselves, as do nearly every other native American group, a general term meaning "people." In their language that word is O'odham. For instance, the Pima Indians call themselves 'Akiel O'odham, or River People, because most lived along the Salt and Gila Rivers. The Papagos call themselves the Tohono O'odham, or Desert People, because most of them lived in the Arizona Upland division of the Sonoran Desert. There is also a

Los Papagos se autodenominan el Tohono O'odham, o Gente del Desierto por que muchos de ellos viven en las mesetas divisorias del desierto de Sonora, incluso hay otro grupo aunque menos conocido mismos que se autodenominan Hia ced O'odham, o Gente de la Arena anteriormente Pápagos del desierto. Hasta ahora no mucho se conocía acerca de ellos, ya sea por que sus observadores pensaron que habian desaparecido o porque se han integrado a las tribus por medio del matrimonio. Los Pápagos tradicionalmente viven en las zonas más cálidas y secas de la subdivisión occidental del Desierto de Sonora, en lo que ahora es el ORPI (específicamente Quitobaquito), Goldwater Bombing Range, y la parte norte de Sonora, México.

En 1934 el Congreso realizó una legislación histórica en terminos del Acto de Reorganización Indígena (IRA 25 USCA/461) la que en su oportunidad permitió que las tribus fueran reconocidas por el Gobierno Federal. El Tohono O'odham ratificó el IRA en 1937. En ese año el proceso de inclusión oficial para pertenecer a la tribu terminó. Muy pocos Hia Ced O'odham firmaron las listas oficiales, aún muchos de ellos en el presente siglo siguen viviendo en condiciones nomadas o semi-nomadas en el desierto. Ellos no cuentan con la sofisticación política para darse cuenta de que necesitan firmar un pedazo de papel para hacer "oficial" a los miembros de la tribu aún cuando el área que tradicionalmente ocupan fue incluida dentro de los limites de la reservación. Como consecuencia varios Hia Ced O'odham no pudieron vivir en la reservación y tuvieron que situarse en Ajo, Gila Bend, y el sureste de California. No se les otorgaron muchos privilegios de la tribu por que no se registraron.

Cuando la Comisión Indígena de Quejas fue establecida para supuestamente pagar retribuciones a los indios que pudieran legitimizar sus quejas contra el gobierno de los Estados Unidos, las indemnizaciones fueron dadas solo a aquellos reconocidos por el O'odham. A la fecha hay más de 1,050 personas que pueden probar su linaje al Hia Ced O'odham y existe un programa para ellos dentro del Tohono O'odham para ayudar a rectificar las inequidades del pasado.

### **Tratados y Acuerdos**

Los siguientes son importantes doctrinas legales y actos legislativos con los que el ORPI debe familiarizarse:

#### **A. Doctrina de Descubrimiento**

Cuando el hemisferio occidental estaba siendo colonizado la promulgación Papal llamada "Doctrina de Descubrimiento" estableció que las naciones cristianas que descubrieran nuevas tierras tenían el derecho de reclamarlas por su apropiación, sujeto a la disposición de los habitantes aborígenes para cederlos.

third, although lesser known group of O'odham who call themselves Hia Ced O'odham, or Sand People, formerly Sand Papagos. Until recently not much was known about them and many casual observers thought they had died out or became lost in inter-marriages. They traditionally lived in the hotter, drier western subdivision of the Sonoran Desert in what today is ORPI (specifically Quitobaquito), the Goldwater Bombing Range, and the northern part of Sonora, Mexico.

In 1934 Congress passed a milestone in modern legislation in the form of the Indian Reorganization Act (IRA 25 USCA/461) which in turn became the modern vehicle for Tribes to be recognized by the federal government. The Tohono O'odham ratified the IRA in 1937. Also in 1937 the base enrollment procedure for official inclusion into the O'odham tribe ended. Very few Hia Ced O'odham signed up on the official list, as many of them, even in the 20th century were still roaming and living a semi-nomadic existence in the desert. They did not have the political sophistication to realize they needed to sign a piece of paper in order to become "official" members of the tribe even though part of their traditional occupancy area was included within the reservation boundary. As a consequence many Hia Ced O'odham could not live on the reservation and had to settle in Ajo, Gila Bend, and southern California. They were not afforded tribal privileges because they were not enrolled.

When the Indian Claims Commission was established to supposedly pay retribution to Indians who had legitimate complaints against the US government, payments were given only to the recognized O'odham. Today there are more than 1,050 people who can trace their lineage to Hia Ced O'odham and there is a Hia Ced Program within the Tohono O'odham Nation to help rectify inequities of the past.

### **Treaties and Agreements**

The following are important legal doctrines and legislative acts with which ORPI managers should be familiar:

#### **A. Doctrine of Discovery**

When the western hemisphere was being colonized a Papal promulgation entitled "Doctrine of Discovery" stated that Christian nations discovering new lands had a right to claim them for their own, subject only to the aboriginal inhabitants' willingness to cede them. This was universally accepted by European monarchs and the practice was carried on when the U.S. gained independence from Great Britain. It is interesting to note that the U.S. has never signed a treaty or original land cession with the O'odham Nation as it has with nearly every other large land-based tribe.

Esto fué universalmente aceptado por monarcas europeos y la práctica continuó cuando los Estados Unidos obtuvieron su independencia de Gran Bretaña. Es interesante notar que los Estados Unidos nunca firmaron un tratado o cesión original de terreno con la nación O'odham como se hizo en el principio con las grandes tribus establecidas.

B. Tratado de Guadalupe Hidalgo, 1848  
Tratado Apache Papago 1853 (Compra de Gadsen)

Esos tratados otorgaron los derechos de todas "personas y propiedades" y aquellos que eligieron permanecer en los Estados Unidos se hicieron ciudadanos con todos los derechos asociados a la ciudadanía. El significado importante de esto es que despues en estos tratados: a) se garantizó a los O'odham el libre ejercicio de su religión sin restricción; b) se les garantizó el disfrute de su libertad y propiedades; c) Los pobladores O'odham fueron considerados como ciudadanos de los Estados Unidos; d) los O'odham que viven en los Estados Unidos son libres de vivir donde ellos decidan y retener sus propiedades. Por esto, fué otorgado el derecho de proceso legal para todos los O'odham.

Ninguna propiedad de los O'odham fue virtualmente tomada por los gobiernos Español o Mexicano. Por lo consiguiente los derechos personales y de propiedad de el O'odham se desprenden de: 1) de la soberanía aborígen 2) a España, 3) a su ciudadanía de los Estados Unidos. No se consumaron cesiones formales de propiedades de los Tohono O'odham con los Estados Unidos. Esto es aclarado para el beneficio del personal de ORPI y para actualizar la historia del O'odham.

C. Acto Legal de Libertad de Creencia Indígena PL 95-341

En 1978 el Congreso aprobó el (AIRFA). El propósito de este Acto fué el de establecer una ley federal que protegiera y preservara las prácticas y tradiciones religiosas nativo-americanas. Las provisiones principales de este Acto garantizan: a) acceso a sitios religiosos; b) uso y posesión de objetos sagrados; y c) libertad de acción mediante ritos ceremoniales tradicionales. El acto también hizo un llamado a las agencias gubernamentales para que implementaran el espíritu de la ley en consulta con los líderes tradicionales para determinar si se requerían cambios para proteger los derechos y las prácticas indígenas religiosas.

D. Política de las relaciones Nativo-Americanas (NARP)

En respuesta al AIRFA y las provisiones generales de la Política Nacional del Medio Ambiente Act (NEPA) 1969, PL 91-190, y el Acto de Protección de los Recursos Arqueológicos (ARPA) 1979, PL 96-95; 93 Stat. 721 el NPS adoptó en Septiembre de 1987 el NARP (anteriormente expresado en directiva especial 78-1 Guías de

B. Treaty of Guadalupe Hidalgo, 1848  
Papago Apache Treaty, 1853 (Gadsden Purchase)

These treaties provided for the rights of all "persons and property" and those who chose to remain in the U.S. were to become citizens with all the associated rights of citizenship. The significant meaning of this is that following these treaties: a) O'odham people were guaranteed free exercise of their religion without restriction; b) O'odham people were guaranteed free enjoyment of their liberty and property; c) O'odham people remaining were to be considered citizens of the U.S.; d) O'odham living in the U.S. were to be free to continue where they reside and retain their property. Because of this the right of due process was afforded to all O'odham people.

Virtually no O'odham land was ever taken by the Spanish or Mexican governments. Therefore, the personal and property rights of the O'odham flowed from 1) aboriginal sovereignty to 2) Spain to 3) U.S. citizenship, and no formal land cessions were ever consummated between the U.S. and the O'odham. This is mentioned for the benefit of ORPI personnel and for the sake of historical accuracy.

C. American Indian Religious Freedom Act PL 95-341

In 1978 Congress passed the AIRFA. The purpose of this Act was to establish federal law that would preserve and protect traditional native American religious practices. The main provisions of this Act guarantee: a) access to religious sites; b) use and possession of sacred objects; c) freedom to worship through traditional ceremonial rites. The Act also called for government agencies to help implement the spirit of the law by consulting with traditional leaders to determine if changes were needed in order to protect Indian religious rights and practices.

D. Native American Relationships Policy (NARP)

In response to AIRFA and the general provisions of the National Environmental Policy Act (NEPA) of 1969 (PL 91-190) and the Archeological Resources Protection Act (ARPA) of 1979 (PL 96-95; 93 Stat. 721, 16 U.S.C. 470aa-11), the NPS in September 1987 adopted NARP (formerly articulated in Special Directive 78-1, Policy Guidelines for Native American Cultural Resources Management). The main provisions of this policy call for NPS managers to respond to native Americans' concerns regarding natural and cultural resources that NPS manages. This, of course, could apply to any number of situations where the NPS now manages resources that stem back to native Americans.

Política para el Manejo de Recursos Culturales de Americanos Nativos). El fin principal de esta política solicita que los administradores del Organ Pipe Cactus respondan a los intereses de los nativo-americanos con respecto de los recursos culturales que el NPS administra en la actualidad. Esto, por supuesto, puede aplicarse a cualquier número de situaciones donde el NPS administra recursos que originan con los Americanos Nativos.

#### E. Preservación Cultural de Americanos Nativos Act S. 187

Este documento espera la aprobación del Senado desde Marzo de 1988. Autoridades reconocidas creen que será aprobado próximamente. El propósito de este documento es codificar y dar un formato por el que miles de restos humanos y otros artefactos sagrados almacenados en museos y otras agencias federales regresen a la tribu a la que pertenecen. El resultado puede expandirse a "repatriación" de objetos religiosos sagrados de Americanos Nativos que son actualmente exhibidos o guardados en instalaciones en todo Estados Unidos.

Excepto por el Tratado de Guadalupe Hidalgo, de 1848 y el Tratado Apache Pápago de 1853, los actos legislativos anteriores y todas las políticas que son pertinentes para los Americanos Nativos como grupo y el Tohono O'odham, como tal, esta autorizado a darles seguimiento.

A continuación se presenta una lista de acuerdos y Actos legislativos que son específicos para ORPI y el Tohono O'odham:

#### A. Proclama Presidencial No. 2232, Abril 13, 1937

La proclamación del Decreto ORPI prevé el "derecho de los Indios de la Reservación Papago para coleccionar el fruto del cactus llamado "pitahaya" y otros cactus, bajo la reglamentación que puede ser indicada por la Secretaría del Interior."

#### B. Permiso de Uso Especial 8660-3-0001

Este permiso data desde 1939, permite al Tohono O'odham pastorear ganado sobre 1,600 acres en la esquina sureste de ORPI en el lado este de la cresta de las Montañas Ajo.

Las implicaciones de la legislación y sus acuerdos serán discutidas en la segunda mitad de la siguiente sección del reporte.

### **ESTRATEGIAS**

#### **Mexico**

México es una nación en la cual la autoridad está altamente centralizada y las decisiones de importancia están hechas en la Ciudad de México.



#### **E. Native American Cultural Preservation Act S. 187**

This bill awaits passage in the Senate as of March, 1988. Leading authorities expect it to be passed soon. The purpose of this bill is to provide a specific language and format whereby thousands of skeletons and other sacred artifacts stored in museums and other federal agencies will be returned to the rightful Tribes and/or families. The outcome may be widespread retrieval of native American religious and sacred objects that are currently displayed or stored in facilities all across the U.S.

Except for the Treaty of Guadalupe Hidalgo in 1848 and the Papago Apache Treaty in 1853 the preceding legislative acts and policies all pertain to native Americans as a group and the Tohono O'odham, as such, are entitled to pursue them.

The following list of legislative acts and agreements are specific to ORPI and the Tohono O'odham:

##### **A. Presidential Proclamation No. 2232, April 13, 1937**

The ORPI Proclamation Act has a provision for the "right of the Indians of the Papago Reservation to pick the fruit of the organ pipe cacti and other cacti, under such regulations as may be prescribed by the Secretary of the Interior."

##### **B. Special Use Permit 8660-3-0001**

This permit, dating back to 1939, allows the Tohono O'odham to graze livestock on 1,600 acres in the southeastern corner of ORPI on the eastern side of the crest of the Ajo mountains.

The implications of the legislation and of the agreements will be discussed in the second half of the following section of the report.

### **STRATEGIES**

#### **Mexico**

Mexico is a nation in which authority is highly centralized and the decisions of importance are made in Mexico City. However, in the past decade there has been an active decentralization of governmental functions. In addition, the success of any program in Mexico has always depended on the ability to create parallel relationships at the state and municipal levels. This is particularly true in the complex realm of relations that lead to international actions.

No obstante, durante la década pasada ha habido una activa descentralización de las funciones gubernamentales. Además, el éxito de cualquier programa en México ha dependido en la habilidad de crear relaciones paralelas a niveles municipales y estatales. Esto es particularmente cierto en el complejo ámbito de relaciones que conducen a las acciones internacionales.

Lo siguiente es una reseña de la estrategia propuesta:

A. Un programa concertado y planeado de reuniones, conferencias, información y visitas de funcionarios del NPS/ORPI o de sus representantes con funcionarios de las agencias en México que se encuentran en la sección de RECURSOS de este informe.

B. La participación de la administración de NPS y/o asesores en las Sesiones Plenarias de la Comisión Arizona/México Sonora/Arizona con particular énfasis en las reuniones del Comité del Medio Ambiente.

C. En base a estos lazos determinar donde el NPS puede desarrollar relaciones recíprocas que incluyan el intercambio de información sobre los recursos de la frontera entre varias agencias de México y los Estados Unidos.

NOTA: Este proceso es aplicable a otras agencias e instituciones relacionadas con los recursos naturales de la frontera - Man in the Biosphere (MAB) el Bureau of Land Management (BLM), la Universidad de Arizona, el Sierra Club, Friends of the Earth, The Nature Conservancy, Audubon, etc. Es de interés notar que Friends of PRONATURA inició este proceso en 1985 (Ver Apéndice XIII).

#### **Tohono O'odham**

La cortesía dicta que la comunicación sea por conducto del presidente del consejo de la tribu in Sells. Una recomendación práctica es incluir además al distrito local de Gu Vo en la frontera este de ORPI en todos los asuntos que sean de posible mutuo interés. Los once distritos locales del Tohono O'odham pueden actuar muy independientemente y es importante comunicarse directamente con ellos. Otra consideración práctica es que un mismo representante de ORPI siempre sea el contacto con el Tohono O'odham para que la familiaridad, confianza, y afinidad puedan ser establecidas.

La breve historia del Hia Ced O'odham que anteriormente se presentó en este informe fue incluida para que los representantes de ORPI puedan entender la esencia de quienes fueron los habitantes naturales dentro de los terrenos de ORPI.

The following is an outline of the proposed strategy:

A. A concerted and planned program of meetings, conferences, information, and visits of NPS/ORPI officials, or their representatives, with officials of the agencies in Mexico that are listed in the RESOURCES section.

B. Participation of NPS management and/or advisors at the Plenary Sessions of the Arizona/Mexico - Sonora/Arizona Commission with particular emphasis on the Environmental Committee meetings.

C. On the basis of these linkages, determine where the NPS can develop reciprocal relationships that include the exchange of information about border resources between various agencies in Mexico and the U.S.

NOTE: This process is applicable to other agencies and institutions involved in border natural resources - Man in the Biosphere (MAB), the Bureau of Land Management (BLM), the University of Arizona, the Sierra Club, Friends of the Earth, Nature Conservancy, Audubon, etc. It is of interest to note that Friends of PRONATURA, Inc. initiated such a process in 1985 (See Appendix XIII).

#### **Tohono O'odham**

Courtesy dictates that communication be done through the Tribal Chairman's office in Sells. Practical advice is to also include the local district of Gu Vo on the eastern boundary of ORPI in all matters that may be of mutual concern. The eleven local districts of the Tohono O'odham can act quite independently and it is important to communicate directly with them. Another practical consideration is to have the same representative from ORPI be the contact with the Tohono O'odham so that familiarity, trust, and rapport can be established.

The brief history of the Hia Ced O'odham presented earlier in this report was included so that ORPI managers might gain some insight into who were the original inhabitants of the land within ORPI's boundaries. There is now a formal Hia Ced Program in the Tohono O'odham government and the Program Director should periodically be contacted to see if they will be given their own district and where it will be located.

Political and traditional leaders are often different people on the reservation. It would be very beneficial for ORPI managers to meet with traditional elders (an interpreter may be needed) and explain how ORPI is preserving part of their original homeland from the effects of development and destruction.

Ahora hay un nuevo programa formal Hia Ced O'odham dentro del gobierno Tohono O'odham y debe haber comunicación periódica con el director de ese programa para saber si ellos han sido dotados de su propio distrito y dónde esta ubicado.

Los líderes políticos y los tradicionales son muchas veces diferentes personas en la reservación; seria muy útil para los administradores del ORPI reunirse con antiguos lideres (puede necesitarse un intérprete) y explicar como ORPI esta preservando parte de la cultura original de los estragos del desarrollo y de la destrucción. En ese sentido el personal del NPS y la gente indígena tradicional pueden reunirse como aliados. Las buenas relaciones con los viejos líderes serán más y más importantes especialmente si es aprobada la ley S. 187 y los indígenas puedan reclamar la devolucion de los artefactos religiosos y sagrados incluyendo, cualquier nuevo descubrimiento, en el Centro Turístico, Centro Occidental Deconservación Arqueologica (WACC), etc. Debe recordarse también que para los Americanos Nativos casi todo es de alguna forma sagrado y por esa razon muchos de esos objetos pueden ser reclamados.

Además de la legislación que permitirá la "repatriación de artefactos," los tratados de 1848 y 1853 y el AIRFA permitirán al Tohono O'odham buscar acceso a cualquier lugar tradicional de veneración incluyendo montañas, ojos de agua y cementerios en ORPI.

A la luz de la designación de ORPI como una Reserva de la Biósfera y su proximidad con la reservación Tohono O'odham uno de los propósitos de una Reserva Internacional de la Biósfera es el de preservar el area natural medular y "crear una zona cultural estable donde los pobladores indigenas vivan en armonia con el medio ambiente", será especialmente apropiado incorporar mas población indígena tradicional y uso de los terrenos cerca del monumento. El Hia Ced O'odham quizá fueron tan sensibles al medio ambiente del desierto como ninguna otra gente en cualquier otro medio ambiente. Sería bueno reconocer y utilizar algo de su restante sabiduría colectiva.

En el objetivo de administración del ORPI se encuentra el inciso Número 5 mismo que solicita una relacion de aceptación mútua con México y agencias de administración de recursos vecinas que permitan actividades interculturales de investigación paralelas en todos los parques fronterizos. No existe un objetivo administrativo específico que refuerze lazos con el Tohono O'odham. Se recomienda que los administradores del ORPI busquen la oportunidad de emplear mas al Tohono O'odham en cualquiera de las capacidades tanto como sea posible. El BIA (Agencia De Asuntos Indígena) posee una política de empleo con preferencia indígena y el NPS debe incrementar el empleo de indigenas e intercambiar ideas con individuos que se encuentran en las cercanias del Parque.

In that way NPS personnel and traditional indigenous people can come together as allies. Good relations with these elders will become increasingly important especially if S. 187 is passed and they can demand return of all religious and sacred artifacts including any currently found in the Visitor Center, Western Archeological and Conservation Center, etc. It should also be remembered that to traditional native Americans nearly everything is in some manner sacred and therefore, many of these objects may be recalled.

In addition to the legislation that would allow for the repatriation of artifacts, the Treaties of 1848 and 1853 and AIRFA allow for the Tohono O'odham to seek access to any traditional place of worship including mountains, springs, and cemeteries in ORPI.

In light of ORPI's designation as a MAB site and its proximity to the Tohono O'odham reservation, one of the purposes of an International Biosphere Reserve is to preserve the core natural area and to "create a stable cultural zone where indigenous people live in harmony with the environment," it would seem especially appropriate to incorporate more traditional people and land use in and near the Monument. The Hia Ced O'odham were perhaps as responsive and sensitive to the desert environment as any people ever were to any environment. It would be nice to acknowledge and utilize some of their remaining collective wisdom.

ORPI's Statement for Management, Objective #5, calls for a mutually acceptable relationship with Mexico and other adjacent land agencies that allows for cross cultural, parallel research activities on all park borders. There is not a specific management objective that calls for greater ties with the Tohono O'odham. It is recommended that ORPI managers seek to employ more Tohono O'odham in as many capacities as possible. The Bureau of Indian Affairs has a hiring policy of Indian preference and the NPS should seek to increase Indian employment and the exchange of ideas with individuals on reservations that border on the Park.

An intercultural training program for managers and scientists is an essential aspect of the proposed strategy. It is important that those charged with the administration of border programs increase their sensitivity to the cultural dimensions of the process.

The strategy outlined above should be viewed as a long-range approach to building institutional relationships that are appropriate to the cultural styles of each nation and lead eventually to public policies that will work.

Un programa de entrenamiento intercultural para directivos y científicos es un aspecto esencial de la estrategia propuesta. Es importante que aquellos que esten encargados de programas fronterizos aumenten su sensibilidad a las dimensiones culturales del proceso.

La estrategia anterior debe ser vista como un plan a largo plazo para crear relaciones institucionales que sean apropiadas al estilo cultural de cada nación y conduzcan eventualmente a políticas públicas que funcionen.

Estas recomendaciones son mucho más que una construcción teórica; muchas de las exitosas actividades en la frontera que ya existen -investigación- educación, salud, transferencia de tecnología, - pueden ser usadas como vehículos para asistir los próximos niveles de involucramiento para el NPS o ORPI.

### RECOMENDACIONES

Dada la creciente y compleja naturaleza en el manejo de los recursos naturales y el incremento de esta complejidad en su aspecto internacional, como lo es la frontera entre México y los Estados Unidos, es esencial explorar alternativas para hacer recomendaciones apropiadas a las agencias encargadas de la administración de los recursos naturales.

Asi también este reporte señala la necesidad de mantener comunicación con los habitantes indigenas de las areas que comprenden no solo al ORPI sino que también se extiende a México.

Ha sido mi experiencia que el factor que determina la buena política pública esta basado consistentemente en negociaciones a largo plazo entre individuos que conocen y estan interesados en los problemas de su región y que se confian entre ellos. Este factor es importante para el funcionamiento dentro de cualquier sistema social; en México es esencial. Es por eso que mis recomendaciones exigen que se desarrollen mecanismos para motivar a los profesionales de las diferentes culturas, a que se reúnan para conocerse unos a otros. Esta es la mejor oportunidad para el éxito de la administración de recursos naturales en las areas fronterizas.

Esto no tiene porque ser un problema angustiante. En la medida que aumenta la intensidad de los problemas, asi también aumenta el interés en el desarrollo de las técnicas para operar atraves de las fronteras culturales.

El proceso de crear confianza entre personas que conduce a políticas institucionales de éxito requiere de tiempo y dedicación. Esto sucederá, con o sin apoyo institucional. Con el aumento de las presiones, con una fuerte voluntad política y administrativa esta tarea puede acelerarse y debe iniciarse ahora.

These recommendations are much more than a theoretical construct; many successful border activities that already exist - research, education, health, transfer of technology - can be used as vehicles to assist the next levels of involvement for NPS/ORPI.

### **RECOMMENDATIONS**

Given the increasingly complex nature of management of natural resources, and the compounding of that complexity in an international setting such as the U.S./Mexico border region, it is essential to explore alternative ways by which appropriate recommendations can be made to the agencies responsible for the administration of these resources.

In addition, this report indicates the need for maintaining communication with the native inhabitants of the area that surrounds and includes not only ORPI but extends as well into Mexico.

It has been my experience that the factors that lead to good public policies are based on long-range, consistent negotiations among individuals who know and are interested in the problems of their region and who trust each other. This factor is important for functioning within any social system; in Mexico it is essential.

Thus, my recommendations urge that mechanisms be developed to encourage professionals in the various cultures to meet face to face and to know each other. It is the best chance for the successful management of natural resources in the border areas.

This does not have to be an anguishing problem. As the intensity of the problems increases, so has the interest in developing techniques for operating across cultural boundaries.

The process of building trust between individuals that then leads to successful institutional policies requires time and dedication. This will happen with or without institutional support as the pressures increase. With a strong political and administrative will this task can be accelerated and should be initiated now.

## **RECURSOS**

### **A. Agencias Gubernamentales**

Agencias Gubernamentales a niveles Municipal Estatal y Nacional están enlistadas en el Apéndice XIII.

### **B. Organizaciones Civicas**

Las organizaciones cívicas provén de importantes lazos dentro de una red local de personas. Ellos pueden ayudar a establecer las relaciones sociales que forman las bases de diálogo sobre los recursos naturales en la región fronteriza y que eventualmente conlleva a una política pública operante.

### **C. Instituciones Educativas y de Investigación**

No hay duda de la importancia que revisten las instituciones educativas y de investigación en el diálogo que culmina con políticas de largo alcance. Debe existir una comunicación estrecha con personas de estas organizaciones, ambos en México y los Estados Unidos. Varios de estos organismos están enlistados en el Apéndice VII con una breve descripción al respecto.

Dadas las incertidumbres que rodean muchas de las instituciones públicas de alto aprendizaje es importante para aquellos en los Estados Unidos buscar el asesoramiento de personas y organizaciones expertos en los actuales acontecimientos en México antes de establecer un diálogo con esas instituciones.

### **D. Administración Nativo-Americana**

Es importante estar al tanto de los derechos y las necesidades del Tohono O'odham en la planeación de la estrategia general de administración. En la misma forma que la línea física trazada en el mapa no define las fronteras culturales entre México y los Estados Unidos, tampoco lo define con la reservación Tohono O'odham.

### **E. Otras Organizaciones**

A medida que crece el interés en temas del medio ambiente natural, existen muchas posibilidades para comunicación con organizaciones que pueden apoyar con información, colección e intercambio. En México existen actualmente más de treinta grupos conservacionistas que comprenden principalmente personas voluntarias; no obstante más y más profesionales del medio ambiente se asocian con sus actividades.

Además, la Ley General del Equilibrio Ecológico y Protección del Medio Ambiente fue aprobada en Marzo de 1988 y provee una base legal adicional para la operación de grupos que se preocupan por el medio.



## **RESOURCES**

### **A. Government Agencies**

Government agencies at the National, State and Municipal level are listed in Appendix XIII.

### **B. Civic Organizations**

Civic organizations provide important links within the local network of individuals. They can help establish the social relationships that form the basis of a dialogue about natural resources in the border region and that eventually lead to workable public policies.

### **C. Research and Education Institutions**

There is no question about the importance of scientific and education institutions in the dialogue that leads to long range policy. There should be close communication with individuals in these organizations, both in Mexico and the United States. Several of these are listed in Appendix VII, with a brief description of the most significant.

Given the political uncertainties that surround most of the public institutions of higher learning it is important for those from the United States to seek the advice of knowledgeable individuals and organizations about the current situation in Mexico before engaging in a dialogue with those institutions.

### **D. Native American Administration**

It is important to be aware of the rights and needs of the Tohono O'odham when planning an overall management strategy. In the same way that the line drawn on a physical map does not define the cultural boundaries between Mexico and the US, neither does it with the Tohono O'odham Reservation.

### **E. Other Organizations**

As interest in environmental and natural resource topics increases, many possibilities exist for contact with organizations that could provide information collection and exchange. There are now over 30 environmental groups in Mexico that encompass mostly volunteer workers; however, there are more and more professional environmentalists associated with their activities.

In addition the General Law on Ecologic Equilibrium and Protection of the Environment went into effect on March 1, 1988 and will provide an additional legal basis for environmental groups to operate.

## **APPENDICES**

The following 13 appendices are the specific agreements discussed in the body of this report. We have numbered the pages consecutively with the body of the text for the convenience of the reader. We have also left the original page numbers on the agreements for scholarly reference.

## **APENDICES**

A continuación se presentan 13 Apéndices, estos son los textos actuales de los convenios que se describen en este informe. Se han numerado las páginas consecutivamente con el texto del informe para conveniencia del lector. Asimismo, permanece la numeración original de cada documento para referencias académicas.

**APPENDIX I**

**INTERNATIONAL BOUNDARY AND WATER COMMISSION TREATY**

TREATY SERIES 994

UTILIZATION OF WATERS  
OF THE COLORADO AND TIJUANA RIVERS  
AND OF THE RIO GRANDE

+

TREATY  
BETWEEN THE UNITED STATES OF AMERICA  
AND MEXICO

Signed at Washington February 3, 1944.

AND  
PROTOCOL

Signed at Washington November 14, 1944.

Ratification advised by the Senate of the United States of America  
April 18, 1945, subject to certain understandings.

Ratified by the President of the United States of America November  
1, 1945, subject to said understandings.

Ratified by Mexico October 16, 1945.

Ratifications exchanged at Washington November 8, 1945.

Proclaimed by the President of the United States of America  
November 27, 1945, subject to said understandings.

Effective November 8, 1945.



UNITED STATES  
GOVERNMENT PRINTING OFFICE  
WASHINGTON : 1946

[Reprinted November 1951  
and November 1954]

**BY THE PRESIDENT OF THE UNITED STATES OF AMERICA**

**A PROCLAMATION**

**WHEREAS a treaty between the United States of America and the United Mexican States relating to the utilization of the waters of the Colorado and Tijuana Rivers, and of the Rio Grande (Rio Bravo) from Fort Quitman, Texas, to the Gulf of Mexico, was signed by their respective Plenipotentiaries in Washington on February 3, 1944, and a protocol supplementary to the said treaty was signed by their respective Plenipotentiaries in Washington on November 14, 1944, the originals of which treaty and protocol, in the English and Spanish languages, are word for word as follows:**

**(1)**

The Government of the United States of America and the Government of the United Mexican States: animated by the sincere spirit of cordiality and friendly cooperation which happily governs the relations between them; taking into account the fact that Articles VI and VII of the Treaty of Peace, Friendship and Limits between the United States of America and the United Mexican States signed at Guadalupe Hidalgo on February 2, 1848, [1] and Article IV of the boundary treaty between the two countries signed at the City of Mexico December 30, 1853 [2] regulate the use of the waters of the Rio Grande (Rio Bravo) and the Colorado River for purposes of navigation only; considering that the utilization of these waters for other purposes is desirable in the interest of both countries, and desiring, moreover, to fix and delimit the rights of the two countries with respect to the waters of the Colorado and Tijuana Rivers, and of the Rio Grande (Rio Bravo) from Fort Quitman, Texas, United States of America, to the Gulf of Mexico, in order to obtain the most complete and satisfactory utilization thereof, have resolved to conclude a treaty and for this purpose have named as their plenipotentiaries:

The President of the United States of America:      Los Gobiernos de los Estados Unidos de América y de los Estados Unidos Mexicanos: ani-

El Presidente de los Estados Unidos de América:

<sup>1</sup> [Treaty Series 207; 9 Stat. 922; 18 Stat. (pt. 2, Public Treaties) 492.]

<sup>2</sup> [Treaty Series 208; 10 Stat. 1031; 18 Stat. (pt. 2, Public Treaties) 503.]

Cordell Hull, Secretary of State of the United States of America, George S. Messersmith, Ambassador Extraordinary and Plenipotentiary of the United States of America in Mexico, and Lawrence M. Lawson, United States Commissioner, International Boundary Commission, United States and Mexico; and.

Al Señor Cordell Hull, Secretario de Estado de los Estados Unidos de América, al Señor George S. Messersmith, Embajador Extraordinario y Plenipotenciario de los Estados Unidos de América en México, y al Señor Ingeniero Lawrence M. Lawson, Comisionado de los Estados Unidos en la Comisión Internacional de Límites entre los Estados Unidos y México; y

The President of the United Mexican States:

El Presidente de los Estados Unidos Mexicanos:

Francisco Castillo Nájera, Ambassador Extraordinary and Plenipotentiary of the United Mexican States in Washington, and Rafael Fernández MacGregor, Mexican Commissioner, International Boundary Commission, United States and Mexico; who, having communicated to each other their respective Full Powers and having found them in good and due form, have agreed upon the following:

Al Señor Dr. Francisco Castillo Nájera, Embajador Extraordinario y Plenipotenciario de los Estados Unidos Mexicanos en Washington, y al Señor Ingeniero Rafael Fernández MacGregor, Comisionado Mexicano en la Comisión Internacional de Límites entre los Estados Unidos y México; quienes, después de haberse comunicado sus respectivos Plenos Poderes y haberlos encontrado en buena y debida forma, convienen en lo siguiente:

#### I - PRELIMINARY PROVISIONS

#### I - DISPOSICIONES PRELIMINARES

##### ARTICLE 1

##### ARTICULO 1

For the purposes of this Treaty it shall be understood that:

Para los efectos de este Tratado se entenderá:

(a) "The United States" means the United States of America.

a) Por "los Estados Unidos", los Estados Unidos de América.

(b) "Mexico" means the United Mexican States.

b) Por "México", los Estados Unidos Mexicanos.

(c) "The Commission" means the International Boundary and Water Commission, United States and Mexico, as described in Article 2 of this Treaty.

c) Por "La Comisión", la Comisión Internacional de Límites y Aguas entre los Estados Unidos y México, según se define en el Artículo 2 de este Tratado.

(d) "To divert" means the deliberate act of taking water from

d) Por "derivar", el acto deliberado de tomar agua de cualquier



any channel in order to convey it elsewhere for storage, or to utilize it for domestic, agricultural, stock-raising or industrial purposes whether this be done by means of dams across the channel, partition weirs, lateral intakes, pumps or any other methods.

(e) "Point of diversion" means the place where the act of diverting the water is effected.

(f) "Conservation capacity of storage reservoirs" means that part of their total capacity devoted to holding and conserving the water for disposal thereof as and when required, that is, capacity additional to that provided for silt retention and flood control.

(g) "Flood discharges and spills" means the voluntary or involuntary discharge of water for flood control as distinguished from releases for other purposes.

(h) "Return flow" means that portion of diverted water that eventually finds its way back to the source from which it was diverted.

(i) "Release" means the deliberate discharge of stored water for conveyance elsewhere or for direct utilization.

(j) "Consumptive use" means the use of water by evaporation, plant transpiration or other manner whereby the water is consumed and does not return to its source of supply. In general it is measured by the amount of water

cauce con objeto de hacerla llegar a otro lugar y almacenarla, o aprovecharla con fines domésticos, agrícolas, ganaderos o industriales; ya sea que dicho acto se lleve a cabo utilizando presas construídas a través del cauce, partidores de corriente, bocatomas laterales, bombas o cualesquier otros medios.

e) Por "punto de derivación", el lugar en que se realiza el acto de derivar el agua.

f) Por "capacidad útil de las presas de almacenamiento", aquella parte de la capacidad total que se dedica a retener y conservar el agua para disponer de ella cuando sea necesario, o sea, la capacidad adicional a las destinadas al azolve y al control de avenidas.

g) Por "desfogue" y por "desfogue", la salida voluntaria o involuntaria de agua para controlar las avenidas o con cualquier otro propósito que no sea de los especificados para la extracción.

h) Por "retornos", la parte de un volumen de agua derivada de una fuente de abastecimiento, que finalmente regresa a su fuente original.

i) Por "extracción", la salida del agua almacenada, deliberadamente realizada para su conducción a otro lugar o para su aprovechamiento directo.

j) Por "consumo", el agua evaporada, transpirada por las plantas, retenida o por cualquier medio perdida y que no puede retornar a su cauce de escurrimiento. En general se mide por el monto del agua derivada menos

diverted less the part thereof el volumen que retorna al cauce. which returns to the stream.

(k) "Lowest major international dam or reservoir" means the major international dam or reservoir situated farthest downstream. k) Por "presa inferior principal internacional de almacenamiento", la presa internacional principal situada más aguas abajo.

(l) "Highest major international dam or reservoir" means the major international dam or reservoir situated farthest upstream. l) Por "presa superior principal internacional de almacenamiento", la presa internacional principal situada más aguas arriba.

## ARTICLE 2

## ARTICULO 2

The International Boundary Commission established pursuant to the provisions of the Convention between the United States and Mexico signed in Washington March 1, 1889 [1] to facilitate the carrying out of the principles contained in the Treaty of November 12, 1884 [2] and to avoid difficulties occasioned by reason of the changes which take place in the beds of the Rio Grande (Rio Bravo) and the Colorado River shall hereafter be known as the International Boundary and Water Commission, United States and Mexico, which shall continue to function for the entire period during which the present Treaty shall continue in force. Accordingly, the term of the Convention of March 1, 1889 shall be considered to be indefinitely extended, and the Convention of November 21, 1900 [3] between the United States and Mexico regarding that Convention shall be considered completely terminated.

La Comisión Internacional de Límites establecida por la Convención suscrita en Washington, por los Estados Unidos y México, el primero de marzo de 1889, para facilitar la ejecución de los principios contenidos en el Tratado de 12 de noviembre de 1884, y para evitar las dificultades ocasionadas con motivo de los cambios que tienen lugar en el cauce de los ríos Bravo (Grande) y Colorado, cambiará su nombre por el de Comisión Internacional de Límites y Aguas, entre los Estados Unidos y México, la que continuará en funciones por todo el tiempo que el presente Tratado esté en vigor. En tal virtud se considera prorrogado indefinidamente el término de la Convención de primero de marzo de 1889 y se deroga, por completo, la de 21 de noviembre de 1900, entre los Estados Unidos y México, relativa a aquella Convención.

The application of the present Treaty, the regulation and exer-

La aplicación del presente Tratado, la reglamentación y el ejerci-

<sup>1</sup> [Treaty Series 232; 26 Stat. 1512.]

<sup>2</sup> [Treaty Series 226; 24 Stat. 1011.]

<sup>3</sup> [Treaty Series 244; 31 Stat. 1936.]

cise of the rights and obligations which the two Governments assume thereunder, and the settlement of all disputes to which its observance and execution may give rise are hereby entrusted to the International Boundary and Water Commission, which shall function in conformity with the powers and limitations set forth in this Treaty.

The Commission shall in all respects have the status of an international body, and shall consist of a United States Section and a Mexican Section. The head of each Section shall be an Engineer Commissioner. Wherever there are provisions in this Treaty for joint action or joint agreement by the two Governments, or for the furnishing of reports, studies or plans to the two Governments, or similar provisions, it shall be understood that the particular matter in question shall be handled by or through the Department of State of the United States and the Ministry of Foreign Relations of Mexico.

The Commission or either of its two Sections may employ such assistants and engineering and legal advisers as it may deem necessary. Each Government shall accord diplomatic status to the Commissioner, designated by the other Government. The Commissioner, two principal engineers, a legal adviser, and a secretary, designated by each Government as members of its Section of the Commission, shall be entitled in the territory of the other country to the privileges and immuni-

cio de los derechos y el cumplimiento de las obligaciones que los dos Gobiernos adquieren en virtud del mismo, y la resolución de todos los conflictos que originen su observancia y ejecución, quedan confiados a la Comisión Internacional de Límites y Aguas que funcionará de conformidad con las facultades y restricciones que se fijan en este Tratado.

La Comisión tendrá plenamente el carácter de un organismo internacional y estará constituida por una Sección de los Estados Unidos y por una Sección Mexicana. Cada Sección será encabezada por un Comisionado Ingeniero. Cuando en este Tratado se establece acción conjunta o el acuerdo de los dos Gobiernos o la presentación a los mismos de informes, estudios o proyectos, u otras estipulaciones similares, se entenderá que dichos asuntos serán de la competencia de la Secretaría de Estado de los Estados Unidos y de la Secretaría de Relaciones Exteriores de México o que se tratarán por su conducto.

La Comisión y cada una de las Secciones que la constituyen podrán emplear a los auxiliares y consejeros técnicos, de ingeniería y legales, que estimen necesarios. Cada Gobierno reconocerá carácter diplomático al Comisionado del otro, y el Comisionado, dos ingenieros principales, un consejero legal y un secretario, designados por el otro Gobierno como miembros de su Sección de la Comisión, tendrán derecho a todos los privilegios e inmunidades pertenecientes a funcionarios diplo-

ties appertaining to diplomatic máticos. La Comisión y su personal podrán llevar a cabo, con toda libertad, sus observaciones, estudios y trabajos de campo en el territorio de cualquiera de los dos países.

The jurisdiction of the Commission shall extend to the limitrophe parts of the Rio Grande (Rio Bravo) and the Colorado River, to the land boundary between the two countries, and to works located upon their common boundary, each Section of the Commission retaining jurisdiction over that part of the works located within the limits of its own country. Neither Section shall assume jurisdiction or control over works located within the limits of the country of the other without the express consent of the Government of the latter. The works constructed, acquired or used in fulfillment of the provisions of this Treaty and located wholly within the territorial limits of either country, although these works may be international in character, shall remain, except as herein otherwise specifically provided, under the exclusive jurisdiction and control of the Section of the Commission in whose country the works may be situated.

La jurisdicción de la Comisión se ejercerá sobre los tramos limitrofes del río Bravo (Grande) y del río Colorado, sobre la línea divisoria terrestre entre los dos países y sobre las obras construídas en aquéllos y en ésta. Cada una de las Secciones tendrá jurisdicción sobre la parte de las obras situadas dentro de los límites de su nación y ninguna de ellas ejercerá jurisdicción o control sobre obras construídas o situadas dentro de los límites del país de la otra Sección sin el expreso consentimiento del Gobierno de esta última. Las obras construídas, adquiridas o usadas en cumplimiento de las disposiciones de este Tratado y que se encuentren ubicadas totalmente dentro de los límites territoriales de cualquiera de los dos países, aunque de carácter internacional, quedarán, con las excepciones expresamente señaladas en este Tratado, bajo la exclusiva jurisdicción y control de la Sección de la Comisión en cuyo país se encuentren dichas obras.

The duties and powers vested in the Commission by this Treaty shall be in addition to those vested in the International Boundary Commission by the Convention of March 1, 1889 and other pertinent treaties and agreements in force between the two countries except as the provisions of any of them

Las facultades y obligaciones que impone a la Comisión este Tratado serán adicionales a las conferidas a la Comisión Internacional de Límites por la Convención del primero de marzo de 1889 y los demás tratados y convenios pertinentes en vigor entre los dos países, con excepción de

may be modified by the present Treaty. aquellas estipulaciones de cualquiera de ellos que este Tratado modifica.

Each Government shall bear the expenses incurred in the maintenance of its Section of the Commission. The joint expenses, which may be incurred as agreed upon by the Commission, shall be borne equally by the two Governments. Los gastos que demande el sostenimiento de cada Sección de la Comisión serán sufragados por cuenta del Gobierno del cual dependa. Los gastos comunes que acuerde la Comisión serán cubiertos por mitad por ambos Gobiernos.

## ARTICLE 3

## ARTICULO 3

In matters in which the Commission may be called upon to make provision for the joint use of international waters, the following order of preferences shall serve as a guide: En los asuntos referentes al uso común de las aguas internacionales, acerca de los cuales deba resolver la Comisión, servirá de guía el siguiente orden de preferencias:

- |                                                                         |                                                                      |
|-------------------------------------------------------------------------|----------------------------------------------------------------------|
| 1. Domestic and municipal uses.                                         | 1°.- Usos domésticos y municipales.                                  |
| 2. Agriculture and stock-raising.                                       | 2°.- Agricultura y ganadería.                                        |
| 3. Electric power.                                                      | 3°.- Energía eléctrica.                                              |
| 4. Other industrial uses.                                               | 4°.- Otros usos industriales.                                        |
| 5. Navigation.                                                          | 5°.- Navegación.                                                     |
| 6. Fishing and hunting.                                                 | 6°.- Pesca y caza.                                                   |
| 7. Any other beneficial uses which may be determined by the Commission. | 7°.- Cualesquiera otros usos benéficos determinados por la Comisión. |

All of the foregoing uses shall be subject to any sanitary measures or works which may be mutually agreed upon by the two Governments, which hereby agree to give preferential attention to the solution of all border sanitation problems. Todos los usos anteriores estarán sujetos a las medidas y obras sanitarias que convengan de común acuerdo los dos Gobiernos, los cuales se obligan a resolver preferentemente los problemas fronterizos de saneamiento.

## II - RIO GRANDE (RIO BRAVO)

## II - RIO BRAVO (GRANDE)

## ARTICLE 4

## ARTICULO 4

The waters of the Rio Grande (Rio Bravo) between Fort Quitman, Texas and the Gulf of Mexico are hereby allotted to the two countries in the following manner: Las aguas del río Bravo (Grande) entre Fort Quitman, Texas, y el Golfo de México se asignan a los dos países de la siguiente manera:

**A. To Mexico:**

(a) All of the waters reaching the main channel of the Rio Grande (Rio Bravo) from the San Juan and Alamo Rivers, including the return flow from the lands irrigated from the latter two rivers.

(b) One-half of the flow in the main channel of the Rio Grande (Rio Bravo) below the lowest major international storage dam, so far as said flow is not specifically allotted under this Treaty to either of the two countries.

(c) Two-thirds of the flow reaching the main channel of the Rio Grande (Rio Bravo) from the Conchos, San Diego, San Rodrigo, Escondido and Salado Rivers and the Las Vacas Arroyo, subject to the provisions of subparagraph (c) of paragraph B of this Article.

(d) One-half of all other flows not otherwise allotted by this Article occurring in the main channel of the Rio Grande (Rio Bravo), including the contributions from all the unmeasured tributaries, which are those not named in this Article, between Fort Quitman and the lowest major international storage dam.

**B. To the United States:**

(a) All of the waters reaching the main channel of the Rio Grande (Rio Bravo) from the Pecos and Devils Rivers, Goodenough Spring, and Alamito, Terlingua, San Felipe and Pinto Creeks.

**A. - A México:**

a) La totalidad de las aguas que lleguen a la corriente principal del río Bravo (Grande), de los ríos San Juan y Alamo; comprendiendo los retornos procedentes de los terrenos que rieguen estos dos últimos ríos.

b) La mitad del escurrimiento del cauce principal del río Bravo (Grande) abajo de la presa inferior principal internacional de almacenamiento, siempre que dicho escurrimiento no esté asignado expresamente en este Tratado a alguno de los dos países.

c) Las dos terceras partes del caudal que llegue a la corriente principal del río. Bravo (Grande) de los ríos Conchos, San Diego, San Rodrigo, Escondido y Salado y Arroyo de Las Vacas, en concordancia con lo establecido en el inciso c) del párrafo B de este Artículo.

d) La mitad de cualquier otro escurrimiento en el cauce principal del río Bravo (Grande), no asignado específicamente en este Artículo, y la mitad de las aportaciones de todos los afluentes no aforados—que son aquellos no denominados en este Artículo—entre Fort Quitman y la presa inferior principal internacional.

**B. - A los Estados Unidos:**

a) La totalidad de las aguas que lleguen a la corriente principal del río Bravo (Grande) procedentes de los ríos Pecos, Devils, manantial Goodenough y arroyos Alamito, Terlingua, San Felipe y Pinto.

(b) One-half of the flow in the main channel of the Rio Grande (Rio Bravo) below the lowest major international storage dam, so far as said flow is not specifically allotted under this Treaty to either of the two countries.

(c) One-third of the flow reaching the main channel of the Rio Grande (Rio Bravo) from the Conchos, San Diego, San Rodrigo, Escondido and Salado Rivers and the Las Vacas Arroyo, provided that this third shall not be less, as an average amount in cycles of five consecutive years, than 350,000 acre-feet (431,721,000 cubic meters) annually. The United States shall not acquire any right by the use of the waters of the tributaries named in this subparagraph, in excess of the said 350,000 acre-feet (431,721,000 cubic meters) annually, except the right to use one-third of the flow reaching the Rio Grande (Rio Bravo) from said tributaries, although such one-third may be in excess of that amount.

(d) One-half of all other flows not otherwise allotted by this Article occurring in the main channel of the Rio Grande (Rio Bravo), including the contributions from all the unmeasured tributaries, which are those not named in this Article, between Fort Quitman and the lowest major international storage dam.

b) La mitad del escurrimiento del cauce principal del río Bravo (Grande) abajo de la presa inferior principal internacional de almacenamiento, siempre que dicho escurrimiento no esté asignado expresamente en este Tratado a alguno de los dos países.

c) Una tercera parte del agua que llegue a la corriente principal del río Bravo (Grande) procedente de los ríos Conchos, San Diego, San Rodrigo, Escondido, Salado y Arroyo de Las Vacas; tercera parte que no será menor en conjunto, en promedio y en ciclos de cinco años consecutivos, de 431 721 000 metros cúbicos (350 000 acres pies) anuales. Los Estados Unidos no adquirirán ningún derecho por el uso de las aguas de los afluentes mencionados en este inciso en exceso de los citados 431 721 - 000 metros cúbicos (350 000 acres pies), salvo el derecho a usar de la tercera parte del escurrimiento que llegue al río Bravo (Grande) de dichos afluentes, aunque ella exceda del volumen aludido.

d) La mitad de cualquier otro escurrimiento en el cauce principal del río Bravo (Grande), no asignado específicamente en este Artículo, y la mitad de las aportaciones de todos los afluentes no aforados—que son aquéllos no denominados en este Artículo—entre Fort Quitman y la presa inferior principal internacional.

In the event of extraordinary drought or serious accident to the hydraulic systems on the measured Mexican tributaries, making it difficult for Mexico to make available the run-off of 350,000 acre-foot (431,721,000 cubic meters) annually, allotted in subparagraph (c) of paragraph B of this Article to the United States as the minimum contribution from the aforesaid Mexican tributaries, any deficiencies existing at the end of the aforesaid five-year cycle shall be made up in the following five-year cycle with water from the said measured tributaries.

En casos de extraordinaria sequía o de serio accidente en los sistemas hidráulicos de los afluentes mexicanos aforados que hagan difícil para México dejar escurrir los 431 721 000 metros cúbicos (350 000 acres pies) anualmente, allotted in subparagraph (c) of paragraph B of this Article Unidos como aportación mínima de los citados afluentes mexicanos, en el inciso c) del párrafo B de este Artículo, los faltantes que existieren al final del ciclo aludido de cinco años, se repondrán en el ciclo siguiente con agua procedente de los mismos tributarios.

Whenever the conservation capacities assigned to the United States in at least two of the major international reservoirs, including the highest major reservoir, are filled with waters belonging to the United States, a cycle of five years shall be considered as terminated and all debits fully paid, whereupon a new five-year cycle shall commence.

Siempre que la capacidad útil asignada a los Estados Unidos de por lo menos dos de las presas internacionales principales, incluyendo la localizada más aguas arriba, se llene con aguas pertenecientes a los Estados Unidos, se considerará terminado un ciclo de cinco años y todos los débitos totalmente pagados, iniciándose, a partir de ese momento, un nuevo ciclo.

#### ARTICLE 5

#### ARTICULO 5

The two Governments agree to construct jointly, through their respective Sections of the Commission, the following works in the main channel of the Rio Grande (Rio Bravo):

Los dos Gobiernos se comprometen a construir conjuntamente, por conducto de sus respectivas Secciones de la Comisión, las siguientes obras en el cauce principal del río Bravo (Grande):

I. The dams required for the conservation, storage and regulation of the greatest quantity of the annual flow of the river in a way to ensure the continuance of existing uses and the development of the greatest number of feasible

I. - Las presas que se requieran para el almacenamiento y regulación de la mayor parte que sea posible del escurrimiento anual del río en forma de asegurar los aprovechamientos existentes y llevar a cabo el mayor número de



projects, within the limits imposed by the water allotments specified. proyectos factibles, dentro de los límites impuestos por las asignaciones estipuladas de agua.

II. The dams and other joint works required for the diversion of the flow of the Rio Grande (Rio Bravo). II. — Las presas y las otras obras comunes que se requieran para la derivación de las aguas del río Bravo (Grande).

One of the storage dams shall be constructed in the section between Santa Helena Canyon and the mouth of the Pecos River; one in the section between Eagle Pass and Laredo, Texas (Piedras Negras and Nuevo Laredo in Mexico); and a third in the section between Laredo and Roma, Texas (Nuevo Laredo and San Pedro de Roma in Mexico). One or more of the stipulated dams may be omitted, and others than those enumerated may be built, in either case as may be determined by the Commission, subject to the approval of the two Governments. Una de las presas de almacenamiento se construirá en el tramo entre el Cañón de Santa Elena y la desembocadura del río Pecos; otra, en el tramo comprendido entre Piedras Negras, Coahuila y Nuevo Laredo, Tamaulipas (Eagle Pass y Laredo en los Estados Unidos) y una tercera, en el tramo entre Nuevo Laredo, Tamaulipas y San Pedro de Roma, Tamaulipas (Laredo y Roma en los Estados Unidos). A juicio de la Comisión, sujeto a la aprobación de los dos Gobiernos, podrán omitirse una o más de las presas estipuladas y, en cambio, podrán construirse otras que no sean de las enumeradas.

In planning the construction of such dams the Commission shall determine: Al planear la construcción de dichas presas, la Comisión determinará:

- |                                                                                                                                                                            |                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| (a) The most feasible sites;                                                                                                                                               | a) Los sitios más adecuados;                                                                                                                          |
| (b) The maximum feasible reservoir capacity at each site;                                                                                                                  | b) La máxima capacidad factible en cada sitio;                                                                                                        |
| (c) The conservation capacity required by each country at each site, taking into consideration the amount and regimen of its allotment of water and its contemplated uses; | c) La capacidad útil requerida por cada país en cada sitio tomando en consideración el monto y régimen de su asignación de agua y sus usos previstos; |
| (d) The capacity required for retention of silt;                                                                                                                           | d) La capacidad requerida para la retención de azolves;                                                                                               |
| (e) The capacity required for flood control.                                                                                                                               | e) La capacidad requerida para el control de avenidas.                                                                                                |

The conservation and silt capacities of each reservoir shall be assigned to each country in the same La capacidad útil y la requerida para la retención de azolves, serán asignadas a cada uno de los dos

proportion as the capacities required by each country in such reservoir for conservation purposes. Each country shall have an undivided interest in the flood control capacity of each reservoir.

países en cada presa, en la misma proporción que las capacidades requeridas para almacenamiento útil, por cada país, en la misma presa. Ambos países tendrán un interés común indivisible en la capacidad de cada presa para el control de avenidas.

The construction of the international storage dams shall start within two years following the approval of the respective plans by the two Governments. The works shall begin with the construction of the lowest major international storage dam, but works in the upper reaches of the river may be constructed simultaneously. The lowest major international storage dam shall be completed within a period of eight years from the date of the entry into force of this Treaty.

La construcción de las presas internacionales de almacenamiento principiará dentro de los dos años siguientes a la aprobación por los dos Gobiernos de los planos correspondientes. Los trabajos empezarán por la construcción de la presa inferior principal internacional de almacenamiento, pero se podrán llevar a cabo, simultáneamente, obras en los tramos superiores del río. La presa inferior principal internacional deberá quedar terminada en un plazo máximo de ocho años a partir de la fecha en que entre en vigor este Tratado.

The construction of the dams and other joint works required for the diversion of the flows of the river shall be initiated on the dates recommended by the Commission and approved by the two Governments.

La construcción de las presas y otras obras comunes requeridas para la derivación del caudal del río, se iniciará en las fechas determinadas por la Comisión y aprobadas por los dos Gobiernos.

The cost of construction, operation and maintenance of each of the international storage dams shall be prorated between the two Governments in proportion to the capacity allotted to each country for conservation purposes in the reservoir at such dam.

El costo de construcción de cada una de las presas internacionales de almacenamiento y los costos de su operación y mantenimiento se dividirán entre los dos países en proporción a las respectivas capacidades útiles que en la presa de que se trate se asignen a cada uno de ellos.

The cost of construction, operation and maintenance of each of the dams and other joint works required for the diversion of the flows of the river shall be prorated

El costo de construcción de cada una de las presas y de las otras obras comunes necesarias para la derivación de las aguas del río y los costos de su operación y

between the two Governments in proportion to the benefits which the respective countries receive therefrom, as determined by the Commission and approved by the two Governments.

mantenimiento, serán prorrateados entre los dos países en proporción de los beneficios que reciban, respectivamente, de cada una de dichas obras, de acuerdo con lo que determine la Comisión y aprueben los dos Gobiernos.

#### ARTICLE 6

#### ARTICULO 6

The Commission shall study, investigate, and prepare plans for flood control works, where and when necessary, other than those referred to in Article 5 of this Treaty, on the Rio Grande (Rio Bravo) from Fort Quitman, Texas to the Gulf of Mexico. These works may include levees along the river, floodways and grade-control structures, and works for the canalization, rectification and artificial channeling of reaches of the river. The Commission shall report to the two Governments the works which should be built, the estimated cost thereof, the part of the works to be constructed by each Government, and the part of the works to be operated and maintained by each Section of the Commission. Each Government agrees to construct, through its Section of the Commission, such works as may be recommended by the Commission and approved by the two Governments. Each Government shall pay the costs of the works constructed by it and the costs of operation and maintenance of the part of the works assigned to it for such purpose.

Siempre que sea necesario, la Comisión estudiará, investigará y preparará los proyectos para las obras—distintas de aquéllas a que se refiere el Artículo 5 de este Tratado—de control de las avenidas del río Bravo (Grande) desde Fort Quitman, Texas, hasta el Golfo de México. Estas obras podrán incluir bordos a lo largo del río, cauces de alivio, estructuras de control de pendiente y la canalización, rectificación o encauzamiento de algunos tramos del río. La Comisión informará a los dos Gobiernos acerca de las obras que deberán construirse, de la estimación de sus costos, de la parte de aquéllas que deberá quedar a cargo de cada uno de ellos y de la parte de las obras que deberá ser operada y mantenida por cada Sección de la Comisión. Cada Gobierno conviene en construir, por medio de su Sección de la Comisión, las obras que recomiende la Comisión y que aprueben los dos Gobiernos. Cada Gobierno pagará los costos de las obras que construya y los costos de operación y mantenimiento de la parte de las obras que se le asigne con tal objeto.

#### ARTICLE 7

#### ARTICULO 7

The Commission shall study, investigate and prepare plans for

plants for generating hydro-electric energy which it may be feasible to construct at the international storage dams on the Rio Grande (Rio Bravo). The Commission shall report to the two Governments in a Minute the works which should be built, the estimated cost thereof, and the part of the works to be constructed by each Government. Each Government agrees to construct, through its Section of the Commission, such works as may be recommended by the Commission and approved by the two Governments. Both Governments, through their respective Sections of the Commission, shall operate and maintain jointly such hydro-electric plants. Each Government shall pay half the cost of the construction, operation and maintenance of such plants, and the energy generated shall be assigned to each country in like proportion.

para las plantas de generación de energía hidroeléctrica que fuere factible construir en las presas internacionales de almacenamiento en el río Bravo (Grande). La Comisión informará a los dos Gobiernos, mediante un acta, acerca de las obras que deberán construirse, de la estimación de sus costos y de la parte de aquéllas que deberá quedar a cargo de cada uno de ellos. Cada Gobierno conviene en construir, por medio de su Sección de la Comisión, las obras que le recomiende la Comisión y que aprueben los dos Gobiernos. Las plantas hidroeléctricas serán operadas y mantenidas conjuntamente por ambos Gobiernos por conducto de sus respectivas Secciones de la Comisión. Cada Gobierno pagará la mitad del costo de construcción, operación y mantenimiento de estas plantas y en la misma proporción será asignada a cada uno de los dos países la energía hidroeléctrica generada.

## ARTICLE 8

The two Governments recognize that both countries have a common interest in the conservation and storage of waters in the international reservoirs and in the maximum use of these structures for the purpose of obtaining the most beneficial, regular and constant use of the waters belonging to them. Accordingly, within the year following the placing in operation of the first of the major international storage dams which is constructed, the Commission

## ARTICULO 8

Los dos Gobiernos reconocen que ambos países tienen un interés común en la conservación y en el almacenamiento de las aguas en las presas internacionales y en el mejor uso de dichas presas, con objeto de obtener el más benéfico, regular y constante aprovechamiento de las aguas que les corresponden. Con tal fin, la Comisión, dentro del año siguiente de haber sido puesta en operación la primera de las presas principales internacionales que se construya,

shall submit to each Government for its approval, regulations for the storage, conveyance and delivery of the waters of the Rio Grande (Rio Bravo) from Fort Quitman, Texas to the Gulf of Mexico. Such regulations may be modified, amended or supplemented when necessary by the Commission, subject to the approval of the two Governments. The following general rules shall severally govern until modified or amended by agreement of the Commission, with the approval of the two Governments:

(a) Storage in all major international reservoirs above the lowest shall be maintained at the maximum possible water level, consistent with flood control, irrigation use and power requirements.

(b) Inflows to each reservoir shall be credited to each country in accordance with the ownership of such inflows.

(c) In any reservoir the ownership of water belonging to the country whose conservation capacity therein is filled, and in excess of that needed to keep it filled, shall pass to the other country to the extent that such country may have unfilled conservation capacity, except that one country may at its option temporarily use the conservation capacity of the other country not currently being used in any of the upper reservoirs; provided that in the event of flood discharge or spill occurring while one country is using the conserva-

someterá a la aprobación de los dos Gobiernos un reglamento para el almacenamiento, conducción y entrega de las aguas del río Bravo (Grande) desde Fort Quitman, Texas, hasta el Golfo de México. Dicha reglamentación podrá ser modificada, adicionada o complementada, cuando sea necesario, por la Comisión, con la aprobación de los dos Gobiernos. Cada una de las siguientes reglas generales regirá hasta que sean modificadas por acuerdo de la Comisión con la aprobación de los dos Gobiernos:

a) El almacenamiento de aguas en todas las presas superiores principales internacionales se mantendrá al más alto nivel que sea compatible con el control de avenidas, las extracciones normales para irrigación y los requerimientos de generación de energía eléctrica.

b) Las entradas de agua a cada presa se acreditarán al país a quien pertenezca dicha agua.

c) En cualquier vaso de almacenamiento la propiedad del agua perteneciente al país que tenga agua en exceso de la necesaria para mantener llena la capacidad útil que le corresponda, pasará al otro país, hasta que se llene la capacidad útil asignada a éste. Sin embargo, en todos los vasos de almacenamiento superiores, un país, al llenarse la capacidad útil que le pertenezca, podrá usar transitoriamente la capacidad útil del segundo país y que ésta no use, siempre que, si en ese momento ocurrieren derrames y desfuegos,

tion capacity of the other, all of la totalidad de éstos se cargue al such flood discharge or spill shall primero y todas las entradas a la be charged to the country using presa se consideren propiedad del the other's capacity, and all inflow segundo, hasta que cesen los shall be credited to the other derrames o desfuegos o hasta que country until the flood discharge la capacidad útil del segundo se or spill ceases or until the capacity llene con aguas que le pertenezcan. of the other country becomes filled with its own water.

(d) Reservoir losses shall be charged in proportion to the ownership of water in storage. Releases from any reservoir shall be charged to the country requesting them, except that releases for the generation of electrical energy, or other common purpose, shall be charged in proportion to the ownership of water in storage.

d) Las pérdidas que ocurran en los vasos de almacenamiento se cargarán a los dos países en proporción de los respectivos volúmenes almacenados que les pertenezcan. Las extracciones de cualquiera de los vasos se cargarán al país que las solicite, excepto las efectuadas para la generación de energía eléctrica u otro propósito común que se cargarán a cada uno de los dos países en proporción de los respectivos volúmenes almacenados que les pertenezcan.

(e) Flood discharges and spills from the upper reservoirs shall be divided in the same proportion as the ownership of the inflows occurring at the time of such flood discharges and spills, except as provided in subparagraph (c) of this Article. Flood discharges and spills from the lowest reservoir shall be divided equally, except that one country, with the consent of the Commission, may use such part of the share of the other country as is not used by the latter country.

e) Los derrames y desfuegos de los vasos superiores de almacenamiento se dividirán entre los dos países en la misma proporción que guarden los volúmenes pertenecientes a cada uno de ellos de las aguas que entren a los almacenes durante el tiempo en que ocurran los citados derrames y desfuegos, con excepción del caso previsto en el inciso c) de este Artículo. Los derrames y desfuegos de la presa inferior de almacenamiento se dividirán en partes iguales entre los dos países, pero uno de ellos, con el permiso de la Comisión, podrá usar las aguas correspondientes al otro país que éste no usare.

(f) Either of the two countries may avail itself, whenever it so desires, of any water belonging to

f) Cualquiera de los dos países podrá disponer, en el momento en que lo desee, del agua almacenada

it and stored in the international reservoirs, provided that the water taken is for direct beneficial use or for storage in other reservoirs. For this purpose the Commissioner of the respective country shall give appropriate notice to the Commission, which shall prescribe the proper measures for the opportune furnishing of the water.

que le pertenezca en las presas internacionales, siempre que su extracción se efectúe para algún uso benéfico directo, o para ser almacenada en otra presa. Al efecto, el Comisionado respectivo dará el aviso correspondiente a la Comisión, la que dictará las medidas necesarias para el suministro oportuno del agua.

## ARTICLE 9

## ARTICULO 9

- (a) The channel of the Rio Grande (Rio Bravo) may be used by either of the two countries to convey water belonging to it.
- a) El cauce del río Bravo (Grande) podrá ser empleado por los dos países para conducir el agua que les pertenezca.
- (b) Either of the two countries may, at any point on the main channel of the river from Fort Quitman, Texas to the Gulf of Mexico, divert and use the water belonging to it and may for this purpose construct any necessary works. However, no such diversion or use, not existing on the date this Treaty enters into force, shall be permitted in either country, nor shall works be constructed for such purpose, until the Section of the Commission in whose country the diversion or use is proposed has made a finding that the water necessary for such diversion or use is available from the share of that country, unless the Commission has agreed to a greater diversion or use as provided by paragraph (d) of this Article. The proposed use and the plans for the diversion works to be constructed in connection therewith shall be previously made known to the Commission for its information.
- b) Cualquiera de los dos países podrá derivar y usar, en cualquier lugar del cauce principal del río Bravo (Grande) desde Fort Quitman, Texas, hasta el Golfo de México, el agua que le pertenezca y podrá construir, para ello, las obras necesarias. Sin embargo, no podrá hacerse ninguna derivación o uso en cualquiera de los dos países, fuera de los existentes en la fecha en que entre en vigor este Tratado, ni construirse ningunas obras con aquel fin, hasta que la Sección de la Comisión del país en que se intente hacer la derivación o uso verifique que hay el agua necesaria para ese efecto, dentro de la asignación de ese mismo país, a menos que la Comisión haya convenido, de acuerdo con lo estipulado en el inciso d) de este Artículo, en una derivación o uso en mayor cantidad. El uso proyectado, y los planos para las correspondientes obras de derivación que deban construirse, al efecto, se darán a conocer previamente a la Comisión para su información.

(c) Consumptive uses from the main stream and from the un-measured tributaries below Fort Quitman shall be charged against the share of the country making them.

(d) The Commission shall have the power to authorize either country to divert and use water not belonging entirely to such country, when the water belonging to the other country can be diverted and used without injury to the latter and can be replaced at some other point on the river.

(e) The Commission shall have the power to authorize temporary diversion and use by one country of water belonging to the other, when the latter does not need it or is unable to use it, provided that such authorization or the use of such water shall not establish any right to continue to divert it.

(f) In case of the occurrence of an extraordinary drought in one country with an abundant supply of water in the other country, water stored in the international storage reservoirs and belonging to the country enjoying such abundant water supply may be withdrawn, with the consent of the Commission, for the use of the country undergoing the drought.

(g) Each country shall have the right to divert from the main channel of the river any amount of water, including the water belonging to the other country, for the purpose of generating hydro-electric power, provided that such diversion causes no injury to the other country and

c) Los consumos hechos, abajo de Fort Quitman, en la corriente principal y en los afluentes no aforados, se cargarán a cuenta de la asignación del país que los efectúe.

d) La Comisión podrá autorizar que se deriven y usen aguas que no correspondan completamente al país que pretenda hacerlo, cuando el agua que pertenezca al otro país pueda ser derivada y usada sin causarle perjuicio y le sea repuesta en algún otro lugar del río.

e) La Comisión podrá autorizar la derivación y uso transitorios a favor de un país de aguas que pertenezcan al otro, cuando éste no las necesite o no las pueda utilizar y sin que dicha autorización o el uso de las citadas aguas establezca, con relación a las mismas, ningún derecho para continuar derivándolas.

f) En los casos en que concurra una extraordinaria sequía en un país con un abundante abastecimiento de agua en el otro país, el agua de éste almacenada en los vasos de almacenamiento internacionales podrá ser extraída, con el consentimiento de la Comisión, para uso del país que experimente la sequía.

g) Cada uno de los países tendrá el derecho de derivar del cauce principal del río cualquiera cantidad de agua, incluyendo el agua perteneciente al otro país, con el objeto de generar energía hidroeléctrica, siempre que tal derivación no cause perjuicio al otro país, no interfiera con la



does not interfere with the international generation of power and that the quantities not returning directly to the river are charged against the share of the country making the diversion. The feasibility of such diversions not existing on the date this Treaty enters into force shall be determined by the Commission, which shall also determine the amount of water consumed, such water to be charged against the country making the diversion.

(h) In case either of the two countries shall construct works for diverting into the main channel of the Rio Grande (Rio Bravo) or its tributaries waters that do not at the time this Treaty enters into force contribute to the flow of the Rio Grande (Rio Bravo) such water shall belong to the country making such diversion.

(i) Main stream channel losses shall be charged in proportion to the ownership of water being conveyed in the channel at the times and places of the losses.

(j) The Commission shall keep a record of the waters belonging to each country and of those that may be available at a given moment, taking into account the measurement of the allotments, the regulation of the waters in storage, the consumptive uses, the withdrawals, the diversions, and the losses. For this purpose the Commission shall construct, operate and maintain on the main channel of the Rio Grande (Rio Bravo), and each Section shall

generación internacional de energía eléctrica y que los volúmenes que no retornen directamente al río sean cargados a la participación del país que hizo la derivación. La factibilidad de dichas derivaciones, que no existan al entrar en vigor este Tratado, será determinada por la Comisión, la que también fijará la cantidad de agua consumida que se cargará en cuenta de la participación del país que efectúe la derivación.

h) En el caso de que cualquiera de los dos países construya obras para derivar, hacia el cauce principal del río Bravo (Grande) o de sus tributarios, aguas que no contribuyan, en la fecha en que este Tratado entre en vigor, al escurrimiento del citado río, dicha agua pertenecerá al país que haya hecho esa derivación.

i) Las pérdidas de agua ocurridas en la corriente principal serán cargadas a cada país en proporción a los volúmenes conducidos o escurridos que le pertenezcan, en ese lugar del cauce y en el momento en que ocurran las pérdidas.

j) La Comisión llevará un registro de las aguas que pertenezcan a cada país y de aquellas de que pueda disponer en un momento dado, teniendo en cuenta al aforo de las aportaciones, la regularización de los almacenamientos, los consumos, las extracciones, las derivaciones y las pérdidas. Al efecto, la Comisión construirá, operará y mantendrá en la corriente principal del río Bravo (Grande) y cada Sección en los correspondientes afluentes afora-

construct, operate and maintain dos, todas las estaciones hidro-  
 on the measured tributaries in its métricas y aparatos mecánicos  
 own country, all the gaging sta- que sean necesarios para hacer  
 tions and mechanical apparatus los cálculos y obtener los datos  
 necessary for the purpose of mak- requeridos para el aludido regis-  
 ing computations and of obtaining tro. La información respecto a  
 the necessary data for such record. las derivaciones y consumos hechos  
 The information with respect to en los afluentes no aforados será  
 the diversions and consumptive proporcionada por la Sección que  
 uses on the unmeasured tributaries corresponda. El costo de cons-  
 shall be furnished to the Commis- trucción de las estaciones hidro-  
 sion by the appropriate Section. métricas nuevas que se localicen  
 The cost of construction of any en el cauce principal del río Bravo  
 new gaging stations located on (Grande) se dividirá igualmente  
 the main channel of the Rio entre los dos Gobiernos. La ope-  
 Grande (Rio Bravo) shall be ración y mantenimiento, o el costo  
 borne equally by the two Govern- de los mismos, de todas las esta-  
 ments. The operation and main- ciones hidrométricas serán dis-  
 tenance of all gaging stations or tribuidos entre las dos Secciones,  
 the cost of such operation and de acuerdo con lo que determine  
 maintenance shall be apportioned la Comisión.  
 between the two Sections in ac-  
 cordance with determinations to  
 be made by the Commission.

### III - COLORADO RIVER

#### ARTICLE 10

Of the waters of the Colorado River, from any and all sources, there are allotted to Mexico:

(a) A guaranteed annual quantity of 1,500,000 acre-feet (1,850,234,000 cubic meters) to be delivered in accordance with the provisions of Article 15 of this Treaty.

(b) Any other quantities arriving at the Mexican points of diversion, with the understanding that in any year in which, as determined by the United States Section, there exists a surplus of waters of the Colorado River in excess of the amount necessary to

### III - RIO COLORADO

#### ARTICULO 10

De las aguas del río Colorado, cualquiera que sea su fuente, se asignan a México:

a) Un volumen garantizado de 1 850 234 000 metros cúbicos (1 500 000 acres pies) cada año, que se entregará de acuerdo con lo dispuesto en el Artículo 15 de este Tratado.

b) Cualesquier otros volúmenes que lleguen a los puntos mexicanos de derivación; en la inteligencia de que, cuando a juicio de la Sección de los Estados Unidos, en cualquier año exista en el río Colorado agua en exceso de la necesaria para abastecer los con-

supply uses in the United States sumos en los Estados Unidos y el and the guaranteed quantity of volumen garantizado anualmente 1,500,000 acre-feet (1,850,234,000 a México de 1 850 234 000 metros cubic meters) annually to Mexico, cúbicos (1 500 000 acres pies), the United States undertakes to los Estados Unidos se obligan a deliver to Mexico, in the manner entregar a México, según lo esta-set out in Article 15 of this Treaty, blecido en el Artículo 15 de este additional waters of the Colorado Tratado, cantidades adicionales de River system to provide a total agua del sistema del río Colorado quantity not to exceed 1,700,000 hasta por un volumen total que no acre-feet (2,096,931,000 cubic exceda de 2 096 931 000 metros meters) a year. Mexico shall ac- cúbicos (1 700 000 acres pies) quire no right beyond that pro- anuales. México no adquirirá nin- vided by this subparagraph by the gún derecho, fuera del que le use of the waters of the Colorado confiere este inciso, por el uso de River system, for any purpose las aguas del sistema del río whatsoever, in excess of 1,500,000 Colorado para cualquier fin, en acre-feet (1,850,234,000 cubic exceso de 1 850 234 000 metros meters) annually.. cúbicos (1 500 000 acres pies) anuales.

In the event of extraordinary En los casos de extraordinaria drought or serious accident to the sequía o de serio accidente al sis- irrigation system in the United tema de irrigación de los Estados States, thereby making it difficult Unidos, que haga difícil a éstos for the United States to deliver entregar la cantidad garantizada the guaranteed quantity of 1,500,- de 1 850 234 000 metros cúbicos 000 acre-feet (1,850,234,000 cubic (1 500 000 acres pies), por año, meters) a year, the water allotted el agua asignada a México, según to Mexico under subparagraph (a) el inciso a) de este Artículo, se of this Article will be reduced in reducirá en la misma proporción the same proportion as consump- en que se reduzcan los consumos tive uses in the United States are en los Estados Unidos. reduced.

## ARTICLE 11

## ARTICULO 11

(a) The United States shall a) Los Estados Unidos entre- deliver all waters allotted to Mex- garán las aguas asignadas a México ico wherever these waters may en cualquier lugar a que lleguen arrive in the bed of the limitrophe en el lecho del tramo limítrofe del section of the Colorado River, río Colorado, con las excepciones with the exceptions hereinafter que se citan más adelante. El provided. Such waters shall be volumen asignado se formará con made up of the waters of the said las aguas del citado río, cualquiera river, whatever their origin, sub- que sea su fuente, con sujeción a

ject to the provisions of the following paragraphs of this Article. las estipulaciones contenidas en los párrafos siguientes de este Artículo.

(b) Of the waters of the Colorado River allotted to Mexico by subparagraph (a) of Article 10 of this Treaty, the United States shall deliver, wherever such waters may arrive in the limitrophe section of the river, 1,000,000 acre-feet (1,233,489,000 cubic meters) annually from the time the Davis dam and reservoir are placed in operation until January 1, 1980 and thereafter 1,125,000 acre-feet (1,387,675,000 cubic meters) annually, except that, should the main diversion structure referred to in subparagraph (a) of Article 12 of this Treaty be located entirely in Mexico and should Mexico so request, the United States shall deliver a quantity of water not exceeding 25,000 acre-feet (30,837,000 cubic meters) annually, unless a larger quantity may be mutually agreed upon, at a point, to be likewise mutually agreed upon, on the international land boundary near San Luis, Sonora, in which event the quantities of 1,000,000 acre-feet (1,233,489,000 cubic meters) and 1,125,000 acre-feet (1,387,675,000 cubic meters) provided hereinabove as deliverable in the limitrophe section of the river shall be reduced by the quantities to be delivered in the year concerned near San Luis, Sonora.

b) Del volumen de aguas del río Colorado asignado a México en el inciso a) del Artículo 10 de este Tratado, los Estados Unidos entregarán en cualquier lugar a que lleguen del tramo limítrofe del río, 1 233 489 000 metros cúbicos (1 000 000 de acres pies) de agua anualmente, desde la fecha en que se ponga en operación la presa Davis hasta el primero de enero de 1980 y, después de esta fecha, 1 387 675 000 metros cúbicos (1 125 000 acres pies) de agua cada año. Sin embargo, si la estructura principal de derivación a que se refiere el inciso a) del Artículo 12 de este Tratado quedare localizada totalmente en México, los Estados Unidos entregarán, a solicitud de México, en un lugar mutuamente determinado de la línea terrestre limítrofe cerca de San Luis, Sonora, un volumen de agua que no exceda de 30 837 000 metros cúbicos (25 000 acres pies) anualmente, a menos que se convenga en un volumen mayor. En este último caso, a los mencionados volúmenes de 1 233 489 000 metros cúbicos (1 000 000 de acres pies) y de 1 387 675 000 metros cúbicos (1 125 000 acres pies) que deberán entregarse, como se especifica arriba, en el tramo limítrofe del río, se les deducirán los volúmenes que se entreguen, cada año, cerca de San Luis, Sonora.

(c) During the period from the time the Davis dam and reservoir c) En el período comprendido entre la fecha en que la Presa

are placed in operation until Davis se ponga en operación y el January 1, 1980, the United primero de enero de 1980, los States shall also deliver to Mexico Estados Unidos entregarán annually, of the water allotted to mente a México, además, del it, 500,000 acre-feet (616,745,000 volumen asignado a México, cubic meters), and thereafter the 616 745 000 metros cúbicos (500 000 United States shall deliver annu- acres pies) y, a partir de la ally 375,000 acre-feet (462,558,000 última fecha citada, 462 558 000 cubic meters), at the international metros cúbicos (375 000 acres boundary line, by means of the pies) anuales, en la línea limítrofe internacional, por conducto connecting the lower end of the del Canal Todo Americano y de Pilot Knob Wasteway with the un canal que una al extremo Alamo Canal or with any other inferior de la descarga de Pilot Mexican canal which may be Knob con el Canal del Alamo o substituted for the Alamo Canal. con cualquier otro canal mexicano In either event the deliveries shall que lo sustituya. En ambos be made at an operating water casos las entregas se harán a una surface elevation not higher than elevación de la superficie del that of the Alamo Canal at the agua no mayor que aquélla con point where it crossed the inter- la que se operaba el Canal del national boundary line in the year Alamo, en el punto en que cruzaba 1943. la línea divisoria en el año de 1943.

(d) All the deliveries of water d) Todas las entregas de agua specified above shall be made especificadas anteriormente se su- subject to the provisions of Ar- jectarán a las estipulaciones del ticle 15 of this Treaty. Artículo 15 de este Tratado.

## ARTICLE 12

## ARTICULO 12

The two Governments agree to construct the following works:

Los dos Gobiernos se comprometen a construir las siguientes obras:

(a) Mexico shall construct at its expense, within a period of five years from the date of the entry into force of this Treaty, a main diversion structure below the point where the northernmost part of the international land boundary line intersects the Colorado River. If such diversion structure is located in the limitrophe section of the river; its location, design and construction shall be subject to

a) México construirá a sus expensas, en un plazo de cinco años contados a partir de la fecha en que entre en vigor este Tratado, una estructura principal de derivación ubicada aguas abajo del punto en que la parte más al norte de la línea divisoria internacional terrestre encuentra al río Colorado. Si dicha estructura se localiza en el tramo limítrofe del río, su ubicación, proyecto y

the approval of the Commission. The Commission shall thereafter maintain and operate the structure at the expense of Mexico. Regardless of where such diversion structure is located, there shall simultaneously be constructed such levees, interior drainage facilities and other works, or improvements to existing works, as in the opinion of the Commission shall be necessary to protect lands within the United States against damage from such floods and seepage as might result from the construction, operation and maintenance of this diversion structure. These protective works shall be constructed, operated and maintained at the expense of Mexico by the respective Sections of the Commission, or under their supervision, each within the territory of its own country.

construcción se sujetarán a la aprobación de la Comisión. Una vez construida la estructura, la Comisión la operará y mantendrá a expensas de México. Independientemente del lugar en que se localice la estructura aludida, simultáneamente se construirán los bordos, drenajes interiores y otras obras de protección y se harán las mejoras a las existentes, según la Comisión estime necesario, para proteger los terrenos ubicados dentro de los Estados Unidos de los daños que pudieran producirse a causa de avenidas y filtraciones como resultado de la construcción, operación y mantenimiento de la citada estructura de derivación. Estas obras de protección serán construidas, operadas y mantenidas, a expensas de México, por las correspondientes Secciones de la Comisión, o bajo su vigilancia, cada una dentro de su propio territorio.

(b) The United States, within a period of five years from the date of the entry into force of this Treaty, shall construct in its own territory and at its expense, and thereafter operate and maintain at its expense, the Davis storage dam and reservoir, a part of the capacity of which shall be used to make possible the regulation at the boundary of the waters to be delivered to Mexico in accordance with the provisions of Article 15 of this Treaty.

b) Los Estados Unidos construirán, a sus expensas, en su propio territorio, en un plazo de cinco años contados a partir de la fecha en que entre en vigor este Tratado, la presa de almacenamiento Davis, una parte de cuya capacidad se usará para obtener la regularización de las aguas que deben ser entregadas a México de la manera establecida en el Artículo 15 de este Tratado. La operación y mantenimiento de la misma presa serán por cuenta de los Estados Unidos.

(c) The United States shall construct or acquire in its own territory the works that may be necessary to convey a part of the

c) Los Estados Unidos construirán o adquirirán en su propio territorio las obras que fueren necesarias para hacer llegar una

waters of the Colorado River parte de las aguas del río Cololotted to Mexico to the Mexican rado, asignadas a México, a los diversion points on the inter puntos mexicanos de derivaciónnational land boundary line re en la línea divisoria internacionalferred to in this Treaty. Among terrestre que se especifican en este these works shall be included: Tratado. Entre estas obras se the canal and other works neces incluirán: el canal y las otras sary to convey water from the obras necesarias para conducir el lower end of the Pilot Knob agua desde el extremo inferior de Wasteway to the international la descarga de Pilot Knob hasta boundary, and, should Mexico el límite internacional y, a solicitud request it, a canal to connect de México, un canal que conecte the main diversion structure referred la estructura principal de deriva to in subparagraph (a) of this ción a que se refiere el inciso a) Article, if this diversion structure de este Artículo, si ésta se con should be built in the limitrophe struyere en el tramo limítrofe del section of the river, with the río, con el sistema mexicano de Mexican system of canals at a canales en el punto de la línea point to be agreed upon by the divisoria internacional, cerca de Commission on the international San Luis, Sonora, en que convenga land boundary near San Luis, la Comisión. Las obras men Sonora. Such works shall be con cionadas serán construidas o ad structed or acquired and operated quiridas y operadas y mantenidas and maintained by the United por la Sección de los Estados States Section at the expense of Unidos a expensas de México. Mexico. Mexico shall also pay México cubrirá también los costos the costs of any sites or rights de los sitios y derechos de vía way required for such works. requeridos para dichas obras.

(d) The Commission shall con d) La Comisión construirá, struct, operate and maintain in mantendrá y operará en el tramo the limitrophe section of the Colorado limítrofe del río Colorado, y cada River, and each Section shall Sección construirá, mantendrá y construct, operate and maintain in operará en su territorio respectivo, the territory of its own country en el río Colorado, aguas abajo de on the Colorado River below Im la presa Imperial, y en todas las perial Dam and on all other carry otras obras usadas para entregar ing facilities used for the delivery agua a México, las estaciones of water to Mexico, all necessary hidrométricas y dispositivos ne gaging stations and other measur cesarios para llevar un registro ing devices for the purpose of completo del caudal que se en keeping a complete record of the tregue a México y del escurri waters delivered to Mexico and of miento del río. Todos los datos the flows of the river. All data ob obtenidos al respecto serán com-

tained as to such deliveries and pilados e intercambiados periódica-  
flows shall be periodically com- mente por las dos Secciones.  
piled and exchanged between the  
two Sections.

## ARTICLE 13

## ARTICULO 13

The Commission shall study, in- La Comisión estudiará, investi-  
vestigate and prepare plans for gará y preparará los proyectos  
flood control on the Lower Colora- para el control de las avenidas en  
do River between Imperial Dam el Bajo Río Colorado, tanto en los  
and the Gulf of California, in both Estados Unidos como en México,  
the United States and Mexico, and desde la Presa Imperial hasta el  
shall, in a Minute, report to the Golfo de California, e informará a  
two Governments the works which los dos Gobiernos, mediante un  
should be built, the estimated cost acta, acerca de las obras que de-  
thereof, and the part of the works berán construirse, de la estimación  
to be constructed by each Gov- de sus costos y de la parte de las  
ernment. The two Governments obras que deberá construir cada  
agree to construct, through their Gobierno. Los dos Gobiernos con-  
respective Sections of the Com- vienen en construir, por medio de  
mission, such works as may be rec- sus respectivas Secciones de la  
ommended by the Commission and Comisión, las obras que aprueben,  
approved by the two Governments, recomendadas por la Comisión, y  
each Government to pay the costs en pagar los costos de las que res-  
of the works constructed by it. pectivamente construyan. De la  
The Commission shall likewise rec- misma manera, la Comisión re-  
ommend the parts of the works to comendará qué porciones de las  
be operated and maintained jointly obras deberán ser operadas y  
by the Commission and the parts mantenidas conjuntamente por la  
to be operated and maintained by Comisión y cuáles operadas y  
each Section. The two Govern- mantenidas por cada Sección. Los  
ments agree to pay in equal shares dos Gobiernos convienen en pagar  
the cost of joint operation and por partes iguales el costo de la  
maintenance, and each Govern- operación y mantenimiento con-  
ment agrees to pay the cost of juntos, y cada Gobierno conviene  
operation and maintenance of the en pagar el costo de operación y  
works assigned to it for such mantenimiento de las obras asig-  
purpose. nadas a él con dicho objeto.

## ARTICLE 14

## ARTICULO 14

In consideration of the use of the En consideración del uso del  
All-American Canal for the deliv- Canal Todo Americano para la  
ery to Mexico, in the manner pro- entrega a México, en la forma  
vided in Articles 11 and 15 of this establecida en los Artículos 11 y



Treaty, of a part of its allotment of the waters of the Colorado River, Mexico shall pay to the United States: 15 de este Tratado, de una parte de su asignación a las aguas del río Colorado, México pagará a los Estados Unidos:

(a) A proportion of the costs actually incurred in the construction of Imperial Dam and the Imperial Dam-Pilot Knob section of the All-American Canal, this proportion and the method and terms of repayment to be determined by the two Governments, which, for this purpose, shall take into consideration the proportionate uses of these facilities by the two countries, these determinations to be made as soon as Davis dam and reservoir are placed in operation. a) Una parte de los costos reales de la construcción de la Presa Imperial y del tramo Imperial-Pilot Knob del Canal Todó Americano; dicha parte y la forma y términos de su pago serán determinados por los dos Gobiernos, tomando en consideración la proporción en que ambos países usarán las citadas obras. Esta determinación deberá ser hecha tan pronto como sea puesta en operación la Presa Davis.

(b) Annually, a proportionate part of the total costs of maintenance and operation of such facilities, these costs to be prorated between the two countries in proportion to the amount of water delivered annually through such facilities for use in each of the two countries. b) Anualmente, la parte que le corresponda de los costos totales de mantenimiento y operación de aquellas obras. Dichos costos serán prorrateados entre los dos países en proporción a la cantidad de agua entregada anualmente a cada uno de ellos, para su uso, por medio de esas obras.

In the event that revenues from the sale of hydro-electric power which may be generated at Pilot Knob become available for the amortization of part or all of the costs of the facilities named in subparagraph (a) of this Article, the part that Mexico should pay of the costs of said facilities shall be reduced or repaid in the same proportion as the balance of the total costs are reduced or repaid. It is understood that any such revenue shall not become available until the cost of any works which may be constructed for the genera- En el caso de que pueda disponerse de los productos de la venta de la energía hidroeléctrica que se genere en Pilot Knob para la amortización de una parte o de la totalidad de los costos de las obras enumeradas en el inciso a) de este Artículo, la parte que México deberá pagar del costo de dichas obras será reducida o reembolsada en la misma proporción en que se reduzca o reembolse el saldo insoluto de los costos totales. Queda entendido que no podrá disponerse con ese fin de esos productos de la venta de energía

tion of hydro-electric power at said location has been fully amortized from the revenues derived therefrom.

eléctrica, sino hasta que el costo de todas las obras construídas en ese lugar para generación de energía eléctrica, haya sido totalmente amortizado con los mencionados productos de la venta de la energía eléctrica.

#### ARTICLE 15

A. The water allotted in subparagraph (a) of Article 10 of this Treaty shall be delivered to Mexico at the points of delivery specified in Article 11, in accordance with the following two annual schedules of deliveries by months, which the Mexican Section shall formulate and present to the Commission before the beginning of each calendar year:

#### ARTICULO 15

A. — El agua asignada en el inciso a) del Artículo 10 de este Tratado será entregada a México en los lugares especificados en el Artículo 11, de acuerdo con dos tablas anuales de entregas mensuales, que se indican a continuación, y que la Sección Mexicana formulará y presentará a la Comisión antes del principio de cada año civil:

#### SCHEDULE I

Schedule I shall cover the delivery, in the limitrophe section of the Colorado River, of 1,000,000 acre-feet (1,233,489,000 cubic meters) of water each year from the date Davis dam and reservoir are placed in operation until January 1, 1980 and the delivery of 1,125,000 acre-feet (1,387,675,000 cubic meters) of water each year thereafter. This schedule shall be formulated subject to the following limitations:

With reference to the 1,000,000 acre-foot (1,233,489,000 cubic meter) quantity:

(a) During the months of January, February, October, November and December the prescribed rate of delivery shall be not less than 600 cubic feet

#### TABLA I

La tabla I detallará la entrega en el tramo limitrofe del río Colorado de 1 233 489 000 metros cúbicos (1 000 000 de acres pies) anuales de agua, a partir de la fecha en que la Presa Davis se ponga en operación, hasta el primero de enero de 1980, y la entrega de 1 387 675 000 metros cúbicos (1 125 000 acres pies) anuales de agua después de esa fecha. Esta tabla se formulará con sujeción a las siguientes limitaciones:

Para el volumen de 1 233 489 000 metros cúbicos (1 000 000 de acres pies);

a) Durante los meses de enero, febrero, octubre, noviembre y diciembre, el gasto de entrega no será menor de 17.0 metros cúbicos (600 pies cúbicos) ni

(17.0 cubic meters) nor more than 3,500 cubic feet (99.1 cubic meters) per second.

(b) During the remaining months of the year the prescribed rate of delivery shall be not less than 1,000 cubic feet (28.3 cubic meters) nor more than 3,500 cubic feet (99.1 cubic meters) per second.

With reference to the 1,125,000 acre-foot (1,387,675,000 cubic meter) quantity:

(a) During the months of January, February, October, November and December the prescribed rate of delivery shall be not less than 675 cubic feet (19.1 cubic meters) nor more than 4,000 cubic feet (113.3 cubic meters) per second.

(b) During the remaining months of the year the prescribed rate of delivery shall be not less than 1,125 cubic feet (31.9 cubic meters) nor more than 4,000 cubic feet (113.3 cubic meters) per second.

Should deliveries of water be made at a point on the land boundary near San Luis, Sonora, as provided for in Article 11, such deliveries shall be made under a sub-schedule to be formulated and furnished by the Mexican Section. The quantities and monthly rates of deliveries under such sub-schedule shall be in proportion to those specified for Schedule I, unless otherwise agreed upon by the Commission.

mayor de 99.1 metros cúbicos (3 500 pies cúbicos) por segundo.

b) Durante los meses restantes del año, el gasto de entrega no será menor de 28.3 metros cúbicos (1 000 pies cúbicos) ni mayor de 99.1 metros cúbicos (3 500 pies cúbicos) por segundo.

Para el volumen de 1 387 675 000 metros cúbicos (1 125 000 acres pies):

a) Durante los meses de enero, febrero, octubre, noviembre y diciembre, el gasto de entrega no será menor de 19.1 metros cúbicos (675 pies cúbicos) ni mayor de 113.3 metros cúbicos (4 000 pies cúbicos) por segundo.

b) Durante los meses restantes del año, el gasto de entrega no será menor de 31.9 metros cúbicos (1 125 pies cúbicos) ni mayor de 113.3 metros cúbicos (4 000 pies cúbicos) por segundo.

En el caso en que se hagan entregas de agua en un lugar de la línea divisoria terrestre cercano a San Luis, Sonora, de acuerdo con lo establecido en el Artículo 11, dichas entregas se sujetarán a una subtabla que formulará y proporcionará la Sección Mexicana. Los volúmenes y gastos mensuales de entrega especificados en dicha subtabla estarán en proporción a los especificados para la Tabla I, salvo que la Comisión acuerde otra cosa.

## SCHEDULE II

Schedule II shall cover the delivery at the boundary line by means of the All-American Canal of 500,000 acre-feet (616,745,000 cubic meters) of water each year from the date Davis dam and reservoir are placed in operation until January 1, 1980 and the delivery of 375,000 acre-feet (462,558,000 cubic meters) of water each year thereafter. This schedule shall be formulated subject to the following limitations:

With reference to the 500,000 acre-foot (616,745,000 cubic meter) quantity:

(a) During the months of January, February, October, November and December the prescribed rate of delivery shall be not less than 300 cubic feet (8.5 cubic meters) nor more than 2,000 cubic feet (56.6 cubic meters) per second.

(b) During the remaining months of the year the prescribed rate of delivery shall be not less than 500 cubic feet (14.2 cubic meters) nor more than 2,000 cubic feet (56.6 cubic meters) per second.

With reference to the 375,000 acre-foot (462,558,000 cubic meter) quantity:

(a) During the months of January, February, October, November and December the prescribed rate of delivery shall be not less than 225 cubic feet

## TABLA II

La tabla II detallará la entrega en la línea divisoria de las aguas procedentes del Canal Todo Americano, de un volumen de 616 745 000 metros cúbicos (500 000 acres pies) anuales de agua a partir de la fecha en que la Presa Davis sea puesta en operación, hasta el primero de enero de 1980, y de 462 558 000 metros cúbicos (375 000 acres pies) de agua anuales después de esa fecha. Esta tabla se formulará con sujeción a las siguientes limitaciones:

Par el volumen de 616 745 000 metros cúbicos (500 000 acres pies):

a) Durante los meses de enero, febrero, octubre, noviembre y diciembre, el gasto de entrega no será menor de 8.5 metros cúbicos (300 pies cúbicos), ni mayor de 56.6 metros cúbicos (2 000 pies cúbicos) por segundo.

b) Durante los meses restantes del año, el gasto de entrega no será menor de 14.2 metros cúbicos (500 pies cúbicos), ni mayor de 56.6 metros cúbicos (2 000 pies cúbicos) por segundo.

Para el volumen de 462 558 000 metros cúbicos (375 000 acres pies):

a) Durante los meses de enero, febrero, octubre, noviembre y diciembre, el gasto de entrega no será menor de 6.4 metros cúbicos (225 pies cúbicos)

(6.4 cubic meters) nor more than 1,500 cubic feet (42.5 cubic meters) per second.

(b) During the remaining months of the year the prescribed rate of delivery shall be not less than 375 cubic feet (10.6 cubic meters) nor more than 1,500 cubic feet (42.5 cubic meters) per second.

B. The United States shall be under no obligation to deliver, through the All-American Canal, more than 500,000 acre-feet (616,745,000 cubic meters) annually from the date Davis dam and reservoir are placed in operation until January 1, 1980 or more than 375,000 acre-feet (462,558,000 cubic meters) annually thereafter. If, by mutual agreement, any part of the quantities of water specified in this paragraph are delivered to Mexico at points on the land boundary otherwise than through the All-American Canal, the above quantities of water and the rates of deliveries set out under Schedule II of this Article shall be correspondingly diminished.

C. The United States shall have the option of delivering, at the point on the land boundary mentioned in subparagraph (c) of Article 11, any part or all of the water to be delivered at that point under Schedule II of this Article during the months of January, February, October, November and December of each year, from any source whatsoever, with the

cos) ni mayor de 42.5 metros cúbicos (1 500 pies cúbicos) por segundo.

b) Durante los meses restantes del año, el gasto de entrega no será menor de 10.6 metros cúbicos (375 pies cúbicos), ni mayor de 42.5 metros cúbicos (1 500 pies cúbicos) por segundo.

B. - Los Estados Unidos no estarán obligados a entregar por el Canal Todo Americano más de 616 745 000 metros cúbicos (500 000 acres pies) anuales desde la fecha en que se ponga en operación la Presa Davis hasta el primero de enero de 1980, ni más de 462 558 000 metros cúbicos (375 000 acres pies) anuales después de esa última fecha. Si por acuerdo mutuo se entregare a México cualquiera parte de los volúmenes de agua especificados en este párrafo, en puntos de la línea terrestre internacional distintos del lugar en que se haga la entrega por el Canal Todo Americano, los gastos de entrega y los volúmenes de agua arriba mencionados y determinados en la Tabla II de este Artículo, serán disminuidos en las cantidades correspondientes.

C. - Durante los meses de enero, febrero, octubre, noviembre y diciembre de cada año, los Estados Unidos tendrá la opción de entregar, en el lugar de la línea divisoria internacional determinado en el inciso c) del Artículo 11, de cualquier fuente que sea, una parte o la totalidad del volumen de agua que deberá ser entregado en ese lugar de acuerdo

understanding that the total specified annual quantities to be delivered through the All-American Canal shall not be reduced because of the exercise of this option, unless such reduction be requested by the Mexican Section, provided that the exercise of this option shall not have the effect of increasing the total amount of scheduled water to be delivered to Mexico.

D. In any year in which there shall exist in the river water in excess of that necessary to satisfy the requirements in the United States and the guaranteed quantity of 1,500,000 acre-feet (1,850,234,000 cubic meters) allotted to Mexico, the United States hereby declares its intention to cooperate with Mexico in attempting to supply additional quantities of water through the All-American Canal as such additional quantities are desired by Mexico, if such use of the Canal and facilities will not be detrimental to the United States, provided that the delivery of any additional quantities through the All-American Canal shall not have the effect of increasing the total scheduled deliveries to Mexico. Mexico hereby declares its intention to cooperate with the United States by attempting to curtail deliveries of water through the All-American Canal in years of limited supply, if such curtailment can be accomplished without detriment to Mexico and is necessary to allow full use of all available water supplies, provided that such curtailment shall not have the effect of reducing the total scheduled deliveries to Mexico.

con la Tabla II de este Artículo. El ejercicio de la anterior opción, no producirá la reducción de los volúmenes totales anuales especificados para ser entregados por el Canal Todo Americano, a menos que dicha reducción sea solicitada por la Sección Mexicana, ni implicará el aumento del volumen total de agua tabulada que deberá entregarse a México.

D. - En cualquier año en que haya agua en el río en exceso de la necesaria para satisfacer las demandas en los Estados Unidos y el volumen garantizado de 1 850 234 000 metros cúbicos (1 500 000 acres pies) asignado a México, los Estados Unidos declaran su intención de cooperar con México procurando abastecer, por el Canal Todo Americano, los volúmenes adicionales de agua que México desee, si ese uso del Canal y de las obras respectivas no resultare perjudicial a los Estados Unidos; en la inteligencia de que la entrega de los volúmenes adicionales de agua por el Canal Todo Americano no significará el aumento del volumen total de entregas de agua tabulado para México. Por su parte, México declara su intención de cooperar con los Estados Unidos durante los años de abastecimiento limitado tratando de reducir las entregas de agua por el Canal Todo Americano si dicha reducción pudiere llevarse a efecto sin perjuicio para México y si fuere necesaria para hacer posible el aprovechamiento total del agua disponible; en la inteligencia de que dicha reducción no tendrá el

ing the total scheduled deliveries of water to Mexico.

E. In any year in which there shall exist in the river water in excess of that necessary to satisfy the requirements in the United States and the guaranteed quantity of 1,500,000 acre-feet (1,850,234,000 cubic meters) allotted to Mexico, the United States Section shall so inform the Mexican Section in order that the latter may schedule such surplus water to complete a quantity up to a maximum of 1,700,000 acre-feet (2,096,931,000 cubic meters). In this circumstance the total quantities to be delivered under Schedules I and II shall be increased in proportion to their respective total quantities and the two schedules thus increased shall be subject to the same limitations as those established for each under paragraph A of this Article.

F. Subject to the limitations as to rates of deliveries and total quantities set out in Schedules I and II, Mexico shall have the right, upon thirty days notice in advance to the United States Section, to increase or decrease each monthly quantity prescribed by those schedules by not more than 20% of the monthly quantity.

G. The total quantity of water to be delivered under Schedule I of paragraph A of this Article may be increased in any year if the amount to be delivered under Schedule II

efecto de disminuir el total de entregas de agua tabulado para México.

E. - En cualquier año en que haya agua en el río en exceso de la cantidad necesaria para satisfacer las demandas en los Estados Unidos y el volumen garantizado de 1 850 234 000 metros cúbicos (1 500 000 acres pies) asignado a México, la Sección de los Estados Unidos lo informará así a la Sección Mexicana con objeto de que esta última pueda tabular las aguas excedentes hasta completar un volumen máximo de 2 096 931 000 metros cúbicos (1 700 000 acres pies). En este caso los volúmenes totales que se entregarán de acuerdo con las Tablas números I y II serán aumentados en proporción a sus respectivos volúmenes totales y las dos tablas así incrementadas quedarán sujetas a las mismas limitaciones establecidas, para cada una de ellas, en el párrafo A de este Artículo.

F. - Con sujeción a las limitaciones fijadas en las Tablas I y II por lo que toca a los gastos de entrega y a los volúmenes totales, México tendrá el derecho de aumentar o disminuir, mediante avisos dados a la Sección de los Estados Unidos con 30 días de anticipación, cada uno de los volúmenes mensuales establecidos en esas tablas, en una cantidad que no exceda del 20% de su respectivo monto.

G. - En cualquier año, el volumen total de agua que deberá entregarse de acuerdo con la Tabla I a que se refiere el párrafo A de este Artículo, podrá ser

is correspondingly reduced and if the limitations as to rates of delivery under each schedule are correspondingly increased and reduced.

aumentado, si el volumen de agua que se entregue de acuerdo con la Tabla II se redujere en el mismo volumen y si las limitaciones en cuanto a gastos de entrega estipulados para cada tabla se aumentan y se reducen correspondientemente.

## IV - TIJUANA RIVER

## ARTICLE 16

In order to improve existing uses and to assure any feasible further development, the Commission shall study and investigate, and shall submit to the two Governments for their approval:

(1) Recommendations for the equitable distribution between the two countries of the waters of the Tijuana River system;

(2) Plans for storage and flood control to promote and develop domestic, irrigation and other feasible uses of the waters of this system;

(3) An estimate of the cost of the proposed works and the manner in which the construction of such works or the cost thereof should be divided between the two Governments;

(4) Recommendations regarding the parts of the works to be operated and maintained by the Commission and the parts to be operated and maintained by each Section.

The two Governments through their respective Sections of the Commission shall construct such of the proposed works as are

## IV - RIO TIJUANA

## ARTICULO 16

Con el objeto de mejorar los usos existentes y de asegurar cualquier desarrollo futuro factible, la Comisión estudiará, investigará y someterá a los dos Gobiernos para su aprobación:

(1) Recomendaciones para la distribución equitativa entre los dos países de las aguas del sistema del río Tijuana;

(2) Proyectos de almacenamiento y control de avenidas a fin de fomentar y desarrollar los usos domésticos, de irrigación y demás usos factibles de las aguas de este sistema;

(3) Estimaciones de los costos de las obras propuestas y de la forma en que la construcción de dichas obras o los costos de las mismas deberán ser divididos entre los dos Gobiernos;

(4) Recomendaciones respecto de las partes de las obras que deberán ser operadas y mantenidas por la Comisión y las partes de las mismas que deberán ser operadas y mantenidas por cada Sección.

Los dos Gobiernos, cada uno por conducto de sus respectivas Secciones de la Comisión, construirán las obras que propongan



approved by both Governments, y aprueben ambos Gobiernos, se shall divide the work to be done or dividirán la cantidad de obra o su the cost thereof, and shall distrib- costo y se distribuirán las aguas ute between the two countries del sistema del río Tijuana en las the waters of the Tijuana River proporciones que ellos decidan. system in the proportions ap- Los dos Gobiernos convienen en proved by the two Governments. pagar por partes iguales el costo The two Governments agree to de la operación y mantenimiento pay in equal shares the costs of conjuntos de las obras, y cada joint operation and maintenancé Gobierno conviene en pagar el of the works involved, and each costo de operación y manteni- Government agrees to pay the miento de las obras asignadas a cost of operation and maintenance él con dicho objeto. of the works assigned to it for such purpose.

## V - GENERAL PROVISIONS

## V - DISPOSICIONES GENERALES

## ARTICLE 17

## ARTICULO 17

The use of the channels of the El uso del cauce de los ríos international rivers for the dis- internacionales para la descarga charge of flood or other excess de aguas de avenida o de otras waters shall be free and not sub- excedentes será libre y sin limita- ject to limitation by either coun- ción para los dos países y ninguno try, and neither country shall have de ellos podrá presentar reclama- any claim against the other in ciones al otro por daños causados respect of any damage caused by por dicho uso. Cada uno de los such use. Each Government Gobiernos conviene en propor- agrees to furnish the other Gov- cionar al otro, con la mayor anti- ernment, as far in advance as cipación posible, la información practicable, any information it que tenga sobre las salidas de agua may have in regard to such extra- extraordinarias de las presas y las ordinary discharges of water from crecientes de los ríos que existan reservoirs and flood flows on its en su propio territorio y que own territory as may produce pudieran producir inundaciones floods on the territory of the other. en el territorio del otro.

Each Government declares its Cada Gobierno declara su inten- intention to operate its storage ción de operar sus presas de almace- dams in such manner, consistent namiento en tal forma, compatible with the normal operations of its con la operación normal de sus hydraulic systems, as to avoid, as sistemas hidráulicos, que evite, en far as feasible, material damage cuanto sea factible, que se pro- in the territory of the other. duzcan daños materiales en el territorio del otro.

## ARTICLE 18

Public use of the water surface of lakes formed by international dams shall, when not harmful to the services rendered by such dams, be free and common to both countries, subject to the police regulations of each country in its territory, to such general regulations as may appropriately be prescribed and enforced by the Commission with the approval of the two Governments for the purpose of the application of the provisions of this Treaty, and to such regulations as may appropriately be prescribed and enforced for the same purpose by each Section of the Commission with respect to the areas and borders of such parts of those lakes as lie within its territory. Neither Government shall use for military purposes such water surface situated within the territory of the other country except by express agreement between the two Governments.

## ARTICULO 18

El uso civil de las superficies de las aguas de los lagos de las presas internacionales, cuando no sea en detrimento de los servicios a que están destinadas dichas presas, será libre y común para ambos países, sujeto a los reglamentos de policía de cada país en su territorio, a los reglamentos generales pertinentes que establezca y ponga en vigor la Comisión con la aprobación de los dos Gobiernos con el fin de aplicar las disposiciones de este Tratado, y a los reglamentos pertinentes que establezca y ponga en vigor cada Sección de la Comisión, con el mismo fin, respecto a las áreas y orillas de aquellas partes de los lagos comprendidas dentro de su territorio. Ninguno de los dos Gobiernos podrá usar para fines militares las superficies de las aguas situadas dentro del territorio del otro país sin un convenio expreso entre los dos Gobiernos.

## ARTICLE 19

The two Governments shall conclude such special agreements as may be necessary to regulate the generation, development and disposition of electric power at international plants, including the necessary provisions for the export of electric current.

## ARTICULO 19

Los dos Gobiernos celebrarán los convenios especiales que sean necesarios para reglamentar la generación, el desarrollo y utilización de la energía eléctrica en las plantas internacionales y los requisitos para exportar la corriente eléctrica.

## ARTICLE 20

The two Governments shall, through their respective Sections of the Commission, carry out the construction of works allotted to

## ARTICULO 20

Los dos Gobiernos, por conducto de sus respectivas Secciones de la Comisión, llevarán a cabo los trabajos de construcción que les

them. For this purpose the respective Sections of the Commission may make use of any competent public or private agencies in accordance with the laws of the respective countries. With respect to such works as either Section of the Commission may have to execute on the territory of the other, it shall, in the execution of such works, observe the laws of the place where such works are located or carried out, with the exceptions hereinafter stated.

All materials, implements, equipment and repair parts intended for the construction, operation and maintenance of such works shall be exempt from import and export customs duties. The whole of the personnel employed either directly or indirectly on the construction, operation or maintenance of the works may pass freely from one country to the other for the purpose of going to and from the place of location of the works, without any immigration restrictions, passports or labor requirements. Each Government shall furnish, through its own Section of the Commission, convenient means of identification to the personnel employed by it on the aforesaid works and verification certificates covering all materials, implements, equipment and repair parts intended for the works.

Each Government shall assume responsibility for and shall adjust exclusively in accordance with its own laws all claims arising within its territory in connection with the construction, operation or

sean asignados, empleando, para ese fin, los organismos públicos o privados competentes de acuerdo con sus propias leyes. Respecto a las obras que cualquiera de las Secciones de la Comisión deba ejecutar en el territorio de la otra, la Sección de la Comisión que observe en la ejecución del trabajo las leyes del lugar donde se efectúe, con las excepciones que en seguida se consignan.

Todos los materiales, implementos, equipos y refacciones destinados a la construcción de las obras, su operación y mantenimiento, quedarán exceptuados de tributos fiscales de importación y exportación. Todo el personal empleado directa o indirectamente en la construcción, operación y mantenimiento de las obras, podrá pasar libremente de un país al otro con objeto de ir al lugar de su trabajo, o regresar de él, sin restricciones de inmigración, pasaporte, o requisitos de trabajo. Cada Gobierno proporcionará, por medio de su respectiva Sección de la Comisión, una identificación conveniente al personal empleado por la misma en las mencionadas labores y un certificado de verificación para los materiales, implementos, equipos y refacciones destinados a las obras.

En caso de que se presenten reclamaciones en conexión con la construcción, operación o mantenimiento de la totalidad o de cualquiera parte de las obras aquí convenidas o que, en cumplimien-

maintenance of the whole or of to de este Tratado, se convenga any part of the works herein en lo futuro, el Gobierno del país agreed upon, or of any works en cuyo territorio se hayan origi- which may, in the execution of nado tales reclamaciones asumirá this Treaty, be agreed upon in the la responsabilidad de todas ellas future. y las ajustará de acuerdo con sus propias leyes exclusivamente.

## ARTICLE 21

The construction of the international dams and the formation of artificial lakes shall produce no change in the fluvial international boundary, which shall continue to be governed by existing treaties and conventions in force between the two countries.

The Commission shall, with the approval of the two Governments, establish in the artificial lakes, by buoys or by other suitable markers, a practicable and convenient line to provide for the exercise of the jurisdiction and control vested by this Treaty in the Commission and its respective Sections. Such line shall also mark the boundary for the application of the customs and police regulations of each country.

## ARTICULO 21

La construcción de las presas internacionales y la formación de sus lagos artificiales no producirá variación alguna de la línea divisoria internacional fluvial, la que continuará siendo la establecida en los tratados y convenciones vigentes entre los dos países.

La Comisión, con la aprobación de los dos Gobiernos, fijará en los lagos artificiales, por medio de boyas o por cualquier otro procedimiento que juzgue adecuado, una línea más sencilla y conveniente para los efectos prácticos del ejercicio de la jurisdicción y del control que a dicha Comisión y a cada una de sus Secciones les confiere y les impone este Tratado. La línea aludida marcará, igualmente, el límite para la aplicación de los respectivos reglamentos fiscales y de policía de los dos países.

## ARTICLE 22

The provisions of the Convention between the United States and Mexico for the rectification of the Rio Grande (Rio Bravo) in the El Paso-Juárez Valley signed on February 1, 1933, [1] shall govern, so far as delimitation of the boundary, distribution of jurisdiction and sovereignty, and relations

## ARTICULO 22

Las estipulaciones de la Convención entre los Estados Unidos y México, del 1º de febrero de 1933, para la Rectificación del Río Bravo del Norte (Grande) en el Valle de Juárez-El Paso, en lo que se refiere a delimitación de fronteras, atribución de jurisdicción y soberanía y relaciones con pro-

<sup>1</sup>[Treaty Series 864; 48 Stat. 1621.]

with private owners are concerned, pietarios particulares, regirán en in any places where works for the los lugares donde se hagan las artificial channeling, canalization obras de encauzamiento, canali- or rectification of the Rio Grande zación o rectificación del río Bravo (Rio Bravo) and the Colorado (Grande) y del río Colorado. River are carried out.

## ARTICLE 23

The two Governments recognize the public interest attached to the works required for the execution and performance of this Treaty and agree to acquire, in accordance with their respective domestic laws, any private property that may be required for the construction of the said works, including the main structures and their appurtenances and the construction materials therefor, and for the operation and maintenance thereof, at the cost of the country within which the property is situated, except as may be otherwise specifically provided in this Treaty.

Each Section of the Commission shall determine the extent and location of any private property to be acquired within its own country and shall make the necessary requests upon its Government for the acquisition of such property.

The Commission shall determine the cases in which it shall become necessary to locate works for the conveyance of water or electrical energy and for the servicing of any such works, for the benefit of either of the two countries, in the territory of the other country, in order that such works can be built pursuant to agreement between the two Govern-

## ARTICULO 23

Los dos Gobiernos reconocen la utilidad pública de las obras necesarias para la aplicación y cumplimiento de este Tratado y, por consiguiente, se comprometen a adquirir, de acuerdo con sus respectivas leyes internas, las propiedades privadas que se necesiten para la ejecución de las obras de referencia, comprendiendo, además de las obras principales, sus anexos y el aprovechamiento de materiales de construcción, y para la operación y mantenimiento de ellas, a expensas del país en donde se encuentren dichas propiedades, con las excepciones que expresamente establece este Tratado.

Cada una de las Secciones de la Comisión fijará en su correspondiente país la extensión y ubicación de las propiedades privadas que deban ser adquiridas y hará a su respectivo Gobierno la solicitud pertinente para que las adquiera.

La Comisión determinará los casos en que sea necesario ubicar obras para la conducción de agua o energía eléctrica y para los servicios anexos a las mismas obras, en beneficio de cualquiera de los dos países, en territorio del otro, para que dichas obras puedan construirse por acuerdo de los dos Gobiernos. Dichas obras quedarán bajo la jurisdicción y vigi-

ments. Such works shall be subject to the jurisdiction and supervision of the Section of the Commission within whose country they are located.

Construction of the works built in pursuance of the provisions of this Treaty shall not confer upon either of the two countries any rights either of property or of jurisdiction over any part whatsoever of the territory of the other. These works shall be part of the territory and be the property of the country wherein they are situated. However, in the case of any incidents occurring on works constructed across the limitrophe part of a river and with supports on both banks, the jurisdiction of each country shall be limited by the center line of such works, which shall be marked by the Commission, without thereby changing the international boundary.

Each Government shall retain, through its own Section of the Commission and within the limits and to the extent necessary to effectuate the provisions of this Treaty, direct ownership, control and jurisdiction within its own territory and in accordance with its own laws, over all real property—including that within the channel of any river—rights of way and rights *in rem*, that it may be necessary to enter upon and occupy for the construction, operation or maintenance of all the works constructed, acquired or used pursuant to this Treaty. Furthermore, each Government shall similarly acquire and retain

lancia de la Sección de la Comisión del país en que se encuentren.

La construcción de las obras, en cumplimiento de las disposiciones de este Tratado, no conferirá a ninguno de los dos países derechos ni de propiedad ni de jurisdicción sobre ninguna parte del territorio del otro. Las obras constituirán parte del territorio y pertenecerán al país dentro del cual se hallen. Sin embargo, para sucesos ocurridos sobre las obras construídas en los tramos limítrofes de los ríos y que se apoyen en ambas márgenes, la jurisdicción de cada país quedará limitada por el eje medio de dichas obras—el cual será marcado por la Comisión—sin que por eso varíe la línea divisoria internacional.

Cada Gobierno por medio de su respectiva Sección de la Comisión, conservará dentro de los límites y en la extensión necesaria para cumplir con las disposiciones de este Tratado, el dominio directo, control y jurisdicción dentro de su propio territorio y de acuerdo con sus leyes, sobre los inmuebles—including los que estén dentro del cauce del río—los derechos de vía y los derechos reales que sea necesario ocupar para la construcción, operación y mantenimiento de todas las obras que se construyan, adquieran o usen de acuerdo con este Tratado. Asimismo, cada Gobierno adquirirá y conservará en su poder, en

in its own possession the titles, la misma forma, los títulos, control control and jurisdiction over such y jurisdicción sobre tales obras. works.

## ARTICLE 24

## ARTICULO 24

The International Boundary and Water Commission shall have, La Comisión Internacional de Límites y Aguas tendrá las siguientes facultades y obligaciones, in addition to the powers and duties otherwise specifically provided in this Treaty, the following powers and duties: en adición a las establecidas específicamente en este Tratado:

(a) To initiate and carry on investigations and develop plans for the works which are to be constructed or established in accordance with the provisions of this and other treaties or agreements in force between the two Governments dealing with boundaries and international waters; to determine, as to such works, their location, size, kind and characteristic specifications; to estimate the cost of such works; and to recommend the division of such costs between the two Governments, the arrangements for the furnishing of the necessary funds, and the dates for the beginning of the works, to the extent that the matters mentioned in this subparagraph are not otherwise covered by specific provisions of this or any other Treaty.

a) Iniciar, llevar a cabo las investigaciones y desarrollar los proyectos de las obras que deberán ser construídas o establecidas de acuerdo con las estipulaciones de éste y de los demás tratados y convenios vigentes entre los dos Gobiernos, relativos a límites y aguas internacionales; determinar la localización, magnitud, calidad y especificaciones características de dichas obras; estimar su costo; y recomendar la forma en que éste deberá repartirse entre los dos Gobiernos y los arreglos para proveer los fondos necesarios, y las fechas en que deberán principiarse las obras, en todo lo que las cuestiones mencionadas en este inciso no estén reglamentadas en forma distinta por disposiciones específicas de éste o de algún otro tratado.

(b) To construct the works agreed upon or to supervise their construction and to operate and maintain such works or to supervise their operation and maintenance, in accordance with the respective domestic laws of each country. Each Section shall have, to the extent necessary to give effect to the provisions of this

b) Construir o vigilar la construcción y después operar y mantener o vigilar la operación y mantenimiento de las obras convenidas, con sujeción a las respectivas leyes de cada país. Cada Sección tendrá jurisdicción sobre las obras construídas exclusivamente en el territorio de su país, hasta el límite necesario para cum-

Treaty, jurisdiction over the works constructed exclusively in the territory of its country whenever such works shall be connected with or shall directly affect the execution of the provisions of this Treaty.

(c) In general to exercise and discharge the specific powers and duties entrusted to the Commission by this and other treaties and agreements in force between the two countries, and to carry into execution and prevent the violation of the provisions of those treaties and agreements. The authorities of each country shall aid and support the exercise and discharge of these powers and duties, and each Commissioner shall invoke when necessary the jurisdiction of the courts or other appropriate agencies of his country to aid in the execution and enforcement of these powers and duties.

(d) To settle all differences that may arise between the two Governments with respect to the interpretation or application of this Treaty, subject to the approval of the two Governments. In any case in which the Commissioners do not reach an agreement, they shall so inform their respective governments reporting their respective opinions and the grounds therefor and the points upon which they differ, for discussion and adjustment of the difference through diplomatic channels and for application where proper of the general or special agreements which the two Governments have concluded for the settlement of controversies.

plir con las disposiciones de este Tratado y siempre que dichas obras tengan conexión con las estipulaciones aludidas o alguna influencia en la ejecución de las mismas.

c) En general, ejercer las facultades y cumplir con las obligaciones específicas impuestas a la Comisión por éste y otros Tratados y Convenios vigentes entre los dos países, ejecutar sus disposiciones y evitar la violación de las mismas. Las autoridades de cada país ayudarán y apoyarán a la Comisión en el ejercicio de estas facultades, pudiendo cada Comisionado requerir, siempre que sea necesario, el imperio de los tribunales o de otras dependencias gubernamentales competentes de su país, con objeto de obtener ayuda en la ejecución y cumplimiento de estas facultades y obligaciones.

d) Resolver, con la aprobación de los dos Gobiernos, todas las diferencias que se susciten entre ellos sobre la interpretación o la aplicación del presente Tratado. Si los Comisionados no llegaren a un acuerdo, darán aviso a su Gobierno, expresando sus opiniones respectivas, los fundamentos de su decisión y los puntos en que difieran, para la discusión y ajuste de la discrepancia por la vía diplomática, o con objeto de que se apliquen, en su caso, los convenios generales o especiales celebrados entre los mismos Gobiernos para resolución de controversias.



(e) To furnish the information requested of the Commissioners jointly by the two Governments on matters within their jurisdiction. In the event that the request is made by one Government alone, the Commissioner of the other Government must have the express authorization of his Government in order to comply with such request.

(f) The Commission shall construct, operate and maintain upon the limitrophe parts of the international streams, and each Section shall severally construct, operate and maintain upon the parts of the international streams and their tributaries within the boundaries of its own country, such stream-gaging stations as may be needed to provide the hydrographic data necessary or convenient for the proper functioning of this Treaty. The data so obtained shall be compiled and periodically exchanged between the two Sections.

(g) The Commission shall submit annually a joint report to the two Governments on the matters in its charge. The Commission shall also submit to the two Governments joint reports on general or any particular matters at such other times as it may deem necessary or as may be requested by the two Governments.

e) Proporcionar las informaciones que los dos Gobiernos soliciten conjuntamente de los Comisionados sobre asuntos de su jurisdicción. En caso de que la solicitud sea hecha por un solo Gobierno, el Comisionado del otro, necesitará la autorización expresa de su Gobierno para atenderla.

f) La Comisión construirá, operará y mantendrá en los tramos limítrofes de las corrientes internacionales, y cada Sección construirá, operará y mantendrá separadamente en las porciones de las corrientes internacionales y de sus afluentes que queden dentro de los límites de su propio país, las estaciones de aforo que sean necesarias para obtener los datos hidrográficos necesarios o convenientes para el funcionamiento adecuado de este Tratado. Los datos así obtenidos serán recopilados e intercambiados periódicamente entre las dos Secciones.

g) La Comisión someterá anualmente a los dos Gobiernos un informe conjunto sobre los asuntos que estén a su cargo. Asimismo, la Comisión someterá a los dos Gobiernos los informes conjuntos, generales o sobre cualquier asunto especial, cuando lo considere necesario o lo soliciten los dos Gobiernos.

#### ARTICLE 25

Except as otherwise specifically provided in this Treaty, Articles III and VII of the Convention of March 1, 1889 shall govern the

#### ARTICULO 25

Con las excepciones específicamente establecidas en este Tratado, los procedimientos de la Comisión, para la ejecución de las

proceedings of the Commission in carrying out the provisions of this Treaty. Supplementary thereto the Commission shall establish a body of rules and regulations to govern its procedure, consistent with the provisions of this Treaty and of Articles III and VII of the Convention of March 1, 1889 and subject to the approval of both Governments.

Decisions of the Commission shall be recorded in the form of Minutes done in duplicate in the English and Spanish languages, signed by each Commissioner and attested by the Secretaries, and copies thereof forwarded to each Government within three days after being signed. Except where the specific approval of the two Governments is required by any provision of this Treaty, if one of the Governments fails to communicate to the Commission its approval or disapproval of a decision of the Commission within thirty days reckoned from the date of the Minute in which it shall have been pronounced, the Minute in question and the decisions which it contains shall be considered to be approved by that Government. The Commissioners, within the limits of their respective jurisdictions, shall execute the decisions of the Commission that are approved by both Governments.

If either Government disapproves a decision of the Commission the two Governments shall take cognizance of the matter, and if an agreement regarding such matter is reached between the two Governments, the agree-

estipulaciones del mismo, se regirán por los Artículos III y VII de la Convención de primero de marzo de 1889. En adición y en concordancia con las disposiciones citadas y con las estipulaciones de este Tratado, la Comisión establecerá las normas y reglamentos que regirán, una vez aprobados por ambos Gobiernos, los procedimientos de la propia Comisión.

Los acuerdos de la Comisión se harán constar en forma de actas, levantadas por duplicado, en inglés y en español, firmadas por ambos Comisionados y bajo la fe de los Secretarios, una copia de cada una de las cuales será enviada a cada Gobierno dentro de los tres días siguientes a su firma. Excepto en los casos en que, de acuerdo con las disposiciones de este Tratado, se requiera específicamente la aprobación de los dos Gobiernos, si un Gobierno deja de comunicar a la Comisión su acuerdo aprobatorio o reprobatorio, dentro del término de 30 días contados a partir de la fecha que tenga el acta, se darán por aprobadas ésta y las resoluciones en ella contenidas. Los Comisionados ejecutarán las resoluciones de la Comisión, aprobadas por ambos Gobiernos, dentro de los límites de sus respectivas jurisdicciones.

En los casos en que cualquiera de los dos Gobiernos desapruuebe un acuerdo de la Comisión, ambos Gobiernos tomarán conocimiento del asunto y, si llegaren a un acuerdo, éste se comunicará a los Comisionados con objeto de que

ment shall be communicated to ellos sigan los procedimientos ne-  
 the Commissioners, who shall take cesarios para llevar a cabo lo  
 such further proceedings as may convenido.  
 be necessary to carry out such  
 agreement.

## VI - TRANSITORY PROVISIONS

VI - DISPOSICIONES TRANSITO-  
RIAS

## ARTICLE 26

## ARTICULO 26

During a period of eight years from the date of the entry into force of this Treaty, or until the beginning of operation of the lowest major international reservoir on the Rio Grande (Rio Bravo), should it be placed in operation prior to the expiration of said period, Mexico will cooperate with the United States to relieve, in times of drought, any lack of water needed to irrigate the lands now under irrigation in the Lower Rio Grande Valley in the United States, and for this purpose Mexico will release water from El Azúcar reservoir on the San Juan River and allow that water to run through its system of canals back into the San Juan River in order that the United States may divert such water from the Rio Grande (Rio Bravo). Such releases shall be made on condition that they do not affect the Mexican irrigation system, provided that Mexico shall, in any event, except in cases of extraordinary drought or serious accident to its hydraulic works, release and make available to the United States for its use the quantities requested, under the following conditions: that during the said eight years there shall be made available a total of 160,000 acre-feet (197,358,000 cubic me-

Durante un lapso de ocho años contados a partir de la fecha en que principie la vigencia de este Tratado, o hasta que sea puesta en operación la presa inferior principal internacional de almacenamiento en el río Bravo (Grande), si se pone en operación antes de aquel plazo, México cooperará con los Estados Unidos para aliviar, en períodos de escasez, la falta del agua necesaria para regar las tierras que actualmente se riegan en el valle del Bájio Río Bravo (Grande), en los Estados Unidos, y, al efecto, México extraerá agua de la presa de El Azúcar en el Río San Juan y la dejará correr por medio de su sistema de canales al río San Juan, con objeto de que los Estados Unidos puedan derivarla del río Bravo (Grande). Dichas extracciones se harán siempre que no afecten la operación del sistema de riego mexicano; sin embargo, México se obliga, salvo casos de escasez extraordinaria o de serio accidente a sus obras hidráulicas, a dejar salir y a abastecer los volúmenes pedidos por los Estados Unidos, para su uso, bajo las siguientes condiciones: que en los ocho años citados se abastecerá un total de 160 000 acres pies) y, en un año

ters) and up to 40,000 acre-feet determinado, un volumen hasta (49,340,000 cubic meters) in any de 49 340 000 metros cúbicos one year; that the water shall be (40 000 acres pies); que el agua se made available as requested at abastecerá a medida que sea solici- rates not exceeding 750 cubic feet tada y en gastos que no excedan de (21.2 cubic meters) per second; 21.2 metros cúbicos (750 pies cúbicos) por segundo; que cuando requested and made available have los gastos solicitados y abastecidos been more than 500 cubic feet excedan de 14.2 metros cúbicos (14.2 cubic meters) per second the (500 pies cúbicos) por segundo, el period of release shall not extend período de extracción no se pro- beyond fifteen consecutive days; longará por más de 15 días con- and that at least thirty days must secutivos; y que deberán trans- elapse between any two periods of currir cuando menos treinta días release during which rates of flow entre dos extracciones en el caso de in excess of 500 cubic feet (14.2 que se hayan abastecido solici- cubic meters) per second have been tudes para gastos mayores de 14.2 requested and made available. In metros cúbicos (500 pies cúbicos) porsegundo. Además de los volú- addition to the guaranteed flow, menes garantizados, México de- Mexico shall release from El jará salir de la presa de El Azúcar reservoir and conduct y conducirá por su sistema de through its canal system and the canales y el río San Juan, para su San Juan River, for use in the uso en los Estados Unidos, du- United States during periods of rante los períodos de sequía y drought and after satisfying the después de haber satisfecho todos needs of Mexican users, any excess los requerimientos de los usuarios water that does not in the opinion mexicanos, aquellas aguas exce- of the Mexican Section have to be dentes que, a juicio de la Sección stored and that may be needed for Mexicana no necesiten almace- the irrigation of lands which were narse, para ayudar al riego de las under irrigation during the year tierras que, en el año de 1943, se 1943 in the Lower Rio Grande regaban, en el citado valle del Valley in the United States. Bajo Río Bravo (Grande) en los Estados Unidos.

## ARTICLE 27

## ARTICULO 27

The provisions of Article 10, 11, and 15 of this Treaty shall not be applied during a period of five years from the date of the entry into force of this Treaty, or until the Davis dam and the major Mexican diversion structure on the Colorado River are placed in

Durante un lapso de cinco años, contados a partir de la fecha en que principie la vigencia de este Tratado, o hasta que puestas en operación la Presa Davis y la estructura mexicana principal de derivación en el río Colorado, si se ponen en operación estas obras

operation, should these works be placed in operation prior to the expiration of said period. In the meantime Mexico may construct and operate at its expense a temporary diversion structure in the bed of the Colorado River in territory of the United States for the purpose of diverting water into the Alamo Canal, provided that the plans for such structure and the construction and operation thereof shall be subject to the the approval of the United States Section. During this period of time the United States will make available in the river at such diversion structure river flow not currently required in the United States, and the United States will cooperate with Mexico to the end that the latter may satisfy its irrigation requirements within the limits of those requirements for lands irrigated in Mexico from the Colorado River during the year 1943.

antes de aquel plazo, no se aplicarán los Artículos 10, 11 y 15 de este Tratado y, mientras tanto, México podrá construir y operar a sus expensas, en territorio de los Estados Unidos, una estructura de derivación provisional en el lecho del río Colorado, destinada a derivar agua hacia el canal del Alamo; en la inteligencia de que los planos para dicha estructura, su construcción y operación quedarán sujetos a la aprobación de la Sección de los Estados Unidos. Durante el mismo período los Estados Unidos pondrán a disposición de México en el lugar del río en que se construya dicha estructura, los caudales que a la sazón no se requieran en los Estados Unidos y ofrecen cooperar con México a fin de que éste pueda satisfacer sus necesidades de riego, dentro de los límites que tuvieron esas necesidades en las tierras regadas en México con aguas del río Colorado en el año de 1943.

## VII - FINAL PROVISIONS

## ARTICLE 28

This Treaty shall be ratified and the ratifications thereof shall be exchanged in Washington. It shall enter into force on the day of the exchange of ratifications and shall continue in force until terminated by another Treaty concluded for that purpose between the two Governments.

In witness whereof the respective Plenipotentiaries have signed this Treaty and have hereunto affixed their seals.

Done in duplicate in the English and Spanish languages, in Wash-

## VII - DISPOSICIONES FINALES

## ARTICULO 28

Este Tratado será ratificado y las ratificaciones canjeadas en la ciudad de Washington. Entrará en vigor el día del canje de ratificaciones y regirá indefinidamente hasta que sea terminado por otro Tratado concluido al efecto entre los dos Gobiernos.

En testimonio de lo cual los respectivos Plenipotenciarios han firmado este Tratado y agregado sus sellos.

Hecho en duplicado, en los idiomas inglés y español, en la Ciudad

ington on this third day of Febru- de Wáshington, el día tres de  
ary, 1944. febrero de 1944.

FOR THE GOVERNMENT OF THE UNITED STATES OF AMERICA:

|                       |        |
|-----------------------|--------|
| CORDELL HULL          | [SEAL] |
| GEORGE S. MESSERSMITH | [SEAL] |
| LAWRENCE M. LAWSON.   | [SEAL] |

FOR THE GOVERNMENT OF THE UNITED MEXICAN STATES:

|                            |        |
|----------------------------|--------|
| F. CASTILLO NÁJERA         | [SEAL] |
| RAFAEL FERNÁNDEZ MacGREGOR | [SEAL] |

## PROTOCOL

The Government of the United States of America and the Government of the United Mexican States agree and understand that:

Wherever, by virtue of the provisions of the Treaty between the United States of America and the United Mexican States, signed in Washington on February 3, 1944, relating to the utilization of the waters of the Colorado and Tijuana Rivers and of the Rio Grande from Fort Quitman, Texas, to the Gulf of Mexico, specific functions are imposed on, or exclusive jurisdiction is vested in, either of the Sections of the International Boundary and Water Commission, which involve the construction or use of works for storage or conveyance of water, flood control, stream gaging, or for any other purpose, which are situated wholly within the territory of the country of that Section, and which are to be used only partly for the performance of treaty provisions, such jurisdiction shall be exercised, and such functions, including the construction, operation and maintenance of the said works, shall be performed and carried out by the Federal agencies of that country which now or hereafter may be authorized by domestic law to construct, or to operate and maintain, such works. Such functions or jurisdictions shall be exercised in conformity with the provisions of the Treaty and in cooperation

## PROTOCOLO

El Gobierno de los Estados Unidos de América y el Gobierno de los Estados Unidos Mexicanos convienen y tienen entendido que:

Siempre que en virtud de lo dispuesto en el Tratado entre los Estados Unidos de América y los Estados Unidos Mexicanos, firmado en Washington el 3 de febrero de 1944, relativo al aprovechamiento de las aguas de los ríos Colorado y Tijuana; y del río Bravo (Grande) desde Fort Quitman, Texas, hasta el Golfo de México, se impongan funciones específicas o se confiera jurisdicción exclusiva a cualquiera de las Secciones de la Comisión Internacional de Límites y Aguas, que entrañen la construcción o uso de obras de almacenamiento o de conducción de agua, de control de avenidas, de aforos o para cualquier otro objeto, que estén situadas totalmente dentro del territorio del país al que corresponda esa Sección y que se usen solamente en parte para cumplir con las disposiciones del Tratado, dicha jurisdicción la ejercerán y las referidas funciones, incluso la construcción, operación y conservación de las obras de que se trata, las desempeñarán y realizarán las dependencias federales de ese mismo país, que estén facultadas, en virtud de sus leyes internas actualmente en vigor o que en lo futuro se dicten, para construir, operar y conservar dichas obras. Las citadas funciones y jurisdic-

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with the respective Section of the Commission, to the end that all international obligations and functions may be coordinated and fulfilled.

The works to be constructed or used on or along the boundary, and those to be constructed or used exclusively for the discharge of treaty stipulations, shall be under the jurisdiction of the Commission or of the respective Section, in accordance with the provisions of the Treaty. In carrying out the construction of such works the Sections of the Commission may utilize the services of public or private organizations in accordance with the laws of their respective countries.

This Protocol, which shall be regarded as an integral part of the aforementioned Treaty signed in Washington on February 3, 1944, shall be ratified and the ratifications thereof shall be exchanged in Washington. This Protocol shall be effective beginning with the day of the entry into force of the Treaty and shall continue effective so long as the Treaty remains in force.

In witness whereof the respective Plenipotentiaries have signed this Protocol and have hereunto affixed their seals.

Done in duplicate, in the English and Spanish languages, in

ciones se ejercerán observando las disposiciones del Tratado y en cooperación con la respectiva Sección de la Comisión, con el objeto de que todas las obligaciones y funciones internacionales puedan coordinarse y cumplirse.

Las obras que se construyan o usen en la línea divisoria o a lo largo de ella, así como las que se construyan o usen exclusivamente para cumplir con las estipulaciones del Tratado, quedarán bajo la jurisdicción de la Comisión o de la Sección correspondiente de acuerdo con lo dispuesto por el mismo. Para llevar a cabo la construcción de dichas obras, las Secciones de la Comisión podrán utilizar los servicios de organismos públicos o privados, de acuerdo con las leyes de sus respectivos países.

Este Protocolo, que se considerará parte integral del susodicho Tratado firmado en Washington el 3 de febrero de 1944, será ratificado y las ratificaciones canjeadas en Washington. Este Protocolo entrará en vigor a partir del día en que empiece a regir el Tratado y continuará en vigor por todo el tiempo que esté vigente éste.

En testimonio de lo cual los respectivos Plenipotenciarios han firmado este Protocolo y le han agregado sus sellos.

Hecho en duplicado, en los idiomas inglés y español, en Wásh-



Washington, this fourteenth day of November, 1944. ington, el día catorce de noviembre de 1944.

FOR THE GOVERNMENT OF THE UNITED STATES OF AMERICA:

E R STETTINIUS JR [SEAL]  
*Acting Secretary of State*  
*of the United States of America*

FOR THE GOVERNMENT OF THE UNITED MEXICAN STATES:

F. CASTILLO NÁJERA [SEAL]  
*Ambassador Extraordinary and Plenipotentiary*  
*of the United Mexican States in Washington*

AND WHEREAS the Senate of the United States of America by their Resolution of April 18, 1945, two-thirds of the Senators present concurring therein, did advise and consent to the ratification of the said treaty and protocol, subject to certain understandings, the text of which Resolution is word for word as follows:

*"Resolved (two-thirds of the Senators present concurring therein),*  
That the Senate advise and consent to the ratification of Executive A, Seventy-eighth Congress, second session, a treaty between the United States of America and the United Mexican States, signed at Washington on February 3, 1944, relating to the utilization of the waters of the Colorado and Tijuana Rivers and of the Rio Grande from Fort Quitman, Texas, to the Gulf of Mexico, and Executive H, Seventy-eighth Congress, second session, a protocol, signed at Washington on November 14, 1944, supplementary to the treaty, subject to the following understandings, and that these understandings will be mentioned in the ratification of this treaty as conveying the true meaning of the treaty, and will in effect form a part of the treaty:

"(a) That no commitment for works to be built by the United States in whole or in part at its expense, or for expenditures by the United States, other than those specifically provided for in the treaty, shall be made by the Secretary of State of the United States, the Commissioner of the United States Section of the International Boundary and Water Commission, the United States Section of said Commission, or any other officer or employee of the United States, without prior approval of the Congress of the United States. It is understood that the works to be built by the United States, in whole or in part at its expense, and the expenditures by the United States, which are specifically provided for in the treaty, are as follows:

"1. The joint construction of the three storage and flood-control dams on the Rio Grande below Fort Quitman, Texas, mentioned in article 5 of the treaty.

"2. The dams and other joint works required for the diversion of the flow of the Rio Grande mentioned in subparagraph II of article 5 of the treaty, it being understood that the commitment of the United States to make expenditures under this subparagraph is limited to its share of the cost of one dam and works appurtenant thereto.

"3. Stream-gaging stations which may be required under the provisions of section (j) of article 9 of the treaty and of subparagraph (d) of article 12 of the treaty.

"4. The Davis Dam and Reservoir mentioned in subparagraph (b) of article 12 of the treaty.

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"5. The joint flood-control investigations, preparation of plans, and reports on the Rio Grande below Fort Quitman required by the provisions of article 6 of the treaty.

"6. The joint flood-control investigations, preparations of plans, and reports on the lower Colorado River between the Imperial Dam and the Gulf of California required by article 13 of the treaty.

"7. The joint investigations, preparation of plans, and reports on the establishment of hydroelectric plants at the international dams on the Rio Grande below Fort Quitman provided for by article 7 of the treaty.

"8. The studies, investigations, preparation of plans, recommendations, reports, and other matters dealing with the Tijuana River system provided for by the first paragraph (including the numbered subparagraphs) of article 16 of the treaty.

"(b) Insofar as they affect persons and property in the territorial limits of the United States, the powers and functions of the Secretary of State of the United States, the Commissioner of the United States Section of the International Boundary and Water Commission, the United States Section of said Commission, and any other officer or employee of the United States, shall be subject to the statutory and constitutional controls and processes. Nothing contained in the treaty or protocol shall be construed as impairing the power of the Congress of the United States to define the terms of office of members of the United States Section of the International Boundary and Water Commission or to provide for their appointment by the President by and with the advice and consent of the Senate or otherwise.

"(c) That nothing contained in the treaty or protocol shall be construed as authorizing the Secretary of State of the United States, the Commissioner of the United States Section of the International Boundary and Water Commission, or the United States Section of said Commission, directly or indirectly to alter or control the distribution of water to users within the territorial limits of any of the individual States.

"(d) That 'international dam or reservoir' means a dam or reservoir built across the common boundary between the two countries.

"(e) That the words 'international plants', appearing in article 19, mean only hydroelectric generating plants in connection with dams built across the common boundary between the two countries.

"(f) That the words 'electric current', appearing in article 19, mean hydroelectric power generated at an international plant.

"(g) That by the use of the words 'The jurisdiction of the Commission shall extend to the limitrophe parts of the Rio Grande

(Rio Bravo) and the Colorado River, to the land boundary between the two countries, and to works located upon their common boundary \* \* \* in the first sentence of the fifth paragraph of article 2, is meant: 'The jurisdiction of the Commission shall extend and be limited to the limitrophe parts of the Rio Grande (Rio Bravo) and the Colorado River, to the land boundary between the two countries, and to works located upon their common boundary \* \* \*.'

"(h) The word 'agreements' whenever used in subparagraphs (a), (c), and (d) of article 24 of the treaty shall refer only to agreements entered into pursuant to and subject to the provisions and limitations of treaties in force between the United States of America and the United Mexican States.

"(i) The word 'disputes' in the second paragraph of article 2 shall have reference only to disputes between the Governments of the United States of America and the United Mexican States.

"(j) First, that the one million seven hundred thousand acre-feet specified in subparagraph (b) of article 10 includes and is not in addition to the one million five hundred thousand acre-feet, the delivery of which to Mexico is guaranteed in subparagraph (a) of article 10; second, that the one million five hundred thousand acre-feet specified in three places in said subparagraph (b) is identical with the one million five hundred thousand acre-feet specified in said subparagraph (a); third, that any use by Mexico under said subparagraph (b) of quantities of water arriving at the Mexican points of diversion in excess of said one million five hundred thousand acre-feet shall not give rise to any future claim of right by Mexico in excess of said guaranteed quantity of one million five hundred thousand acre-feet of water.

"(k) The United States recognizes a duty to require that the protective structures to be constructed under article 12, paragraph (a), of this treaty, are so constructed, operated, and maintained as to adequately prevent damage to property and lands within the United States from the construction and operation of the diversion structure referred to in said paragraph."

AND WHEREAS the said treaty and protocol were duly ratified by the President of the United States of America on November 1, 1945, in pursuance of the aforesaid advice and consent of the Senate and subject to the aforesaid understandings on the part of the United States of America;

AND WHEREAS the said treaty and protocol were duly ratified by the President of the United Mexican States on October 16, 1945, in pursuance and according to the terms of a Decree of September 27, 1945 of the Senate of the United Mexican States approving the said treaty

and protocol and approving the said understandings on the part of the United States of America in all that refers to the rights and obligations between the parties;

AND WHEREAS it is provided in Article 28 of the said treaty that the treaty shall enter into force on the day of the exchange of ratifications;

AND WHEREAS it is provided in the said protocol that the protocol shall be regarded as an integral part of the said treaty and shall be effective beginning with the day of the entry into force of the said treaty;

AND WHEREAS the respective instruments of ratification of the said treaty and protocol were duly exchanged, and a protocol of exchange of instruments of ratification was signed in the English and Spanish languages, by the respective Plenipotentiaries of the United States of America and the United Mexican States on November 8, 1945, the English text of which protocol of exchange of instruments of ratification reads in part as follows:

"The ratification by the Government of the United States of America of the treaty and protocol aforesaid recites in their entirety the understandings contained in the resolution of April 18, 1945 of the Senate of the United States of America advising and consenting to ratification, the text of which resolution was communicated by the Government of the United States of America to the Government of the United Mexican States. The ratification by the Government of the United Mexican States of the treaty and protocol aforesaid is effected, in the terms of its instrument of ratification, in conformity to the Decree of September 27, 1945 of the Senate of the United Mexican States approving the treaty and protocol aforesaid and approving also the aforesaid understandings on the part of the United States of America in all that refers to the rights and obligations between both parties, and in which the Mexican Senate refrains from considering, because it is not competent to pass judgment upon them, the provisions which relate exclusively to the internal application of the treaty within the United States of America and by its own authorities, and which are included in the understandings set forth under the letter (a) in its first part to the period preceding the words 'It is understood' and under the letters (b) and (c)."

NOW, THEREFORE, be it known that I, Harry S. Truman, President of the United States of America, do hereby proclaim and make public the said treaty and the said protocol supplementary thereto, to the end that the same and every article and clause thereof may be observed and fulfilled with good faith, on and from the eighth day of November, one thousand nine hundred forty-five, by the United

States of America and by the citizens of the United States of America and all other persons subject to the jurisdiction thereof.

IN TESTIMONY WHEREOF, I have hereunto set my hand and caused the Seal of the United States of America to be affixed.

DONE at the city of Washington this twenty-seventh day of November in the year of our Lord one thousand nine hundred [SEAL] forty-five and of the Independence of the United States of America the one hundred seventieth.

HARRY S TRUMAN

By the President:

JAMES F BYRNES

*Secretary of State*

**APPENDIX II**

**THE IXTAPA DRAFT AGREEMENT RELATING TO THE USE  
TRANSBOUNDARY GROUNDWATERS**

## The Ixtapa Draft Agreement Relating to the Use of Transboundary Groundwaters<sup>†</sup>

The law and institutions for the management and equitable distribution of groundwaters have been slow to develop.<sup>1</sup> This is particularly true of transboundary aquifers. At the international level, "references to groundwaters are scant and too limited in scope to propose them in terms of customary law."<sup>2</sup> International practice and international law principles related to "'shared' groundwater resources are fragmentary"<sup>3</sup> at best.

In regard to groundwater we are faced more with "a case of non-management than of mismanagement."<sup>4</sup> This striking absence of law and institutions for dealing with transboundary groundwaters is on a collision course with greatly increasing demands being placed on those water supplies by rapidly increasing populations. Estimates of world population vary, and factors which may influence that growth are numerous, but the extent of current population growth has to be the single, most salient factor affecting both water supply and water quality.<sup>5</sup>

Increased population means increased competition for water. In particular, competition for groundwater supplies is increasing at a rapid rate. Already, in many countries, great reliance is placed upon groundwater. Israel relies upon groundwater for more than two-thirds of all the water used in the country, and in Europe more than three-fourths of the public water supply comes from groundwater sources in Denmark, the Federal Republic of Germany, and the Netherlands. In Tunisia and Belgium, nine out of every ten people are dependent upon underground sources, and the aquifers surrounding many major cities are becoming severely depleted as the withdrawals exceed the natural recharge of the aquifer. For

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\*Research Lawyer, Natural Resources Center, University of New Mexico.

\*\*Professor of Law, University of New Mexico.

<sup>†</sup>The co-sponsorship and financial assistance of the Lincoln Institute of Land Policy and the New Mexico Water Resources Research Institute was of strategic importance to this project, and is greatly appreciated.

1. For a more complete discussion see Utton, *The Development of International Groundwater Law*, 22 NAT. RES. J. 95 (1982) and INTERNATIONAL GROUNDWATER LAW (Teclaff & Utton eds. 1981). Hayton, *The Groundwater Legal Regime as Instrument of Policy Objectives and Management*, 2 ANNALES JURIS AQUARUM 272, 275 (1976).

2. Caponera & Alheritiere, *Principles of International Groundwater Law*, 18 NAT. RES. J. 589, 618 (1978).

3. *Id.* at 610.

4. Hayton, *supra* note 1, at 275.

5. United Nations, *World Population Prospects, 1965-2000, As Assessed in 1968*, U.N. Doc. ESA/P/WR (1968); L. BROWN, *BY BREAD ALONE* 35 (1974).



example, London, Copenhagen, Hamburg, Basel, and Vienna are urban areas in Europe which face a chronic problem of falling groundwater levels.<sup>6</sup> In Africa, most of the capital cities are heavily dependent on groundwater sources for their water supplies. As a result wells in many coastal areas in Africa have been overexploited, resulting in the intrusion of sea water. In Latin America, major cities have looked more and more to groundwater as the least expensive means of obtaining water, and shortages of surface waters (accentuated by prolonged droughts) have stimulated farmers in arid and semiarid regions to expand the use of groundwater, particularly in those areas which do not have reliable surface water supplies. Again, the result often has been the overpumping of aquifers and the consequent deterioration of water quality which generally occurs when the water pressure of the aquifer is reduced thus allowing the intrusion of overlying saline waters.<sup>7</sup>

The experience in North America has been similar to that in Africa, Europe, and Latin America, and it has been observed that "the general picture is one of more recent resort to groundwater, except in arid zones, without an adequate understanding of the physics of the resource and without regard, generally speaking, for the future."<sup>8</sup>

#### DEVELOPMENT OF NATIONAL GROUNDWATER LAW

Society has responded slowly to the need to manage and equitably distribute groundwater. Hayton points out:

[B]ecause law, and governments, respond (with few exceptions) only to felt needs of a society it comes as no surprise that traditionally there has been a failure to focus on the regulation and management of groundwater use in most legal systems. Demand for regulatory action simply has not been insistent.<sup>9</sup>

It has truly been a case of groundwater being out of sight and out of mind.

The laws governing groundwater are inadequately developed generally. "[T]raditionally there has been a failure to focus on the regulation and management of groundwater in most legal systems."<sup>10</sup> Professor Robert Emmet Clark adds that "legislative attention to the physical relationship between surface and groundwater sources is scarcely older than the concern for pollution."<sup>11</sup> The primary attention of domestic water law has

6. Teclaff, *Abstraction and Use of Water: A Comparison of Legal Regimes*, U.N. DOC. ST/ECH/154 at 62 (1972).

7. Hayton, *supra* note 1, at 274.

8. *Id.* at 275.

9. *Id.*

10. *Id.*

11. Clark, *Western Groundwater Law*, in 5 *WATERS AND WATER RIGHTS* 411 (R. Clark ed. 1972).

focused on surface water, and there is a very limited groundwater practice at the international level.

"[T]he problem, then, . . . is to fashion a legal regime and a management machinery"<sup>12</sup> which will be integrated in order to achieve the optimum use of a nation's, or a region's, total water resources. In order to ensure the efficient use and distribution of available water resources, institutions must be developed to manage the world's water resources rationally. This is especially true of groundwater where the development of laws and institutions has been much slower than that for surface water.

At the national level trends are changing and more attention is being paid to the regulation of groundwater, although in most countries groundwater is still a separate legal regime.<sup>13</sup> However, even with the increased attention being given to groundwater, the modern legislation in most countries is inadequate. At the national level, "we are still faced . . . with unsatisfactory results. . . . The difficulties that have faced us in this field still persist: problems of supply, of quality, of the impact of surface waters, and the social, political and economic consequences of the still deteriorating conditions."<sup>14</sup>

#### THE "COMMONS" OF TRANSBOUNDARY AQUIFERS: SOME ECONOMIC CONSEQUENCES OF UNCONTROLLED COMPETITION

Transboundary aquifers present many of the "Tragedies of the Commons" experienced in exploiting other common resources such as fisheries on the high seas.<sup>15</sup> Since the resources are owned in common, that is, owned by everyone, yet owned by no one, there is no regulation, no security of legal rights, and no protection from the exploitation of the resource by others.

In the case of transboundary groundwaters, no party sharing the aquifer can have the assurance of a fair share of the waters of the aquifer or that the waters will be of a useable quality. Because groundwater is mobile, other users can take possession of the resource without regard to political boundaries. A strong economic incentive, moreover, exists to exploit the resource as quickly as possible, before the mobile fluid resource is captured by others—in a phrase, there is a strong incentive to race "each other to the bottom of the aquifer."<sup>16</sup>

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12. Hayton, *supra* note 1, at 293.

13. *Id.* at 278.

14. *Id.* at 284.

15. G. HARDIN & J. BADEN, *MANAGING THE COMMONS* (1977); Hardin, *The Tragedy of the Commons*, 162 *SCIENCE* 1243 (1968) (Presidential Address to Pacific Division of American Association for the Advancement of Science).

16. Hansen, *Economic Growth Patterns in the Texas Border Lands*, 22 *NAT. RES. J.* 805, 819 (1982).

In an uncontrolled transboundary aquifer:

[The d]efinite property rights belong only to those who are in possession—that is, who gets there “fustest with the mostest.” Every user tries to protect himself against others by acquiring ownership through capture in the fastest possible way. Deferred use is always subject to great uncertainty; others may capture the resource in the meantime.<sup>17</sup>

A common property resource has been defined as one which may be used by many different users, “none of which have any well defined rights to any specific amount in the common pool.”<sup>18</sup> In this unregulated situation the various users have

[no] incentive to extract the resource at a rate that maximizes its value over time. The operative rule is simple: *Use it or lose it*. This rule follows from the obvious notion that if one reduces production or extraction rates today in order to have more of the resource available tomorrow when resource values are higher, there is nothing to prevent other users from extracting the “saved” resource. In the absence of well-defined (and enforced) property rights, extraction costs impose the only limit on extraction rates—potential future uses and values are irrelevant inasmuch as future rights or access to the resource do not exist.<sup>19</sup>

Veeman adds that

[i]n the absence of effective social institutions to guide resource use, private groundwater use can be predicted eventually to generate excessive investment and extraction costs; induce a pumping rate which is greater than socially optimal, and which may lead to irreversible depletion; dissipate economic rent or producer surplus; and in general create economic waste and resource inefficiency.<sup>20</sup>

In sum the effect of unregulated human actions makes the supply less reliable for all users. There is incentive for each user to protect himself from his neighbor's actual or potential pumping by capturing as much of the “fugitive resource” as quickly as possible. Because the movement of water within an aquifer does not respect political boundaries, a state's or a country's groundwater supply may be depleted and its economic development retarded by development of the same groundwater supply.

17. S. CIRIACY-WANTRUP, *RESOURCE CONSERVATION, ECONOMICS AND POLICIES*, 142 (3d ed. 1968).

18. Muys, Cummings & Burke, *Interstate Groundwater Management*, 56 (paper prepared for Western Governor's Policy Office 1984).

19. *Id.*

20. Veeman, *Water Policy and Water Institutions in Northern India: The Case of Ground Water Rights*, 18 NAT. RES. J. 569 (1978).

The economic incentive for over-development and, consequently, the over-investment in pumping capacity leads to the depletion of the resource. In the process, lift distances and, therefore, pumping costs are increased for the later user. Both economic waste and resource waste are the likely results of inadequate legal protection of water rights. In addition, the water quality of the aquifer may be affected adversely by human activities on the other side of a political boundary, including pumping which can lower the water pressure allowing the intrusion of saline waters.

In order to avoid such adverse consequences before they occur, a central challenge is laid down to design mechanisms that will:

1. insure each party a fair share of the use of transboundary groundwaters.
2. encourage the prudent use of the resource over time.
3. resolve potential and actual disputes over the use of the resources, and
4. protect the underground environment of the aquifers.<sup>21</sup>

All this suggests that as populations increase, as economic development advances, the need to regulate the use of transboundary groundwaters increases. Rational management requires the formulation of water policies aimed at the preservation of the resource, particularly in view of its high vulnerability to long-lasting contamination or salt water intrusion and its very slow recharge and movement in many cases.<sup>22</sup>

Along with new policies affecting groundwater there must be established adequate administrative machinery to carry out the management tasks.<sup>23</sup> The resulting integrated management should be designed bearing in mind that there are peculiar physical characteristics of the movement and availability of groundwater that require special regulations and coordinated management with surface waters. The ultimate challenge is for specialists, working with other disciplines and administrators, to fashion legal regimes and management machinery which can prudently manage national as well as transboundary groundwater resources.

## DEVELOPMENTS IN TRANSBOUNDARY GROUNDWATER LAW

### A. *Treaty Practice*

Caponera and Alheritiere, after surveying international treaty practice, were unable to find any decisions of international courts specifically on

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21. For example, Sepulveda suggests that groundwater is "one of the questions which can most affect diplomatic relations between Mexico and the United States in the latter part of the Twentieth Century." *Los Recursos Hidraulicos en la zona Fronteriza Mexico-Estados Unidos. Perspectiva de la Problematica Hacia El Ano 2000-Algunas Recomendaciones*, 22 NAT. RES. J. 1081 (1982).

22. Hayton, *supra* note 1, at 287.

23. *Id.*

the question of groundwater.<sup>24</sup> However, they anticipate a more rapid development of groundwater law and institutions for two principal reasons: first, the nature of the resource itself makes it an ideal subject for international cooperation and second, because groundwater resources are becoming so important in supplying the world's needs for water.<sup>25</sup>

Groundwater, like surface water, often transcends political boundaries, and there are many large aquifers which are shared by several countries. For example, the Northeastern African aquifer underlies Libya, Egypt, Chad, and Sudan, and on the Arabian peninsula there are the aquifers shared by Saudi Arabia, Bahrain, and perhaps Qatar and the United Arab Emirates. These aquifers, being in arid areas, are absolutely essential for the development of industry and agriculture. Other important international aquifers are the northern Sahara Basin shared by Algeria, Tunisia, and Libya, and the Chad aquifers shared by Chad, Niger, Sudan, and the Central African Empire, Nigeria and Cameroon. There are also the Taoudeni Basin in Chad, Egypt, Libya, and the Sudan, and the Maestrichtian Basin shared by Senegal, Gambia, Guinea Bissau, and Mauritania. These groundwater basins are in arid and semiarid areas, are divided by international boundaries, and are likely to be the subject of increasing development.

The development of international law and legal institutions for managing groundwater resources and for resolving disputes is in its infancy.<sup>26</sup> There are but a handful of international treaties which refer to groundwater specifically. For example, Article 242 under the 1944 treaty between the United States and Mexico<sup>27</sup> restricts groundwater pumping on one segment of the boundary. Other examples are the 1925 Agreement between Egypt and Italy on the Ramba Well,<sup>28</sup> the 1927 Convention and Protocol between the USSR and Turkey regarding the use of frontier waters,<sup>29</sup> and the 1947 treaty of peace between the Allies and Italy which outlines guarantees between Italy and Yugoslavia concerning springs in the Commune of Gorizia.<sup>30</sup> Also there is the 1958 agreement between Yugoslavia and Bulgaria<sup>31</sup> and the 1955 Yugoslav-Hungarian Water Economy Commission Mission Agreement.<sup>32</sup> There are also treaties between Czechoslovakia

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24. Caponera & Alheritiere, *supra* note 2, at 618.

25. *Id.* at 591.

26. *Id.*

27. Treaty on Utilization of Waters, Feb. 3—Nov. 14, 1944, United States-Mexico, 59 Stat. 1219, T.S. No. 944.

28. UNITED NATIONS, LEGISLATIVE TEXTS AND TREATY PROVISIONS CONCERNING THE UTILIZATION OF INTERNATIONAL RIVERS FOR OTHER PURPOSES THAN NAVIGATION 99 (1963), U.N. Doc. ST/LEG/SER. B/12, Treaty No. 6 [hereinafter cited as TEXTS & TREATY PROVISIONS].

29. *Id.* at 384 (Treaty No. 106).

30. *Id.* at 415 (Treaty No. 120). See also *id.* at 866 (Treaty No. 236).

31. *Id.* at 558 (Treaty No. 161).

32. *Id.* at 830 (Treaty No. 228).

and Poland,<sup>33</sup> between Poland and the U.S.S.R.,<sup>34</sup> and between Poland and the Democratic Republic of Germany,<sup>35</sup> as well as the 1972 convention between Switzerland and Italy concerning water pollution control.<sup>36</sup> Even in these treaties, however, groundwater is usually only a secondary issue which is mentioned almost in passing.

### *B. Interstate Practice in Federal Countries*

Perhaps one of the most fruitful sources of nourishment for the development of transboundary groundwater law is the interstate practice in federal countries. Although not technically international practice, the decisions of the courts in countries like the United States, Canada, the Federal Republic of Germany, and Switzerland nonetheless have been influential in the development of international surface water practice. Interstate practice, moreover, provides a potentially rich reference for international law in the development of groundwater at the international level. Switzerland, Germany, Canada, Yugoslavia, India, Argentina, and the United States provide considerable experience which reflects a variety of approaches<sup>37</sup> in regard to transboundary surface waters. The groundwater practice, however, is limited.

The richest field for transboundary groundwater law is the United States' experience, but even so the United States' experience is also quite scanty. Thirty-five interstate compacts have been enacted regarding water management, but, in fact, very few of them deal with groundwater.<sup>38</sup> Generally, the goal of the interstate compact is the allocation of water between the various signatory states and, generally, the compact refers to surface water only.

Several interstate compacts now, however, do refer to groundwater. The Lower Niobrara River and Ponca Creek Compact apportions resources shared by Nebraska and South Dakota, and the Upper Niobrara River Basin Compact apportions water resources shared by Nebraska and Wyoming.<sup>39</sup> The Upper Niobrara River Compact explicitly recognizes the interdependencies of groundwater withdrawals and surface stream flow. The compacts of the Delaware<sup>40</sup> and Susquehanna River Basins are of

33. Agreement Concerning the Use of Water Resources in Frontier Waters, March 21, 1958, Czechoslovakia-Poland, 538 U.N.T.S. 89.

34. Agreement Concerning the Use of Water Resources in Frontier Waters, July 17, 1964, Poland-U.S.S.R., 552 U.N.T.S. 175.

35. S.D.R. Gesetzblatt, Jul. 20, 1967.

36. Convention of April 20, 1972, Italy-Switzerland, Rev. Gen. de Droit Int'l Publ. 265 (1975).

37. Caponera & Alheritiere, *supra* note 2, at 604. See also S. JAIN & A. JACOB, INTERSTATE WATER DISPUTES IN INDIA (1971); and Interstate Water Disputes Act of India, 4(1) (1956).

38. J. MUYS, INTERSTATE COMPACTS (1971).

39. Act of Aug. 4, 1969, Pub. L. No. 91-52, 83 Stat. 86 (1969).

40. Delaware River Basin Compact, Pub. L. No. 87-328, 75 Stat. 688 (1961).

41. Susquehanna River Basin Compact, Pub. L. No. 91-575, 84 Stat. 1509 (1970).

particular interest.<sup>41</sup> Professor Clark observes that "The Delaware and Susquehanna Compacts of 1961 and 1970 have gone the farthest in providing a legal framework for management of surface and groundwaters across state lines."<sup>42</sup> The Delaware River Compact grants broad powers to its Commission. The Commission has the power to equitably apportion "the waters of the basin . . . and to impose conditions, obligations and release requirements."<sup>43</sup> It can veto water projects,<sup>44</sup> control pollution,<sup>45</sup> promulgate "rules, regulations and standards,"<sup>46</sup> issue orders "to cease the discharge" of pollutants<sup>47</sup> and take legal action "in its own name . . . to compel compliance. . . ."<sup>48</sup>

A number of United States Supreme Court decisions have dealt with interstate surface waters,<sup>49</sup> but few related to interstate groundwaters until recently.<sup>50</sup> The *Sporhase* case and the federal district court *El Paso* case have now focused attention on transboundary groundwater allocation.<sup>51</sup>

In sum, there is helpful but limited interstate practice in federal systems. At the international level there is little guidance provided by the meager international treaty practice.

### LOOKING TO THE FUTURE

Considering the increasing competition for groundwater and the admonition that "economic development presupposes the protection of adequate legal guarantees. . . ,"<sup>52</sup> how do we provide users who are dependent on groundwater a secure supply? How may transboundary groundwaters be protected from contamination? The U.N. Water Conference has exhorted countries sharing water resources to "review existing and available techniques for managing shared water resources, and coordinate development of such resources."<sup>53</sup> Yet being aware that groundwater, because

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42. Clark, *Institutional Alternatives for Managing Groundwater Resources: Notes for a Proposal*, 18 NAT. RES. J. 153, 157 (1978).

43. Pub. L. No. 87-328 § 3.3, 75 Stat. 688 (1961).

44. *Id.* at § 3.8.

45. *Id.* at § 5.2.

46. *Id.*

47. *Id.* at § 5.4.

48. *Id.*

49. Clark, *supra* note 42, at 157.

50. See, e.g., *Washington v. Oregon*, 297 U.S. 517 (1936).

51. *Sporhase v. Nebraska*, 458 U.S. 941, 102 S.Ct. 3456 (1982); *City of El Paso v. Reynolds*, 563 F. Supp. 379 (D.N.M. 1983). See DuMars, *New Mexico Water Law: An Overview and Discussion of Current Issues*, 22 NAT. RES. J. 1045, 1057 (1982); Tarlock, *So, It's Not "Ours"—Why Can't We Still Keep It? A First Look at Sporhase v. Nebraska*, 18 LAND & WATER L. REV. 137 (1983); Corker, *Problems of Interstate Allocation of Groundwater*, GROUNDWATER: ALLOCATION, DEVELOPMENT, POLLUTION (Univ. of Colo. 1983).

52. JENKS, *THE COMMON LAW OF MANKIND* 172 (1958).

53. Report of the United Nations Water Conference, E 77, II Annexes (Agenda Item 12), at 51 (1977).

of its association with that sovereignty which has always attached itself to land, "may be the very last element of the environment to be considered,"<sup>54</sup> what suggestions can be made to improve the security of water supply and thereby the investment of transboundary groundwater users? How can we ensure that each party will receive a fair share of the transboundary resources in the border region, adequately protected so as to avert unnecessary and damaging conflict? How can we avoid what has been called "education by disaster?"<sup>55</sup>

#### THE IXTAPA WORKING GROUP: SOME THRESHOLD SUGGESTIONS

In an attempt to respond to these questions and others regarding the development of transboundary law and institutions, a small, multi-disciplinary working group of water resources specialists has met over a period of three years to prepare a draft agreement for the allocation and management of transboundary groundwaters. The Working Group wrestled with the problems of allocation and regulation, and debated and exchanged views from the vantage point of different disciplines. They did not meet with the idea of dictating to governments, but rather worked to explore the kinds of problems which may be encountered in the sharing of transboundary aquifers, and in the process to make some suggestions as to how the allocation and regulation issues might be addressed. They did not intend to lay out a definitive blueprint, but rather to provide some threshold thinking which, in turn, may stimulate others to explore the issues further. In so doing, it is the hope of the Working Group to advance the understanding of the allocation and prudent use of transboundary groundwaters which is at a pioneering stage. In short, it is an attempt to address the problems before the crisis is upon us.

The Working Group met in Mexico twice at Ixtapa and once at Puerto Vallarta, and provided numerous written commentaries over a period of three years as the draft was repeatedly revised. The Working Group undoubtedly reflected their experience with the U.S.-Mexican border region in particular. The conditions and institutions along the U.S.-Mexico frontier were used as a working example by the Group. The Ixtapa draft, therefore, might be most relevant to that region. However, the draft agreement is not directed exclusively at any specific frontier, and it is hoped that it will be of broader relevance.

The group was far from complete agreement on many issues, and no single member would agree with every word of this revision. The rapporteurs labored valiantly to consider and respond to the comments of

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54. L. Teclaff & E. Teclaff, *Transboundary Groundwater Pollution: Survey and Trends in Treaty Law*, 19 NAT. RES. J. 629, 667 (1979).

55. Clark, *supra* note 42, at 157.



the group and are responsible for any failures to accurately reflect the thinking of the participants. We have tried to indicate the diversity of thinking on particular issues in the comments to the draft agreement. We think it is as important to display the spectrum of opinion as it is to report general consensus. In so doing we hope to stimulate and be of assistance in the further exploration of mechanisms for sharing transboundary groundwaters fairly and prudently, while minimizing conflict over their use.

The members of the Ixtapa Working Group were:

Thomas G. Bahr (Limnologist), New Mexico Water Resources  
Institute  
F. Lee Brown (Economist), University of New Mexico  
Randall J. Charbeneau (Engineer), University of Texas at Austin  
Robert Emmet Clark (Lawyer), University of Arizona  
Ronald G. Cummings (Economist), University of New Mexico  
Charles T. DuMars (Lawyer), University of New Mexico  
Leonard B. Dworsky (Engineer), Cornell University  
Roger L. Eldridge (Policy Analyst), Colorado Commission on  
Higher Education  
Enzo Fano (Economist), Chief, Water Resources Bureau, United  
Nations  
Robert D. Hayton (Lawyer), Hunter College  
Helen Ingram (Political Scientist), University of Arizona  
Will Knedlik (Lawyer), Lincoln Institute for Land Policy  
George O'Connor (Biologist), New Mexico State University  
Ann Berkley Rodgers (Lawyer), Natural Resources Center,  
University of New Mexico  
Stanley R. Ross (Historian), University of Texas at Austin  
Cesar Sepulveda (Lawyer), Bonn, Germany  
Ross Shipman (Geologist), University of Texas at Austin  
Alberto Szekely (Lawyer), El Colejio de Mexico  
Ludwik A. Teclaff (Lawyer), Fordham University  
Jose Trava (Engineer), Centro de Estudios Fronterizos del Norte  
de Mexico  
Albert E. Utton (Lawyer), University of New Mexico  
and others

### GENERAL CONSIDERATIONS

In approaching the task of drafting a hypothetical transboundary agreement, the Working Group formulated some threshold premises including the following:

1. There must be conjunctive management of surface and groundwater in areas where supplies are interrelated. In the management of transboundary groundwaters it is essential to recognize the interrelationships

between surface and groundwaters, which are frequently interconnected. Contrary to hydrologic reality, the law frequently has made distinctions which separate surface water from underground waters; these distinctions have failed to recognize interrelationships between surface and underground waters.

2. Legal rights should take into account the hydrologic fact that water is a fugitive resource. Therefore, the legal rights are to the control and use of the water, not the ownership of the water.

3. Decisions such as the spacing of wells and the rate of drawdown need to be carried out according to a reasoned development scheme.

4. Hydrologic information needs to be developed carefully in order to plan for the use of the supply over a calculated period, to determine sustained yield, and to prevent salt water intrusion.

a. There should be a system of measurement of withdrawals from wells.

b. Records must be kept of withdrawals over a period of time.

5. Controls must be placed on drilling in those areas where present and future uses may be endangered.

6. Allocation procedures, including permits, must be flexible in order to anticipate and minimize conflicts and shortages and to facilitate transfers to other uses.

7. The planning process should be flexible enough to allow for planned depletion over a calculated period by certain uses such as irrigation or municipal water supply. The planned depletion or mining of water can be justified in the same way as the mining of nonrenewable mineral resources such as oil, coal, or copper. The decision to mine, however, has to be made after thorough investigation and the development must be orderly and rational. This is particularly so where the groundwater resource is divided by an international boundary, because depletion of the resource and the consequent damage to the other country cannot be easily corrected by natural recharge.

8. The management effort must include and be related to all water quality matters.

9. Management should be placed in an agency with authority which is broad enough to carry out the policies of the parties concerned and strong enough to enforce the policies designed for particular groundwater areas along and near the border.

10. The use of groundwater resources divided by political boundaries may be equitably apportioned and in that apportioning, shared groundwater may be treated in the same manner as shared surface water.

11. The amount and quality of groundwater available to the affected countries within their shared international drainage basins and from shared groundwater aquifers should be included as elements in the determination of an equitable apportionment of their shared water resources.

12. The allocation of shared groundwater should not be determined by parties acting unilaterally, but rather the parties should determine through amicable deliberations and negotiation their respective rights to shared natural resources.

13. The actual allocation, administration, and enforcement of water rights as to each party's portion of water in a transboundary groundwater conservation area would be within the jurisdiction of that party and its appropriate political subdivisions.

14. In addition, there should be a general supervisory power lodged in the Commission to ensure that each party abides by its obligations.

15. In the event of prolonged drought the Commission should be authorized to use transboundary groundwaters as drought reserves.

16. The Draft Agreement is based on the sovereign power of nations to enter into agreements. Thus, in large part, political and institutional implications of the draft agreement that are intra-national in character are not discussed. While the issues of how local or provincial support for a treaty within a nation is to be gained and how the provisions are to be implemented are important, they are not addressed in this draft. Absent knowledge of specific parties and circumstances such matters are difficult to anticipate and analyze. Some flavor for such implications is considered in the comments pertaining to specific provisions of the Draft Agreement.

## THE IXTAPA DRAFT AGREEMENT RELATING TO THE USE OF TRANSBOUNDARY GROUNDWATERS

### PREFACE

This Draft identifies issues which we think should be considered in agreements concerning the management of transboundary groundwater basins. Persons involved in this effort are from universities and organizations which have interests in the equitable management of natural resources. We recognize that the process of negotiating fair rules for managing any resource which may be in severely deficient supply demands great skill and diplomacy of persons officially representing the various interests and constituents.

The laws concerning water and other natural resources differ from nation to nation. Physical conditions, economies and customs vary greatly. Customs and traditions may not have legal weight, but they are factors that wise diplomats may find difficult to ignore. These and other factors mean that the successful negotiation of international water agreements is a most difficult task.

Those of us who contributed to this document do not represent any government. Moreover, we recognize that our work only covers concepts which we believe are worthy of consideration in international or interstate

agreements concerning groundwater resources which are divided by political boundaries. We present options when sensitive and difficult issues are addressed. Nonetheless, we know that potential conflicts arise when negotiators hammer out agreements which cannot include the "easy solution" of offering options. Although such agreements may be difficult to achieve, we believe that failure to work patiently and fairly to achieve them can serve no purpose and can lead to abusive use of resources to the future detriment of all interested parties. Our goals will have been fulfilled if scholars and those who have the responsibility for officially representing various parties find this document helpful in identifying some of the allocation and regulation issues and how they might be addressed. We wish them well in their difficult tasks.

### *Key Concepts*

The development of the international law of rivers in its simplest form followed a somewhat predictably human pattern. Typically State A, the upstream riparian, took an "I am entitled to it all" position, or, in legal terms, the position of absolute territorial sovereignty. State B, the lower riparian, commonly responded by also taking an "I am entitled to it all" position, or one of absolute territorial integrity. See Figure 1. International and interstate practice responded to the "I am entitled to it all" claims with a "no, you must share the waters" or the doctrine of equitable apportionment or equitable utilization. "No one party can unilaterally determine its share."<sup>56</sup>

In regard to transboundary aquifers (Figure 2), we have very little international practice. But by analogy with the international and interstate law of rivers, we can say:

1. no one party is entitled to all of the waters of a transboundary aquifer;
2. the use of the waters of the aquifer must be shared by those parties which overlie it; and
3. no one party may unilaterally determine its share.

In regard to those transboundary aquifers which are tributary to or interrelated with an international stream (Figure 3), we can say that:

1. both State A and State B must share the use of the waters of the aquifer equitably, and
2. neither state may use the aquifer so as to impair deliveries of surface waters pursuant to existing agreements governing surface waters.

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56. Griffin, *The Use of Waters of International Drainage Basins Under Customary International Law*, 53 AM. J. INT'L. L. 50 (1959); THE LAW OF INTERNATIONAL DRAINAGE BASINS, (Garretson, Hayton & Olmstead eds. 1967); L. TECLAFF, THE RIVER BASIN IN HISTORY AND LAW (1967); Utton, *International Streams and Lakes*, in 2 WATERS AND WATER RIGHTS 402 (Clark ed. 1967).

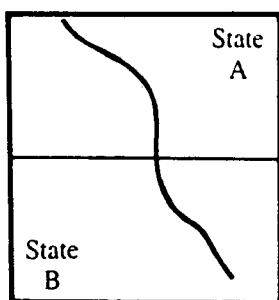


Figure 1

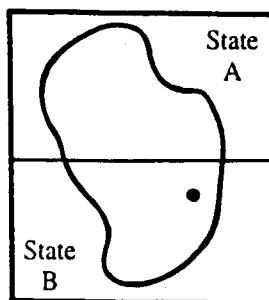


Figure 2

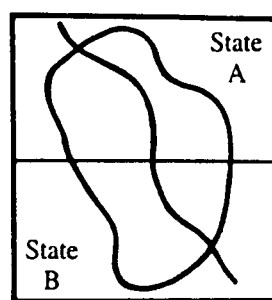


Figure 3

Building on these fundamental premises, the Ixtapa Draft Agreement has several key concepts, including:

1. decision by mutual agreement,
2. critical area protection (or case by case decision making), and
3. administration by the respective parties themselves.

The allocation and regulation of the use of transboundary groundwaters should be by the mutual agreement of the parties. Conversely, no one party may unilaterally determine its share of the uses of the groundwaters of a transboundary aquifer.

The critical zone concept is a common practice under which the responsible agency would not assert jurisdiction along the entire length of a common frontier, but would rather only proceed selectively in areas which were determined to be "critical areas" because of, for example, the threat of severe overdraft or aquifer contamination. In these critical areas the administering agency could, for example, regulate withdrawals by controlling the size, number, or placement of wells.

The actual administration of water rights and regulating measures is left to the respective Parties so as to minimize intrusions into the territorial sovereignty of the parties.

#### OUTLINE OF IXTAPA DRAFT

This draft generally follows a simple structure.

- I. First, the designated joint agency is called on to carry out a continued research program to identify and understand transboundary aquifers.
- II. Using the developed information, the agency may declare "Transboundary Groundwater Conservation Areas."
- III. Groundwater uses in declared conservation areas are subject to a spectrum of protective measures, ranging from interim and per-

manent measures regulating withdrawals to equitable apportionment.

- IV. Special attention is given to "mining" and using groundwater as a "drought reserve."
- V. Special provision is made for protecting the quality of transboundary groundwater.

DRAFT AGREEMENT  
RELATING TO THE USE OF  
TRANSBOUNDARY GROUNDWATERS

THE HIGH CONTRACTING PARTIES, \_\_\_\_\_ and  
\_\_\_\_\_;

Motivated by the spirit of cordiality and cooperation which governs the relations between them;

Desirous of expanding the scope of their concerted actions with respect to the problems confronting their peoples along their common frontier;

Recognizing the critical importance of their shared water resources and the need to enhance the use and conservation of the said resources on a long-term basis;

Noting especially the present unsatisfactory state of protection and control of their shared groundwaters, as well as the prospect of crisis conditions in some areas because of increasing demands upon, and the decreasing quality of, those groundwaters;

Seeking to provide for the sharing and protection of those groundwaters on an equitable basis and, to that end, for the creation and maintenance of an adequate data base;

Seeking to promote the rational use of these groundwaters and an equitable sharing of the available groundwaters in the border region;

Recognizing that the efficient use of their shared water resources is essential to the interests of both Parties;

Resolving to protect the quality of the groundwaters for present and future generations;

Wishing to resolve amicably any differences that may arise in connection with the use, protection or control of the said groundwaters and, for that purpose, to strengthen their joint agency; and

Concluding that the best means to achieve the rational management of their shared water resources and the protection of the underground environment is to adopt, in principle, an in-

tegrated approach including, where appropriate, the conjunctive use of surfacewater and groundwater;

Have agreed as follows:

*COMMENT:*

I. This document presumes a common interest of all Parties in coming to an agreement concerning groundwater, but by no means assumes all interests in relation to the resource are in common. There may be differences between or among Parties in the extent of concern about the management of the resource. There may be differences in the priority of goals such as economic development and the protection of environmental quality. Further, there may be differences in the financial and other resources which the Parties may bring to bear in participating in the management of this joint resource. While all Parties to the agreement are equal in a legal sense, it is recognized that some suggested substantive provisions may appear more advantageous to some Parties depending upon their particular attributes and their extent of control over the resource. While we may cite specific examples of where suggested provisions may be favorable to certain interests under particular circumstances, we leave it to diplomatic negotiations to identify specific interests in an actual application.

II. This preamble purports to set forth, in addition to iterations of friendship and good will, the Parties' salient policy principles with regard to groundwaters of common concern, including implied acknowledgement of the interrelationships between water resources on the surface and those underground.

III. Both water quality and water supply, interdependent in any event, receive express attention; use of the phrase "underground environment" imports a concern for the water body (aquifer) as well as the water stored in, and flowing through, it.

IV. The means proposed for actually accomplishing the Parties' policy objectives—duties of the Parties, augmentation of the functions of their commission (presumably heretofore restricted, or largely so, to surface waters), and the special powers under specified conditions—are left to the operative provisions of the agreement.

V. General terms are employed at the outset (*e.g.*, "shared water resources" and "on an equitable basis"), leaving to the substantive articles, including definitions, the establishment of the agreement's words and phrases of art.

ARTICLE I—DEFINITIONS

As used in this Agreement:

I. "Aquifer" means waterbearing geologic formation.

- II. "Border Area" means that area within \_\_\_\_\_ Kilometers from the mutual boundary.
- III. "Drought" means a condition of abnormal water scarcity in a specific area resulting from natural factors.
- IV. "Groundwater" means all water beneath the surface of the ground.
- V. "Impairment" means any change in a water resource under the jurisdiction of the Commission which significantly reduces or restricts the potential for the use of that water resource.
- VI. "Interrelated Surface Water" means those surface waters in the territory of either Party the quantity or quality of which is affected by the outflows from or inflows to transboundary ground waters.
- VII. "Mining" means the withdrawal of waters from an aquifer over a period of time in amounts greater than the recharge to the aquifer over the same period of time.
- VIII. "Pollutant" means any waterborne substance or property which in concentration or combination may be toxic or harmful to public use, to human, animal, or plant life.
- IX. "Pollution" means the introduction of pollutants into transboundary groundwaters that results in an impairment of human, plant, animal or public use.
- X. "Recharge" means the addition of water to an aquifer by infiltration of precipitation through the soil, infiltration from surface streams, lakes or reservoirs, flow of groundwater from another aquifer, or pumpage of water into the aquifer through wells.
- XI. "State(s)" means the Parties to this treaty.
- XII. "Sustained Yield" means the maximum quantity of water permitted to be withdrawn from an aquifer intersected by a common boundary, calculated to provide that quantity either indefinitely or for a period of years.
- XIII. "The Commission" means the joint agency designated in Article 3 of this Agreement.
- XIV. "Transboundary Groundwater Conservation Area" means the areas declared by the Commission to be a Transboundary Groundwater Conservation Area pursuant to Article 5.
- XV. "Transboundary Groundwaters" means waters in aquifers intersected by a common boundary.



## COMMENT ON ARTICLE I

I. These definitions are applicable in a variety of geographic settings. However, because conditions do vary greatly from one location to another, local factors including not only physical but also political, economic, and cultural conditions need to be considered. Some definitions merit specific comment.

II. The definition of "aquifer" is meant to cover any underground water source. An alternative definition would be "a waterbearing geologic formation that yields significant quantities of water to wells or springs." This alternative definition includes two characteristics of most aquifers: (1) ability to hold significant quantities of water; and (2) permeability sufficient to transmit that water. The alternative definition is adequate for aquifers where water is extracted at the present time or that have a natural discharge. The broader definition in the Article covers untapped aquifers that might be in danger or pose a threat to critical aquifers as a result of a variety of human activities such as mining for other resources.

III. The definition of drought is interpretive and most applicable where the climate of the geographical area results in great deviations from the average annual quantity on an annual basis. In such situations, numerical standards for the point at which drought occurs may be difficult to establish. Some members of the Ixtapa Working Group, however, supported a more objective standard. One member suggested that "we must come up with a period of time and a measurable degree of diminution by which to specify the physical conditions that trigger so vast an exercise of governmental power" [as described in Article 8]. A suggested alternative definition of drought is:

a period of time exceeding two years where a combination of natural factors results in the diminution by 30% or more of the average annual quantity of water available for use in a given water basin.

This alternative definition looks not to the amount of water received in a geographical area, but to the water available for use. Thus, drought conditions become a direct function of runoff waters that are stored. The volume of water received in a watershed can vary from the volume of water available for use by several hundred percent, depending on many natural and manmade conditions.

IV. Pollutant, pollution, and impairment have been defined to complement Article X on water quality. Issues concerning pollution and impairment will be controlled by the standards determined under the provisions of Article X. The definition of pollutant depends on a determination of what concentrations or combinations of substances or properties are toxic or harmful to life and other uses. For example, the parties must agree on what concentration of soluble mineral content is harmful in saline water. The numerically specified threshold varies in the United States from 500

parts per million (ppm) soluble mineral content for drinking water to 1000 ppm for other uses.

The definition of pollutant is written broadly to include substances or properties or their combinations which affect color, taste or odor of groundwater and therefore possible uses of it. Also the word "property" could include temperature change which could be harmful to some uses.

V. "Transboundary Groundwaters" is surely the most important definition, since protection of those waters is the ultimate goal of this agreement. Although all of the participants appreciated the need for a system wide approach to groundwater management, most felt that any definition beyond this would be so broad as to require system wide management by the Commission, an unrealistic expansion of powers in most circumstances.

Where the Parties have previously agreed to permit an existing Commission to manage water resources, an alternative definition could be used:

"Transboundary Groundwaters" means waters that are below the surface that discharge into or are fed by international surface boundary waters or are intersected by the common frontier, whether such underground waters flow in channels, percolate, are in direct contact with ground or subsoil or are ecologically isolated.

This definition identifies the kind of groundwater that is of concern in this treaty, and is broad enough to include nearly all kinds of groundwater. The definition also ensures that groundwaters that begin or end in international surface waters are not excluded. With regard to surface waters the Great Lakes Agreement of 1978, Article 1(h),<sup>57</sup> extends to waters flowing into or out of boundary waters, and the Helsinki Rules of 1966, Article 1,<sup>58</sup> make groundwaters that flow into surface waters of an international basin part of the waters of that basin. A broad definition of the groundwaters of concern might avoid controversies as to the areal extension of the Commission's jurisdiction, thereby avoiding a situation where an international basin is subject to conflicting and possibly mutually defeating administrative systems. Political reality, however, would surely indicate that this definition is likely to be too broad to be acceptable. The limits placed by the 1944 Treaty between the United States and Mexico on the jurisdiction of the International Boundary and Water Commission to the "limitrophe"<sup>59</sup> sections of surface flows reflect the kind of resistance that could be expected to an expansive definition and thereby grant of jurisdiction to an international commission.

57. Agreement Between the United States and Canada on Great Lakes Water Quality, 30 U.S.T. 1383, T.I.A.S. No. 9257 (1978).

58. Helsinki Rules on the Uses of International Rivers, International Law Assn., Report of the 52nd Conference held at Helsinki, Aug. 17-20, 1966 (1967).

59. Treaty on Utilization of Waters, Feb. 3—Nov. 14, 1944, United States-Mexico, art. II, 59 Stat. 1219, T.S. No. 994.

## ARTICLE II—GENERAL PURPOSES

The Parties recognize their common interest and responsibility to ensure the amicable, prudent and equitable use of groundwaters divided by their common boundary for the well-being of their citizens in the border region. The Parties further recognize the critical importance of water to the economic development, productivity, and progress of their citizens.

Accordingly, the Parties have entered into this Agreement to ensure the optimum use of transboundary groundwaters on the basis of equitable sharing, and to protect the quality of the underground environment. It is also the purpose of the Parties to develop and share adequate and reliable information concerning transboundary groundwaters in order to use and protect these waters in a prudent, secure, and informed manner.

### COMMENT ON ARTICLE II

The Statement of General Purposes focuses on the reasons why governments negotiate with each other as to the use of shared resources, in particular, ground waters. It is contemplated that this type of agreement is the beginning of an ongoing process to manage the resource and provide that degree of certainty necessary to make prudent decisions as to the use of the resource. One vital component of any such effort is a strong research effort to learn about the characteristics of underground waters. As one Working Group commentator stated:

Hydrologically we operate largely in a sphere of ignorance, not because we lack understanding of the laws of nature as they relate to groundwater flow and quality, but because we lack the practical means to assess the extent of the resource . . . (we) are not able to map fresh groundwater supplies in the same way as we quantify surface waters . . . [we] have to learn to operate within the range of uncertainties which exist of a given data base.

The purpose of this prototype agreement, then, is to provide a model for governments. This agreement seeks to ensure that the present and future uses of shared groundwaters will represent an equitable sharing of the use of the resource throughout the life of the resource.

## ARTICLE III—DESIGNATION OF THE COMMISSION

The \_\_\_\_\_ Commission is designated as the joint agency to implement the responsibilities and functions provided for by this agreement.

## COMMENT ON ARTICLE III

Article III assumes the existence of a commission such as the International Boundary and Water Commission in the case of Mexico and the United States. Many governments already have administrative bodies with varying degrees of authority over transboundary water resources. Separate agencies for groundwater only would complicate resource management where these agencies already exist, in view of the need for conjunctive management of surface and groundwaters. If no joint agency exists, the Working Group assumed that one would be formed.

## ARTICLE IV—IDENTIFICATION AND INVESTIGATION OF TRANSBOUNDARY GROUNDWATERS

- I. The Commission, in addition to other duties and obligations, which may have been or may be assigned to it by the Parties, shall identify, investigate, and verify transboundary groundwaters, and the underground environment. It shall carry out directly or by means of national or other joint agencies or bodies, public or private, continuing research programs which shall include but will not necessarily be limited to:
  - A. a comprehensive inventory of all transboundary groundwater supplies considering quantity, quality, aquifer geometry, recharge rates, interaction with surface waters, and other pertinent hydrologic factors;
  - B. identification of gaps and imbalances in presently available data, and the preparation of research programs to remedy these deficiencies;
  - C. a comprehensive examination of present and possible future uses for said groundwaters, taking into account demographic projections and economic development potential;
  - D. a study of the quantities, qualities, present and possible future uses of other surface and groundwaters, actually and potentially available for use in the Border Area;
  - E. detailed studies of the potential for and consequences of drought, extended drought, and pollution in the areas served by transboundary groundwater.
- II. The Commission, utilizing its technical staff and the technical staffs of the Parties, is charged with the creation and maintenance of comprehensive, coordinated joint data files pertaining to transboundary groundwaters, in the lan-



guages of the participating Parties. The files should be continuously updated.

- III. The Parties undertake to facilitate the acquisition of information and data by the Commission on a timely basis in accordance with the Commission's requirements.
- IV. The Commission will collate, analyze, and disseminate the information and data resulting from inventories, examinations and studies.

#### COMMENT ON ARTICLE IV

A broad research charge is given to the Commission in this article. The Commission must assess the resource's quantity, quality, hydrological characteristics and present and future uses, given contemporary knowledge. There was a consensus of the Ixtapa Working Group that the authority of any Commission is rooted in its technical understanding of the resource. In addition, the Commission must also be impartial in assessing the characteristics of an aquifer. It must be able to collect and interpret data from all the Parties to the agreement and do research on its own initiative to reach an integrated understanding of transboundary groundwater resources.

In this regard the Commission is to identify gaps and imbalances in data which may exist. For example, one side of the frontier may have more data regarding withdrawals than the other side, thus creating an imbalance in information. Also the Commission is charged with establishing and maintaining a data base in the languages of the Parties so as to provide equality of access to the information.

The Commission must have a technical staff to accomplish the goals of this Article. Included within the staff's duties is the responsibility for model research standards and units of measurement that the Commission will use to study the characteristics of the resource.

#### ARTICLE V—THE DECLARATION OF TRANSBOUNDARY GROUNDWATER CONSERVATION AREAS

- I. The Commission shall on the basis of testing programs and studies determine the desirability of declaring any area within the Border Area containing transboundary groundwaters to be a "Transboundary Groundwater Conservation Area." Any determination of such desirability shall be reported to the respective Governments of the Parties with a draft of the proposed declaration. If no Party files an objection with the Commission within 180 days, the Commission shall issue the formal declaration. Any objection(s) filed shall specify the objectionable sec-

tion(s) of: (1) the proposed declaration; and/or (2) supporting data.

Within ninety (90) days of receipt of such objections, the Commission shall report to the respective governments a "revised determination" and a "revised proposed declaration," to be effective within ninety (90) days, unless a Party files an objection with the Commission. If no objection is filed within the said ninety (90) day period, the formal declaration shall be issued by the Commission. If objection is filed by a Party within the ninety (90) day period, the Commission shall refer the matter, together with the entire record, to the Governments for resolution.

The legal status of the aquifer or aquifers named in the declaration, and of its waters, shall be that of "Transboundary Groundwater Conservation Area," as herein provided, from the date of publication of the declaration by the Commission.

In making its determination, the Commission shall consider whether:

- A. groundwater withdrawals exceed or are likely to exceed recharge so as to endanger yield or water quality;
  - B. groundwater withdrawals are likely to diminish the quantity or quality of interrelated surface waters;
  - C. prudent management of the groundwater resources including the decision to mine groundwater makes such designation desirable;
  - D. the area's use as an important source of drinking water is likely to be impaired;
  - E. the aquifer is contaminated or is highly susceptible to contamination; or
  - F. recurring or persistent drought conditions necessitate emergency management of all or some water supplies in a particular area.
- II. For the purposes of this article,
- A. water quality may be impaired through chemical point source pollution as well as non-point source pollution;
  - B. in reaching any conclusions the Commission may take into account adverse effects on waters previously allocated by agreements between the Parties including any deterioration in water quality, quantity, or rate of flow.
- III. The Commission shall, based on continuing studies, review the appropriateness of continuing or modifying ex-

isting Transboundary Groundwater Conservation Areas, and the desirability of declaring additional Transboundary Groundwater Conservation Areas. These determinations of such desirability shall be made at intervals not to exceed 10 years.

#### COMMENT ON ARTICLE V

I. The data gathered by the Commission under Article IV may identify various adverse impacts on groundwaters. Once the Commission makes this finding, an area can be declared a Transboundary Groundwater Conservation Area, thereby triggering the Commission's powers under Article V of the treaty. This "critical area" approach is not novel. "In the common pattern, the state engineer is given the power to identify aquifers that are subject to severe overdraft conditions and to limit or impose controls for the drilling of new wells."<sup>60</sup> Examples of the "critical area" approach would include the Arizona Groundwater Management Code<sup>61</sup> and the New Mexico Groundwater Code.<sup>62</sup>

II. The Ixtapa Working Group discussed a spectrum of options. These options clearly reflected the tension between the need to give power to act to a technical body and the reality of what is possible politically. One member said, "I still believe that the Commission should be limited to recommending. Otherwise we are being politically unrealistic." Another argued that if the agreement attempts too much, nothing will be accepted. "The urge for utopia flies in the face of the possible." Another said "there are limits to what sovereign nations will accept. It would be better to leave these matters to the parties to work out." Yet, another member said "We are in a pioneering endeavor; if we do not suggest that the technical body be able to act affectively, who will? The Commission on the spot with hands on information needs to be able to act. Governments have too much on their agenda to be able to respond expeditiously."

The variety of options discussed ranged from the polar positions of giving the Commission the power to declare a Transboundary Groundwater Conservation Area, at one extreme, to giving the Commission only the power to recommend, at the other extreme. The Working Group opted for a middle position which allows the technical body to declare a Transboundary Groundwater Conservation Area, but which makes the declaration subject to the disapproval of the respective governments. This is aimed at allowing the specialist commission to act effectively, while allowing the ultimate political decisions to be exercised by the govern-

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60. Muys, Cummings & Burke, *supra* note 18, at 49.

61. ARIZ. REV. STAT. ANN. §§ 45-401 (Supp. 1981-82).

62. N.M. STAT. ANN. § 75-11-1 (1968).

ments. The Working Group thus chose a middle ground between effectiveness and legitimate political checks and balances.

The approach allows for declaration by the Commission subject to the approval of the Parties during a 180-day ratification period. In the absence of any objections, the Commission has a mandatory duty to issue a declaration. A review procedure has been added should any objections be made by a Party.

At least one commentator felt that the Working Group was being overly sensitive to "political realities" in debating whether the Commission should have power to declare Transboundary Groundwater Conservation Areas. It was argued that the Commission in fact would not be separate from participating governments but rather would be an extension of them. It was therefore argued that the Commission should be more than merely a technical advisory board which would lead to inefficiency at best and disaster at worst. In response to this suggestion the Working Group has given the Commission certain emergency powers set out in Articles VIII and XI.

III. The Working Group also discussed another option which provided the alternative of the Commission being given either the power to declare or only the power to recommend. It follows:

*Alternate Option*

- A. The Commission (may declare) (may recommend that the respective governments declare) any transboundary groundwater area to be a "Transboundary Groundwater Conservation Area" when in its judgment:
  - 1. demand has exceeded or is likely to exceed recharge so as to endanger yield or water quality;
  - 2. groundwater withdrawals are likely to diminish the quantity or quality of interrelated surface waters;
  - 3. prudent management of the groundwater resources including the decision to mine groundwater makes such designation desirable;
  - 4. the area is an important source of drinking water;
  - 5. the aquifer is contaminated or is highly susceptible to contamination; or
  - 6. recurring or persistent drought conditions necessitate emergency management of all or some water supplies in a particular area.
- B. For the purposes of this article,
  - 1. the Commission may determine the appropriate yield from an aquifer through consideration of economic, hydrological, and hydrogeological criteria selected by the Commission;
  - 2. water quality may be endangered through chemical point source pollution and non-point source pollution.



3. in reaching any conclusions the Commission may take into account adverse effects on waters previously allocated by agreements between the Parties including any deterioration in water quality, quantity, or rate of flow.
- C. The Commission shall, based on continuing studies, review the appropriateness of existing Transboundary Groundwater Conservation Areas, and the desirability of declaring additional Transboundary Groundwater Conservation Areas. These determinations of such desirability shall be made at intervals not to exceed \_\_\_\_\_ years.

IV. There is precedent for giving a Commission a broad spectrum of responsibility and authority. Perhaps the best example is that of the Delaware River Basin Commission which is given broad powers, including the power of equitable apportionment and power to veto water projects.<sup>63</sup> It is necessary, however, to add the caveat that this is an interstate agreement which is remarkable even within the context of a federal system. It could be expected that such an international agreement would be even more difficult to negotiate.

Section 3.3 of the Delaware River Basin Compact provides that "the Commission shall have the power from time to time as the need appears, in accordance with the doctrine of equitable apportionment, to allocate the waters of the basin to and among the states signatory to this compact . . . and to impose conditions, obligations and release requirements. . . ."

Section 3.8 provides: "No project having a substantial effect on the water resources of the basin shall hereafter be undertaken by any person, corporation or governmental authority unless it shall have been first submitted to and approved by the commission, subject to the provisions of Sections 3.3 and 3.5. The commission shall approve a project whenever it finds and determines that such project would not substantially impair or conflict with the comprehensive plan and may modify and approve as modified, or may disapprove any such project whenever it finds and determines that the project would substantially impair or conflict with such plan. . . ."

Section 3.1 provides: "The commission shall develop and effectuate plans, policies and projects relating to the water resources of the basin. It shall adopt and promote uniform and coordinated policies for water conservation, control, use and management in the basin. It shall encourage the planning, development, and financing of water resources projects according to such plans and policies."

V. A variety of situations are listed which could result in the declaration

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63. Delaware River Basin Compact, Pub. L. No. 87-328, 75 Stat. 688 (1961).

of a Transboundary Groundwater Conservation Area (TGCA) because of danger to the resource. The first situation introduces the concept of an appropriate yield. Where an aquifer is recharged on a continuing basis by the hydrologic cycle, an appropriate yield would limit the amount of water to be withdrawn from the aquifer over a period of time. The discussion in paragraph II emphasizes the nontechnical approach of this agreement in that the determination of what constitutes an appropriate sustained yield is left up to the Commission, and is not the result of any preexisting definition. These options also require the Commission to consider the effects of nonpoint source pollution, such as saline waters and fertilizer leachates. The Commission is asked to consider effects on interrelated surface waters under existing treaties or compacts.

VI. Paragraph III mandates a review of a TGCA declaration every ten years. This seeks to accommodate the goal of flexibility, in order to respond to increased knowledge about the TGCA and its use, with the need for certainty. Certainty is necessary to provide a time frame by which people can rely upon the use of the resource for capital investment decisions. Although many would argue that certainty is the more vital need, flexibility is also necessary in order to adjust to changing conditions including economic development and new technology and to take into account new knowledge of the aquifer. One commentator said, "I have trouble with apportionment. It is too inflexible. The degree of uncertainty about future developments is too great." Economists have commented that the tradeoff between certainty and flexibility may be the heart of the problem of equitable allocation.

#### ARTICLE VI—APPORTIONMENT AND INTERIM AND PERMANENT MEASURES

- I. After declaring a "Transboundary Groundwater Conservation Area" the Commission shall prepare and administer with appropriate periodic revisions, a Comprehensive Plan for the rational development, use, protection, and control of the waters in the Transboundary Groundwater Conservation Area. Pursuant to said plan the Commission may:
  - A. Equitably apportion the uses of groundwaters and interrelated surface waters consistent with any other apportionment previously made by the Parties in the Transboundary Groundwater Conservation Area between the Parties and/or
  - B. Prescribe interim measures including, *inter alia*:
    1. limiting the pumping of groundwater within the Transboundary Groundwater Conservation Area to

- specified quantities, or number and capacities of pumps;
2. establishing criteria for the placement of, and requiring approvals for, new wells, where permitted;
  3. retiring existing wells in cases where continued operation substantially threatens the quality of groundwaters;
  4. establishing pumping fees or charges for groundwater extractions, to be paid to the account of the respective National Section of the Commission;
  5. reserving groundwaters or portions of Transboundary Groundwater Conservation Areas for future use;
  6. other measures as may be deemed appropriate by the Commission, including the collection and reporting of information and data.
- C. Prescribe permanent measures to govern abstraction of groundwaters within the Transboundary Groundwater Conservation Areas after monitoring the effects of interim measures for a reasonable time.
- II. The Commission shall have the power to approve advances against future years' planned withdrawals under an equitable apportionment or as a variance to interim or permanent measures because of demonstrated need.
- III. The Commission shall carry on continuing studies to determine the appropriateness of interim measures which have been prescribed and whether such interim measures should be continued or modified. Determinations of whether interim measures should be continued shall be made at intervals not to exceed \_\_\_\_ years.
- IV. In making the decisions under this Article the Commission shall consider the following:
- A. The geography of the area, including each Party's proportion of total surface area overlying the Transboundary Groundwater Conservation Area;
  - B. The hydrology and hydrogeology of the area, including:
    1. the proportion of the total volume of the available water in the Transboundary Groundwater Conservation Area which lies within each Party's territory;
    2. the contribution of recharge by each Party;
    3. other relevant hydrogeologic considerations such

as aquifer geometry, flow characteristics including inflow and outflow, groundwater quality and vulnerability to contamination, aquifer transmissability, permeability, recharge areas and rates, and other data pertinent to apportioning, protecting, and controlling the waters of the Transboundary Groundwater Conservation Area; and

4. interaction between the aquifer and any surface waters.
- C. Existing utilization by each Party with particular attention to present and possible future uses for human consumption, and for sanitation, health services, and public safety such as for fire control and other municipal uses;
- D. The protection of the water quality necessary for each Party's utilization of the shared resource;
- E. Economic implications;
- F. Water conservation practices and efficiency in water use and management;
- G. Other considerations deemed to be relevant by the Commission.

The weight to be given to each factor is to be determined by its importance in comparison with that of other relevant factors. In determining what is an equitable share and/or appropriate interim measure, all relevant factors are to be considered together with a conclusion reached on the basis of the whole.

- V. An appropriate sustained yield may be determined by the Commission through consideration of economic, hydrological, and hydrogeological criteria selected by the Commission.
- VI. Any determination by the Commission to equitably apportion or prescribe interim or permanent measures shall be reported to the respective governments of the Parties with a draft of the proposed action. If no Party files an objection with the Commission within 180 days the Commission shall proceed with the proposed action.

Any objection(s) filed shall specify the objectionable sections of: (1) the proposed action; and/or (2) supporting data.

Within ninety (90) days of receipt of such objections, the Commission shall report to the respective governments a "revised proposed action," to be effective within ninety

(90) days, unless a Party files an objection with the Commission. If no objection is filed within the said ninety (90) day period, the proposed action shall be put into effect. If objection is filed by a Party within the ninety (90) day period, the Commission shall refer the matter, together with the entire record, to the Governments for resolution.

#### COMMENT ON ARTICLE VI

I. The Working Group discussed two principal options, each of which has the same ultimate goals of structuring an ongoing process that leads to a fair and secure sharing of the use of the resource and the protection of the underground environment.

In earlier drafts of the prototype agreement, each option was based strictly upon the doctrine of equitable apportionment. The Ixtapa Working Group rejected this approach because of the need for a more flexible range of possible regulatory measures.

One participant said, "I prefer the option with the interim measures. In general, management through interim measures makes better sense to me than apportionment." Although another was "uncomfortable with the interim measures, on the basis of giving too much power to the Commission." He went on to say, "However, if the problem is overdraft, some interim measures may be necessary."

II. The Commission has been given the authority to equitably apportion the use of the resource and/or manage it through the listed interim or permanent measures. Included in the list of interim measures is the power to reserve groundwaters for future use. The power to reserve groundwaters for future uses can be used as a variation to equitable apportionment in that the Commission might want to apportion only some of the groundwaters and set aside a portion as a reserve pending the development of more information about the aquifer, or changes in technology or patterns of use, demand, and economic development.

The interim measures provide a degree of flexibility on an aquifer-wide basis. This would complement the transfer provisions of Article IX which allow for flexibility on an individual use basis. The interim measures can be used in a variety of ways: as steps taken in place of equitable apportionment based upon a management scheme or, once the use of a resource is apportioned, these measures can be taken to maintain the allocation of all Parties to the agreement.

Hydrological uncertainty also makes interim measures attractive to some commentators. Any quantification of an aquifer is at best a partially informed guess. The same would be true for any quantitative apportionment. Flexibility allows for change as knowledge of an aquifer increases, or as natural or artificial additives affect the aquifer.

One participant commented, "I think the process would be more logical and acceptable if the Commission were required to impose interim measures and monitor them and give them a chance to work before imposing the step of equitable sharing or any other permanent or semi-permanent measures."

III. Reevaluation of interim measures serves the same purpose as reevaluation of the TGCA declaration because it gives the certainty necessary for investment and promotes prudent planning and management while providing opportunity for change with changing conditions. Also, it was concluded that there should be provision for permanent measures in lieu of or in addition to apportionment after monitoring the effects of interim measures for a reasonable time.

IV. In order to strike a workable middle position between administrative effectiveness and political responsiveness, the Commission is given the power to take a spectrum of actions ranging from interim measures to equitable apportionment, but subject to disapproval by the respective governments within a 180 day period.

V. Equitable apportionment is a common approach to the allocation of surface water resources between sovereigns and is accomplished through negotiation or adjudication.<sup>64</sup>

The end result of any equitable apportionment is a rather inflexible set allocation, thus leading to the criticism that an equitable apportionment cannot adequately anticipate changing conditions.<sup>65</sup> Interim measures that can become permanent provide considerable flexibility and to a significant extent overcome the rigidity of equitable apportionment as the sole alternative. Additional flexibility can be achieved by permitting the transfer of water as provided in Article IX.

VI. As an alternative to the centralized, regulatory approach to managing an aquifer implied in Article VI, Cummings suggests a decentralized approach which relies on price mechanisms as a means of controlling pumping rates. In such a system, a tax is imposed on water use which is based on the scarcity value of water. The scarcity value of water is based on each state's *share* of groundwater stock as well as the impact of mining on pumping costs. In cases where these latter impacts are uncertain, scarcity values are revised periodically as additional information becomes available. With appropriately structured measures for scarcity values, and the imposition of user charges or taxes in these amounts, water users would have *no incentive* to extract the resource at rates in excess of allotted amounts—indeed, disincentives would exist for more rapid rates of pumping. Cummings further argues that decen-

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64. Management of International Water Resources: Institutional and Legal Aspects, U.N. Doc. ST/ESA/5144 (1975).

65. Utton, *International Water Quality Law*, 13 NAT. RES. J. 282, 309 (1973).

tralized decision-making by individual water users could result in rates of resource use that are the same as those which might be "imposed" by limiting pumping by regulation. He goes on to say that such taxes, once collected, *must not* be returned to water users in any way proportional to their water use. The redistribution of tax collections in proportion to water use would have the effect of reducing the effective tax paid per acre foot. If tax collections are ultimately returned, all or in part, to water users, such returns must be in the form of "lump sum" payments which are in no way related to quantity of water pumped by each water user.<sup>66</sup>

This pricing or decentralized approach is provided as a possible tool under I(B)4 by giving the Commission the option of establishing pumping fees or charges for groundwater extractions. Cummings adds the caveat that the pricing or decentralized method

is not a panacea in terms of assuring compliance with terms of any agreement. Its use presupposes the existence of substantial amounts of information (which is many times unavailable) concerning revenue and cost relationships relevant for all water users; further, distributive and equity considerations are ignored: relatively high cost water users may be put out of business as a result of the tax. To the (likely) extent which equity considerations weigh heavily in states' considerations of transboundary agreements concerning groundwater resources, few options may exist to some sort of the regulatory commission. . . .<sup>67</sup>

VI. Most of the criteria set out in this Article to be considered in determining an apportionment or other measures can be evaluated objectively, reducing subjective determinations from the Commission. It is important, however, to remember the words of Justice Holmes in *New Jersey v. New York*: "[T]he effort always is to secure an equitable apportionment without quibbling over formulas."<sup>68</sup> Commentators disagreed on the value of the concept of the proportion of total volume of available water in the TGCA which underlies a Party's territory because it would be necessary to determine what water was referred to. For example, the reference may be to all waters, including those unfit for use, or to only usable water. Other members of the Working Group expressed concern with the listing of relevant hydrogeologic considerations because these terms represent contested concepts of the physical sciences which could be used as labels to achieve a preconceived expectation rather than raw data.

Other considerations might include:

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66. Muys, Cummings & Burke, *supra* note 18, at 64.

67. *Id.* at 68.

68. 283 U.S. 336, 337 (1931).

The population dependent on the waters of the aquifer in each border area;

The comparative costs of alternative means of satisfying the economic and social needs of each basin nation;

The availability of other water resources;

The avoidance of unnecessary waste in the utilization of waters of the area;

The degree to which the needs of one nation may be satisfied without causing substantial injury to the other nation;

The protection of the water quality of each nation's uses;

Also of interest are the criteria suggested by U.S. federal law and Spanish law for the equitable apportionment of surface water. The United States Supreme Court has said that equitable apportionment

calls for the exercise of an informed judgement on a consideration of many factors. Priority of appropriation is the guiding principle. But physical and climatic conditions, the consumptive use of water in several sections of the river, the character and rate of return flows, the extent of established uses, the availability of storage water, the practical effect of wasteful uses on downstream areas if a limitation is imposed on the former—these are all relevant factors. They are merely an illustrative, not an exhaustive, catalogue. They indicate the nature of the problem of apportionment and the delicate adjustment of interests which must be made.<sup>69</sup>

Seven principles have been identified that were used in deciding water disputes under Spanish colonial and Mexican law:<sup>70</sup>

1. *Title*. Without question, a Spanish or Mexican judge would first ask Parties to the case to produce their titles.
2. *Prior Usage*. Prior usage was not synonymous with the oldest usage; a firmly established newer usage would be taken into consideration as well in a subsequent division of water.
3. *Need*. If a litigant or group of litigants asked for a new grant of water or an amount above and beyond that which they had been using, the judge would inquire about the increased need, a fundamental concept in water allocations. If, for example, population increase seemed to substantiate the claim of increased need, he might well have extended additional water rights. At the same

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69. *Nebraska v. Wyoming*, 325 U.S. 589, 618 (1945).

70. Michael C. Meyer & Susan S. Deeds, *Land, Water, and Equity in Spanish Colonial and Mexican Law: Historical Evidence for the Court in the Case of State of New Mexico vs. R. Lee Aamodt et al.* 69 (Aug. 1979).



time, he would weigh this decision against the needs of others who might be using the water or who might have legitimate claim to it.

4. *Exclusivity and Injury to Third Party.* If a group of petitioners asked for exclusive rights to all of the water from a given source or as much water as they wanted to take from the source, without reference to the needs of others, the judge would be hard put to find many precedents for such exclusivity.
5. *Intent.* The judge hearing the case would inquire about intent. Why did a petitioner or group of petitioners want more water? How did they intend to use it? Were their goals in harmony with those of the larger community? Would the grant of water contribute to an expansion of agriculture, would it increase tax revenues for Church or State, would it benefit the poor?
6. *Legal Right.* In the water disputes, the establishment of legal right was important for the contending Parties. All would have a decided advantage over a competitor without it. But the concept of legal right was not an absolute. Other considerations, such as need and prior use, could subordinate legal right to a secondary position in the process of adjudicating water controversies.
7. *Equity and the Common Good.* Finally, in the solitude of his chambers, the judge might well ponder the doctrines of equity and the common good, the foundations of all Spanish colonial and Mexican law. He would ask himself what was equitable for the petitioners, for other individuals, and for the larger community.

VII. The theory of Equitable Participation moves away from notions of quantification of the volume of a nation's allocation to the protection of a nation's rights and duties as a participant in the management of a shared resource. Three basic principles have been set out by the International Law Commission:

1. The waters of an international watercourse system shall be developed and used by the system States on an equitable basis with a view to attaining optimum utilization of those waters, consistent with adequate protection and control of the components of the system.
2. Without its consent, a State may not be denied its equitable participation in the utilization of the waters of an international watercourse system of which it is a system State.
3. An equitable participation includes the right to use water resources of the system on an equitable basis and the duty to contribute on an equitable basis to the protection and control of the system as particular conditions warrant or require.

The emphasis of this approach is that uses should be equitably shared between nations, and that participation involves both the right to use and

the complimentary duty to protect the rights of others to use the resource. To these ends, this option gives the Commission responsibility for the development and administration of a comprehensive plan to bring about equitable participation.

An alternate Article VI would be:

#### ARTICLE VI—EQUITABLE PARTICIPATION

- I. The Commission shall prepare, and as approved by the Parties shall administer with appropriate periodic revisions, a comprehensive plan for the rational development, use, protection, and control of the Parties' transboundary waters. The plan shall, *inter alia*, include provisions:
  - A. to assess, as between the Parties and at the request of any Party, the equities in relation to the uses of transboundary waters, of parts thereof, or of a particular use as required under the circumstances, and to determine on the basis of such assessment whether a use or uses are consistent with the Parties' equitable participation in the transboundary waters under this agreement and other agreements in force;
  - B. to prescribe standards and measures for the protection of transboundary groundwaters generally and to modify such standards and measures with respect to any controlled aquifers to include restrictions or prohibitions with respect to effluent discharges and the dumping, injection, or application of substances deemed by the Commission likely to result in significant contamination of transboundary groundwaters.
  - C. to restrict the extraction of, and discharge to, transboundary waters in any Transboundary Groundwater Conservation Area.
  - D. to prescribe interim measures with respect to Transboundary Groundwater Conservation Area.
- II. Transboundary waters shall be developed and used by the Parties on an equitable basis with a view to attaining optimum utilization of those waters, consistent with adequate protection and control of the components of the system.
- III. An equitable participation includes the right to use water resources of the system on an equitable basis and the duty to contribute on an equitable basis to the protection and control of the system as particular conditions warrant or require.

- A. The right of a Party to a particular use of the transboundary water resources depends, when questioned by another Party, upon objective evaluation of:
  - 1. contribution of water to transboundary waters, in comparison with that of the other Party (Parties),
  - 2. development and conservation of the transboundary water resources,
  - 3. degree of interference, by such use, with uses or protection and control measures of the other Party (Parties),
  - 4. other uses of transboundary water, in comparison with uses by the other Party (Parties),
  - 5. social and economic need for the particular use, taking into account available alternative water supplies (in terms of quantity and quality), alternative modes of transport or alternative energy sources, and their cost and reliability, as pertinent,
  - 6. efficiency of use of transboundary water resources,
  - 7. pollution of transboundary water resources generally and as a consequence of the particular use, if any,
  - 8. cooperation with the other Party (Parties) in projects or programs to attain more optimum utilization and protection and control of transboundary water resources, and
  - 9. stage of economic development;
- B. the total adverse affect, if any, of such use on the economy and population of other Parties, including the economic value of and dependence upon existing uses of the transboundary waters, and the impact upon the protection and control measures of the Parties;
- C. the efficiency of use by the other Party (Parties);
- D. availability to the other Party (Parties) of alternative sources of water supply, energy or means of transport, and their cost and reliability, as pertinent;
- E. cooperation of the other Party (Parties) with the Party whose use is questioned in projects or programs to attain optimum utilization and protection and control of transboundary waters.

One commentator speculated that equitable participation could result in a stronger Commission since it could command the cooperation of the Parties. There would be no incentive to use non-participation as a strategy to obtain concessions. Another commentator argued that theories such as

equitable apportionment and equitable utilization are inadequate. He urged the need "to explore and articulate" Equitable Participation as a part of "the progressive development" of international water law. Equitable Participation imports

a sense of affirmative cooperation, even collaboration, in order to achieve reasonable and rational use, protection and control—in short, not just a determination of 'rights' against the others, but a partnership in development and safety. Such affirmative obligations and opportunities cannot, it is submitted, be adequately handled with the Principle Equitable Utilization, based on equality of right, alone. The right, as it were, to have the other system States co-operate with you in protection and control measures should be expressed in a larger fashion, encompassing the entire bundle of rights and obligations associated with system-State status which, after all, implies co-system State status.<sup>71</sup>

#### ARTICLE VII—PLANNED DEPLETION

The Commission, after evaluating all relevant considerations, may approve depletion of an aquifer over a calculated period with the consent of the Parties. After considering the environmental, economic, social and hydrologic consequences, the Commission may apportion the use of groundwaters and/or prescribe interim or permanent measures in a way that allows either Party or both Parties to withdraw groundwater at a rate that exceeds the rate of recharge.

After approval of the decision so to deplete by the respective governments, a groundwater management plan for such depletion shall be drawn up and promulgated by the Commission. The management plan shall be carried out by the respective governments, each of which shall make annual reports to the Commission reflecting the measures taken, the quantities withdrawn from the aquifer or aquifers designated for depletion in the plan, and any problems encountered in adhering to the plan.

#### COMMENT ON ARTICLE VII

##### *I. Flow v. Stock Resources*

A useful concept is the distinction between flow and stock resources. Flow resources are self-replenishing and include those groundwaters which are being recharged on a continuing basis as part of the hydrologic cycle

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71. Hayton, *The Law of International Water Resources Systems*, in *RIVER BASIN DEVELOPMENT*, 209 (Zaman ed. 1983).

of precipitation and evaporation. It is these groundwaters which one would try to use on a "sustained yield" basis. The concept of what constitutes a "sustained yield" is dynamic in that much depends upon the extent of knowledge about a system. What would be an appropriate withdrawal rate at one specific time might be superfluous two years later. There are, however, aquifers with small recharge, but with a large amount of water in underground storage which "for all practical purposes . . . has been sidetracked from the hydrologic cycle and is no longer in transit. In human time, at least, it is not self replenishing, but an exhaustible resource, similar to petroleum and other minerals."<sup>72</sup> These nonreplenishing groundwaters are, for all practical purposes, exhaustible "stock resources." They are not being replenished. Thus, continued extraction will lead in time to their complete exhaustion. When exhaustion occurs, or when further mining becomes impractical, the economic activities and other uses dependent upon that supply must turn to other sources or be abandoned:

With a *stock resource* the decisions to be made are whether and when to use it. A property rights doctrine should recognize that rights to such resources do not involve a perpetual supply. It should permit a decision to hold the stock for use at a later time if it is so desired.

In a *flow resource* the problem is to make the best uses of the supply which is continuously available though not necessarily, and in the case of water ordinarily not, at a constant rate. . . .<sup>73</sup>

Thus, the concept of sustained yield is useful for aquifers recharging on a continuing basis, and the concept of mining is appropriate for "stock resource" groundwaters which are not being recharged significantly.

## *II. Management of Groundwater Mining*

The Ixtapa Working Group unanimously agreed that the Commission should be given authority to develop a plan for the use of groundwater once the Parties agree that the aquifer shall be used in such a way as to deplete it. If the Parties have left planning and management decisions to the Commission, the Commission could be given the express power to prepare a plan without waiting for the Parties to act. It is worth making special note of the merit of rationally deciding to mine groundwaters in appropriate circumstances. It has been postulated that a principal purpose of groundwater laws should be "to provide for an orderly development of groundwater supplies, in the interest of the best utilization of this

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72. Bagley, *Water Rights Law and Public Policies Relating to Ground Water "Mining" in the Southwestern States*, 4 J. L. & ECON. 144, 147 (1961).

73. *Id.* at 153 (emphasis added).

natural resource.”<sup>74</sup> Therefore, these laws ordinarily do not sanction diversions that would adversely affect the “complete development of the safe yield found to exist in the area,”<sup>75</sup> in order to preserve the water supply in perpetuity. This is an admirable statement when related to “flow” groundwaters, but what of “stock” groundwaters?

The decision in “stock” groundwaters is “whether and when to use”<sup>76</sup> them, because they are not a replenishing, perpetual supply. In order not to oversimplify, it must be pointed out that flow resources groundwater also can be mined when withdrawals exceed recharge, and this fact is what actually gives rise to the concept of sustained yield.

There may be situations where it is advisable to “mine” water in basins where there is significant but inadequate recharge to meet water needs. Such decisions should be made consciously, with the knowledge of the economic consequences and the fact that future generations’ options will be limited.

Corker argues that sustained yield should not be a sacred principle. The decision to mine can be a rational alternative, but that “‘safe yield,’” if a proper term can be discovered or if the old term can be acceptably defined, should be the basis of operation of every groundwater resource,<sup>77</sup> until the decision to mine is made consciously and with full knowledge of its implications.

Development has to be made in an orderly, rational manner, based upon thorough investigation and consideration. This is particularly so where the groundwater resource is divided by an international boundary, in view of the fact that damage done to the resource and to the other country cannot easily be corrected by natural recharge. At least these “‘stock’ groundwaters once removed, are for all practical purposes gone forever.”<sup>78</sup>

The New Mexico Supreme Court has recognized the validity of mining groundwaters for reasoned policy goals and at the same time recognized the need for careful management of such mining.

[T]he administration for a non-rechargeable basin, if the waters therein are to be applied to a beneficial use, requires giving to the stock or supply of water a time dimension, or, to state it otherwise, requires the fixing of a rate of withdrawal which will result in a determination of the economic life of the basin at a selected time.

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74. W. HUTCHINS, *SELECTED PROBLEMS IN THE LAW OF WATER RIGHTS IN THE WEST* 178 (U.S. Dept. of Agric. Misc. Pub. No. 418, 1942).

75. *Id.*

76. Bagley, *supra* note 72, at 153.

77. C. CORKER, *GROUNDWATER LAW, MANAGEMENT AND ADMINISTRATION* 174 (Nat’l Water Comm’n 1971).

78. Fischer, *Management of Interstate Groundwater*, 7 NAT. RESOURCES L. 521, 524 (1974).

The very nature of the finite stock of water in a non-rechargeable basin compels a modification of the traditional concept. . . . Each appropriator, subsequent to the initial appropriation, reduces in amount, and in time of use, the supply of water available to all prior appropriators, with the consequent decline of the water table, higher pumping costs, and lower yield.<sup>79</sup>

### III. Economic Complexity

In Transboundary Groundwater Conservation Areas, the "time dimension"<sup>80</sup> is an essential aspect of the water right.<sup>81</sup> Particularly in closed or nontributary areas, the capability to plan depletion over a calculated period is essential. Often the hydrologic and economic considerations are quite complicated; for example, the State Engineer of New Mexico suggests that if it were determined to set

a fixed "life" for the basin and then apportion the water by fixing the annual rates for each nation, deferral of development would be discouraged and there would be a race to achieve the allowed rate of withdrawal at the earliest time to maximize the quantity that could be taken within the "life" of the basin. On the other hand, if there is no limitation on the annual rate, that nation which takes its allocated quantum at a slower rate will have greater pumping lifts and possibly a worse quality of water; this could be mitigated by imposing a reasonable limitation on the annual rate of withdrawal as well as specifying the quantum allocated to each nation. In most situations it probably would be useful also to require some areal distribution of withdrawals to insure that one country does not damage the other (and perhaps itself) by concentrating its withdrawals along the international boundary.<sup>82</sup>

The economic considerations can be even more complex in the case of transboundary aquifers in which the states sharing the aquifer are at different stages of economic development.

One commentator suggests that

the state with the higher development level will most likely be pumping water at faster rates than the neighboring state, giving rise to that state's fear of losing part of its resource endowment—the specter of "use it or lose it" may also be relevant from states' points of view.<sup>83</sup>

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79. *Mathers v. Texaco, Inc.*, 77 N.M. 239, 243-44, 421 P.2d 771, 775 (1966).

80. Bagley, *supra* note 72, at 154-55.

81. See *Fundingsland v. Colorado Groundwater Comm'n.*, 171 Colo. 487, 468 P.2d 835 (1970) (the court approved a rate of depletion based on a 25-year period).

82. Letter from S.E. Reynolds, State Engineer, Santa Fe, N.M., to Albert Utton (Aug. 29, 1977). See Bagley, *supra* note 72, at 159.

83. Muys, Cummings & Burke, *supra* note 18, at 59.

The problem can be illustrated by the following:

[S]uppose that on State A's side, substantial irrigation as well as municipal/industrial activity takes place. . . . Suppose also that State B has little in the way of economic activity in its area overlying the aquifer; . . .

Now suppose that States A and B enter into an agreement — compact—whereby each state is entitled to half of the recoverable stock plus half of annual recharge. While shares of the resource apportioned to each state are equal and might thereby seem equitable, it is highly unlikely that the end result would be so viewed. This follows from the fact that one can expect that State A will rapidly exhaust its share, while State B will develop and use (or attempt to use) its share in future years. Of course, as State A exhausts its "share" of the stock, State B's *access* to the resource is affected: recoverable stock may be affected; more importantly, water tables fall thereby increasing lifts and pumping costs. Thus, the economic "quality" of State A's share of the aquifer is quite high because pumping costs are relatively low; but the economic quality of State B's share is much lower because pumping costs will be higher.

The question becomes how to handle these problems and the same commentator suggests two possible approaches. One would be joint mining of the aquifer, but this could have the problem that

. . . (i) State B must accelerate its development so as to match its annual beneficial use of mined water (in quantitative, physical terms) to that of State A, a "solution" that State B might find highly objectionable; (ii) or State A must *reduce* its rate of mining to that required for State B's level of development, a "solution" that State A would surely find objectionable given the depressive effect implied for its current level of economic activity.<sup>84</sup>

Another solution would be to have State A compensate State B for the additional pumping and other costs incurred by State A's earlier use of the groundwater stock. Cummings suggests that

State A would compensate State B for all external costs. While this solution is simply stated, its application will undoubtedly be much less simple. Higher pumping costs to State B, one of the bases for compensation, must be related to that proportion of total mining by State A that gives rise to higher costs to State B. Such calculations may be a source of serious controversy, particularly in (usual) instances where the structure of the shared aquifer varies across the transboundary area.<sup>85</sup>

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84. *Id.* at 63.

85. *Id.*



Yet a third possibility would be for State B to transfer a portion of its present allocated uses to State A pursuant to Article IX for a fixed term at a negotiated price.

#### *IV. Some Physical Considerations*

When an aquifer is being mined, a common problem is degradation of water quality due to the intrusion of unusable water. This problem is especially significant where the aquifer is a practically closed system, stock resource, since these aquifers generally contain greater concentrations of dissolved solids. This consequence represents a fundamental limitation on how much can be withdrawn from an aquifer.<sup>86</sup>

It should be noted that when a flow resource is studied for possible depletion, a lowering of the water table can result in a savings of water since less is lost through evaporation. This might also result in undesired environmental and economic changes when wetlands disappear.

#### *V. A Final Caveat*

In allowing the mining of groundwater stocks, annual water withdrawals are, by definition, at levels which are not sustainable over an indefinite period of time. Groundwater mining allows an expansion in economic activity in the area and the attending in-migration of people and an expansion of private and social infrastructure (roads, hospitals, utility facilities, etc.). Once these economic structures are in place—communities and institutions exist—the Commission must anticipate the problems of *dismantling* these structures when the inevitable time comes at which levels of water use must decline. Too often, the falling water tables which must attend the sustained mining of an aquifer give rise to strong political pressures for some means of “rescuing” the water short area; see, for example, the controversy surrounding the Central Arizona Project in the United States.<sup>87</sup> The essence of the “rescue operation” problem is described as follows:

Labor and Capital in irrigation areas may be immobile over substantial periods of time once the areas have been developed. Land improvement investments are sunk and capital equipment . . . may have only low salvage values. Agricultural labor may not have the skills required to make moving attractive. . . . Making new (water) supplies available to such regions may be termed a ‘rescue operation.’<sup>88</sup>

86. For example see Charbeneau, *Groundwater Resources of the Texas Rio Grande Basin*, 22 NAT. RES. J. 957, 969 (1982).

87. M.M. KELSO, WILLIAM E. MARTIN & LAWRENCE E. MACK, *WATER SUPPLIES ARE ECONOMIC GROWTH IN AN ARID ENVIRONMENT, AN ARIZONA CASE STUDY* (1973). See also R.G. Cummings, *Interbasin Water Transfers, A Case Study in Mexico* (1974) (Chapter 1, section 3).

88. CHARLES W. HOWE & K. WILLIAM EASTER, *INTERBASIN TRANSFERS OF WATER* 28 (1971).

ARTICLE VIII—PLANNING AND MEASURING FOR  
DROUGHT CONDITIONS

- I. Recognizing that drought conditions occur from time to time, the Commission shall within \_\_\_\_ year(s) develop a Drought Management Plan for the administration and allocation of shared water resources, including transboundary groundwaters, during periods of drought.
- II. This Plan may authorize the use of certain groundwaters as a "drought reserve," and, therefore, the conjunctive management of ground and surface water supplies.
- III. This Plan shall be submitted to the Governments.
- IV. After acceptance of the Plan, the Commission shall be empowered to take action applicable to any part or all of a Transboundary Groundwater Conservation Area. Consistent with the Plan, the authority of the Commission shall include but shall not be limited to the declaration of "drought alerts," and in connection therewith the imposition of measures for the emergency management of groundwater supplies conjunctively with surface water supplies.
- V. The conservation and emergency management measures decided upon from time to time by the Commission under paragraph IV of this Article shall remain in effect and shall be implemented and observed by the Parties until modified or terminated by the Commission. Provided that all such measures shall cease to be binding upon the termination of the "drought alert" or "drought emergency" by the Commission and provided that the Governments, by agreement, may at any time impose extraordinary measures not authorized under the said Plan.
- VI. Enforcement in the territory of each of the Parties of the actions and measures taken under this Article shall be the responsibility of the respective Governments.
- VII. The Drought Management Plan may include structural or nonstructural measures; the mining of groundwater at variance with any groundwater management plan as provided by Article VII; apportionment; and/or other interim or permanent measures.
- VIII. The Commission in prescribing measures during a declared "drought emergency" may reduce or increase the total allowable withdrawal from Transboundary Groundwater Conservation areas, but the Commission shall maintain to the extent practicable the equitable sharing of benefits and burdens on both sides of the border.

## COMMENT ON ARTICLE VIII

I. There are three essential aspects to the Commission's function concerning drought: The Commission must have the ability to anticipate it, research the consequences of drought, and develop a plan for the best measures to alleviate its harsh consequences. This Article is written so as to allow for either reducing or increasing withdrawals in the event of drought. The plan must be approved by the respective governments.

II. Conjunctive management of the resource treats both surface and groundwaters as one system, using groundwater when surface flows are reduced and then using aquifers for storage when surface flows increase. Aquifers often are not immediately affected by droughts as are surface flows, and may provide excellent storage to be used to make up for reduced surface flows. For this reason, increased withdrawals may be desirable in case of drought. In other situations, prudent management could call for reduced withdrawals. For example, the Commission might reduce withdrawals in the event of a prolonged drought which would, in judgment of the Commission, significantly affect recharge.

As an example, one might cite the Delaware River Basin Compact, Art. 3.3(a) and Art. 10.4 (Emergency). Also, Teclaff in *Abstraction and Use of Water*, gives some examples of reduction in use of water during time of drought.<sup>89</sup>

III. The response to drought may be phased according to the length of the drought.

It should be noted that the Working Group specifically concluded that emergency plans should include non-structural measures including, but not limited to, insurance, and disaster relief to mitigate the consequences of drought.

IV. Paragraph IV of this article contemplates an equitable sharing of the burdens or hardship associated with drought. It was suggested that any increase or reduction in withdrawals shall be borne by each Party in proportion to the contemporary allowed withdrawal. The precise language suggested was "Each state's withdrawal otherwise allowable under an equitable apportionment and/or prescribed interim or permanent measures accordingly shall be increased or reduced proportionally." This was bothersome, however, to some commentators because the mandatory proportional sharing of the burden was seen as unnecessary and restrictive. It was pointed out that a Party might wish to give up its share for future gains. It was generally agreed that the Commission should determine the allocation of burden without relying on a rigid proportional formula.

It is interesting to note that the United States Supreme Court in *Arizona v. California*, rejected the special master's recommendation that there should be a "pro rata sharing of water shortages." The Court said that

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89. UNITED NATIONS, A COMPARISON OF LEGAL REGIMES 220 (1972), U.N. Doc. ST/ECA 154.

although the pro rata approach “seems equitable on its face . . . we should not bind the Secretary to this formula.”

The Court went on to give the Secretary flexibility to “devise reasonable methods of his own” and concluded “the Secretary may or may not conclude that a pro rata division is the best solution.”<sup>90</sup>

#### ARTICLE IX—TRANSFERS OF TRANSBOUNDARY GROUNDWATERS

Nothing in this agreement shall be so construed as to prevent either short-term or long-term transfers of waters to the other side of the common border under terms and conditions agreed to by the Commission.

In approving any transfer, the Commission must be assured that the transfer is consistent with established programs to protect the quantity and quality of the groundwaters in a Transboundary Groundwater Conservation Area.

#### COMMENT ON ARTICLE IX

The Comments to Article V, *supra*, point out that any apportionment of a water resource is subject to the criticism of inflexibility. The concept of transboundary transfers is rather novel for international water resources and remedies the inflexibility problem to a substantial extent. The transfers would be for fixed terms and subject to approval by the Commission.

One commentator has suggested that transfers could result in problems due to the financial inequality of the Parties, which, if unchecked, could undermine the benefits derived from an agreement. On the other hand, transfers can be an effective method for nations that have not fully developed their allocation of the resource to achieve an immediate benefit without forfeiting any rights to the future use of the resource. Any contemplated transfer must be approved by the Commission.

Another alternative discussed, but not adopted, would have made the Commission a water broker. Under this suggestion, where an aquifer is to be apportioned a certain percentage that could be used by any Party on a temporary basis would be allocated to the Commission. In this alternative, the Commission would be acting as a water broker and would have control over these uses to insure that an undesired increase in the total use of the resource did not result.

#### ARTICLE X—WATER QUALITY

##### *Option 1*

- I. The Parties undertake cooperatively to preserve and to improve, insofar as practicable, the quality of trans-

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90. 373 U.S. 546, 553 (1963).

boundary groundwaters in conjunction with their individual and joint programs for surface water quality control, generally, and to avoid appreciable harm to the territory of either Party.

- II. The Commission shall biennially conduct a review of the measures undertaken within each Party's territory and shall issue a report containing its assessment of the adequacy and effectiveness of programs of use, protection, and control of the Parties' shared groundwaters with particular attention to any declared Transboundary Groundwater Conservation Area.

#### *Option 2*

- I. The Parties shall monitor pollution of transboundary groundwaters and after classifying them according to use:
  - A. identify toxic and hazardous pollutants;
  - B. maintain a continuing record of such substances from origin to disposal;
  - C. monitor the storage of toxic wastes;
  - D. provide the Commission with an inventory of dumpsites, abandoned as well as active, that have the potential for causing transboundary groundwater pollution.
- II. The actual administration of water quality standards and regulations within the territory of each Party shall be the responsibility of each Party respectively or its political subdivisions, as appropriate. In addition, the Commission shall biennially conduct a review of the measures undertaken within each Party's territory and shall issue a report containing its critique of the adequacy and effectiveness of programs of use, protection and control of the Parties' shared groundwaters with particular attention to any declared Transboundary Groundwater Conservation Areas. To that end each Party shall furnish the Commission through its National Section the relevant data and information on which the Commission must base its report in accordance with the reporting scheme provided by the Commission.

#### *Option 3*

- I. The Commission shall formulate a Water Quality Pro-

- tection Plan to prevent and eliminate degradation of transboundary groundwater quality.
- A. The plan shall provide for the establishment of a sufficient number of test wells and other measures for monitoring and inspection for water purity.
  - B. The plan shall provide for contingency cleaning measures and financial responsibility for clean up.
- II. For that purpose the Commission shall classify transboundary groundwaters according to use and promulgate water quality standards and regulations. These standards and regulations shall, *inter alia*
- A. identify toxic and hazardous pollutants;
  - B. require a continuing record of such substances from origin to disposal;
  - C. establish approved routing plans for the transportation of toxic and hazardous pollutants;
  - D. establish criteria for the safe storage of wastes;
  - E. provide for the inventorying of dumpsites, abandoned as well as active, that have the potential for causing transboundary pollution.
  - F. provide for the establishment of protective zones in which land use may be regulated, if necessary.
- III. The actual administration and enforcement of water quality standards and regulations within the territory of each Party shall be the responsibility of each Party respectively or its political subdivisions as appropriate. In addition, the Commission shall biennially conduct a review of the measures undertaken within each Party's territory and shall issue a report containing its assessment of the adequacy and effectiveness of programs of use, protection, and control of the Parties' shared groundwaters with particular attention to any declared Transboundary Groundwater Conservation Areas.
- IV. In authorizing any discharge into transboundary groundwaters, or recharge areas, the Parties shall follow and enforce the standards, criteria, regulations and prohibitions established by the Commission.
- V. Each of the Parties covenants and agrees to prohibit and control pollution in Transboundary Groundwater Conservation Areas according to the Water Quality Protection Plan, standards, and regulations promulgated by the Commission, and to cooperate faithfully in the control of future pollution and abatement of existing pollution.

## COMMENT ON ARTICLE X

I. Water quality issues were of great concern to the Ixtapa Working Group, and there was great diversity of opinion as to what was the best approach. Therefore three different options are presented which range from what some called a "mere exhortation" to what others called "cradle to the grave regulation."

The quantity of groundwater available for use is limited by the quality of the resource. Groundwater is particularly susceptible to contamination, and, unlike surface water, once contaminated it is practically impossible to rehabilitate an aquifer at the present time. Some members of the Working Group felt that water quality might best be dealt with by a separate agreement rather than combining it with allocation issues in this document. Others felt that it was imperative that preservation of water quality be an express goal because if it were not mentioned, nothing would be done by any Party to prevent the deterioration of aquifers.

II. There was considerable difference of opinion within the Working Group over how extensive the power and jurisdiction of the Commission should be.

Some members definitely preferred a more general approach in which the specific powers given to the Commission were limited, and argued that to attempt to do more was politically unrealistic. There also was concern over the administrative burden and expense of "cradle to the grave" regulation. "Too much specificity and administrative responsibility could lead to agency overload and ineffectiveness." In addition, one commentator said "I prefer the more general option. The other options deal specifically with water quality and hazardous wastes, and I am not sure we yet know the best way to regulate groundwater pollution."

Others preferred to detail extensive powers for the Commission. They argued that "the problems are serious and therefore this draft should not be timid, but rather should be a model of what should be done, not necessarily only what can be done." One commentator said "Why are we bold when it comes to apportioning groundwater and timid in regard to groundwater quality?" Another who favored greater specificity said "this is a new area in water treaties; there are few guidelines and precedents. A detailed provision would be useful as a model and as a help to the Commission."

Many aspects of a water quality issue involve value judgments upon which Parties may be able only to agree to disagree, including such fundamental considerations as what constitutes a pollutant, and what is an acceptable concentration of the pollutant. With this in mind, plus the spectrum of opinion reflected by the Working Group, a series of options was developed to allow for gradations in the extent to which Parties could delegate such issues to a commission.

*Option 1*

Here the Parties expressly recognize a duty of each not to cause substantial harm to the others. The Commission acts as a "conscience," biennially reviewing the actions of each Party to the extent that the duty to other Parties is not forsaken. Where Parties cannot agree, except as to the existence of a mutual duty not to harm, this option would be appropriate.

*Option 2*

In addition to the general duty recognized in Option 1, Option 2 creates a duty on all Parties to monitor pollution and classify all transboundary groundwaters as to use. Additionally, each Party must identify pollutants and monitor their use within its territory. With this data available the Commission can competently assess the availability of an aquifer for certain uses, and whether it is endangered to the extent that it should be declared to be a TGCA.

Actual administration is left to the Parties, allowing them to make decisions based upon their political, social, and economic considerations that inform a water quality decision. This can minimize the intrusion into the sovereignties of the Parties.

*Option 3*

This option gives the Commission the most comprehensive responsibilities to deal with water quality problems. It is not without precedent to give a Commission broad authority to control pollution in a transboundary situation. The Delaware River Basin Commission has been given substantially more power than that proposed in Option 3. Of course, it should be observed that the Delaware River Basin Compact is interstate and not international, and was negotiated under the umbrella of a federal system. Further, even within the context of an overriding federal constitution, it has been unusual to grant such extensive powers to a Commission. Negotiating an international agreement could be expected to be even more difficult.

The Delaware River Basin Compact in Section 5.1 provides that "the Commission may assume jurisdiction to control future pollution and abate existing pollution. . . ." <sup>91</sup> Further, the Commission can "establish standards of treatment of sewage, industrial or other waste. . ." and can adopt "rules, regulations and standards to control such future pollution and abate existing pollution. . . ." In addition, the Commission can issue orders to cease the "violation of such rules and regulations as it shall

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91. Delaware Basin River Compact, Pub. L. No. 87-328, 75 Stat. 688 (1961).



have adopted. . . .” The courts of the signatory Parties shall have jurisdiction to enforce . . . any such order.”<sup>92</sup>

In contrast to this extensive power of the Commission itself to establish its regulations, the Ixtapa Group left the actual enforcement to the Parties within their respective territories.

Many of the concepts contained in this option are adapted from interstate compacts and the practice of the European Economic Community

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92. *Id.* at §§ 5.2, 5.3 and 5.4 merit quoting in full (emphasis added):

5.2 Policy and Standards. *The Commission may assume jurisdiction to control future pollution and abate existing pollution in the waters of the basin, whenever it determines after investigation and public hearing upon due notice that the effectuation of the comprehensive plan so requires. The standard of such control shall be that pollution by sewage or industrial or other waste originating within a signatory state shall not injuriously affect waters of the basin as contemplated by the comprehensive plan.* The commission, after such public hearing may classify the waters of the basin and establish standards of treatment of sewage, industrial or other waste, according to such classes including allowance for the variable factors of surface and ground waters, such as size of the stream, flow, movement, location, character, self-purification, and usage of the waters affected. After such investigation, notice and hearing *the commission may adopt and from time to time amend and repeal rules, regulations and standards to control such future pollution and abate existing pollution*, and to require such treatment of sewage, industrial or other waste within a time reasonable for the construction of the necessary works, as may be required to protect the public health or to preserve the waters of the basin for uses in accordance with the comprehensive plan.

5.3 Cooperative Legislation and Administration. *Each of the signatory parties covenants and agrees to prohibit and control pollution of the waters of the basin according to the requirements of this compact and to cooperate faithfully in the control of future pollution in and abatement of existing pollution from the rivers, streams, and waters in the basin which flow through, under, into or border upon any of such signatory states, and in order to effect such object, agrees to enact any necessary legislation to enable each such Party to place and maintain the waters of said basin in a satisfactory condition, available for safe and satisfactory use as public and industrial water supplies after reasonable treatment, suitable for recreational usage, capable of maintaining fish and other aquatic life, free from unsightly or malodorous nuisances due to floating solids or sludge deposits and adaptable to such other uses as may be provided by the comprehensive plan.*

5.4 Enforcement. *The commission may, after investigation and hearing, issue an order or orders upon any person or public or private corporation, or other entity, to cease the discharge of sewage, industrial or other waste into waters of the basin which it determines to be in violation of such rules and regulations as it shall have adopted for the prevention and abatement of pollution. Any such order or orders may prescribe the date, including a reasonable time for the construction of any necessary works, on or before which such discharge shall be wholly or partially discontinued, modified or treated, or otherwise conformed to the requirements of such rules and regulations. Such order shall be reviewable in any court of competent jurisdiction. The courts of the signatory parties shall have jurisdiction to enforce against any person, public or private corporation, or other entity, any and all provisions of this Article or of any such order.* The commission may bring an action in its own name in any such court of competent jurisdiction to compel compliance with any provision of this Article, or any rule or regulation issued pursuant thereto or of any such order, according to the practice and procedure of the court.

Delaware River Basin Compact, Pub. L. 87-328, 75 Stat. 688 (1961). See INTERNATIONAL GROUNDWATER LAW (L. Teclaff & A. Utton eds. 1981).

without, however, giving the Commission a supranational character. It is desirable that the Commission would first of all formulate a general plan, and this is generally the task of international bodies even with weak advisory powers.

Classification and setting of standards are powers given to the Delaware River Basin Commission<sup>93</sup> (but contrast the Susquehanna Commission, which has weaker powers).<sup>94</sup> The Lake Lemman Convention of 1962, Art. 3,<sup>95</sup> provides for the drafting of regulations, and the Franco-Swiss Genevese Aquifer Arrangement of 1977, Art. 16,<sup>96</sup> for classification and standard setting. In the Great Lakes Agreement of 1978<sup>97</sup> the Commission has weaker powers, but the General and Specific Objectives in that treaty are a form of classification, as are the limited use zones. The EEC directives<sup>98</sup> all have standards and lists of polluting substances.

The importance of classification is shown by the protection of drinking water. One kind of classification is the "sole source" if it is the sole or principal drinking water source for an area. Such designated protection zones should include, if possible, the entire area of an aquifer shared by two or more states or at least that part of it in which activity in one state might cause pollution in another state or states.

Zero pollution may be the ideal objective, but it would be hard to achieve and may not be necessary. It is now generally understood, however, that toxic pollutants have to be more stringently controlled than other pollutants, and this is recognized in surface water provisions as, e.g., in the Great Lakes Agreement of 1978.<sup>99</sup> It is even more important for groundwater because of the enduring nature of such pollution, and the EEC Council Directive of 1979 on the Protection of Groundwater Against Pollution Caused by Certain Substances<sup>100</sup> exemplifies the concern, with its Lists I and II of prohibited and limited discharges, similar to the "black" and "grey" lists in marine conventions.

Because groundwater pollution often originates on land with no actual water use involved, it was argued that the Commission should have the

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93. *Id.*

94. Susquehanna River Basin Compact, Pub. L. 91-575, 84 Stat. 1509 (1970). See INTERNATIONAL GROUNDWATER LAW, *supra* note 93.

95. Convention on Protection of Lake Lemman Waters Against Pollution, Nov. 16, 1962, France-Switzerland, O.E.C.D. 418 (1978).

96. Arrangement relating to the Franco-Swiss Genevese aquifer, Sept. 6, 1977, France-Switzerland. See INTERNATIONAL GROUNDWATER LAW, *supra* note 93.

97. Agreement on Great Lakes Water Quality, 1978, United States-Canada, 30 U.S.T. 1383, T.I.A.S. No. 9257.

98. Proposal for Council Directive on Water Pollution from Wood Pulp Mills (20 Jan. 1975). 18 O.J. Eur. Comm. (No. C 90) 2, 2.5 (1975).

99. *Supra* note 98, at Art. V.

100. Council Directive on the Protection of Groundwater against Pollution Caused by Dangerous Substances (17 Dec. 1979). O.J. Eur. Comm. (No. L 20) 43; 26.1 (1980).

power to establish protective zones in which land use is regulated to control the entry of pollutants. Land use concepts, such as the "limited use zone," should be employed, whereby specific contaminating activities such as waste disposal would be limited to specific areas so as to contain the most polluting activities within the smallest possible area and thereby isolate them from areas of natural recharge value.<sup>101</sup> The prospect of an international agency having land use responsibilities, however, caused considerable discomfort among the members of the Working Group. This touches the most sensitive nerves of territorial integrity. One participant said, "Be careful of intruding into the national territory" and "Are we going too far?"

The concepts of "limited use zones" and "sole source" are really counterparts to each other. The sole source designation excludes polluting activities from the vicinity of the source of drinking water, and limited use zones confines contaminating activities to limited areas. Limited use zones are provided for in the Great Lakes Agreement of 1978.<sup>102</sup> The Finland-Sweden Agreement of 1971 on Frontier Rivers<sup>103</sup> (which pertains to groundwater also) contains a list of factories and other installations which may not be constructed without specific permission. The concept of zones is well known in municipal law, e.g., the Swiss Federal Law of 1971,<sup>104</sup> which empowers the cantons to establish protective zones. An outstanding example nearer home is the Long Island 208 Plan,<sup>105</sup> which divides Nassau and Suffolk counties into eight management zones, each with its own water quality objectives and land use guidelines.

It should be noted, though, that most political bodies would be very reluctant to give up the power to regulate land use.<sup>106</sup> Unlike agreements concerning surface waters where contamination can have a direct and immediate effect on an economic system, the contamination of an aquifer from land use is not as readily observed, and does not *seem* as urgent. Therefore, there is less incentive for a Party to give up this planning power.

The necessity for monitoring and continued supervision goes without

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101. L. Teclaff & E. Teclaff, *supra* note 54, at 629.

102. *Supra* note 98, at Art. IV.

103. Agreement concerning Frontier Rivers, Dec. 15, 1971, Finland-Sweden, 825 U.N.T.S. 272 (1972).

104. Federal law on . . . pollution (Switzerland 1971). II Feuille federale 909 (1971).

105. § 208 of the U.S. Clean Water Act, 33 U.S.C. §§ 1251, 1288(b)(2)(G) (Act of June 30, 1948, ch. 758, Titles I-V, as added Oct. 18, 1972, Pub. L. No. 92-500 § 2, 86 Stat. 816 and Dec. 27, 1977, Pub. L. No. 95-217 §§ 39-41, 5, 91 Stat. 1581), gives states power to engage in area-wide planning for wastewater pollution control. See Tripp & Jaffe, *Preventing Groundwater Pollution: Toward a Coordinated Strategy to Protect Critical Recharge Zones*, 3 HARV. ENVTL. L. REV. 1, 43-46 (1979).

106. See ARSANJANI, INTERNATIONAL REGULATION OF INTERNAL RESOURCES: A STUDY OF LAW AND POLICY 61 (1981).

saying. Monitoring is expressly provided for in the following agreements and directives: Great Lakes Agreement of 1978, Art. VI(1)(m); Rhine Chlorides Convention of 1976, Art. 12; Franco Swiss Genevese Aquifer Arrangement, Art. 16; EED Titanium Dioxide Directive of 1978 (especially on crossfrontier pollution); EEC Drinking Water Directive of 1975, Art. 6; and EEC Groundwater Directive of 1979, Arts. 8, 9, and 16.

A contingency plan is provided for in the Great Lakes Agreement, Art. VI (1)(i); also in the U.S. Clean Water Act, revamped in the Superfund legislation (Comprehensive Environmental Response, Compensation and Liability Act of 1980).<sup>107</sup>

Cleanup is very important in groundwater pollution and is recognized as established in U. S. federal law for oil and hazardous pollution of surface waters. The Superfund legislation provides for financing not only of water cleanup, but also of contaminated land which may present a pollution hazard. The Superfund has already been used for the cleanup of groundwater contamination in several states.<sup>108</sup> Financial responsibility for defective operation of a groundwater recharge station is also established in the Franco-Swiss Genevese Aquifer Arrangement of 1977, Art. 18; and the Rhine Chlorides Convention of 1976, Art. 7, also provides for a financing plan, the cost of which is to be prorated among the Parties.

Enforcement is left to the contracting Parties in accordance with the general enforcement of provisions of this agreement. A similar arrangement is quite common in federal law, as in the U. S. Clean Water Act<sup>109</sup> and in the Swiss federal law on pollution of 1971, Art. 2.<sup>110</sup> It is also to be found in the EEC Council directives, which leave implementation to the member states, and in the Rhine Chlorides Convention of 1976, Arts. 3 and 12.

#### ARTICLE XI—PUBLIC HEALTH EMERGENCIES

- I. Upon a determination that there is an imminent or actual contamination of groundwater, the Commission may, after notification to the respective Governments, declare a public health emergency.
- II. On the basis of the declaration, which shall not last for more than \_\_\_\_ days, the Commission shall have authority to:

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107. Clean Water Act 33 U.S.C. §§ 1251, as amended by Comprehensive Environmental Response, Compensation and Liability Act of 1980, Pub. L. No. 96-483 (1981), 94 Stat. 2767 [codified at 42 U.S.C. §§ 9601-57 (Supp. V 1981)].

108. 42 U.S.C. § 9601 (1981). See Dycus, *Development of National Groundwater Protection Policy*, 11 ENVTL. AFFAIRS L. REV. 211, 265 (1984).

109. 33 U.S.C. § 1288 (1981).

110. Federal Law on Pollution FF 11 (1971) 909.

- A. investigate the area of imminent or actual contamination;
- B. alert the affected parts of the imminent or actual health danger; and
- C. undertake, in consultation with the Parties, all necessary measures to eliminate the imminent or actual health danger.

#### COMMENT ON ARTICLE XI

##### *National Standards of Public Health*

I. The problem of defining what constitutes a "public health emergency" caused by contamination of transboundary groundwater is best illustrated by examination of the double ambiguity over (a) what is an unacceptable level of "public health" and (b) when is the probability of a drop in the level of "public health" sufficiently serious to constitute an emergency.

Between nations there will invariably be differences as to what levels of general public health the respective populations find acceptable. These variations make the protection of transboundary groundwaters more difficult and complex. Public health measures cannot be unilaterally imposed. Therefore, where pollution in one nation will affect the public health of the citizens of another, as noted in Article X, there is a need for cooperative action. This is particularly so in emergency situations.

##### *Mutual Agreement as to What Constitutes an Emergency*

Because of the nature of groundwater, which makes the location and extent of contamination difficult to predict, the constant changes in the types of toxic and dangerous substances to which the environment is exposed, and our evolving knowledge of the relationships of exposure to health, it is difficult to anticipate in a treaty what will constitute an emergency upon which parties can agree absent the facts of specific situations. The water quality section, Article X, of the treaty calls for the development of background data on water quality and the designation of critical public health areas that, because of the nature and source of their groundwater, are particularly vulnerable. This emergency provision simply empowers the Commission to act quickly at times when speed is important in preventing irreversible or extreme damages. Cooperation in scooping up and containing contaminated soils immediately after a toxics spill may, for instance, prevent contamination from ever reaching groundwater. The immediate provision of the alternative sources of drinking water may prevent serious and widespread damage to health. This article is intended to provide authority to act quickly when there is agreement that such action is needed.

## ARTICLE XII—ADMINISTRATION

- I. Administration of transboundary groundwater use in that portion of a Transboundary Groundwater Conservation Area located within the territory of a Party to this agreement shall be within the jurisdiction and responsibility of that Party or its political subdivisions, as appropriate.
- II. The Commission shall monitor the measures undertaken by each Party to implement this agreement, including measures decided upon by the Commission.
- III. The Commission shall biennially conduct a review of the measures undertaken within each Party's territory and shall issue a biennial report containing its assessment of the adequacy and effectiveness of programs of use, protection and control of the Parties' shared groundwaters with particular attention to any Transboundary Groundwater Conservation Area. To that end each Party shall furnish the Commission through its National Section the relevant data and information on which it must base its report in accordance with the reporting scheme provided by the Commission.
- IV. After investigation, notice, and hearing the Commission is empowered to adopt, promulgate, and from time to time amend and repeal such rules, regulations, and standards as may be necessary within the scope of this agreement, which become binding on the Parties if not disapproved by one of the Governments within 180 days of issuance.
- V. The settlement of all disputes which may arise out of the observance, implementation, and interpretation of this agreement shall be entrusted to the Commission.

## COMMENT ON ARTICLE XII

The actual administration of transboundary groundwater uses within the territory of a Party would be under its jurisdiction and its appropriate political sub-divisions. This is designed to minimize impinging on the territorial integrity of the Parties. The United States Supreme Court in the equitable apportionment case of *Nebraska v. Wyoming* spoke in support of giving each State "full freedom of intrastate administration of her share of the water. . . ." and "internal administration for each of the States."<sup>111</sup>

The mandatory duties of the Commission are monitoring the actions of the Parties under the agreement and issuing biennial reports. Basic to the monitoring process of the Commission is the continuing acquisition

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111. 325 U.S. 589, 599 (1945).

of information obtained from the metering of wells. "There must be a system of measurement of withdrawals from wells. . . . Records must be kept of withdrawals over a period of time,"<sup>112</sup> and the Commission must be able to ensure that withdrawals do not exceed allocated amounts in the Transboundary Groundwater Conservation Areas which are based on calculated mining programs or a determined sustained yield in terms of water quality and water quantity.<sup>113</sup>

The annual report would establish, among other things, whether a Party is meeting its responsibilities under this Agreement. These mandatory duties would seek to ensure that each Party lives within the total water budget allocated to it, whether allocated by uses or volume. Paragraph IV gives the Commission the necessary power to promulgate rules after investigation, notice, and hearing. The idea of notice and hearing at the international level is somewhat uncommon, but does allow the input of interested parties which can be useful in formulating policy. This follows the example of the Delaware River Basin Compact which provides in Section 5.2:

After such investigation, notice and hearing the commission may adopt and from time to time amend and repeal rules, regulations and standards to control such future pollution and abate existing pollution, and to require such treatment of sewage, industrial or other waste within a time reasonable for the construction of the necessary works, as may be required to protect the public health or to preserve the waters of the basin for uses in accordance with the comprehensive plan.

Paragraph IV provides that the rules and regulations of the Commission shall become effective and binding on the Parties if not disapproved by one Party within 180 days of issuance. If a nation has left regulation up to its political subdivisions, this type of consent might not be sufficient and difficult to achieve. Some commentators felt that "180 days is inadequate."

Other sections of this Article which would spell out procedures to be used in the event of irreconcilable differences between the members of the Commission might also be desirable. Perhaps other powers of the Commission pertaining more explicitly to groundwater, e.g., power to sue, should be enumerated (see Susquehanna River Basin Compact, Sec. 5.3.(b)). As we have seen in the comments to Article X, *supra*, the Delaware River Basin Compact gives the Commission itself extensive enforcement power in Section 5.4.

The challenges to enforcement should not be underestimated. Cummings illustrates two difficulties in limiting groundwater use with an

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112. Clark, *supra* note 42, at 159.

113. *Id.*

example from the Costa de Hermosillo, located in the northern state of Sonora, Mexico. The Costa de Hermosillo is one of Mexico's most productive irrigation districts, and its sole source of water for irrigation in groundwater is a coastal aquifer. Years of groundwater mining resulted in falling water tables, which, in turn, resulted in the intrusion of seawater into the aquifer.

In an effort to limit the destructive effects of seawater intrusion, the Water Resources Ministry (Secretaria de Recursos Hidraulicos, SRH) limited each farmer's pumping rate and, to enforce this limit, required the installation of meters on all pumps. A few years passed, water tables continued to fall, and seawater intrusion continued despite apparent "compliance" with SRH limits on groundwater use: innovative farmers had discovered myriad of ways of bypassing meters. By the mid-1970 the seawater intrusion problem had worsened considerably, thereby forcing the SRH to adopt relatively dramatic management/enforcement policies. Exorbitant fines were imposed on pumping in excess of limits. For enforcement, *three* measures of water use were devised: the amount recorded on the meter; the amount implied by electricity use (each meter was put on a separate electric meter); and the amount implied by the number of acres irrigated by the farmer. Pump limits were then compared with that amount of water implied by the higher of those three measures.<sup>114</sup>

Cummings concludes that this example illustrates two aspects of trans-boundary groundwaters. First, users in an unregulated environment have no incentives for conserving the common property resource stock—private incentives are to pump water so long as the value created by water exceeds pumping costs. He suggests this can be corrected through economic incentives such as pumping charges under a scarcity or corrective tax concept. He concludes secondly, that the Commission must have regulatory/enforcement powers that apply to all of the numerous individual pumpers, and it must monitor water use of all users.<sup>115</sup>

#### ARTICLE XIII—EXISTING RIGHTS AND OBLIGATIONS

Nothing in this Agreement shall be deemed to diminish the rights and obligations of the Parties as set forth in existing agreements between the Parties.

#### ARTICLE XIV—AMENDMENT

This Agreement may be amended by agreement of the Parties.

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114. Muys, Cummings & Burke, *supra* note 18, at 151.

115. *Id.*



## ARTICLE XV—ENTRY INTO FORCE

This Agreement shall enter into force upon signature by the duly authorized representatives of the Parties.

## ARTICLE XVI—RESOLUTION OF DISPUTES

## COMMENT ON ARTICLE XVI

I. The question of dispute resolution is of particular importance and is one that has to be tailored to the specific needs of the particular parties.

Therefore, this article flags the need to address the question, but leaves open the design of specific procedures since they need to be considered in the context of specific settings. Dispute resolution is "particularly urgent" because the lack of effective procedures may contribute to "delay of important projects, suspension of expensive works under construction . . . and inability to deal with very real hazards."<sup>116</sup>

Due to the elemental nature of water to the well-being of all human beings, disputes over water use should be settled in a quick and efficient manner. This point is emphasized in the Third Report to the International Law Commission on the Law of the Non-navigational Uses of International Watercourses.<sup>117</sup> Numerous examples of specific methods are provided in the report.

II. Some agreements provide a special procedure to negotiate a settlement to a dispute.

The Danube Navigation Convention of 1948 provides for the creation of a special body composed of one representative of each party and one additional member chosen by the President of the Commission.<sup>118</sup>

B. Another alternative is the appointment of an umpire on either a permanent or ad hoc basis. One agreement provides for a permanent umpire and a deputy, with special arbitrators who are appointed to handle specific disputes.<sup>119</sup>

C. The Helsinki Rules contain a model for a conciliation commission.<sup>120</sup>

116. Third Report on the Law of Non-Navigational Uses of International Watercourses. Int'l L. Comm'n, 34 U.N. GAOR; UN Doc. A/CN.4/348, at paras. 468-94 (1981).

117. *Id.*

118. Art. 45, 33 U.N.T.S. 196; TEXTS & TREATY PROVISIONS, *supra* note 28, at 420, 422.

119. Art. 70-72, Frontier Treaty between the Kingdom of the Netherlands and the Federal Republic of Germany of 8 April 1960, TEXT & TREATY PROVISIONS, *supra* note 28, at 757, 761-62.

120. Report of the Committee on the Uses of the Waters of International Rivers (London, Int'l Law Association, 1967).

MODEL RULES FOR THE CONSTITUTION OF THE  
CONCILIATION COMMISSION FOR THE SETTLEMENT OF A DISPUTE

*Article I*

The members of the Commission, including the President, shall be appointed by the States concerned.

### III. The Third Report to the International Commission succinctly surveys international practice:

When an accommodation is not achieved at the operating level, higher review must take place. This review can still be by water resources professionals, such as the members, or deputies, of the system States' international watercourse commission. Such arrangements are not uncommon in current system State practice.

An additional "professional" review may be obtained by reference of the question to a technical commission of inquiry. . . . As a further device to forestall the matter's hardening into a formal dispute between the parties, one or more additional "echelons" of review may be built into the system States' arrangements, such as a diplomatic commission specially constituted for the purpose. System States have, in particular agreements, employed a variety of accommodation mechanisms. Belgium and Germany combined diplomatic and technical representation in one joint administrative commission for the purpose of accommodating differences. Such a separate forum could be designated to function prior to the traditional "referral to the Governments," which may mean that the matter will then become a formal dispute.

After "referral to the Governments" of any difference that has not been resolved by the institutional machinery set up by the system

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#### *Article II*

If the States concerned cannot agree on these appointments, each State shall appoint two members. The members thus appointed shall choose one more member who shall be the President of the Commission. If the appointed members do not agree, the member-president shall be appointed, at the request of any State concerned, by the President of the International Court of Justice, or, if he does not make the appointment, by the Secretary-General of the United Nations.

#### *Article III*

The membership of the Commission should include persons who, by reason of their special competence, are qualified to deal with disputes concerning international drainage basins.

#### *Article IV*

If a member of the Commission abstains from performing his office or is unable to discharge his responsibilities, he shall be replaced by the procedure set out in article I or article II of this annex, according to the manner in which he was originally appointed. If, in the case of:

- (1) A member originally appointed under article I, the States fail to agree as to a replacement, or
  - (2) A member originally appointed under article II, the State involved fails to replace the member,
- a replacement shall be chosen, at the request of any State concerned, by the President of the International Court of Justice or, if he does not choose the replacement, by the Secretary-General of the United Nations.

#### *Article V*

In the absence of agreement to the contrary between the parties, the conciliation Commission shall determine the place of its meetings and shall lay down its own procedure.

States for the handling of their shared water resources affairs, the usual next step is direct negotiation between the parties at the political level. The project or programme at issue may be of such importance that even at this stage it may be prudent for the system States to arrange for some or all operations to continue, pending final resolution of the matter.

Failing settlement by high-level negotiation, the parties are, of course, free to take the dispute to the International Court of Justice. The International Court of Justice may in appropriate circumstances indicate provisional measures, which could serve the parties' interests in avoiding delay or disruption of critical water-related activities, or preclude irreversible harm. The parties are also free to refer the matter for adjudication to any other appropriate tribunal.

The fundamental requirement, in accordance with the Charter and the rules of contemporary international law, is settlement by peaceful means. In addition to resolution by means of negotiation, enquiry and adjudication, the parties may choose, among other peaceful means, conciliation, arbitration or the assistance of regional agencies or arrangements.<sup>121</sup>

IN WITNESS WHEREOF, the undersigned Plenipotentiaries, being duly authorized, have signed this Agreement.

DONE AT \_\_\_\_\_, this \_\_\_\_ day of \_\_\_\_\_, one thousand nine hundred and \_\_\_\_\_.

\_\_\_\_\_

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121. *Third Report*, *supra* note 117, at 324.

**APPENDIX III**

**COLORADO RIVER SALINITY - MINUTE 242**

## MEXICO

### Colorado River Salinity

*Agreement confirming minute no. 242 of the International  
Boundary and Water Commission, United States and Mexico.  
Effected by exchange of notes  
Signed at México and Tlatelolco August 30, 1973;  
Entered into force August 30, 1973.*

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*The American Ambassador to the Mexican Secretary of Foreign Relations*

EMBASSY OF THE UNITED STATES  
OF AMERICA

No. 1231

MEXICO, D.F., August 30, 1973

EXCELLENCY:

I have the honor to refer to Minute No. 242 of the International Boundary and Water Commission signed August 30, 1973, entitled "Permanent and Definitive Solution to the International Problem of the Salinity of the Colorado River". Point 10 of that Minute, consistent with the provisions of Article 24 (d) and Article 25 of the Treaty of February 3, 1944,<sup>1</sup> provides that it shall be expressly approved by both Governments.

Accordingly, if the Government of the United Mexican States is in agreement, I propose that the present note and Your Excellency's note in reply to the same effect, constitute an agreement between the Government of the United States of America and the Government of the United Mexican States confirming the provisions of Minute No. 242, which shall enter into force upon the date of these notes, subject, however, to the conditions of point 10 of said Minute.

Accept, Excellency, the assurances of my highest consideration.

ROBERT H. McBRIDE

His Excellency  
EMILIO O. RABASA,  
*Secretary of Foreign Relations,  
Mexico, D.F.*

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<sup>1</sup> TS 994; 59 Stat. 1219.

*The Mexican Secretary of Foreign Relations to the American Ambassador*

ESTADOS UNIDOS MEXICANOS  
SECRETARIA DE RELACIONES EXTERIORES  
MEXICO

Núm. 11154

TlATELOLCO, D. F., a 30 de agosto de 1973.

SEÑOR EMBAJADOR:

Tengo el honor de referirme a la atenta nota de Vuestra Excelencia número 1234, fechada el día de hoy, cuyo texto vertido al español es el siguiente:

"Tengo el honor de hacer referencia al Acta número 242 de la Comisión Internacional de Límites y Aguas firmada el 30 de agosto de 1973, intitulada "Solución Permanente y Definitiva del Problema Internacional de la Salinidad del Río Colorado". El punto 10 de dicha Acta, de conformidad con lo estipulado en el Artículo 24 (d) y el Artículo 25 del Tratado del 3 de febrero de 1944, estipula que deberá ser expresamente aprobada por ambos Gobiernos.

Por lo tanto, si el Gobierno de los Estados Unidos Mexicanos está de acuerdo, propongo que la presente nota y la nota de respuesta de Vuestra Excelencia constituyan un Acuerdo entre el Gobierno de los Estados Unidos de América y el Gobierno de los Estados Unidos Mexicanos confirmando las estipulaciones del Acta 242, la cual entrará en vigor en la fecha de dichas notas, sujeto, sin embargo, a las condiciones del punto 10 del Acta mencionada".

En respuesta, tengo el honor de comunicar a Vuestra Excelencia que el Gobierno de los Estados Unidos Mexicanos está de acuerdo con los términos de la nota que transcribo y, en consecuencia, considera que dicha nota y la presente constituyen un acuerdo entre nuestros dos Gobiernos, el cual entra en vigor el día de hoy.

Aprovecho la oportunidad para renovar a Vuestra Excelencia el testimonio de mi más alta y distinguida consideración.

E. O. RABASA

Excelentísimo señor

ROBERT HENRY MCBRIDE

*Embajador de los Estados Unidos de America,  
Ciudad.*

TIAS 7708

*Translation*

UNITED MEXICAN STATES  
DEPARTMENT OF FOREIGN RELATIONS  
MEXICO

No. 11154

TLATELOLCO, D.F., *August 30, 1973*

MR. AMBASSADOR:

I have the honor to refer to Your Excellency's note No. 1234, dated today, the text of which, translated into Spanish, reads as follows:

[For the English language text, see p. 1968.]

In reply, I have the honor to inform Your Excellency that the Government of the United Mexican States concurs in the terms of the note transcribed above, and accordingly it considers that the aforesaid note and this reply thereto shall constitute an agreement between our two Governments which shall enter into force today.

I take this opportunity to renew to Your Excellency the assurance of my highest and most distinguished consideration.

E. O. RABASA

His Excellency  
ROBERT HENRY MCBRIDE,  
*Ambassador of the United States  
of America,  
Mexico, D.F.*

TIAS 7703

INTERNATIONAL BOUNDARY AND  
WATER COMMISSION, UNITED  
STATES AND MEXICOMexico, D.F.,  
August 30, 1973.*Minute No. 242*PERMANENT AND DEFINITIVE  
SOLUTION TO THE INTER-  
NATIONAL PROBLEM OF THE  
SALINITY OF THE COLORADO  
RIVER.

The Commission met at the Secretariat of Foreign Relations, at Mexico, D.F., at 5:00 p.m. on August 30, 1973, pursuant to the instructions received by the two Commissioners from their respective Governments, in order to incorporate in a Minute of the Commission the joint recommendations which were made to their respective Presidents by the Special Representative of President Richard Nixon, Ambassador Herbert Brownell, and the Secretary of Foreign Relations of Mexico, Lic. Emilio O. Rabasa, and which have been approved by the Presidents, for a permanent and definitive solution of the international problem of the salinity of the Colorado River, resulting from the negotiations which they, and their technical and juridical advisers, held in June, July and August of 1973, in compliance with the references to this matter contained in the Joint Communiqué of Presidents Richard Nixon and Luis Echeverría of June 17, 1972. [1]

COMISION INTERNACIONAL DE  
LIMITES Y AGUAS ENTRE MEXICO  
Y ESTADOS UNIDOSMéxico, D.F.,  
30 de agosto de 1973.*Acta Num. 242*SOLUCION PERMANENTE Y DE-  
FINITIVA DEL PROBLEMA IN-  
TERNACIONAL DE LA SALINIDAD  
DEL RIO COLORADO.

La Comisión se reunió en la Secretaría de Relaciones Exteriores, en México, D.F., a las 17:00 horas del 30 de agosto de 1973, en cumplimiento de las instrucciones que recibieron los dos Comisionados de sus respectivos Gobiernos, a fin de incorporar en una Acta de la Comisión las recomendaciones conjuntas que hicieron a sus respectivos Presidentes el Secretario de Relaciones Exteriores de México, Lic. Emilio O. Rabasa, y el Representante Especial del Presidente Richard Nixon, Embajador Herbert Brownell, y que fueron aprobadas por los Presidentes, para una solución permanente y definitiva del problema internacional de la salinidad del Río Colorado, como resultado de las negociaciones que, con sus asesores técnicos y jurídicos, tuvieron en junio, julio y agosto de 1973, en cumplimiento de lo que sobre esta materia expresaron los Presidentes Luis Echeverría y Richard Nixon en su Comunicado Conjunto del 17 de junio de 1972.

<sup>1</sup> *Department of State Bulletin*, July 10, 1972, p. 66.



Accordingly, the Commission submits for the approval of the two Governments the following

**RESOLUTION:**

1. Referring to the annual volume of Colorado River waters guaranteed to Mexico under the Treaty of 1944, of 1,500,000 acre-feet (1,850,234,000 cubic meters):

a) The United States shall adopt measures to assure that not earlier than January 1, 1974, and no later than July 1, 1974, the approximately 1,360,000 acre-feet (1,677,545,000 cubic meters) delivered to Mexico upstream of Morelos Dam, have an annual average salinity of no more than 115 p.p.m.  $\pm$  30 p.p.m. U.S. count (121 p.p.m.  $\pm$  30 p.p.m. Mexican count) over the annual average salinity of Colorado River waters which arrive at Imperial Dam, with the understanding that any waters that may be delivered to Mexico under the Treaty of 1944 by means of the All American Canal shall be considered as having been delivered upstream of Morelos Dam for the purpose of computing this salinity.

b) The United States will continue to deliver to Mexico on the land boundary at San Luis and in the limitrophe section of the Colorado River downstream from Morelos Dam approxi-

Consecuentemente, la Comisión somete a la aprobación de los dos Gobiernos la siguiente

**RESOLUCION:**

1. Con referencia al volumen anual de las aguas del Río Colorado garantizados a México por el Tratado de 1944, de 1,850,234,000 metros cúbicos (1,500,000 acres-pies):

a) Los Estados Unidos adoptarán medidas para dar seguridades de que no antes del 1° de enero de 1974, y no después del 1° de julio de 1974, los 1,677,545,000 metros cúbicos (1,360,000 acres-pies), aproximadamente, que se entregan a México aguas arriba de la Presa Morelos, tengan una salinidad media anual que no sobrepase en más de 121 p.p.m.  $\pm$  30 p.p.m., normas de México, (115 p.p.m.  $\pm$  30 p.p.m., normas de los Estados Unidos), a la salinidad media anual de las aguas del Río Colorado que lleguen a la Presa Imperial, entendido que las aguas que se entreguen a México por conducto del Canal Todo Americano de conformidad con el Tratado de 1944, se considerarán como si se hubieran entregado aguas arriba de la Presa Morelos para el propósito de calcular esta salinidad.

b) Los Estados Unidos continuarán entregando a México en la línea divisoria terrestre en San Luis y en el tramo limítrofe del Río Colorado, aguas abajo de la Presa Morelos, aproxima-

mately 140,000 acre-feet (172,689,000 cubic meters) annually with a salinity substantially the same as that of the waters customarily delivered there.

c) Any decrease in deliveries under point 1(b) will be made up by an equal increase in deliveries under point 1(a).

d) Any other substantial changes in the aforementioned volumes of water at the stated locations must be agreed to by the Commission.

e) Implementation of the measures referred to in point 1(a) above is subject to the requirement in point 10 of the authorization of the necessary works.

2. The life of Minute No. 241<sup>1</sup> shall be terminated upon approval of the present Minute. From September 1, 1973, until the provisions of point 1(a) become effective, the United States shall discharge to the Colorado River downstream from Morelos Dam volumes of drainage waters from the Wellton-Mohawk District at the annual rate of 118,000 acre-feet (145,551,000 cubic meters) and substitute therefor an equal volume of other waters to be discharged to the Colorado River above Morelos Dam; and, pursuant to the decision of President Echeverría expressed in the

damente 172,789,000 metros cúbicos (140,000 acres-pies) anuales, con una salinidad substancialmente igual a la de las aguas habitualmente entregadas ahí.

c) Cualquiera disminución en las entregas a que se refiere el apartado b) de este punto 1 será compensada por un aumento igual en las entregas a que se refiere el apartado a) de este punto 1.

d) Cualesquiera otros cambios substanciales en los volúmenes de agua antedichos en los lugares indicados deberán ser convenidos por la Comisión.

e) La ejecución de las medidas a que se refiere arriba el apartado a), está sujeta a los requisitos de la autorización de las obras necesarias a que se refiere el punto 10.

2. La vigencia del Acta 241 se dará por concluida con la aprobación de la presente Acta. Desde el 1° de septiembre de 1973 hasta que se pongan en vigor las disposiciones del apartado a) del punto 1, los Estados Unidos descargarán al Río Colorado, aguas abajo de la Presa Morelos, volúmenes de las aguas de drenaje del Distrito de Wellton-Mohawk a razón de 145,551,000 metros cúbicos (118,000 acres-pies) anuales y los sustituirán con volúmenes iguales de otras aguas que serán descargados al Río Colorado aguas arriba de la Presa Morelos; y, de conformidad con la decisión

<sup>1</sup> TIAS 7404, 7696; 23 UST 1286; *ante*, p. 1811.

Joint Communiqué of June 17, 1972, the United States shall discharge to the Colorado River downstream from Morelos Dam the drainage waters of the Wellton-Mohawk District that do not form a part of the volumes of drainage waters referred to above, with the understanding that this remaining volume will not be replaced by substitution waters. The Commission shall continue to account for the drainage waters discharged below Morelos Dam as part of those described in the provisions of Article 10 of the Water Treaty of February 3, 1944.

3. As a part of the measures referred to in point 1(a), the United States shall extend in its territory the concrete-lined Wellton-Mohawk bypass drain from Morelos Dam to the Arizona-Sonora international boundary, and operate and maintain the portions of the Wellton-Mohawk bypass drain located in the United States.

4. To complete the drain referred to in point 3, Mexico, through the Commission and at the expense of the United States, shall construct, operate and maintain an extension of the concrete-lined bypass drain from the Arizona-Sonora international boundary to the Santa Clara Slough of a capacity of 353 cubic feet (10 cubic

del Presidente Echeverría, expresada en el Comunicado Conjunto del 17 de junio de 1972, los Estados Unidos descargarán al Río Colorado, aguas abajo de la Presa Morelos, las aguas de drenaje del Distrito de Wellton-Mohawk que no forman parte de los volúmenes de agua de drenaje arriba citados, entendido que ese volumen restante no será reemplazado por otras aguas de sustitución. La Comisión continuará contabilizando las aguas de drenaje que se descarguen aguas abajo de la Presa Morelos como parte de las que se describen en las estipulaciones del Artículo 10 del Tratado de Aguas del 3 de febrero de 1944.

3. Como parte de las medidas a que se refiere el apartado a) del punto 1, los Estados Unidos prolongarán en su territorio el dren de desvío de Wellton-Mohawk, revestido de concreto, desde la Presa Morelos hasta la línea divisoria internacional entre Sonora y Arizona, y operarán y mantendrán las partes del dren de desvío de Wellton-Mohawk ubicadas en los Estados Unidos.

4. Para completar el dren a que se refiere el punto 3, México, por conducto de la Comisión, y a expensas de los Estados Unidos, construirá, operará y mantendrá una prolongación del dren de desvío, revestido de concreto, desde el límite internacional entre Sonora y Arizona hasta el Estero de Santa Clara, con

meters) per second. Mexico shall permit the United States to discharge through this drain to the Santa Clara Slough all or a portion of the Wellton-Mohawk drainage waters, the volumes of brine from such desalting operations in the United States as are carried out to implement the Resolution of this Minute, and any other volumes of brine which Mexico may agree to accept. It is understood that no radioactive material or nuclear wastes shall be discharged through this drain, and that the United States shall acquire no right to navigation, servitude or easement by reason of the existence of the drain, nor other legal rights, except as expressly provided in this point.

5. Pending the conclusion by the Governments of the United States and Mexico of a comprehensive agreement on groundwater in the border areas, each country shall limit pumping of groundwaters in its territory within five miles (eight kilometers) of the Arizona-Sonora boundary near San Luis to 160,000 acre-feet (197,358,000 cubic meters) annually.

6. With the objective of avoiding future problems, the United States and Mexico shall consult with each other prior to undertaking any new development of either the surface

una capacidad de 10 metros cúbicos (353 pies cúbicos) por segundo. México permitirá a los Estados Unidos descargar por este dren al Estero de Santa Clara todas o una parte de las aguas de drenaje de Wellton-Mohawk, los volúmenes de salmuera resultantes de las operaciones de desalación que se hagan en los Estados Unidos para cumplir con la Resolución de esta Acta, y cualesquiera otros volúmenes de salmuera que México convenga en aceptar. Queda entendido que no se descargarán por este dren materiales radioactivos ni desperdicios nucleares, y que los Estados Unidos no adquirirán derechos de navegación, ni a servidumbres de cualquiera índole a causa de la existencia del dren, ni otros derechos legales, excepto los que expresamente se citan en este punto.

5. Mientras se llega a la celebración por los Gobiernos de México y los Estados Unidos de un convenio de alcance general sobre aguas subterráneas en las áreas fronterizas, cada país limitará el bombeo de las aguas subterráneas en su propio territorio, dentro de los 8 kilómetros (5 millas) de la línea divisoria entre Sonora y Arizona y cerca de San Luis, a 197,358,000 metros cúbicos (160,000 acres-pies) anuales.

6. A fin de evitar problemas futuros, México y los Estados Unidos se consultarán recíprocamente antes de emprender, en el área fronteriza de sus respectivos territorios,

TIAS 7708

or the groundwater resources, or undertaking substantial modifications of present developments, in its own territory in the border area that might adversely affect the other country.

7. The United States will support efforts by Mexico to obtain appropriate financing on favorable terms for the improvement and rehabilitation of the Mexicali Valley. The United States will also provide nonreimbursable assistance on a basis mutually acceptable to both countries exclusively for those aspects of the Mexican rehabilitation program of the Mexicali Valley relating to the salinity problem, including tile drainage. In order to comply with the above-mentioned purposes, both countries will undertake negotiations as soon as possible.

8. The United States and Mexico shall recognize the undertakings and understandings contained in this Resolution as constituting the permanent and definitive solution of the salinity problem referred to in the Joint Communiqué of President Richard Nixon and President Luis Echeverría dated June 17, 1972.

9. The measures required to implement this Resolution shall be undertaken and completed at the earliest practical date.

10. This Minute is subject to the express approval of both

cualquier nuevo desarrollo de aguas superficiales o de aguas subterráneas, o de emprender modificaciones substanciales de sus desarrollos actuales, que pudieran afectar adversamente al otro país.

7. Los Estados Unidos apoyarán las gestiones de México para obtener financiamiento apropiado y en términos favorables para el mejoramiento y rehabilitación del Valle de Mexicali. Los Estados Unidos también proporcionarán asistencia no reembolsable, sobre una base mutuamente aceptable a ambos países, exclusivamente para aquellos aspectos del programa mexicano de rehabilitación del Valle de Mexicali relacionados con el problema de la salinidad, incluyendo drenaje tubular. A fin de cumplir con los propósitos arriba mencionados, ambos países emprenderán negociaciones tan pronto como sea posible.

8. México y los Estados Unidos reconocerán que las medidas y entendimientos contenidos en esta Resolución constituyen la solución permanente y definitiva del problema de la salinidad a que se refiere el Comunicado Conjunto del Presidente Luis Echeverría y del Presidente Richard Nixon, fechado el 17 de junio de 1972.

9. Las medidas requeridas para poner en práctica esta Resolución serán emprendidas y terminadas en la fecha más próxima factible.

10. La presente Acta requiere la aprobación específica

Governments by exchange of Notes. It shall enter into force upon such approval; provided, however, that the provisions which are dependent for their implementation on the construction of works or on other measures which require expenditure of funds by the United States, shall become effective upon the notification by the United States to Mexico of the authorization by the United States Congress of said funds, which will be sought promptly.

Thereupon, the meeting adjourned.

J. F. FRIEDKIN  
*Commissioner of the  
United States*

D HERRERA J  
*Commissioner  
of Mexico*

F H SACKSTEDER JR  
*Secretary of the United States  
Section*

FERNANDO RIVAS S  
*Secretary of the  
Mexican Section*

de ambos Gobiernos por canje de notas. Entrará en vigor en la fecha de su aprobación; entendido, sin embargo, que las disposiciones cuyo cumplimiento depende de la construcción de obras o de otras medidas que requieran la erogación de fondos por parte de los Estados Unidos, entrarán en vigor al notificar los Estados Unidos a México la autorización del Congreso de los Estados Unidos para disponer de dichos fondos, la cual será procurada prontamente.

Con lo anterior se levantó la sesión.

D HERRERA J  
*Comisionado de México*

J. F. FRIEDKIN  
*Comisionado de los  
Estados Unidos*

FERNANDO RIVAS S  
*Secretario de la Sección  
de México*

F H SACKSTEDER JR  
*Secretario de la Sección  
de los Estados Unidos*

## **APPENDIX IV**

### **"PROTECTING QUITOBAQUITO: LEGAL STRATEGIES"**

## PROTECTING QUITOBAQUITO A SURVEY OF LEGAL TOOLS AND STRATEGIES

### PHYSICAL SETTING

Quitobaquito Springs<sup>1</sup> are natural outcroppings of warm, slightly saline groundwater<sup>2</sup> near the southern boundary of Organ Pipe Cactus National Monument (ORPI)<sup>3</sup> in southern Arizona. (See map). On an arid hillside studded with saguaro cacti, two main springs produce approximately 33 gallons of water per minute. The water flows a short distance downhill to a two acre pond surrounded by bullrushes, Gooding willows, and Fremont cottonwoods.<sup>4</sup> The present pond was created from a smaller natural pond when early settlers dammed more of the flow. It is less than 100 meters from the Mexican border. Such large springs are rare in the Sonoran desert, where summer daytime temperatures can exceed 43x C (110 x F) and evaporation rates are extraordinarily high.

An indigenous, endangered species of desert pupfish, *Cyrinodon macularius*, lives in the Quitobaquito pond. Other species of the minnow-like pupfish inhabit other isolated springs throughout the desert southwest. Presumably all of the surviving species are descended from a common ancestor that once lived in a shallow, inland sea that extended over most of the region. Although of great scientific interest, pupfish have no known economic value. The Quitobaquito pupfish occurs in only one other locality in the United States - in Imperial County, California -- and in a few desert springs in Mexico.

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<sup>1</sup>The name "Quitobaquito" has been variously interpreted as a corruption of a Spanish phrase meaning "get away little cow," a corruption of a Papago phrase meaning "place by the lake where the crowfoot grama grass grows," or a corrupt combination of Spanish and Papago meaning "small house spring." Irish, Place Names of Organ Pipe Cactus National Monument, unpublished manuscript on file at the Organ Pipe Cactus National Monument library (undated).

<sup>2</sup>The temperature of the water averages 23x C = 74x F; the salinity 695 ppm compared to 500 ppm in typical city water.

<sup>3</sup>Areas administered by the National Park Service include national parks, national monuments, national recreation areas, and national historical parks. Although national parks and monuments are administered in the same manner, parks are created only by congressional legislation, whereas monuments may be created by Presidential proclamation on April 13, 1937. It's official acronym, consisting of the first two letters of the first two words in it's name, is ORPI.

<sup>4</sup>A swath of grass marks it's course downhill. In an effort to decrease carriage losses due to seepage, the National Park Service recently cement-lined the water's main channel.



Although Quitobaquito Springs and pond appear to isolated in the middle of the Sonoran desert, they are hydrologically connected to the Sonoyta River in Mexico,<sup>5</sup> which drains the desert mountains in this corner of northern Sonoran. The Sonoyta River, a seasonal, intermittent stream, flows to the west, through the town of Sonoyta on the international border, before turning south and emptying into the Gulf of California near Puerto Penasco.<sup>6</sup> (See map.)

The groundwater in the vicinity of Quitobaquito evidently gathers in the Puerto Blanco and Bates Mountains in the monument and flows southwest, emerging to the surface along a geologic fault at the southeast end of the Quitobaquito Hills. (See map.) The water at the Quitobaquito pond that is not lost to evapotranspiration seeps back into the ground and probably continues flowing in southwesterly direction towards the Sonoyta River. In addition to being hydrologically "upstream" from the Sonoyta River, the springs are at a slightly higher elevation.

#### INTRA-NATIONAL THREATS TO THE QUITOBAQUITO SPRINGS AND POND

Quitobaquito is located in the southern central part of the monument, which in turn is surrounded, on the United States side of the border at least, by other federal land -- the Papago Indian Reservation to the east and the Cabeza Prieta National Wildlife Refuge to the west and northwest. The closest non-federal land is directly north of the park, more than twenty-five miles from the springs. Given that the Puerto Blanco and Bates Mountains constitute the local recharge zone and mark the northern boundary of the aquifer, the springs probably will not be threatened by activities in the U.S. outside of the monument. In order to discuss the current state of the law regarding the protection of water resources on federal lands, however, we can hypothesize a situation in which the springs and pond are being impacted by groundwater pumping outside of the monument.

#### INTERNATIONAL THREATS

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<sup>5</sup>Carta Hydrologica de Aguas Subterraneas, Puerto Penasco (#H12-1), pub. by Secretaria de programaci'n y presupuesto (1981) (available for reference in Zimmerman Library Map Room, University of New Mexico, Albuquerque, New Mexico). See also Annual Summary of Ground-Water Conditions in Arizona, Spring 1984 to Spring 1985, pub. by U.S. Geological Survey (1985) (also available for reference in Zimmerman Library Map Room, University of New Mexico, Albuquerque, New Mexico).

<sup>6</sup>Carta Hydrologica de Aguas Superficiales, Puerto Penasco (#H12-1), pub. by Secretaria de programaci'n y presupuesto (1981) (available for reference in Zimmerman Library Map Room, University of New Mexico, Albuquerque, New Mexico).

In contrast to the relatively pristine and protected environment on the U.S. side of the border, the Sonoyta River valley in Mexico is undergoing a period of rapid population growth and agricultural development heavily dependent on the pumping of groundwater. Although still small compared to the population of other Mexican border cities like Tijuana, San Luis Rio Colorado, and Nogales, the population of Sonoyta has doubled in the last fifteen years and now may be as high as 15,000.<sup>7</sup> The agricultural projects are mostly small, privately owned ventures, but reportedly one well can pump 2,000 gallons per minute,<sup>8</sup> and many of the crops being grown, like alfalfa, have high rates of evapotranspiration.<sup>9</sup> As with other Mexican border cities, the prognosis for Sonoyta and the surrounding area is for continued rapid and development. Even though the Sonoyta region is "downstream" from Quitobaquito, the heavy pumping of groundwater eventually could draw down the aquifer enough to impact the springs and pond.

#### PROTECTION AGAINST INTRA-NATIONAL THREATS

For the purposes of this discussion, let us assume that Quitobaquito Springs and pond are being impacted by the pumping, by a private user, of groundwater outside the boundaries of the monument but within the U.S. In such a case, what could the National Park Service, the federal agency that administers ORPI, do to protect Quitobaquito? One or more of the following legal tools may provide the necessary protection: (1) the doctrine of federal reserved water rights; (2) the 1964 Wilderness Act; (3) the 1973 federal Endangered Species Act; or (4) the doctrine of entraterritorial federal power under the Property Clause of the U.S. Constitution. (1) The doctrine of federal reserved water rights originated with the Supreme Court's decision in United States v. Winters,<sup>10</sup> in which the Court held that when the federal government set aside land for an Indian reservation, it also impliedly reserved some amount of water to fulfill the federal government's policy of converting the Indians into a "pastoral and civilized people." For the purposes of integrating the Indians' reserved right into a state's system of prior appropriation, the Court said, the date of the treaty or other document setting aside the land is the priority date of the

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<sup>7</sup>Telephone interview with Caroline Wilson, Chief of Interpretation, Organ Pipe Cactus National Monument (April 18, 1987) (hereinafter cited as Wilson interview).

<sup>8</sup>Bradley and DeCook, Ground Water Occurrence and Utilization in the Arizona-Sonora Border Region, 18 NAT. RESOURCES J. 29 (1978) (hereinafter cited as Wilson interview).

<sup>9</sup>Telephone interview with William Gregg, Co-Chairman of the U.S. MAB Project Directorate on Biosphere Reserve (March 13, 1987) (hereinafter cited as Gregg interview).

<sup>10</sup>207 U.S. 564 (1908).

Indians' water right.<sup>11</sup> Later cases elaborated on the doctrine. In Federal Power Commission v. Oregon (the Pelton Dam case),<sup>12</sup> the Court held that the Desert Land Act of 1877, which "severed ... soil and water rights on public land, and provided that such water rights were to be acquired in the manner provided by the law of the State of location," did not apply to lands reserved by the federal government.<sup>13</sup> In other words, the water on federal reservations, unlike water on public lands, is not necessarily available for appropriation by private or other public users. In Arizona v. California,<sup>14</sup> the Court found that the amount of water reserved when the federal government sets aside land for Indian reservations is that quantity sufficient "to satisfy the future as well as the present needs of the Indian Reservations," i.e., that quantity sufficient to "irrigate all the practicably irrigable acreage on the reservations."<sup>15</sup> In addition, the Court for the first time expressly extended the doctrine of reserved water rights to other non-Indian federal reservations; in that case, to national forests and to areas administered by the National Park Service.<sup>16</sup>

Two more recent Supreme Court cases have focused on such non-Indian federal reserved rights. In Cappaert v. United States (Cappaert),<sup>17</sup> a case whose fact pattern is similar to our hypothetical, the Court decided whether, when a limestone cavern in western Nevada known as Devil's Hole was reserved in 1952 by Presidential proclamation (and added to Death Valley National Monument), the federal government reserved sufficient water to protect the spawning habitat of a species of desert pupfish, *Cyprinodon diabolis*, that lives in a pool in the cavern. In that case, the Cappaerts, private ranchers who owned land adjacent to the Devil's Hole addition, had begun pumping groundwater that was

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<sup>11</sup>Id. at 575-578.

<sup>12</sup>349 U.S. 435 (1955).

<sup>13</sup>Id. at 448. A reservation of public land should be distinguished from a withdrawal of public land. "A 'withdrawal' of land is a generic term referring to a statute, an executive order, or an administrative order that changes the designation of a prescribed parcel from 'available' to 'unavailable' for homesteading or resource exploitation.... A withdrawal is a negative act that prohibits some uses of the specified land without affirmatively prescribing future use, but a 'reservation' in this context means a dedication of the withdrawn land to a specified purpose, more or less permanently." G.C. COGGINS & C.F. WILKINSON, FEDERAL PUBLIC LAND AND RESOURCES LAW, 239 (2nd ed. 1987). Federal reserved water rights are created only by reservations of public land.

<sup>14</sup>373 U.S. 546 (1963).

<sup>15</sup>Id. at 600.

<sup>16</sup>Id. at 601.

<sup>17</sup>426 U.S. 128 (1975).

hydrologically connected to the water in the pool, thereby lowering the water level in the pool enough to threaten the survival of the pupfish. Chief Justice Burger, writing for a unanimous Court, discussed the question of whether a federal reserved water right exists as follows:

In determining whether there is a federally reserved water right implicit in a federal reservation of public land, the issue is whether the Government intended to reserve unappropriated and thus available water. Intent is inferred if the previously unappropriated water are necessary to accomplish the purposes for which the reservation was created.... Thus, since the implied-reservation-of-water-rights doctrine is based on the necessity of water for the purpose of the federal reservation, we hold that the United States can protect its water from subsequent diversion, whether the diversion is of surface or ground water.<sup>18</sup>

Because the proclamation reserving Devil's Hole specifically mentioned the pool, characterizing it as "a unique subsurface remnant of the prehistoric chain of lakes which... formed the Death Valley Lake System," and also mentioned "the presence in this pool of a peculiar race of desert fish" of considerable scientific interest, the Chief Justice concluded that the federal government explicitly reserved water in the pool.<sup>19</sup> Then, to determine the quantity of water reserved, applied, without explanation, the standard prescribed by the implied reserved water rights doctrine, i.e., the quantity reserved, he said, was "only that amount... necessary to fulfill the purpose of the reservation, no more."<sup>20</sup> Because the pupfish was "one of the features of scientific interest" in the pool to which the proclamation referred, the quantity of water reserved was the minimum amount necessary to preserve the fish's spawning habitat.<sup>21</sup> The Cappaerts were enjoined from pumping groundwater whenever their pumping dropped the level of the pool below that critical mark. Significantly, however, Burger avoided the question of whether the federal reserved rights doctrine extends to the reservation of groundwater, since he found that "the water in the pool," although located in an underground cavern, "is

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<sup>18</sup>Id. at 139 and 143.

<sup>19</sup>Id. at 132 and 140.

<sup>20</sup>Id. at 141.

<sup>21</sup>Id.

surface water."<sup>22</sup> Finally, the Chief Justice emphasized that "federal water rights are not dependent upon state law or state procedures" and therefore need not be perfected according to state law.<sup>23</sup>

In United States v. New Mexico (New Mexico)<sup>24</sup>, the Court emphasized again that "Congress reserved only that amount of water necessary to fulfill the purpose of the reservation, no more."<sup>25</sup> The case concerned the quantity of water impliedly reserved in the Mimbres River for Gila National Forest. The Forest Service argued that it's reserved rights included "a minimum instream flow for 'aesthetic, environmental, recreational and "fish" purposes.'"<sup>26</sup> To decide the question, Justice Rehnquist, writing for a 5-4 majority, examined the Forest Service's Organic Administration Act of 1897, which was in force when the forest was set aside in 1899. Because Rehnquist interpreted the 1897 Act to include only two purposes--"to conserve the water flows, and to furnish a continuous supply of timber for the people," -- he ruled that the original reservation of the forest did not include the reservation of

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<sup>22</sup>Id. at 142. That the Chief Justice deliberately was trying to avoid extending the federal reserved water rights doctrine to groundwater seems likely in view of the fact that the district court had not discussed the question of whether the water in the pool is surface water or groundwater, apparently assuming it was groundwater, see United States v. Cappaert, 375 F. Supp. 456 (D. Nevada 1974), and the court of appeals had characterized the water in the pool as groundwater and had ruled expressly that "the United States may reserve not only surface water, but also underground water," see United States v. Cappaert, 508 F. 2d 313, at 317 (9th Cir. 1974). Another federal district court, acting seven years before the final Cappaert decision, also had ruled expressly that the "same implications which led the Supreme Court to hold that surface waters had been reserved would apply to underground waters as well." Tweedy v. Texas Co., 286 F. Supp. 383 (D. Mont. 1968). Because the Chief Justice did not address the reservation of groundwater issue, the decision in Cappaert does not necessarily reverse those lower court decisions. Cappaert simply is silent on the question.

<sup>23</sup>Id. at 145. Despite that apparently clear holding, some federal officials remain tentative or confused about the exemption of federal reserved rights from state water law. A syndicated newspaper article recently quoted an endangered species coordinator for the U.S. Fish and Wildlife Service as saying, in reference to the Devil's Hole pupfish, "Nevada state law requires that if you have a right to any water (surface or ground), you must use that water or lose that right.... Nevada does not recognize wildlife as a beneficial use of water like many states do.... We're going to have to be inventive about how we use those groundwaters." Thybony, Fish Live in Desert, But It's Tough, Albuquerque Journal, March 1, 1987, at F5, cols. 3-4. The tentativeness of federal officials may be due in part to the strong sentiments in most western states against federal ownership of land and water rights.

<sup>24</sup>438 U.S. 696 (1978).

<sup>25</sup>Id. at 700, quoting and citing Cappaert, 426 U.S. at 141.

<sup>26</sup>Id. at 695.

water for any other purposes.<sup>27</sup> Rehnquist contrasted the Forest Service's Organic Act with the 1916 legislation creating the National Park Service, which declared that the "fundamental purpose of the said parks, monuments, and reservations ... is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same ... unimpaired for the enjoyment of future generations."<sup>28</sup> The 1916 Park Service Organic Act, Rehnquist implied, might support an implied reservation of water for wildlife preservation or other purposes.<sup>29</sup> The Multiple-Use Sustained-Yield Act of 1960, which included a provision that national forests "shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes," broadened "the purposes for which national forests had previously been administered," but, according to Rehnquist, did not "thereby expand the reserved rights of the United States."<sup>30</sup> The purposes enumerated in the 1960 Act were, according to the act itself, "supplemental to, but not in derogation of, the purposes for which the national forests were established as set forth in the (Act of 1897)." Rehnquist concluded that the 1960 purposes were therefore "secondary":

Without legislation history to the contrary, we are led to conclude that Congress did not intend in enacting the Multiple-Use Sustained-Yield Act of 1960 to reserve water for the secondary purposes there established.... Congress intended the national forests to administered for broader purposes after 1960 but there is no

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<sup>27</sup>Id. at 707-08. Justice Powell, writing for the dissenters, read the 1897 Act to specify a third purpose--"to improve and protect the forest"--that includes the protection of fish and game. "I therefore would hold," Powell said, "that the United States is entitled to so much water as is necessary to sustain the wildlife of the forests, as well as the plants." Id. at 719.

<sup>28</sup>Id. at 709.

<sup>29</sup>Id. In fact, some Park Service officials, adopting a somewhat fanciful "relation back" theory, currently advocate asserting rights to all water within a national park or monument boundaries that was unappropriated as of 1916, regardless of the date of reservation of the specific park or monument (assuming that it was reserved after 1916). Personal interview with Frank Buono, Mineral Rights Division, National Park Service, in Santa Fe, New Mexico (April 11, 1987). That strategy seems questionable in view of the Supreme Court's assertion in Cappaert that the amount of water impliedly reserved is the minimum "necessary to fulfill the purpose of the reservation, no more," 426 U.S. at 141, and the Court's holding that the Cappaerts, who did not have a perfected right predating the reservation of Devil's Hole, could continue to pump groundwater so long as the level of the pool did not drop below that critical level necessary for the pupfish's survival.

<sup>30</sup>Id. at 713.

indication that it believed the new purposes to be so crucial as to require a reservation of additional water.<sup>31</sup>

In the absence of legislation expressly reserving water rights, then, federal reserved rights are based on the implied intent of Congress or the executive (whichever did the reserving), as inferred by the court. Assuming Congressional or executive intent to reserve water rights, the quantity of water reserved is the minimum amount necessary to fulfill the primary purposes of the reservation. To determine those purposes, the court examines the specific documents setting aside the reservation; the legislative history of the act or, in the case of an executive reservation, any history illuminating the purposes of the proclamation; and general legislation relating the federal agency involved.

ORPI was established by Presidential proclamation on April 13, 1987.<sup>32</sup> Franklin Roosevelt signed the proclamation, which in its essential parts reads:

Whereas certain public lands in the State of Arizona contain historic landmarks, and have situated thereon various objects of historic and scientific interest; and Whereas it appears that it would be in the public interest to reserve such lands as a national monument, to be known as the Organ Pipe Cactus National Monument:  
NOW, THEREFORE, I FRANKLIN D. ROOSEVELT...  
Warning is hereby expressly given to all unauthorized persons not to appropriate, injure, destroy, or remove any feature of this monument and not to locate or settle upon any of the lands thereof.

Because ORPI is a national monument, a court certainly would be willing to infer an intent on the part of President Roosevelt to reserve some amount of water within the monument's boundaries. The judicial construction of the "primary purpose" of the reservation, however, would prevent greater difficulties. Compared to the proclamation reserving Devil's Hole, ORPI's establishment document is extraordinarily general. It doesn't mention Quitobaquito Springs or pond, doesn't mention desert pupfish. In fact, the name given to the monument implies that the primary purpose of the reservation is to preserve the rare species of cactus distinctive of the area, not Quitobaquito Springs or pond, and not desert pupfish. On the other hand, the general language in the proclamation may be read to include all "objects of ... scientific interest" in the monument, even those not specifically mentioned in the proclamation or invoked by the

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<sup>31</sup>Id. at 715 (emphasis in original).

<sup>32</sup>Proclamation No. 2232 (April 13, 1937).

monument's name.<sup>33</sup> Any historical documents specifically mentioning Quitobaquito Springs and pond or the desert pupfish as one of the reasons for reserving the area would be very helpful, and perhaps crucial. Although in Cappaert Chief Justice Burger hewed closely to the language of the proclamation specific to Devil's Hole to reach his result, he also noted, in connection with general language in that proclamation identical to language in ORPI's proclamation, that

the 1952 Proclamation forbids unauthorized persons to "appropriate, injure, destroy, or remove any feature" from the reservation. Since water is a "feature" of the reservation, the Cappaerts, by their pumping, are "appropriating" or "removing" this feature in violation of the Proclamation.<sup>34</sup>

Furthermore, the dicta in New Mexico, implying that the 1916 Park Service Organic Act might support a reservation of water for wildlife preservation or other purposes, would buttress the Park Service's argument that one of the primary purposes of the reservation of ORPI as a national monument is to preserve Quitobaquito Springs and pond and the desert pupfish.

How much water might have been reserved is another difficult question. As noted in the discussions of Cappaert and New Mexico supra, the amount of water reserved is the minimum necessary to fulfill the primary purpose(s) of the reservation. Arguably, the springs and pond, in themselves, are objects of historic or scientific interest within the meaning of those words in the proclamation, and their protection is, by inference, one of the primary purposes of the reservation of ORPI. If a court accepted that argument, then it could find that all of the water in the springs and pond was impliedly reserved by the proclamation. On the other hand, a court could find that the springs and pond, in themselves, are not objects of historic or scientific interest and that their protection is necessary only to the extent that they provide spawning habitat for the pupfish, whose

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<sup>33</sup>But see United States v. City and County of Denver, 656 P. 2d 1 (Colo. 1983). In that case, the Colorado Supreme Court determined the extent of the federal government's reserved water rights for various federal reservations in Colorado, including Dinosaur National Monument. After declaring that "Congress intended national monuments to be more limited in scope and purpose than national parks"--a questionable assertion-- the court cited Cappaert to support the proposition that "the National Park Service Act (of 1916) should not be used as a basis for expanding the monument purposes which support a reservation of water." Looking at the Presidential proclamations establishing and later enlarging Dinosaur, the court then concluded that no water in the Yampa River flowing through the monument was reserved for recreational purposes. The court implied that a national park designation would support a reserved water right for broader purposes.

<sup>34</sup>426 U.S. at 140, n. 6. Unfortunately, in his opinion the Chief Justice does not pursue this line of argument.



preservation, we will assume for now, is one of the primary purposes of the reservation. In that case, the amount of water reserved would be governed by the holding in Cappaert, i.e., the amount reserved would be the minimum necessary to insure the survival of the pupfish, and the level of water in the pond would be allowed to drop to that critical level before the groundwater pumping outside the monument would be enjoined. Using the general language in the 1916 Park Service Organic Act, the general language in the 1937 ORPI proclamation, any existing historical documents, and the dicta in New Mexico, the Park Service could make a credible argument for the reservation of all of the water. Unless the historical documents specifically mention Quitobaquito Springs and pond, however, a court probably would not accept it. Guided by Cappaert, a court probably would find an implied reservation of water sufficient to insure the survival of the pupfish, but "no more."

Our ORPI hypothetical also raises a question not addressed by the Court in Cappaert or New Mexico. Unlike in Nevada, groundwater in Arizona is governed, not by the doctrine of prior appropriation, but by the American doctrine of reasonable use.<sup>35</sup> That rule permits "the extraction of groundwater subjacent to the soil so long as it is taken in connection with a beneficial enjoyment of the land from which it is taken."<sup>36</sup> In Cappaert, the Court noted that "the Cappaerts had no perfected water rights as of the date of the reservation (of Devil's Hole as a national monument)."<sup>37</sup> In our hypothetical, however, the priority of appropriation is irrelevant. According to Arizona law, the private user is entitled to as much groundwater as he can reasonably use on his land. We therefore have a direct conflict between a perfected, private land based on reasonable use and the federal reserved right. In our example, the presence of an endangered species in the Quitobaquito pond surely would influence a court to resolve the conflict in favor of the park. See discussion of the Endangered Species Act in section (3) *infra*. That outcome, however, is not assured.

Our hypothetical suggests two problems connected with a groundwater regime based on the American doctrine of reasonable use. First, it demonstrates the doctrine of federal reserved

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<sup>35</sup>Bristor v Cheatham, 75 Ariz. 227, 255 P. 2nd 173 (1953). More particularly, "percolating" groundwater is governed by the American doctrine of reasonable use, whereas water flowing "in definite underground channels" is public water, governed by the doctrine of prior appropriation. The 1980 Arizona groundwater statute maintains that distinction, imposing restrictions of the withdrawal of "percolating" groundwater in designated "Active Management Areas." For a good discussion of the history of the statute and a summary of its provisions, see Hidgon and Thompson, The 1980 Arizona Groundwater Management Code, ARIZ. ST. L.J. 621 (1980).

<sup>36</sup>75 Ariz. at 234, 255 P 2nd at 180.

<sup>37</sup>426 U.S. at 135.

rights, which has developed in the arid west to protect the water resources of federal reservations, is more easily integrated into a regime based on prior appropriation. Comparing the date of the federal reservation and the date of the private user's perfected water right is a fair and widely accepted method of deciding whose right is superior. In a state like Arizona that follows the American doctrine of reasonable use with respect to groundwater, however, the existing precedents, decided in states adhering to the doctrine of prior appropriation, offer no predictable solution. Second, it suggests the potentially disastrous consequences of allocating groundwater in an arid state on the basis of the American doctrine of reasonable use, which developed in, and is better suited to, water-rich areas. In an arid state, the American doctrine of reasonable use, which lacks a mechanism for allocating water during times of scarcity, tends to encourage adjacent landowners whose lands overlie the same aquifer to engage in the proverbial and decidedly unreasonable "race to the bottom of the aquifer."

A final and most intriguing question raised by our hypothetical is whether a court would classify Quitobaquito Springs and pond as surface water or groundwater. The question is of more than theoretical interest, since, as mentioned in the discussion of Cappaert supra, the Supreme Court has yet to hold unequivocally that the reserved rights doctrine applies to groundwater. Furthermore, the Court has indicated recently that it views groundwater differently than surface water. Whereas historically it has treated interstate surface water in the arid west as a scarce resource to be equitably apportioned between or among the states,<sup>38</sup> in a recent case it held that groundwater, even in the arid west, is an article of commerce.<sup>39</sup> It is unclear how the Court's differing views of groundwater and surface water might affect its view of federal reserved rights. Fortunately, the facts in our case strongly favor the classification of Quitobaquito Springs and pond as surface water. If the Supreme Court found that the pool in Cappaert was "surface water,"

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<sup>38</sup>See, e.g., Nebraska v. Wyoming, 325 U.S. 589 (1945).

<sup>39</sup>Sporhase v. Nebraska, 458 U.S. 941 (1982). Because the Court ruled that groundwater is an article of commerce, states cannot enact legislation that impedes the export of groundwater out of state without demonstrating that the statute "serves a legitimate local purpose," Hughes v. Oklahoma, 441 U.S. 322, at 336 (1979), and "that this purpose could not be served as well by available nondiscriminatory means." Maine v. Taylor, 54 U.S.L.W. 4724, at 4726 (1986). The practical effect of the Sporhase v. Nebraska holding will be to allow entities (whether other states, cities, private corporations or individuals) that can afford to withdraw groundwater and transport it across state lines to take as much as they want. A state's ability to protect its groundwater resources against out-of-state export or "raiding" will be severely restricted. For discussions of the significance of the Supreme Court's differing views of groundwater and surface water, see generally Utton, In Search of an Integrating Principle for Interstate Water Law: Regulation versus the Market Place, 25 NAT. RESOURCES J. 985 (1985); and Utton, Sporhase, El Paso, and the Unilateral Allocation of Water Resources: Some Reflections on International and Interstate Groundwater Law, 57 U. COLO. L. REV. 549 (1986).

despite being located in an underground cavern and being hydrologically connected to the regional aquifer, then Quitobaquito Springs and pond surely would qualify as "surface water," despite their connection with the regional aquifer.

The Supreme Court's differing treatment of surface water and groundwater deserves further comment, for, viewed from a distance, it is typical of the widespread failure of lawmakers and judges to acknowledge the hydrologic fact that the two resources are often interconnected. Quite simply, we now know that most aquifers are connected to some kind of surface water; and in those cases where a connection exists, a legal distinction between the two is an archaic holdover from a time of less complete hydrologic knowledge.<sup>40</sup> One commentator laments that:

Contrary to hydrologic reality, the law frequently has made distinctions which separate surface waters from underground waters and "percolating waters" from definite underground channels. These distinctions fail to recognize the interrelationships between surface and underground waters and have been characterized as attempts to restate the "physical universe."<sup>41</sup>

Over twenty years ago, two hydrologists chastised the legal profession for its irrational classification of water:

Man has coped with the complexity of water by trying to compartmentalize it. The partition committed by hydrologists ... is as nothing compared with that which has been promulgated by the legal profession... The legal classification of water includes "percolating water," "defined underground streams," "underflow of surface streams," "watercourses," and "diffuse surface waters"; all these waters are actually interrelated and interdependent, yet in many jurisdictions unrelated water rights rest upon this classification.<sup>42</sup>

Although some progress has been made in recent statutory and case

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<sup>40</sup>Of course, some groundwater exists in isolated underground reservoirs unconnected to any surface water; in those cases, differing legal treatment of the two is a more reasonable alternative.

<sup>41</sup>Utton, International Groundwater Management: The Case of the U.S.-Mexican Frontier, 57 NEB. L. REV. 633, 654 (1978) (hereinafter cited as Utton).

<sup>42</sup>Thomas & Leopold, Ground Water in North America, 143 SCI 1001, 1003 (1964).

law,<sup>43</sup> the legal system still lags sadly behind the science of hydrology in analyzing and solving water problems.

(2) The 1964 Wilderness Act<sup>44</sup> creates the National Wilderness Preservation System, advocates the designation of suitable undeveloped federal land as wilderness, and mandates the administration of those areas "in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness."<sup>45</sup> The act defines a wilderness as an area containing at least 5,000 contiguous areas "where the earth and its community of life are untrammelled by man" and where the land retains "its primeval character and influence."<sup>46</sup> An area may be considered for wilderness designation if it has "no commercial enterprise and no permanent road."<sup>47</sup> A wilderness area is established by Congress, acting on the advice of the President and either the Secretary of Agriculture or Interior.<sup>48</sup> Federal land that previously has been reserved for other purposes may be designated a wilderness area.<sup>49</sup> In fact, a majority of the areas presently included in the system previously were contained in national forests and national parks and monuments.

In Sierra Club v. Block (Sierra Club),<sup>50</sup> a federal district court recently ruled that a designation of federal land as wilderness is a reservation of land that carries with it an implied reservation of water, even if the wilderness designation is not the original reservation of the land. The court said:

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<sup>43</sup>See e.g., Arizona's 1980 groundwater management statute, codified primarily in various subsections of ARIZ. REV. STAT. ANN. 45 (Supp. 1987).

<sup>44</sup>16 U.S.C. 1131-36 (1985).

<sup>45</sup>Id. at 1131(a).

<sup>46</sup>Id. at 1131(c).

<sup>47</sup>Id. at 1133(c).

<sup>48</sup>Id. at 1132(b) and (c).

<sup>49</sup>Id. at 1131(a).

<sup>50</sup>622 F. Supp. 842 (D. Colo. 1985). John Block, the original defendant, was the Secretary of Agriculture, in whose department the U.S. Forest Service resides. After the suit was filed, the Mountain States Legal Foundation (MSLF) and other interested non-federal parties intervened as defendants. In a recent newspaper article, one of MSLF's attorneys vowed "to carry an appeal to the Supreme Court." Diven, How Much Wilderness Is Enough?, Albuquerque Journal, February 7, 1988, at C6, col. 3.

Although wilderness designation was not the original withdrawal from the public domain and reservation of the land in this case, it does not follow that wilderness areas were not withdrawn and reserved or that the implied-reservation-of-water doctrine is not applicable. On the contrary, application of the definitions of "withdrawal" and "reservation" to this case, as well as legislative history of the Wilderness Act, clearly demonstrate that the wilderness areas were in fact withdrawn and reserved.<sup>51</sup>

The court then characterized the search for a federal reserved water right as follows:

Once it has been determined that the government has withdrawn and reserved the land, the primary issue is whether the government intended to reserve unappropriated water .... If previously unappropriated waters are necessary to accomplish the primary, rather than secondary, purposes for which the reservation was created, then intent to reserve water rights for those purposes is inferred.<sup>52</sup>

Looking carefully at the language and legislative history of the Wilderness Act, the court found that, in establishing the wilderness system, Congress in fact intended to reserve water rights and that one of the primary purposes of the Wilderness Act and, by extension, of specific wilderness designations, is the preservation of wilderness areas in their "natural condition," "untouched and unscathed."<sup>53</sup> The court rejected the non-federal defendant-intervenors' contention that the Wilderness Act is "merely a land management statute," which, like the Federal Land Policy and Management Act of 1976 and the Multiple-Use Sustained-Yield Act of 1960, does not effect a withdrawal and reservation of land.<sup>54</sup> And the court dismissed the defendant-intervenors' argument, adopted from New Mexico, see discussion in section (1) supra, that, as far as wilderness areas in national forests are concerned, the purposes of the act conflict with, and are secondary to, the purposes of the national forests enumerated in the Organic Act of 1897. Instead, the court found that

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<sup>51</sup>Id. at 855 (emphasis in original).

<sup>52</sup>Id. at 853.

<sup>53</sup>Id. at 858-62. Apparently envisioning a wilderness of forests and waterfalls, Judge Kane also opined that "it is beyond cavil that water is the lifeblood of the wilderness areas. Without water, the wilderness would become deserted wastelands." Id. at 862.

<sup>54</sup>Id. at 857-58.

"preservation of wilderness areas in their natural state actually enhances water quality and quantity."<sup>55</sup> The court concluded that "federal reserved water rights do exist in previously unappropriated water in each of the Colorado wilderness areas designated as such pursuant to the Wilderness Act" and that the priority date of the water right is the date of the wilderness designation.<sup>56</sup> The court emphasized, however, that its holding would not "'mean a substantial loss in the amount of water available for irrigation and domestic use,' because 'wilderness itself is generally a non-consumptive use of the water in its lakes and streams.'"<sup>57</sup>

Although the court did not explicitly address the question of the quantity of unappropriated water reserved by virtue of a wilderness designation, it emphasized repeatedly that one of the primary purposes of such a reservation of land is the preservation and protection of the "enduring" resources of wilderness," including the "natural production of invaluable supplies of high quality water."<sup>58</sup> That indicates that the court believed that all of the unappropriated water in a wilderness area is reserved at the time of the wilderness designation. However, because of the relatively recent date of the Wilderness Act (1964) and the even more recent date of specific wilderness designations, and because, as the court noted, wilderness is a non-consumptive use of water, federal reserved rights based on wilderness designations should not have much impact on vested water rights in a western state adhering to the doctrine of prior appropriation.

OPRI encompasses 330,690 acres; 312,600 of those acres were designated as wilderness in 1978.<sup>59</sup> The only areas not included in the wilderness designation are islands around the monuments visitor center and campground, and corridors along the monument's paved and dirt roads. Because a permanent dirt road loops within a hundred meters of the Quitobaquito pond, park personnel are unsure if Quitobaquito is included within the designated wilderness.<sup>60</sup> That question is crucial to the determination of whether the water in Quitobaquito springs and pond was reserved when most of the park was designated a wilderness area in 1978. Fortunately, that question probably is to some extent moot,

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<sup>55</sup>Id. at 859.

<sup>56</sup>Id. at 862.

<sup>57</sup>Id. at 861.

<sup>58</sup>92 Stat. 3467, 401 (1978).

<sup>59</sup>Wilson interview, *supra* note 7.

<sup>60</sup>622 F. Supp. at 858-62.

because, as discussed in section (1) supra, at least some of the water probably was reserved by the proclamation of the national monument in 1937.

Before concluding this discussion of wilderness reserved water rights, it is worth noting that the ORPI wilderness differs in two important respects from the Colorado wilderness areas at issue in Sierra Club. First, ORPI is located in Arizona, where the American doctrine of reasonable use, not the doctrine of prior appropriation, governs the use of groundwater. All of the problems discussed in section (1) supra in connection with the reasonable use doctrine are reprised here. Second, the Colorado wilderness areas, like most wildernesses, are located in well-watered mountainous areas upstream from centers of population and development; as a result of both location and constant replenishment, their water resources will not often be threatened seriously by activities outside the boundaries of the wilderness. The OPRI wilderness, however, is located in a low-lying desert, making it more vulnerable, from a hydrologic point of view, to the activities of private users outside its boundaries. Furthermore, any such impact is likely to have more serious consequences on the area's meager water resources. A desert wilderness has little or no water to spare.

(3) Congress passed the federal Endangered Species Act (ESA)<sup>61</sup> in 1973 in order to "provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved ...."<sup>62</sup> The act requires the Secretary of the Interior to determine, "on the basis of the best scientific and commercial data available to him," whether any species is endangered or threatened.<sup>63</sup> Furthermore, it requires the Secretary to designate the "critical habitats," if any, of those endangered and threatened species.<sup>64</sup> The act defines "critical habitat" as "the specific areas within the geographical area occupied by the species... on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations and protection...."<sup>65</sup> The act requires "each federal agency to insure that any action authorized, funded, or carried out by such agency ... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification" of the critical habitat of

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<sup>61</sup>16 U.S.C. 1531-43 (1985).

<sup>62</sup>Id. at 1531.

<sup>63</sup>Id. at 1533(a)(1) and 1533 (b)(1)(A).

<sup>64</sup>Id. at 1533(a)(3) and

<sup>65</sup>Id. at 1532(5)(A).

such species.<sup>66</sup> However, the act does not prohibit private individuals from destroying habitat on private land, nor does it address the problem of private activities outside the boundaries of federal reservations that impact critical habitat within those boundaries.

The Quitobaquito pupfish, *Cyprinodon Macularius*, was designated an endangered species on March 31, 1986.<sup>67</sup> At the same time, Quitobaquito pond was designated a critical habitat of the desert pupfish.<sup>68</sup> Therefore, any action "authorized, funded, or carried out" by any federal agency, whether within the monument, within Cabeza Prieta National Wildlife Refuge, or within the Papago Indian Reservation, that impacts the Quitobaquito pond may be enjoined.<sup>69</sup> As noted above, however, the ESA provides no mechanism for enjoining the actions of private individuals on private land that may impact critical habitat within a federal reservation. Although the presence the pupfish in the Quitobaquito pond surely would influence a court in favor of the Park Service in finding a federal reserved water right, the ESA itself would not bar the threatening activities.

A related and apparently unlitigated question, however, is whether the designation of an area as a critical habitat of an endangered species, like the designation of an area as wilderness, constitutes a reservation of land such as would carry with it an implied reservation of water. All of the arguments marshalled by the plaintiffs in *Sierra Club*, see discussion in section (2) supra, in support of the proposition that the designation of a wilderness area is a withdrawal and reservation of federal land easily could be transformed into arguments that the designation of an area as a critical habitat likewise is a withdrawal and reservation of federal land. Congressional intent to reserve water could be inferred from Congress' concern with preserving endangered species and their critical habitats and possibly from the legislative history as well. As in *Cappaert*, see discussion in section (1) supra, the amount of water reserved probably would be the minimum amount necessary to insure the continued survival of the particular endangered or threatened species in the particular critical habitat. The date of the designation of the critical habitat would be the priority date for the water rights.

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<sup>66</sup>Id. at 1536.

<sup>67</sup>50 C.F.R. 17.11 (1986).

<sup>68</sup>50 C.F.R. 17.95 (1986).

<sup>69</sup>"Any person" may file suit "on his own behalf" to enjoin agency action that offends the statute. 16 U.S.C. at 1540(g). See, e.g. *T.V.A. v. Hill*, 437 U.S. 153 (1978) (Tellico Dam/snail darter case).



An opposing party might argue that a crucial distinction is that Congress designates a wilderness area, whereas the Secretary of the Interior designates a critical habitat. One response to that argument is that Congress, by enacting the ESA, delegated to the Secretary of the Interior authority to reserve federal land. Just as the President validly reserves federal land when he proclaims a national monument pursuant to his authority under the Antiquities Act of 1906, that response might run, so the Secretary of the Interior validly reserves federal land when he designates a critical habitat pursuant to his authority under the ESA.<sup>70</sup>

In practical terms, the designation of an area as critical habitat imposes restrictions similar to those imposed when an area is designated as wilderness. Whether a reviewing court would characterize a critical habitat designation as a withdrawal and reservation of federal land or "merely" as a land management restriction, see discussion of Sierra Club in section (2) supra, is the threshold crucial question, and one whose answer cannot be predicted.

(4) The Property Clause of the U.S. Constitution declares that the Congress shall have Power to dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States....<sup>71</sup> Although its language is unambiguous and broad, the federal government always has been tentative about exercising fully the power the clause grants it, especially the power, implicit in the clause's language, to regulate activities on state-owned or private land, outside the boundaries of federal reservations, that adversely affect or detract from the designated purpose of the reservation -- what, for the purposes of this paper, I am calling the "extraterritorial power."

The Supreme Court long has upheld the constitutionality of such assertions of power. In the seminal case of Camfield v. United States,<sup>72</sup> the court was faced with a situation in which, because of a checkerboard pattern of land ownership, a fence entirely on

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<sup>70</sup>A second and less advisable response would be to claim that longstanding "Congressional acquiescence" to Executive withdrawals of federal land has created an "implied delegation of authority" to do so. See United States v. Midwest Oil Co., 235 U.S. 459 (1915). However, the President's implied authority has never been supposed to extend to reservations of land, nor is it necessarily delegable to the Secretary of the Interior. More importantly, in the 1976 Federal Land Policy and Management Act, 43 U.S.C. 1701-84 (1986), Congress attempted to repeal the executive's implied withdrawal authority by inserting in the statute the following language: "The Congress declares that it is the policy of the United States that ... Congress delineate the extent to which the Executive may withdraw lands without legislative action." 43 U.S.C. 1701(a)(4).

<sup>71</sup>U.S. Constitution article IV, 3, cl. 2.

<sup>72</sup>167 U.S. 518 (1897).

private land enclosed 20,000 acres of federal public land. Applying a familiar common law doctrine, the Court found that:

the fence is clearly a nuisance, and that it is within the constitutional power of Congress to order it's abatement, notwithstanding such action may involve an entry upon the lands of a private individuals. The general Government doubtless has a power over its own property analogous to the police power of the several States, and the extent to which it may go in the exercise of such power is measured by the exigencies of the particular case.<sup>73</sup>

Although noting that the federal government may not enjoy the same power vis-a-vis a state that it does vis-a-vis a territory, the Court concluded that the federal government may act to protect public lands "so long as such power is directed solely to its (the federal government's) own protection."<sup>74</sup>

In the later case of United States v. Alford (Alford),<sup>75</sup> Justice Holmes relied on the Property Clause to vindicate the prosecution, under a federal statute, of a private individual who had built a fire on private land adjacent to a national forest, in violation of the statute. Holmes, terse as always, said: "The statute is constitutional. Congress may prohibit the doing of acts upon privately owned lands that imperil the publicly owned forests."<sup>76</sup> As justification for the statute, he observed that the danger (which the statute was intended to combat) depends upon the nearness of the fire not upon the ownership of the land where it was built."<sup>77</sup>

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Despite those strong early precedents, the federal government, probably anxious to avoid legal confrontations with individuals states, has remained tentative about exercising its extraterritorial power under the Property Clause. As late as 1966, the Interior Solicitor advised the National Park Service that a court would hold the imposition of federal zoning regulations on private inholdings in national parks to be unconstitutional.<sup>78</sup> That kind of advice has had some unfortunate

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<sup>73</sup>Id. at 525.

<sup>74</sup>Id. at 526.

<sup>75</sup>274 U.S. 264 (1927).

<sup>76</sup>Id. at 267.

<sup>77</sup>Id.

<sup>78</sup>Sax, *Helpless Giants: The National Parks and the Regulations of Private Lands*, 75 MICH. L. REV. 239, at 247-48 (1976).

consequences. In the early 1970's, the Park Service reached a compromise agreement regarding the construction of an obtrusive tower near Gettysburg National Military Park rather than go to court seeking an injunction it feared it would not get.<sup>79</sup> And, in 1974, the Sierra Club sued the Department of the Interior, alleging that the Secretary was not fulfilling his duties under the Redwood National Park Act.<sup>80</sup> The Sierra Club argued that the act, which vested the Secretary with authority to modify the park's boundaries and to acquire interests in land outside the park in order to minimize the adverse effects of logging operations outside the park on the resources within the park's boundaries, imposed affirmative duties on the Secretary.<sup>81</sup> The court agreed and ordered the Secretary to comply. Then, in 1976, the Supreme Court delivered another decision clearly upholding federal extraterritorial power.

In Kleppe v. New Mexico (Kleppe),<sup>82</sup> the state of New Mexico argued that enactment of the federal Wild Free-Roaming Horses and Burros Act, which sought to protect wild horses and burros roaming the public domain, exceeded Congress' power under the Property Clause because the statute was aimed at protecting the animals, not the land they live on. In upholding the statute, Justice Marshall, writing for an unanimous Court, noted that "Congress exercises the power both of a proprietor and of a legislature over the public domain."<sup>83</sup> And he observed that, "while the furthest reaches of the power granted by the Property Clause have not yet been definitively resolved, we have repeatedly observed that 'the power over the public land thus entrusted to Congress is without limitations.'"<sup>84</sup> To resolve the specific issue before the Court, Marshall emphasized that "the 'complete power' that Congress has over public lands includes the power to regulate and protect the wildlife living there."<sup>85</sup> Applying the doctrine of federal pre-emption--"when Congress so acts (pursuant to the Property Clause), the federal legislation necessarily overrides conflicting state laws under the Supremacy Clause"--he then declared that the provisions of the New Mexico

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<sup>79</sup>Id. at 240 and 248.

<sup>80</sup>Sierra Club v. Department of the Interior, 376 F. Supp. 90 (N.D. Calif. 1974) (hearing on defendant's motion to dismiss and motion for summary judgment) and Sierra Club v. Department of the Interior, 398 F. Supp. 284 (N.D. Calif. 1975) (final opinion).

<sup>81</sup>376 F. Supp. at 95 and 398 F. Supp. at 286-87.

<sup>82</sup>426 U.S. 529 (1976).

<sup>83</sup>Id. at 540.

<sup>84</sup>Id. at 539.

<sup>85</sup>Id. at 540-41.

Estray Law that conflicted with the federal statute were unconstitutional and invalid.<sup>86</sup>

In subsequent cases, federal courts of appeals have extended the Kleppe holding. In Minnesota v. Block,<sup>87</sup> for example, the state challenged a section of the federal Boundary Waters Canoe Area Wilderness Act which drastically restricted the use of motorboats and snowmobiles in the wilderness area, even on state-owned land within the exterior boundaries of the wilderness. In upholding the restrictions, the court declared that "Congress' power must extend to regulation of conduct on or off the public land that would threaten the designated purpose of federal lands."<sup>88</sup> And in United States v. Brown,<sup>89</sup> the court held that a National Park Service regulation prohibiting the possession of firearms pre-empted state regulation of hunting on state-owned inholdings in Voyageurs National Park in Minnesota.

All of the cases cited above concerned the extension of federal power state-owned inholdings within the exterior boundaries of federal reservations. Read in the light of Alford, however, Kleppe suggests that any federal regulation of activities on state-owned or private land outside the exterior boundaries of federal reservations, if reasonably related to the protection of the public lands, would be upheld and would pre-empt conflicting state regulation.<sup>90</sup>

At the present time, no federal statute or agency regulation addresses the potential problems of groundwater pumping in the vicinity of national parks and monuments. Furthermore, given the

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<sup>86</sup>Id. at 543-45.

<sup>87</sup>660 F. 2nd 1240 (8th Cir. 1981).

<sup>88</sup>Id. at 1249.

<sup>89</sup>552 F. 2nd 817 (8th Cir. 1977), cert. denied, 431 U.S. 949 (1977). See also United States v. Lindsay, 595 F. 2nd 5 (9th Cir 1979) (Forest Service can prohibit campfires on state lands within the exterior boundaries of Hells Canyon National Recreation Area).

<sup>90</sup>Assuming that the federal statute does not discriminate against a "discrete and insular" minority, see U.S. v. Carolene Products Co., 304 U.S. 144 (1938), and does not infringe a "fundamental right," a reviewing court would apply the highly deferential "mere rationality" test in order to decide whether the statute is constitutional. Under that test, the statute will not be stricken if there is a "rational relation" between the means selected by Congress and a "legitimate" legislative objective. See, e.g., Railway Express Agency v. New York, 336 U.S. 106 (1949) and Williamson v. Lee Optical, 348 U.S. 483 (1955). On the other hand, if the statute discriminates against a "discrete and insular" minority or infringes a "fundamental right," e.g., the right to privacy or the right to travel from state to state, then a reviewing court would apply the nearly always fatal strict scrutiny test. Under that test, the statute will be stricken unless it is necessary to further a "compelling" governmental interest. See, e.g., Loving v. Virginia, 388 U.S. 1 (1967) and Zobel v. Williams, 457 U.S. 55 (1982).

federal government's traditional deference to the states in the area of water law, Congress may never undertake the politically risky venture of enacting legislation to regulate the pumping of groundwater on non-federally owned land. However, Congress has delegated to the Secretary of the Interior the authority to "make and publish such rules and regulations as he may deem necessary or proper for the use and management of the parks, monuments, and reservations under the jurisdiction of the National Park Service."<sup>91</sup> Arguably, the Property Clause limits the Secretary's power only to the same extent that it limits Congress' power, i.e., arguably the Secretary's power over Park Service lands is "without limitations." See discussion of Kleppe supra.

Working within the Department of the Interior, then, the Park Service itself could propose and lobby for a regulation that addresses the problem of groundwater pumping in the vicinity of national parks and monuments. Depending on the political climate in the Secretary's office and the upper echelons of the executive branch, in Congress, and in the country in general, the proposed regulation could be very limited or very wide-ranging with respect to the number of Park Service areas to which it applies, and merely regulatory or outright prohibitory with respect to the restrictions it imposes. If the mood is favorable to federal regulation, for example, the Park Service, asserting that any decrease in the amount of surface water in a park or monument is a denigration of the natural and scenic resources of the park or monument, could draft a document that prohibits the pumping of groundwater outside the boundaries of any park or monument whenever the pumping affects the level of the surface water in the park or monument. Or, at the opposite end of the spectrum of restrictiveness, the Park Service could draft a document that regulates the pumping of groundwater only outside the boundaries of ORPI and only when that pumping threatens to lower the level of Quitobaquito pond below that necessary for the pupfish's survival. Or, somewhere between those two extremes, the Park Service could draft a document that prohibits the pumping of groundwater only outside the boundaries of ORPI, but does so whenever the pumping affects the level of the surface water in Quitobaquito pond. The variations are manifold, with much room for negotiation and compromise.

Given that the current political climate is not favorable to federal regulation, the Park Service probably should propose a regulation that is limited with respect to the number of Park Service areas to which it applies. However, a regulation limited with respect to the restrictions it imposes probably would not provide Quitobaquito with any more protection than the already existing federal reserved water right, i.e., such a limited regulation probably would permit the water level in Quitobaquito pond to drop a prescribed amount before prohibiting the

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<sup>91</sup>16 U.S.C. 3 (1974).

groundwater pumping. In order to protect the Quitobaquito pond as it is, therefore, the proposed regulation should prohibit groundwater pumping outside the boundaries of ORPI whenever the pumping affects the level of the surface water in Quitobaquito pond.

#### PROTECTION AGAINST INTERNATIONAL THREATS

If political boundaries followed topographic and hydrologic boundaries, Quitobaquito Springs and pond would be a part of Sonora, Mexico. Quitobaquito is physically connected to Sonora, not just by contiguous landmass, but by surface drainage and groundwater. Not surprisingly, then, the real threats to Quitobaquito's fragile

**APPENDIX V**

**MEMO OF UNDERSTANDING - ENVIRONMENTAL COOPERATION 1978**

## MEXICO

### Environmental Cooperation

*Agreement effected by exchange of notes*

*Signed at Mexico and Tlatelolco June 14 and 19, 1978;*

*Entered into force June 19, 1978.*

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*The American Ambassador to the Mexican Secretary of Foreign Relations*

MEXICO, D. F., MEXICO

JUNE 14, 1978

No. 952

**EXCELLENCY:**

I have the honor to refer to discussions between representatives of the United States Environmental Protection Agency and the Subsecretariat for Environmental Improvement of Mexico concerning a program for cooperation on environmental programs and transboundary environmental problems.

I have the honor to inform you that the Government of the United States approves of the proposed cooperative program outlined in the attached Memorandum of Understanding Between the United States Environmental Protection Agency and the Subsecretariat for Environmental Improvement of Mexico for Cooperation on Environmental Programs and Transboundary Problems signed at Mexico City on June 6, 1978. It is understood that implementation of the United States participation in the program shall be the responsibility of the United States Environmental Protection Agency and that implementation of the Mexican participation shall be the responsibility of the Subsecretariat for Environmental Improvement of Mexico.

If the program outlined in the attached Memorandum of Understanding meets with the approval of your government, I have the honor to propose that this Note and your reply to that effect, together with the attached Memorandum of Understanding, shall constitute an agreement between our two governments for cooperation on environmental programs and problems.



Accept, Excellency, the renewed assurances of my highest consideration.

PATRICK J LUCEY

Attachment:  
As stated

His Excellency  
Lic. SANTIAGO ROEL,  
*Secretary of Foreign Relations,*  
*Mexico, D. F.*

TIAS 9284

## MEMORANDUM OF UNDERSTANDING

between

The Subsecretariat for Environmental Improvement of Mexico

and

The Environmental Protection Agency of the United States

for

Cooperation on Environmental Programs and Transboundary Problems

Whereas, the Governments of Mexico and the United States share many environmental problems related to large and expanding urban populations, substantial industrial activity, and a common border between the two countries; and both countries possess many areas of natural and man-made scenic and recreational value; and

Whereas, the Subsecretariat for Environmental Improvement of Mexico (SMA) and the Environmental Protection Agency (EPA) of the United States share a concern for protecting and improving the human and natural environments of their respective nations, and a common interest in the cause of global as well as common border environmental protection and improvement; and

Whereas, the Governments of Mexico and the U.S. have pledged increased cooperation through the Consultative Mechanism set up by the two Presidents to include environmental cooperation;

It is Hereby AGREED that:

1. The SMA and EPA will initiate a cooperative effort to resolve environmental problems of mutual concern in border areas as well as any environmental protection matter through exchanges of information and personnel, and the establishment of parallel projects which the two parties consider appropriate to adopt.

2. The SMA and EPA will accomplish parallel activities, while allowing for the possibility that, at any given time, through special agreement, joint actions tending to resolve specific problems, may be conducted.



3. SMA and EPA senior officials will meet annually, unless they mutually agree otherwise, to discuss overall policies, programs and problems which are of common concern. The annual meeting will be held, alternately in each country, at a mutually agreeable time and site.

4. Experts designated by SMA and EPA will meet periodically or as necessary to review technical issues and plan parallel projects, including pollution abatement and control, regulations, quality assurance, research, and monitoring, that are of common interest or concern to both Mexico and the United States. An annual meeting of designated experts will be held at a site mutually agreed to by both parties and may coincide with the U.S./Mexico Border Health Association annual meetings or with other meetings. The SMA and EPA experts may make policy recommendations for consideration by the respective heads of SMA and EPA.

5. The meetings of the SMA and EPA representatives will not be limited to consideration of border problems alone but may include discussions of all areas of environmental protection and enhancement. It is understood that the Water Treaty of 1944<sup>[1]</sup> between the two Governments entrusted the solution of border sanitation problems to the International Boundary and Water Commission.

6. Each Party will name one person to act as coordinator to facilitate exchanges of information and other cooperation under this Memorandum of Understanding. The coordinators will establish procedures and details for the meetings of the senior officials as well as experts, including the time, place and agenda.

7. The coordinators may invite representatives of federal, state and local government agencies, international organizations, members of private organizations or other private citizens to participate in meetings, conferences, and other parallel activities as deemed appropriate.

8. Parallel activities may be conducted when approved by appropriate authorities of the respective governments and may include but will not be limited to the following:

-- Development of pollution abatement and control programs directed toward specific pollution problems affecting either or both countries along the border.

-- Development of an early warning system to alert the two Governments to potential environmental problems.



<sup>1</sup> Signed Feb. 3, 1944. TS 994; 59 Stat. 1219.

-- Review and consultation regarding national environmental policies and strategies of Mexico and the United States.

-- Development of data gathering, processing and mechanisms for the exchanges of information of common interest.

9. The coordinators will be responsible for the general management of programs, workshops, projects and activities undertaken pursuant to this Memorandum of Understanding. This includes definition of each program, workshop or project as to scope, priority, and completion schedules. The coordinators may delegate work on a special problem area to a special subcommittee which shall examine the problem in detail and make recommendations to the Governments through the SMA and EPA, respectively.

10. Unless otherwise agreed, each Party will bear the cost of its participation, including personnel costs, in activities undertaken pursuant to this Memorandum of Understanding.

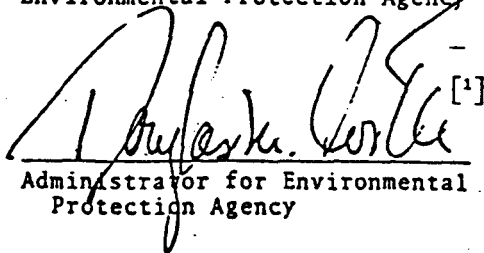
11. Work under this Memorandum of Understanding is subject to the availability of funds and other resources to each Party, and to the laws and regulations of Mexico and the United States.

12. Results of work accomplished under this Memorandum of Understanding will be fully available to both parties and either Party may release information in its possession to the public on 10 days notice to the other Party.

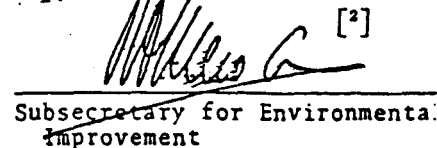
13. This Memorandum of Understanding will enter into force when signed by both Parties and approved by the two Governments through an exchange of notes. The Memorandum of Understanding will remain in force indefinitely until either Party notifies the other of its intent to terminate the agreement, with 90 days notification.

Done in duplicate at Mexico City on the 6 of June 1978 in the Spanish and English languages, both texts being equally authoritative.

For the United States  
Environmental Protection Agency

  
[1]  
Administrator for Environmental  
Protection Agency

For the Mexican  
Subsecretariat for  
Environmental Improvement

  
[2]  
Subsecretary for Environmental  
Improvement

<sup>1</sup> Douglas M. Costle.

<sup>2</sup> Romero Alvarez.

*The Mexican Secretary of Foreign Relations to the American  
Ambassador [1]*

ESTADOS UNIDOS MEXICANOS  
SECRETARIA DE RELACIONES EXTERIORES  
MEXICO

Tlatelolco, D.F., a 19 de junio de 1978.

Señor Embajador:

508218 Tengo el honor de acusar a Vuestra Excelencia recibo de su atenta nota número 952, fechada el 14 del corriente, en la que tuvo a bien comunicar que el gobierno de los Estados Unidos de América aprueba el memorandum de entendimiento suscrito el día 6 anterior, en ésta ciudad de México, por la Subsecretaría del Mejoramiento del Ambiente de la Secretaría de Salubridad y Asistencia y por el Organismo para la Protección del Ambiente de los Estados Unidos.

En respuesta, me complazco en informar a Vuestra Excelencia que el gobierno de México aprueba asimismo el citado memorandum de entendimiento y, por lo tanto, está de acuerdo en que la nota de Vuestra Excelencia, ésta nota y el memorandum de entendimiento anexo constituyan un acuerdo entre nuestros dos gobiernos para la cooperación en problemas y programas ambientales.

Aprovecho esta ocasión para renovar a Vuestra Excelencia el testimonio de mi más alta consideración.



Excelentísimo Señor  
Patrick Joseph Lucey  
Embajador Extraordinario y Plenipotenciario  
de los Estados Unidos de América  
C i u d a d .

<sup>1</sup> For the English language translation, see p. 1583.

**MEMORANDUM DE ENTENDIMIENTO<sup>[1]</sup>**

**ENTRE  
LA SUBSECRETARIA DE MEJORAMIENTO DEL AMBIENTE  
DE LA  
SECRETARIA DE SALUBRIDAD Y ASISTENCIA DE MEXICO  
Y  
LA AGENCIA DE PROTECCION AMBIENTAL DE LOS ESTADOS  
UNIDOS DE AMERICA  
PARA  
LA COOPERACION EN PROBLEMAS Y PROGRAMAS  
AMBIENTALES  
A TRAVES DE LA FRONTERA**

Tomando en cuenta que los Gobiernos de México y los Estados Unidos comparten muchos problemas ambientales que afectan a grandes y crecientes núcleos de población urbana; importantes actividades industriales y una frontera común con muchas áreas naturales y artificiales con valor escénico y recreativo en ambos lados;

En virtud de que la Subsecretaría de Mejoramiento del Ambiente de México (SMA), y la Agencia de Protección Ambiental de los Estados Unidos (APA), tienen interés común en relación a la protección y mejoramiento del medio ambiente natural y humano en sus respectivos países y compartiendo un interés común en cuanto a la protección ambiental en un sentido global y a lo largo de la frontera y

En vista de que los Gobiernos de México y los Estados Unidos se han comprometido a una cooperación mayor a través del mecanismo consultivo establecido por los dos Presidentes, que incluye la cooperación ambiental.

Se acuerda, por medio del presente, que:

1. La SMA y la APA iniciarán un esfuerzo cooperativo para resolver los problemas ambientales de interés mutuo en las áreas de la frontera, así como en relación a cualquier asunto tendiente a la protección ambiental mediante un intercambio de información y de personal, y el establecimiento de planes de operación paralelos que se considere apropiado adoptar entre ambas partes.

2. La SMA y la APA realizarán actividades paralelas, sin perjuicio de que, llegado el momento, puedan concertarse, a través de acuerdos especiales, acciones conjuntas tendientes a la resolución de casos específicos.

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<sup>1</sup> For the English language text, see pp. 1576-1578.

3. La SMA y la APA, a través de sus representantes se reunirán anualmente, a menos que de común acuerdo se conviniera llevar a cabo otras reuniones, para discutir políticas, problemas y programas de interés mutuo. Respecto a la Reunión Anual, se celebrará alternativamente en cada país, en lugar y fecha previamente convenidos.

4. Expertos designados por la SMA y la APA se reunirán periódicamente para proceder a la revisión de asuntos de orden técnico y planear proyectos paralelos, incluyéndose asuntos sobre control de contaminación, reglamentos, control de calidad, investigación y monitoreo, y en fin, problemas de interés común que afecten a ambos países. La reunión o reuniones de expertos se celebrarán en lugar y fecha previamente convenidos y pueden coincidir con la Reunión Anual de la Asociación Fronteriza Mexicano-Estadounidense de Salud o con otras reuniones. Los expertos de la SMA y de la APA podrán hacer recomendaciones sobre políticas a seguir para la consideración de los titulares respectivos de ambas entidades.

5. Las reuniones de la SMA y la APA, a través de sus respectivos representantes, no limitarán sus actividades a problemas exclusivamente fronterizos, sino que podrán incluir discusiones sobre todos los campos de protección ambiental y mejoramiento del mismo. Se entiende que el Tratado de Aguas suscrito por México y los Estados Unidos en 1944, confirió la solución de problemas sanitarios en la frontera a la Comisión Internacional de Límites y Aguas entre México y los Estados Unidos.

6. Cada parte designará a un representante para fungir como coordinador a fin de facilitar el intercambio de información y cooperación respecto al presente Acuerdo. Los coordinadores establecerán procedimientos y detallarán pormenores respecto a las reuniones de los funcionarios y expertos de la SMA y la APA, estableciendo lugares, fechas y agendas.

7. Los coordinadores podrán invitar a participar en las reuniones, conferencias y actividades paralelas a representantes federales, estatales y municipales, a organismos internacionales, a miembros de organizaciones privadas o a simples ciudadanos, según se considere apropiado.

8. Se pueden incluir en los proyectos paralelamente elaborados, cuando sean aprobados por las autoridades de los Gobiernos respectivos, las siguientes rubros, sin ser éstos limitativos:

- Desarrollo de control ambiental y programas de control de contaminación específica que afecten a uno o ambos países en la frontera.
- Desarrollo de un sistema de advertencia temprana para informar a ambos Gobiernos en cuanto a problemas ambientales en potencia.
- Revisión y consulta sobre políticas y estrategias nacionales ambientales de México y los Estados Unidos.

—Desarrollo de programas para efectuar recolección, procesamiento y establecimiento de mecanismos de intercambio de información de interés común.

9. Los coordinadores serán los responsables de la administración de los programas, talleres proyectos y cualquier actividad inherente a este Acuerdo. Esta responsabilidad incluye: el alcance, la prioridad y la fecha de terminación de actividades. Los coordinadores podrán delegar tareas sobre áreas problema especiales a sub-comités específicos para que proceden a examinar los problemas en detalle y hagan recomendaciones a los Gobiernos a través de la SMA y la APA.

10. A menos que se convenga lo contrario, cada parte sufragará el costo de su participación, incluyendo los gastos del personal adscrito a las actividades relacionadas con el Acuerdo.

11. La ejecución del Acuerdo está sujeta a la disponibilidad de fondos y otros recursos correspondientes a cada una de las partes, así como a las leyes y reglamentos de cada país.

12. Los resultados que se obtengan del Acuerdo estarán a disposición de ambas partes y pueden divulgarse a través de informaciones públicas, previo aviso de 10 días a la contraparte.

13. Este Memorandum de Entendimiento entrará en vigor a partir de la fecha de la firma de ambas partes y una vez que sea aprobado por los dos Gobiernos mediante el intercambio de notas diplomáticas, siendo su vigencia indefinida, hasta que una de las partes informe a la otra de su intención de terminarlo con aviso anticipado de 90 días.

Se expide por duplicado en la Ciudad de México, Distrito Federal, el 6 de junio de 1978, en español e inglés, siendo igualmente legales ambos textos.

POR MEXICO  
LA SUBSECRETARIA DE  
MEJORAMIENTO  
DEL AMBIENTE.S.S.A.

ROMERO ALVAREZ

POR LOS ESTADOS UNIDOS  
DE AMERICA:  
LA AGENCIA DE  
PROTECCION  
AMBIENTAL

DOGLAS M. COSTLE



## TRANSLATION

UNITED MEXICAN STATES  
MINISTRY OF FOREIGN RELATIONS  
MEXICO

Tlatelolco, D.F., June 19, 1978

No. 508218

Mr. Ambassador:

I have the honor to acknowledge receipt of Your Excellency's note No. 952 of June 14, 1978, informing me that the Government of the United States of America approves the Memorandum of Understanding signed at Mexico City on June 6, 1978, by the Office of the Deputy Secretary for Environmental Improvement, Department of Health and Assistance, and by the United States Environmental Protection Agency.

In reply, I take pleasure in informing Your Excellency that the Government of Mexico also approves the aforesaid Memorandum of Understanding and therefore agrees to consider that Your Excellency's note, this note, and the attached Memorandum of Understanding constitute an agreement between our two Governments for cooperation on environmental problems and programs.

I avail myself of this opportunity to renew to Your Excellency the assurances of my highest consideration.

S. Roel

His Excellency  
Patrick Joseph Lucey,  
Ambassador Extraordinary and Plenipotentiary  
of the United States of America,  
Mexico, D. F.

TIAS 9264

**APPENDIX VI**

**AGREEMENT BETWEEN MEXICO AND THE UNITED STATES ON  
COOPERATION FOR THE PROTECTION AND IMPROVEMENT OF THE  
ENVIRONMENT IN THE BORDER AREA-LA PAZ AGREEMENT**

## MEXICO

### Environmental Cooperation

*Agreement signed at La Paz August 14, 1983;  
Entered into force February 16, 1984.*

AGREEMENT BETWEEN THE UNITED STATES OF AMERICA AND THE UNITED  
MEXICAN STATES ON COOPERATION FOR THE PROTECTION AND  
IMPROVEMENT OF THE ENVIRONMENT IN THE BORDER AREA

The United States of America and the United Mexican States,

RECOGNIZING the importance of a healthful environment to the long-term economic and social well-being of present and future generations of each country as well as of the global community;

RECALLING that the Declaration of the United Nations Conference on the Human Environment, proclaimed in Stockholm in 1972,<sup>[1]</sup> called upon nations to collaborate to resolve environmental problems of common concern;

NOTING previous agreements and programs providing for environmental cooperation between the two countries;

BELIEVING that such cooperation is of mutual benefit in coping with similar environmental problems in each country;

ACKNOWLEDGING the important work of the International Boundary and Water Commission and the contribution of the agreements concluded between the two countries relating to environmental affairs;

REAFFIRMING their political will to further strengthen and demonstrate the importance attached by both Governments to cooperation on environmental protection and in furtherance of the principle of good neighborliness;

Have agreed as follows:

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<sup>1</sup> *Department of State Bulletin*, July 24, 1972, p. 116.

## ARTICLE 1

The United States of America and the United Mexican States, hereinafter referred to as the Parties, agree to cooperate in the field of environmental protection in the border area on the basis of equality, reciprocity and mutual benefit. The objectives of the present Agreement are to establish the basis for cooperation between the Parties for the protection, improvement and conservation of the environment and the problems which affect it, as well as to agree on necessary measures to prevent and control pollution in the border area, and to provide the framework for development of a system of notification for emergency situations. Such objectives shall be pursued without prejudice to the cooperation which the Parties may agree to undertake outside the border area.

## ARTICLE 2

The Parties undertake, to the fullest extent practical, to adopt the appropriate measures to prevent, reduce and eliminate sources of pollution in their respective territory which affect the border area of the other.

Additionally, the Parties shall cooperate in the solution of the environmental problems of mutual concern in the border area, in accordance with the provisions of this Agreement.

## ARTICLE 3

Pursuant to this Agreement, the Parties may conclude specific arrangements for the solution of common problems in the border area, which may be annexed thereto. Similarly, the Parties may also agree upon annexes to this Agreement on technical matters.

## ARTICLE 4

For the purposes of this Agreement, it shall be understood that the "border area" refers to the area situated 100 kilometers on either side of the inland and maritime boundaries between the Parties.

## ARTICLE 5

The Parties agree to coordinate their efforts, in conformity with their own national legislation and existing bilateral agreements to address problems of air, land and water pollution in the border area.

## ARTICLE 6

To implement this Agreement, the Parties shall consider and, as appropriate, pursue in a coordinated manner practical, legal, institutional and technical measures for protecting the quality of the environment in the border area. Forms of cooperation may include: coordination of national programs; scientific and educational exchanges; environmental monitoring; environmental impact assessment; and periodic exchanges of information and data on likely sources of pollution in their respective territory which may produce environmentally polluting incidents, as defined in an annex to this Agreement.

## ARTICLE 7

The Parties shall assess, as appropriate, in accordance with their respective national laws, regulations and policies, projects that may have significant impacts on the environment of the border area, so that appropriate measures may be considered to avoid or mitigate adverse environmental effects.

## ARTICLE 8

Each Party designates a national coordinator whose principal func

tions will be to coordinate and monitor implementation of this Agreement, make recommendations to the Parties, and organize the annual meetings referred to in Article 10, and the meetings of the experts referred to in Article 11. Additional responsibilities of the national coordinators may be agreed to in an annex to this Agreement.

In the case of the United States of America the national coordinator shall be the Environmental Protection Agency, and in the case of Mexico it shall be the Secretaría de Desarrollo Urbano y Ecología, through the Subsecretaría de Ecología.

#### ARTICLE 9

Taking into account the subjects to be examined jointly, the national coordinators may invite, as appropriate, representatives of federal, state and municipal governments to participate in the meetings provided for in this Agreement. By mutual agreement they may also invite representatives of international governmental or non-governmental organizations who may be able to contribute some element of expertise on problems to be solved.

The national coordinators will determine by mutual agreement the form and manner of participation of non-governmental entities.

#### ARTICLE 10

The Parties shall hold at a minimum an annual high level meeting to review the manner in which this Agreement is being implemented. These meetings shall take place alternately in the border area of Mexico and the United States of America.

The composition of the delegations which represent each Party, both

in these annual meetings as well as in the meetings of experts referred to in Article 11, will be communicated to the other Party through diplomatic channels.

#### ARTICLE 11

The Parties may, as they deem necessary, convoke meetings of experts for the purposes of coordinating their national programs referred to in Article 6, and of preparing the drafts of the specific arrangements and technical annexes referred to in Article 3.

These meetings of experts may review technical subjects. The opinions of the experts in such meetings shall be communicated by them to the national coordinators, and will serve to advise the Parties on technical matters.

#### ARTICLE 12

Each Party shall ensure that its national coordinator is informed of activities of its cooperating agencies carried out under this Agreement. Each Party shall also ensure that its national coordinator is informed of the implementation of other agreements concluded between the two Governments concerning matters related to this Agreement. The national coordinators of both Parties will present to the annual meetings a report on the environmental aspects of all joint work conducted under this Agreement and on implementation of other relevant agreements between the Parties, both bilateral and multilateral.

Nothing in this Agreement shall prejudice or otherwise affect the functions entrusted to the International Boundary and Water Commission, in accordance with the Water Treaty of 1944.<sup>[1]</sup>

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<sup>1</sup> Treaty relating to the utilization of waters of the Colorado and Tijuana Rivers and of the Rio Grande. Signed at Washington Feb. 3, 1944 and supplementary protocol signed Nov. 14, 1944. TS 994; 59 Stat. 1219.



## ARTICLE 13

Each Party shall be responsible for informing its border states and for consulting them in accordance with their respective constitutional systems, in relation to matters covered by this Agreement.

## ARTICLE 14

Unless otherwise agreed, each Party shall bear the cost of its participation in the implementation of this Agreement, including the expenses of personnel who participate in any activity undertaken on the basis of it.

For the training of personnel, the transfer of equipment and the construction of installations related to the implementation of this Agreement, the Parties may agree on a special modality of financing, taking into account the objectives defined in this Agreement.

## ARTICLE 15

The Parties shall facilitate the entry of equipment and personnel related to this Agreement, subject to the laws and regulations of the receiving country.

In order to undertake the monitoring of polluting activities in the border area, the Parties shall undertake consultations relating to the measurement and analysis of polluting elements in the border area.

## ARTICLE 16

All technical information obtained through the implementation of this Agreement will be available to both Parties. Such information may be made available to third parties by the mutual agreement of the Parties to this Agreement.

## ARTICLE 17

Nothing in this Agreement shall be construed to prejudice other existing or future agreements concluded between the two Parties, or affect the rights and obligations of the Parties under international agreements to which they are a party.

## ARTICLE 18

Activities under this Agreement shall be subject to the availability of funds and other resources to each Party and to the applicable laws and regulations in each country.

## ARTICLE 19

The present Agreement shall enter into force upon an exchange of Notes stating that each Party has completed its necessary internal procedures.<sup>[1]</sup>

## ARTICLE 20

The present Agreement shall remain in force indefinitely unless one of the Parties notifies the other, through diplomatic channels, of its desire to denounce it, in which case the Agreement will terminate six months after the date of such written notification. Unless otherwise agreed, such termination shall not affect the validity of any arrangements made under this Agreement.

## ARTICLE 21

This Agreement may be amended by the agreement of the Parties.

## ARTICLE 22

The adoption of the annexes and of the specific arrangements provided for in Article 3, and the amendments thereto, will be effected

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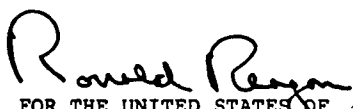
<sup>1</sup> Feb. 16, 1984.

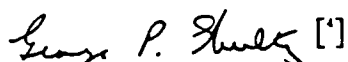
by an exchange of Notes.<sup>[1]</sup>

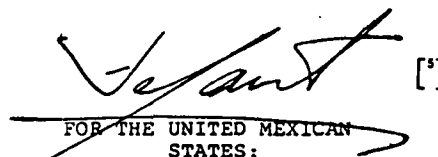
# ARTICLE 23

This Agreement supersedes the exchange of Notes, concluded on June 19, 1978 with the attached Memorandum of Understanding between the Environmental Protection Agency of the United States and the Subsecretariat for Environmental Improvement of Mexico for Cooperation on Environmental Programs and Transboundary Problems.<sup>[2]</sup>

DONE in duplicate, in the city of La Paz, Baja California, Mexico, on the 14th of August of 1983, in the English and Spanish languages, both texts being equally authentic.

<sup>[3]</sup>  
FOR THE UNITED STATES OF  
AMERICA:

<sup>[4]</sup>

<sup>[5]</sup>  
FOR THE UNITED MEXICAN  
STATES:

<sup>[6]</sup>

<sup>1</sup> Annexes subsequently agreed to by the parties are on file in the Office of Treaty Affairs, Department of State.

<sup>2</sup> TIAS 9264; 30 UST 1574.

<sup>3</sup> Ronald Reagan.

<sup>4</sup> George P. Shultz.

<sup>5</sup> De la Madrid.

<sup>6</sup> B. Sepulveda.

TIAS 10827

CONVENIO ENTRE LOS ESTADOS UNIDOS DE AMERICA Y LOS ESTADOS  
UNIDOS MEXICANOS SOBRE COOPERACION PARA LA PROTECCION Y  
MEJORAMIENTO DEL MEDIO AMBIENTE EN LA ZONA FRONTERIZA

Los Estados Unidos de América y los Estados Unidos Mexicanos,

RECONOCIENDO la importancia de un medio ambiente sano para el bienestar económico y social, a largo plazo, de las generaciones presentes y futuras de cada país, así como de la comunidad internacional;

RECORDANDO que la Declaración de la Conferencia de Naciones Unidas sobre el Medio Humano, proclamada en Estocolmo en 1972, hizo un llamado a todas las naciones para colaborar en la solución de problemas ambientales de interés común;

TOMANDO NOTA de acuerdos y programas previamente celebrados entre los dos países referentes a la cooperación en materia ambiental;

CONVENCIDOS que tal cooperación es de beneficio mutuo al atender problemas ambientales similares en cada país;

RECONOCIENDO el importante trabajo de la Comisión Internacional de Límites y Aguas y la contribución de los acuerdos celebrados entre los dos países en relación con asuntos ambientales;

REAFIRMANDO su voluntad política de fortalecer y demostrar la importancia que conceden ambos Gobiernos a la cooperación sobre protección ambiental y en observancia del principio de buena vecindad;

Han acordado lo siguiente:

## ARTICULO 1

Los Estados Unidos de América y los Estados Unidos Mexicanos, en adelante referidos como las Partes, acuerdan cooperar en el campo de la protección ambiental en la zona fronteriza sobre la base de igualdad, reciprocidad y beneficio mutuo. Los objetivos del presente Convenio son establecer las bases para la cooperación entre las Partes en la protección, mejoramiento y conservación del medio ambiente y los problemas que lo afectan, así como acordar las medidas necesarias para prevenir y controlar la contaminación en la zona fronteriza, y proveer el marco para el desarrollo de un sistema de notificación para situaciones de emergencia. Dichos objetivos podrán ser propiciados sin perjuicio de la cooperación que las Partes pudieran acordar llevar a cabo fuera de la zona fronteriza.

## ARTICULO 2

Las Partes se comprometen, en la medida de lo posible, a adoptar las medidas apropiadas para prevenir, reducir y eliminar fuentes de contaminación en su territorio respectivo que afecten la zona fronteriza de la otra.

Adicionalmente, las Partes cooperarán en la solución de problemas ambientales de interés común en la zona fronteriza, de conformidad con las disposiciones de este Convenio.

## ARTICULO 3

De conformidad con este Convenio, las Partes podrán concluir arreglos específicos para la solución de problemas comunes en la zona fronteriza, los que podrán serle anexados. Igualmente, las Partes podrán también acordar anexos a este Convenio sobre cuestiones técnicas.

## ARTICULO 4

Para los propósitos de este Convenio deberá entenderse que la "zona fronteriza" es el área situada hasta 100 kilómetros de ambos lados de las líneas divisorias terrestres y marítimas entre las Partes.

## ARTICULO 5

Las Partes acuerdan coordinar sus esfuerzos, de conformidad con sus propias legislaciones nacionales y acuerdos bilaterales vigentes para atender problemas de contaminación del aire, tierra y agua en la zona fronteriza.

## ARTICULO 6

Para aplicar este Convenio, las Partes considerarán y, según sea apropiado, procurarán en forma coordinada medidas prácticas, legales, institucionales y técnicas, para proteger la calidad del medio ambiente en la zona fronteriza. Las formas de cooperación pueden incluir: coordinación de programas nacionales; intercambios científicos y educativos; medición ambiental; evaluación de impacto ambiental; e intercambios periódicos de información y datos sobre posibles fuentes de contaminación en su territorio respectivo que puedan producir incidentes contaminantes del medio ambiente, según se definan en un anexo a este Convenio.

## ARTICULO 7

Las Partes evaluarán, según sea apropiado, de conformidad con sus respectivas leyes, reglamentos y políticas nacionales, proyectos que puedan tener impactos significativos en el medio ambiente de la zona fronteriza, para que se puedan considerar medidas apropiadas para evitar o mitigar efectos ambientales adversos.

## ARTICULO 8

Cada Parte designa a un coordinador nacional cuyas principales funciones serán las de coordinar y vigilar la aplicación de este Convenio, hacer recomendaciones a las Partes, y organizar las reuniones anuales a que se refiere el Artículo 10, así como las reuniones de expertos de que trata el Artículo 11. Otras responsabilidades de los coordinadores nacionales podrán ser acordadas en un anexo a este Convenio.

En el caso de los Estados Unidos el coordinador nacional será la Environmental Protection Agency, y en el caso de México será la Secretaría de Desarrollo Urbano y Ecología a través de la Subsecretaría de Ecología.

## ARTICULO 9

Tomando en cuenta los temas a ser examinados conjuntamente los coordinadores nacionales podrán invitar, según sea apropiado, a representantes de los gobiernos federales, estatales y municipales para que participen en las reuniones dispuestas en este Convenio. Por mutuo acuerdo podrán también invitar a representantes de organizaciones internacionales gubernamentales o no gubernamentales que pudieren contribuir con algún elemento de conocimiento a los problemas por resolver.

Los coordinadores nacionales determinarán por acuerdo mutuo la forma y manera de participación de las entidades no gubernamentales.

## ARTICULO 10

Las Partes celebrarán como mínimo una reunión anual de alto nivel para revisar la manera en que se está aplicando este Convenio. Estas reuniones se celebrarán en la zona fronteriza, alternativamente, en México y en los Estados Unidos de América.

La composición de las delegaciones que representen a cada Parte, tanto en las reuniones anuales como en las reuniones de expertos a que se refiere el Artículo 11, será comunicada a la otra Parte por la vía diplomática.

#### ARTICULO 11

Las Partes podrán, según lo estimen necesario, convocar reuniones de expertos para los propósitos de coordinar los programas nacionales referidos en el Artículo 6 y preparar los proyectos de arreglos específicos y de anexos técnicos previstos en el Artículo 3.

Estas reuniones de expertos podrán revisar asuntos técnicos. Las opiniones de los expertos que resulten de dichas reuniones serán comunicadas por ellos a los coordinadores nacionales, y servirán para asesorar a las Partes en cuestiones técnicas.

#### ARTICULO 12

Cada Parte se asegurará de que su coordinador nacional esté informado de las actividades de sus entidades de cooperación realizadas con sujeción a este Convenio. Cada Parte se asegurará también de que su coordinador nacional esté informado de la aplicación de otros acuerdos vigentes entre los dos Gobiernos en cuestiones relacionadas con este Convenio. Los coordinadores nacionales de ambas Partes presentarán a las reuniones anuales un informe sobre los aspectos ambientales de todo trabajo conjunto realizado conforme a este Convenio y en aplicación de otros acuerdos relevantes entre las Partes, tanto bilaterales como multilaterales.

Nada en este Convenio prejuzgará o de manera alguna afectará las funciones encargadas a la Comisión Internacional de Límites y Aguas,



de conformidad con el Tratado de Aguas de 1944.

#### ARTICULO 13

Cada Parte será responsable de informar a sus estados fronterizos y de consultarlos de conformidad con sus respectivos sistemas constitucionales, en relación a asuntos cubiertos por este Convenio.

#### ARTICULO 14

A menos que se acuerde otra cosa, cada Parte sufragará el costo de su participación en la aplicación de este Convenio, incluyendo los gastos del personal que participe en cualquier actividad realizada sobre la base del mismo.

Para el entrenamiento de personal, la transferencia de equipo y la construcción de instalaciones relacionadas con la aplicación de este Convenio, las Partes podrán acordar una modalidad especial de financiamiento, tomando en cuenta los objetivos definidos en este Convenio.

#### ARTICULO 15

Las Partes facilitarán la entrada de equipo y personal relacionados con este Convenio, con sujeción a las leyes y reglamentos del país receptor.

A fin de llevar a cabo la detección de actividades contaminantes en la zona fronteriza, las Partes realizarán consultas sobre la medición y análisis de elementos contaminantes en la zona fronteriza.

#### ARTICULO 16

Toda información técnica obtenida a través de la aplicación de es

te Convenio estará disponible para ambas Partes. Dicha información podrá facilitarse a terceras partes por acuerdo mutuo de las Partes en este Convenio.

#### ARTICULO 17

Nada en este Convenio será entendido en perjuicio de otros acuerdos vigentes o futuros entre las dos Partes, ni afectará los derechos y obligaciones de las Partes conforme a acuerdos internacionales de los que son parte.

#### ARTICULO 18

Las actividades realizadas conforme a este Convenio se sujetarán a la disponibilidad de fondos y otros recursos de cada Parte y a la aplicación de las leyes y reglamentos de cada país.

#### ARTICULO 19

El presente Convenio entrará en vigor mediante un intercambio de Notas, en las que cada una de las Partes declare que ha cumplido con sus procedimientos internos necesarios.

#### ARTICULO 20

El presente Convenio estará en vigor indefinidamente a menos que una de las Partes notifique a la otra, por la vía diplomática, su deseo de denunciarlo, en cuyo caso el Convenio terminará seis meses después de la fecha de tal notificación escrita. A menos que se acuerde otra cosa, dicha terminación no afectará la validez de ningún arreglo celebrado conforme a este Convenio.

## ARTICULO 21

Este Convenio podrá ser enmendado por acuerdo de las Partes.

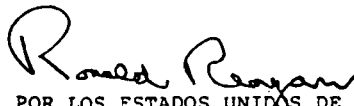
## ARTICULO 22

La adopción de los anexos y de los arreglos específicos previstos en el Artículo 3, y las enmiendas a los mismos, se efectuarán por intercambio de Notas.

## ARTICULO 23

Este Convenio sustituye al intercambio de Notas concluido el 19 de junio de 1978 con el Memorándum de Entendimiento anexo, entre la Environmental Protection Agency de los Estados Unidos y la Subsecretaría de Mejoramiento del Ambiente de la Secretaría de Salubridad y Asistencia de México, para la Cooperación en Problemas y Programas Ambientales a través de la Frontera.

HECHO por duplicado en la ciudad de La Paz, Baja California, México, el 14 de agosto de 1983, en los idiomas inglés y español, siendo ambos textos igualmente auténticos.

  
POR LOS ESTADOS UNIDOS DE  
AMERICA:



  
POR LOS ESTADOS UNIDOS  
MEXICANOS:



TIAS 10827

**APPENDIX VII**

**UNITED STATES FISH AND WILDLIFE SERVICE/SEDUE**

AGREEMENT BETWEEN THE DIRECCION GENERAL DE FLORA Y FAUNA SILVESTRES DE LA SECRETARIA DE DESARROLLO URBANO Y ECOLOGIA, DE LOS ESTADOS UNIDOS MEXICANOS AND THE FISH AND WILDLIFE SERVICE OF THE DEPARTMENT OF THE INTERIOR OF THE UNITED STATES FOR COOPERATION IN THE CONSERVATION OF WILDLIFE.

The Direccion General de Flora y Fauna Silvestres (hereinafter the Direccion General), of the Secretary of Urban Development and Ecology of the Government of the United Mexican States, and the Fish and Wildlife Service (hereinafter the Service) of the Department of the Interior of the Government of the United States of America.

TAKING INTO ACCOUNT:

The Agreement on Scientific and Technical Cooperation between the United Mexican States and the United States of America of June 15, 1972; and

That the United Mexican States and the United States of America share the concern, the responsibility and the necessity to conserve diverse species of wildlife and their habitats which form part of the natural heritage of each of the countries;

That said responsibility for conservation is shared between the two countries according to the Convention between Mexico and the United States of America for the Protection of Migratory Birds and Game Mammals of February 7, 1936, and by virtue of the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere of October 12, 1940;

That the Direccion General and the Service are the technical and administrative agencies officially authorized to manage the wild flora and fauna in their respective countries,

That both agencies recognize areas of mutual concern, that these areas can be adequately addressed only by direct and joint participation, that it is necessary to assure the joint implementation of projects that are of mutual interest and concern in an orderly and well-planned form and in a manner that will result in a benefit to wild flora and fauna in both countries.

IT IS THEREFORE AGREED to cooperate in the conservation of wildlife, according to the following provisions:

ARTICLE I: There is hereby established the USA-Mexico Joint Committee on Wildlife Conservation which shall be jointly chaired by the Directors of the Service and the Direccion General.

ARTICLE II: It shall be the responsibility of the Joint Committee Committee to identify priorities for cooperation, define and evaluate projects, allocate resources necessary for the development of projects, as well as to promote cooperation that will assure the rational and prudent management of the flora and fauna of both countries.

ARTICLE III: In order to accomplish the objectives of the Joint Committee, activities will be developed based on the following areas of mutual interest:

1. Conservation of species of wild flora and fauna threatened or in danger of extinction.
2. Exchange of wildlife specimens.
3. Management of migratory birds.
4. Investigations on wild flora and fauna, as well as their respective habitats.
5. Management of protected natural areas.
6. Training and education.
7. Mutual support in the enforcement of legal and administrative provisions relating to the conservation of and commerce in wild species.

ARTICLE IV: In order to facilitate the organization and development of the work of the Joint Committee, the Committee will meet a minimum of one time per year, alternating host countries.

Other meetings may be called by mutual agreement between both Parties.

1. The Joint Committee will develop its activities through the development of projects and subprojects which will be defined at the annual meetings.
- 1a. The projects and subprojects will make up the Annual Program of Cooperative Activities between the two agencies.

Each project or subproject shall be under the direction of a coordinator who will have been previously selected by each of the Parties. The coordinators will be responsible for the joint preparation, in advance of the Committee meeting, of a draft of their respective projects, which must consist of the following information:

- Description of the project and subproject
- Objectives
- Methodology for conducting cooperative work
- Time schedule for completing the work
- Personnel and equipment needs
- Estimated costs and source of funds

- 1b. All projects will consider and incorporate, whenever possible, training for Mexican and U.S. nationals as a part of the project. The Annual Program of Cooperative Activities will require approval from the appropriate national authorities responsible for each action.
2. In the course of performing each project and subproject, the coordinators will prepare a joint status report which will be delivered to their corresponding National Chairman for presentation and evaluation at the Annual Meeting of the Committee.
3. Joint project and subproject descriptions must be approved by the Chairman of the Joint Committee before they can be funded or modified by project or subproject leaders.
4. Projects and subprojects which, in the opinion of the Chairman, require urgent or special consideration may be reviewed jointly by the Chairman at any time by mutual agreement.
5. A final agreement will be prepared in duplicate at each Joint Committee meeting and will be signed by both Chairman and be made immediately available to both Parties. This agreement will include the Annual Program of Activities as well as other matters discussed. The agreement will also contain:
  - Date and location of the meeting
  - Summary of topics discussed
  - List of attendees
  - Copies of approved project/subproject descriptions
6. The agreements from Joint Committee meetings will be sent to the Mexico-U.S. Commission on Scientific and Technical Cooperation for their information.

ARTICLE V: Activities performed under this Agreement will be subject to the availability of funds and resources of each Party, and to the laws and regulations of each country.

ARTICLE VI: This Agreement will become effective immediately and will remain in effect for 5 years, renewable automatically for equal periods.

ARTICLE VII: This Agreement may be terminated at any time by either Party upon notification to the other Party through diplomatic channels 3 months before the date of termination. Termination, however, will not affect the completion of projects already funded and underway unless otherwise decided.

Signed in duplicate in the city of Claremont, California, on the fifth day of December of the year 1984, in identical texts of Spanish and English.

FOR THE SECRETARY OF  
URBAN DEVELOPMENT AND ECOLOGY  
OF THE GOVERNMENT OF THE  
UNITED STATES OF MEXICO

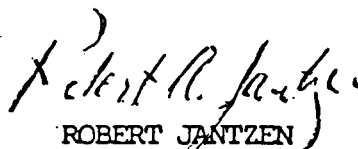
FOR THE SECRETARY OF  
THE DEPARTMENT OF INTERIOR OF  
THE UNITED STATES OF AMERICA

The Director General of  
Flora and Fauna Silvestres



WILFRIDO CONTRERAS D.

The Director of the Fish  
and Wildlife Service



ROBERT JANTZEN



**APPENDIX VIII**

**PROTECTION OF MIGRATORY BIRDS**

## MEXICO

### Protection of Migratory Birds

*Agreement supplementing the agreement of February 7, 1936.*

*Effectuated by exchange of notes*

*Signed at México and Tlatelolco March 10, 1972;*

*Entered into force March 10, 1972.*

*The American Ambassador to the Mexican Acting Secretary of Foreign Relations*

EMBASSY OF THE UNITED STATES OF AMERICA,  
MEXICO CITY, March 10, 1972

No. 283

#### EXCELLENCY:

I have the honor to refer to the Convention between the United States of America and the United Mexican States for the Protection of Migratory Birds and Game Mammals, signed at Mexico City on February 7, 1936, [1] and to conversations between representatives of our two Governments relating to the addition to the list of birds considered migratory for the purposes of the Convention.

Pursuant to authority delegated by the President of the United States, I have the honor to propose that the following additions be made to the list of birds set forth in Article IV of the Convention:

| <i>Scientific Name</i> | <i>English Name</i>      | <i>Spanish Name</i>             |
|------------------------|--------------------------|---------------------------------|
| Accipitridae           | Eagles, hawks            | Gavilanes, aguilas, aguillillas |
| Alcedinidae            | Kingfishers              | Martin Pescador                 |
| Alcidae                | Auklets, murres puffins  | Pato de noche                   |
| Anhingidae             | Snake birds              | Ahuizote                        |
| Aramidae               | Limpkins                 | Totalaca                        |
| Ardeidae               | Herons, egrets, bitterns | Garzas, garzones                |
| Cathartidae            | New World vultures       | Zopilotes, auras                |
| Ciconiidae             | Stork and wood ibis      | Jaribu, Galambae                |
| Corvidae               | Ravens, crows, jay       | Cuervos, urracas                |
| Diomedaeidae           | Albatrosses              | Albatros                        |
| Falconidae             | Falcons, hawks           | Gavilan, Caracara               |
| Fregatidae             | Man-of-war birds         | Fragata                         |
| Phalacrocoracidae      | Cormorant                | Cormoran, corvejon              |
| Phoenicopteridae       | Flamingo                 | Flamenco                        |
| Gaviidae               | Loons                    | Somorgujos                      |
| Haematopodidae         | Oyster catcher           | Ostrero                         |
| Hydrobatidae           | Storm petrels            | Petrelas                        |

<sup>1</sup> TS 912; 50 Stat. 1311.

| <i>Scientific Name</i> | <i>English Name</i> | <i>Spanish Name</i>   |
|------------------------|---------------------|-----------------------|
| Jacaniidae             | Jacanas             | Cirujano              |
| Laridae                | Sea gulls, Terns    | Gaviotas, Gallito     |
| Pandionidae            | Ospreys             | Aguilla pescadora     |
| Pelecanidae            | Pelicans            | Pelicanos             |
| Phaethontidae          | Tropic-birds        | Raba de junco         |
| Podicipedidae          | Grebes              | Zambullidores, Buzos  |
| Procellariidae         | Shearwaters         | Petrelas, Fulmaros    |
| Rynchopidae            | Skimmers            | Rayador               |
| Sittidae               | Nuthatches          | Salta-palos           |
| Stercorariidae         | Jaeger              | Estercorario, Skus    |
| Strigidae              | Owls                | Tecolote, Lechuza     |
| Sulidae                | Boobies, Gannets    | Bubias                |
| Threskiornithidae      | Spoonbill, ibises   | Teoquchol, Cucharera  |
| Tytonidae              | Barn owl            | Lechuzas              |
| Trogonidae             | Trogons             | Pabellon, Cuauhtotola |

Upon the receipt of a note from Your Excellency indicating that the proposal contained in this note is acceptable to the Government of the United Mexican States, the Government of the United States of America will consider that this note and your reply thereto shall constitute an agreement between the two Governments on this subject, which agreement shall enter into force on the date of your note in reply.

Accept, Excellency, the renewed assurances of my highest consideration.

ROBERT H. McBRIDE

His Excellency

RUBEN GONZÁLEZ SOSA

*Acting Secretary of Foreign Relations,  
México, D. F.*

*The Mexican Acting Secretary of Foreign Relations to  
the American Ambassador*

ESTADOS UNIDOS MEXICANOS  
SECRETARIA DE RELACIONES EXTERIORES  
MEXICO

501874

TLATELOLCO, D. F., a 10 de marzo de 1972.

SEÑOR EMBAJADOR:

Tengo a honra acusar a Vuestra Excelencia recibo de su atenta nota número 283, fechada el día de hoy, cuyos términos vertidos al español son los siguientes:

"Tengo el honor de referirme al Convenio entre los Estados Unidos de América y los Estados Unidos Mexicanos para la Protección de Aves Migratorias y Mamíferos Cinegéticos, firmado en la Ciudad de México el 7 de febrero de 1936 y a las conversaciones entre representantes de nuestros dos Gobiernos relativas a la adición a la lista de aves consideradas migratorias para los efectos del Convenio.

TIAS 7302

De acuerdo con la autoridad delegada por el Presidente de los Estados Unidos de América, tengo el honor de proponer que se efectúen las siguientes adiciones a la lista de aves que se mencionan en el Artículo 4o. del Convenio:

| <i>Nombre científico</i> | <i>Nombre en español</i>       | <i>Nombre en inglés</i>  |
|--------------------------|--------------------------------|--------------------------|
| Accipitridae             | Gavilanes, águilas, aguilillas | Eagles, hawks            |
| Alcedinidae              | Martin Pescador                | Kingfishers              |
| Alcidae                  | Pato de noche                  | Auklets, murres, puffins |
| Anhingidae               | Ahuizote                       | Snake birds              |
| Aramidae                 | Totalaca                       | Limpkins                 |
| Ardeidae                 | Garzas, garzones               | Hérons, egrets, bitterns |
| Cathartidae              | Zopilotes, auras               | New world vultures       |
| Ciconiidae               | Jaribú, Galambae               | Stork and wood ibis      |
| Corvidae                 | Cuervos, urracas               | Ravens, crows, jay       |
| Diomedidae               | Albatros                       | Albatrosses              |
| Falconidae               | Gavilán, Caracara              | Falcons, hawks           |
| Fregatidae               | Fragata                        | Man-of-war birds         |
| Phalacrocoracidae        | Cormoran, corvejon             | Cormorant                |
| Phoenicopteridae         | Flamenco                       | Flamingo                 |
| Gaviidae                 | Somorgujos                     | Loons                    |
| Haematopodidae           | Ostrero                        | Oyster catcher           |
| Hydrobatidae             | Petreles                       | Storm petrels            |
| Jacaniidae               | Cirujano                       | Jacanas                  |
| Laridae                  | Gavioetas, Gallito             | Sea gulls, Terns         |
| Pandionidae              | Aguililla pescadora            | Ospreys                  |
| Pelecanidae              | Pelicanos                      | Pelicans                 |
| Phaethontidae            | Raba de junco                  | Tropic-birds             |
| Podicipedidae            | Zambullidores, Buzos           | Grebes                   |
| Procellariidae           | Petreles, Fulmaros             | Shearwaters              |
| Rynchopidae              | Rayador                        | Skimmers                 |
| Sittidae                 | Saltapalos                     | Nuthatches               |
| Stercorariidae           | Estercorario, Skus             | Jaeger                   |
| Strigidae                | Tecolote, Lechuza              | Owls                     |
| Sulidae                  | Bubias                         | Boobies, Gannets         |
| Threskiornithidae        | Teoquchol, Cucharera           | Spoonbill, ibises        |
| Tytonidae                | Lechuzas                       | Barn owl                 |
| Trogonidae               | Pabellon, Cuauhtotola          | Trogons                  |

Al recibir la nota de Vuestra Excelencia indicando que la propuesta contenida en esta nota es aceptable para el Gobierno de los Estados Unidos Mexicanos, el Gobierno de los Estados Unidos de América considerará que esta nota y la respuesta a la misma constituirán un acuerdo entre los dos Gobiernos sobre esta materia, el cual entrará en vigor en la fecha de su nota de respuesta".

En respuesta, me complace en informar a Vuestra Excelencia que mi Gobierno acepta los términos de su nota número 283 antes transcrita y, en consecuencia, está de acuerdo en considerar que dicha nota y la presente constituyen un Acuerdo entre el Gobierno de los Estados Unidos Mexicanos y el Gobierno de los Estados Unidos de América que modifica el Artículo 4o. del Convenio para la Protección de Aves Migratorias y Mamíferos Cinegéticos, firmado en la Ciudad de México el 7 de febrero de 1936, el cual entra en vigor el día de hoy.

Aprovecho la oportunidad para renovar a Vuestra Excelencia el testimonio de mi más alta consideración.

R. GONZÁLEZ S.

Excelentísimo señor ROBERT HENRY McBRIDE,  
*Embajador Extraordinario y Plenipotenciario de los  
Estados Unidos de América,  
México, D. F.*

*Translation*

UNITED MEXICAN STATES  
DEPARTMENT OF FOREIGN RELATIONS  
MEXICO

501874

TLATELOLCO, D.F., March 10, 1972

MR. AMBASSADOR:

I have the honor to acknowledge receipt of Your Excellency's note No. 283 of today's date, the Spanish translation of which is as follows:

[For the English language text, see p. 260.]

In reply, I am happy to inform Your Excellency that my Government accepts the terms of your note No. 283, transcribed above, and consequently agrees to consider that your note and this note in reply shall constitute an agreement between the Government of the United Mexican States and the Government of the United States of America amending Article 4 of the Convention for the Protection of Migratory Birds and Game Mammals, signed at Mexico City on February 7, 1936, which agreement shall enter into force on this date.

I avail myself of this opportunity to renew to Your Excellency the assurance of my highest consideration.

R. GONZÁLEZ S.

His Excellency

ROBERT HENRY McBRIDE,  
*Ambassador Extraordinary and Plenipotentiary  
of the United States of America,  
Mexico, D.F.*

TIAS 7302

**APPENDIX IX**

**UNITED STATES FOREST SERVICE**

MEMORANDUM OF UNDERSTANDING BETWEEN THE DEPARTMENT OF  
AGRICULTURE OF THE UNITED STATES OF AMERICA AND THE  
SECRETARY OF AGRICULTURE AND WATER RESOURCES OF  
THE UNITED MEXICAN STATES, ON SCIENTIFIC AND  
TECHNOLOGICAL COOPERATION IN FORESTRY

The Department of Agriculture of the United States of America (USDA) and the Secretary of Agriculture and Water Resources (SARH) of the United Mexican States (hereinafter referred to as the "Parties").

Based on the provisions of Article I of the agreement for scientific and technological cooperation, signed in Washington D.C., June 15, 1972,

Pursuant to discussions held during the preparatory meeting of the fifth U.S. - Mexico Mixed Commission which met in Mexico City, September 20-22, 1983,

Recognizing that joint scientific and technical cooperation in agriculture will further advance the technology of both sides, have agreed to strengthen the relations between the Parties through a Memorandum of Understanding on scientific and technological cooperation for a better utilization and development of the forest resources of the two nations in accordance with the following provisions:

ARTICLE I

The Parties will undertake forestry programs of scientific and technological cooperation hereinafter referred to as Programs, which will be of two types:

"ordinary", under a biannual basis and "extraordinary" of unexpected nature and hence non-programmable. Both will have the same weight and include the areas of education, training, management, protection and administration of forest resources in addition to other disciplines of mutual interest.

## ARTICLE II

Joint activity between the Parties will include:

- Exchange of scientific, educational and technological information and documentation;
- Exchange of scientists and specialists for study tours or visits;
- Organization of joint seminars, workshops and conference;
- Development of joint research and exchange of results between scientists research institutions and organizations, and
- Other forms of cooperation as may be agreed upon by both Parties.

## ARTICLE III

The main goals to be achieved through this cooperation are:

To establish, nurture and maintain the scientific and technical cooperation and practical application between the Parties in areas of mutual interest;

- To establish, exchange and consult as to policies; planning; administration and management information systems;
- To conduct joint multi-resource management research;
- To develop and improve forest harvest; and multiple resource protection with a view toward long-term production and conservation; and
- To conduct training in computer technology, practical application, technology transfer and information network systems.

It is expected that this Memorandum will promote establishment and improvement of methodologies and communications; will increase knowledge, and stimulate technical interchange and professional development.

## ARTICLE IV

In accordance with appropriate financial and budgetary processes, each Party will bear the costs of its participation and that of its representatives in cooperative activities unless the Parties mutually agree on other arrangements.



## ARTICLE V

Scientific information derived from a cooperative activity will be made available to the world's scientific community through customary channels and in accordance with the normal procedures of each Government of the particular activity. Treatment of intellectual property, licenses and patents will be mutually agreed upon by the Parties according to the existing laws and practices of each country.

## ARTICLE VI

A "Joint Forestry Working Group" (JFWG) will be formed as the institutional mechanism to coordinate, plan, design and monitor the activities carried out under the auspices of this memorandum. Its operation will follow the procedures that the working group will adopt.

The JFWG will have among its members, a national coordinator. This will be the Chief of the USDA Forest Service in the case of the United States of America and the Subsecretary of Forestry in the case of Mexico. Other members of the JFWG will be an alternate and a given number of professionals, jointly agreed by the working group. It will be chaired jointly by the national coordinators, and will meet ordinarily during the meetings of the U.S.-Mexico Mixed Commission of Scientific and Technological Cooperation to review pending tasks. Non-ordinary meetings will be subject to mutual approval.

## ARTICLE VII

Cooperative Programs will be oriented to achieve the main purpose of this memorandum. They are expected to include in detail, precise duties of the Parties for each proposed task. Information on objectives, specification of areas for cooperation, time schedules, and additional elements that will contribute to program success should be provided.

## ARTICLE VIII

JFWG will periodically report to the Mixed Commission on Program development and evaluation and specific tasks. Such tasks will be selected by mutual agreement from the proposals suggested by the national coordinators.

## ARTICLE IX

The parties by mutual consent may invite other agencies of their governments to collaborate in the programs, as well as their academic, scientific and private entities, the effect of which would be to facilitate and encourages those institutions and specialists deemed pertinent.

#### ARTICLE X

This memorandum may be modified by the prior consent of the Parties, and these modifications will be valid after notification in writing. United States Department of Agriculture and the Subsecretary of Forestry, Secretary of Agriculture and Water Resources of the United Mexican States.

#### ARTICLE XI

This document substitutes the memorandum between the USDA Forest Service and the SARH Subsecretary of Forestry of Mexico, signed February 21, 1980; and may incorporate, by agreement of both Parties, specific aspects of ongoing cooperation identified in this latter document.

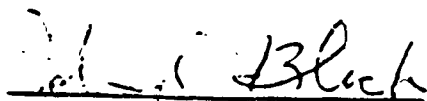
The present memorandum will enter into force on the date of its signature by the authorized representatives of the Parties, and will remain in force for six years, automatically renewed for successive six year periods, unless any of the Parties decide on the contrary in which case, it will notify by written notice to the other Party with six months of anticipation.

#### ARTICLE XII

The expiration, modification or termination of this memorandum will not affect in any way the activities previously approved by the Parties.

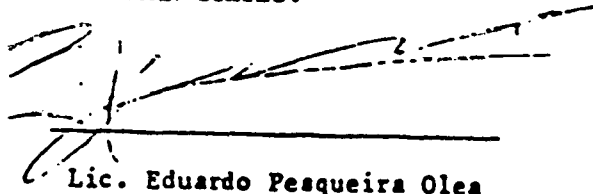
Signed in Washington, D.C. this 16th of November 1984, in duplicate and in English and Spanish, both texts being equally authentic.

FOR THE DEPARTMENT OF  
AGRICULTURE OF THE UNITED  
STATES OF AMERICA.



Mr. John R. Block

FOR THE SECRETARY OF  
AGRICULTURE AND WATER  
RESOURCES OF THE UNITED  
MEXICAN STATES.

  
Lic. Eduardo Pesqueira Olea

## **APPENDIX X**

### **ARID AND SEMI-ARID LANDS MANAGEMENT (expired)**

## **MEXICO**

### **Arid and Semi-Arid Lands Management and Desertification Control**

*Agreement signed at México February 16, 1979;  
Entered into force February 16, 1979.*

AGREEMENT BETWEEN THE GOVERNMENT OF THE UNITED STATES  
OF AMERICA AND THE GOVERNMENT OF THE UNITED MEXICAN  
STATES ON COOPERATION TO IMPROVE THE MANAGEMENT OF  
ARID AND SEMI-ARID LANDS AND CONTROL DESERTIFICATION

The Government of the United States of America and the  
Government of the United Mexican States,

CONCERNED because the desertification phenomenon presents  
a growing threat to the economic and social well-being of large  
sectors of the population of both countries;

RECOGNIZING the benefits which can be derived from the  
implementation of the recommendations of the Global Plan of Action  
to Combat Desertification adopted at the United Nations Conference  
on Desertification in Nairobi, Kenya, in 1977;

CONSIDERING that possibilities exist for controlling  
desertification and for restoring and enhancing the productive  
capacity of arid and semi-arid lands through the application of  
new policies, programs and practices of proper resource manage-  
ment;

EMPHASIZING that cooperation to solve common desertification-  
related problems may produce important mutual benefits, including  
an increase in the pace, efficiency and effectiveness of the  
respective national plans on desertification that each Government  
is developing; and

NOTING that the consultations on desertification between  
the two Governments have provided adequate guidance and a frame-  
work for expansion of cooperation in this field

HAVE AGREED AS FOLLOWS:

ARTICLE I

1. The two Governments shall promote cooperation for the purposes of controlling desertification and protecting and enhancing the productive capacity of the agricultural lands, rangelands and forests of each country's arid and semi-arid zones.

2. The institutions which principally will develop the operative activities of cooperation under this Agreement will be, for the United States of America, the Department of the Interior and the Department of Agriculture, and for the United Mexican States, the Secretariat of Agriculture and Hydraulic Resources, the Secretariat of Human Settlements and Public Works, and the National Commission for Arid Zones.

ARTICLE II

1. Cooperation under this Agreement shall be undertaken in the conservation of soil and water; the management of watersheds, rangelands and forests; the identification, inventory and continuing assessment of desertification; the management and utilization of flora and fauna native to arid and semi-arid zones; and other subjects which may be defined by agreement of the Parties.

2. Cooperation may include the exchange of scientific and technological information; exchange of scientists and other technical and research personnel; the planning and conduct of joint or coordinated research, management and demonstration projects; the organization of joint courses, conferences and symposia; and other forms of cooperation as may be mutually agreed.

3. Under this Agreement, initial priority shall be given to the following:

(a). Soil and water conservation on agricultural lands, rangelands and forests, with a view toward increasing food production and preserving the ecological balance;

(b). Conservation, regeneration, utilization and commercialization of arid zone native species with a view toward expanding employment opportunities and income generation in the rural areas; and

(c). Completion of the National Desertification Plans of each Government, with a view toward coordinating policies and programs in the fields of arid and semi-arid land management and desertification control.

#### ARTICLE III

1. To facilitate cooperation under this Agreement, each Government shall designate a National Coordinator.

2. The National Coordinator for the Government of the United States will be the Department of State and the Coordinator for the Government of Mexico will be the Secretariat of Programming and Budget.

3. The National Coordinators shall serve as the principal points of contact of the two Governments and shall work closely in facilitating, coordinating and reviewing cooperative activities under this Agreement.

4. The National Coordinator of each Government, in consultation with the agencies and other entities which participate in the cooperative programs, shall be responsible for coordinating the activities in its country which arise as a consequence of this Agreement.

#### ARTICLE IV

1. Pursuant to the objectives of this Agreement, the two Governments, through their National Coordinators, shall encourage, facilitate and authorize, as appropriate, contacts, the negotiation of accords, and cooperation between Government agencies, universities, and other entities of both countries for the conduct of specific cooperative activities.

2. Specific accords implementing this Agreement may cover the subjects of cooperation, procedures to be followed, treatment of intellectual property, funding and any other appropriate matters.

3. Costs shall be borne as mutually agreed by the participants.

4. All cooperative activities undertaken pursuant to this Agreement shall be subject to the availability of funds.

#### ARTICLE V

The two Governments shall endeavor to promote and contribute to the rapid implementation of the United Nations Global Plan of Action to Combat Desertification through measures which may include:

1. Inviting, when appropriate and by mutual agreement of the National Coordinators, entities and scientists, technical experts, and resource planners and administrators of third countries or of international and regional organizations to participate in cooperative activities under this Agreement; and



2. The joint distribution of information and data generated by this Agreement to other governments and international and regional organizations, particularly to the United Nations Environment Program (UNEP) and to the Economic Commission for Latin America of the United Nations (ECLA).

#### ARTICLE VI

Scientific and technological information derived from cooperative activities under this Agreement may be made available, unless agreed otherwise in specific accords under Article IV, to the world community through customary channels and in accordance with the normal procedures of the participating entities.

#### ARTICLE VII

1. Cooperative activities under this Agreement shall be subject to the laws and regulations in each country.

2. Each Government shall, with respect to cooperative activities under this Agreement, use its best efforts to facilitate prompt entry into and exit from its territory of equipment and personnel of the other country.

#### ARTICLE VIII

1. None of the provisions of this Agreement shall be construed to prejudice other Agreements or arrangements between the two Governments.

2. Cooperative activities carried out under this Agreement shall be developed in a manner that complements and reinforces those activities carried out pursuant to the 1972 Agreement on Scientific and Technical Cooperation between the United States of America and the United Mexican States,<sup>[1]</sup> and in the 1977 Memorandum

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<sup>1</sup> Exchange of notes June 15, 1972. TIAS 7362; 23 UST 934.

of Understanding signed by the Department of Agriculture of the United States of America and the National Council for Science and Technology of Mexico on Tropical Agriculture, Deserts, Livestock, Nutrition and Health.

#### ARTICLE IX

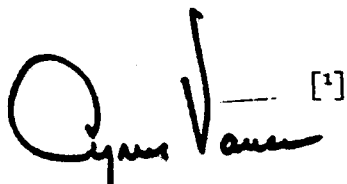
Representatives of the two Governments will meet as necessary in order to discuss the implementation of this Agreement and to exchange information about programs, projects and activities of common interest. Experts from each country, as mutually agreed, may participate in these meetings to address specific issues.

#### ARTICLE X

This Agreement will be governed by the following stipulations:

1. It will enter into force on the date of signature.
2. It will have a duration of three years, renewable by mutual agreement of the Parties.
3. Either Party may terminate this Agreement at any time, by written notice to the other Party. In this case, the Agreement will terminate six months after the receipt of such notice.
4. Termination of the Agreement shall not affect the validity or duration of specific accords which are concluded in conformity with Article IV of this Agreement.

DONE in duplicate at Mexico, D. F., on February 16, 1979  
in the English and Spanish languages, both texts being equally  
authentic.

A handwritten signature in dark ink, appearing to read "Cyrus Vance", with a small square box containing the number "1" to its upper right.

FOR THE GOVERNMENT OF THE  
UNITED STATES OF AMERICA

A handwritten signature in dark ink, appearing to read "S. Roel", with a small square box containing the number "2" to its upper right.

FOR THE GOVERNMENT OF THE  
UNITED MEXICAN STATES

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<sup>1</sup> Cyrus Vance.  
<sup>2</sup> S. Roel.

CONVENIO ENTRE EL GOBIERNO DE LOS ESTADOS UNIDOS DE AMERICA Y EL GOBIERNO DE LOS ESTADOS UNIDOS MEXICANOS SOBRE COOPERACION PARA MEJORAR EL MANEJO DE LAS TIERRAS ARIDAS Y SEMIARIDAS Y CONTROLAR LA DESERTIFICACION

El Gobierno de los Estados Unidos de América y el Gobierno de los Estados Unidos Mexicanos

PREOCUPADOS porque el fenómeno de la desertificación representa una amenaza creciente al bienestar económico y social de amplios sectores de la población de ambos países,

RECONOCIENDO los beneficios que se pueden derivar de la implementación de las Recomendaciones del Plan Mundial de Acción para combatir la Desertificación, adoptado en la Conferencia de las Naciones Unidas sobre Desertificación, celebrada en Nairobi, Kenia, en 1977,

CONSIDERANDO que existen posibilidades para controlar la desertificación y para restablecer y ampliar la capacidad productiva de las tierras áridas y semiáridas mediante la aplicación de nuevas políticas, programas y prácticas de manejo apropiado de los recursos,

DESTACANDO que la cooperación para resolver problemas comunes relacionados con la desertificación puede producir importantes beneficios mutuos, incluyendo un incremento en el ritmo, eficiencia y efectividad de

los respectivos Planes Nacionales sobre Desertificación que cada Gobierno está desarrollando, y

RESALTANDO que las consultas sobre desertificación entre los dos Gobiernos han proporcionado una guía adecuada y un marco para extender la cooperación en este campo,

HAN CONVENIDO LO SIGUIENTE:

#### ARTICULO I

- 1.- Los dos Gobiernos promoverán la cooperación a fin de controlar la desertificación y proteger y aumentar la capacidad productiva de las tierras-agrícolas, de los pastizales y bosques de las zonas áridas y semiáridas de ambos países.
- 2.- Las Instituciones que principalmente desarrollarán las actividades operativas de cooperación bajo este Convenio serán, por los Estados Unidos de América, el Departamento del Interior y el Departamento de Agricultura y, por los Estados Unidos Mexicanos, la Secretaría de Agricultura y Recursos Hidráulicos, la Secretaría de Asentamientos Humanos y Obras Públicas y la Comisión Nacional de las Zonas Áridas.

## ARTICULO II

- 1.- La cooperación bajo este Convenio incluye la conservación de suelos y aguas; el manejo de cuencas, pastizales y bosques; la identificación, inventario y la evaluación continua de la desertificación; el manejo y utilización de la flora y la fauna nativas de las zonas áridas y semiáridas y otros temas que se podrían definir por acuerdo de las Partes.
- 2.- La cooperación puede incluir el intercambio de información científica y tecnológica; el de científicos y de otro personal técnico y de investigación; la planeación y conducción conjunta o coordinada de investigaciones, proyectos de manejo y de mostración; la organización de cursos conjuntos, conferencias y simposia; y otras formas de cooperación que pueden establecer de mutuo acuerdo.
- 3.- Bajo este Convenio, la prioridad inicial deberá dársele a lo siguiente:
  - a) Conservación de suelos y agua en tierras agrícolas, pastizales y bosques, con la mira puesta en la incrementación de la producción alimenticia y la preservación del equilibrio ecológico;

- b) Conservación, regeneración, utilización y comercialización de especies nativas de las zonas áridas con la mira puesta en aumentar las oportunidades de trabajo y generar mejores ingresos en las áreas rurales; y
- c) La terminación de los Planes Nacionales de Desertificación de cada Gobierno con miras a coordinar las políticas y programas en los campos de manejo de las tierras áridas y semiáridas y del control de la desertificación.

### ARTICULO III

- 1.- Para facilitar la cooperación bajo este Convenio, cada Gobierno designará un Coordinador Nacional.
- 2.- El Coordinador Nacional por parte del Gobierno de los Estados Unidos el Departamento de Estado, y el Coordinador por parte del Gobierno de México será la Secretaría de Programación y Presupuesto.
- 3.- Los Coordinadores Nacionales servirán como los puntos principales de contacto de los dos Gobiernos y trabajarán estrechamente vinculados facilitando, coordinando y revisando las actividades de cooperación bajo este Convenio.

- 4.- El Coordinador Nacional de cada Gobierno, en consulta con las Dependencias y otras entidades que participen en los programas de cooperación, será responsable en su País de la coordinación de las actividades que surjan como consecuencia de este Convenio.

#### ARTICULO IV

- 1.- De acuerdo con los objetivos de este Convenio, ambos Gobiernos, a través de sus Coordinadores Nacionales, promoverán, facilitarán y autorizarán, según sea necesario, los contactos, la negociación de acuerdos, y la cooperación entre Dependencias Gubernamentales, universidades y otras instituciones de los dos Países, para llevar a cabo actividades específicas conjuntas.
- 2.- Los Acuerdos específicos para poner en práctica este Convenio pueden incluir la identificación de las áreas de cooperación, los procedimientos a seguir, el tratamiento de la propiedad intelectual, el financiamiento y cualquier otro asunto relativo.
- 3.- Los costos de cada actividad bajo este Convenio se distribuirán según acuerdo de los participantes.
- 4.- Todas las actividades de cooperación iniciadas bajo este Convenio estarán condicionadas a la disponibilidad de fondos.



## ARTICULO V

Los dos Gobiernos se esforzarán en promover y contribuir a la rápida aplicación del Plan Mundial de las Naciones Unidas para combatir la Desertificación a través de medidas que pueden incluir:

- 1.- Invitar cuando sea conveniente y por mutuo acuerdo de los Coordinadores Nacionales, a entidades y científicos, a expertos técnicos, a planificadores y administradores de recursos de terceros países o de organismos internacionales y regionales, para participar en actividades de cooperación bajo este Convenio; y
- 2.- La distribución conjunta de información y datos generados por este Convenio, a otros Gobiernos y a Organismos Internacionales y Regionales, principalmente al Programa de las Naciones Unidas para el Medio Ambiente (PNUMA) y a la Comisión Económica para América Latina de las Naciones Unidas (CEPAL).

## ARTICULO VI

La información científica y tecnológica que se derive de las actividades de cooperación bajo este Convenio, podrá facilitarse a la comunidad internacional a través de los canales acostumbrados y conforme a los pro-

cedimientos usuales de las entidades participantes, a menos que se decida lo contrario en los Acuerdos específicos contemplados en el Artículo IV.

#### ARTICULO VII

- 1.- Las actividades de cooperación a que se refiere este Convenio estarán sujetas a las leyes y reglamentos en cada País.
- 2.- Respecto a las actividades de cooperación bajo este Convenio cada Gobierno se esforzará en facilitar la entrada y salida expeditas a y de su territorio, del equipo y personal del otro País.

#### ARTICULO VIII

- 1.- Ninguna de las disposiciones del presente Convenio se interpretará en perjuicio de otros Acuerdos o Convenios celebrados entre los dos Gobiernos.
- 2.- Las actividades de cooperación que se realicen bajo este Convenio, se desarrollarán de manera que permitan complementar y reforzar todas aquellas actividades realizadas conforme al Convenio de Cooperación Científica y Técnica entre los Estados Uni

dos Mexicanos y los Estados Unidos de América de 1972, y al Memorándum-Acuerdo de 1977 firmado entre el Consejo Nacional de Ciencia y Tecnología de México y el Departamento de Agricultura de los Estados Unidos de América sobre Asuntos de Agricultura Tropical, Desiertos, Ganadería, Nutrición y Salud.

#### ARTICULO IX

Los Representantes de los dos Gobiernos se reunirán siempre que lo consideren necesario, a fin de vigilar el cumplimiento de este Convenio e intercambiar información sobre los programas, proyectos y actividades de interés común. Por mutuo acuerdo, Expertos de cada País podrán participar en estas reuniones para atender asuntos específicos.

#### ARTICULO X

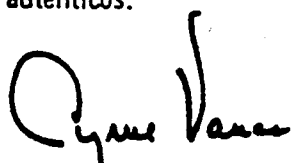
El presente Convenio se regirá por las normas siguientes:

- 1.- Entrará en vigor en la fecha de su firma;
- 2.- Tendrá una validez de tres años, renovable por mutuo acuerdo de las Partes;
- 3.- Cada Parte podrá dar por terminado este Convenio, en cualquier momento, mediante notificación escrita a la otra Parte. En este caso, el Convenio dejará de estar en vigor seis me-

ses después del recibo de tal aviso.

- 4.- La terminación de este Convenio no afectará la validez o duración de los Acuerdos específicos que se celebren de conformidad con el Artículo IV de este Convenio.

Hecho por duplicado en la Ciudad de México, Distrito Federal, a los dieciseis días del mes de febrero del año mil novecientos setenta y nueve, en los idiomas inglés y español, siendo ambos textos igualmente auténticos.



Por el Gobierno de los Estados  
Unidos de América.



Por el Gobierno de los Estados  
Unidos Mexicanos.

**APPENDIX XI**

**CUSTOMS AGREEMENT**

*By the President of the United States of America*

## **A PROCLAMATION**

*WHEREAS, it is necessary for the public welfare that a strip of land lying along the boundary line between the United States and the Republic of Mexico be reserved from the operation of the public land laws and kept free from obstruction as a protection against the smuggling of goods between the United States and said Republic;*

*Now, therefore, I, THEODORE ROOSEVELT, President of the United States, do hereby declare, proclaim and make known that there are hereby reserved from entry, settlement or other form of appropriation under the public land laws and set apart as a public reservation, all public lands within sixty feet of the international boundary between the United States and the Republic of Mexico, within the State of California and the Territories of Arizona and New Mexico; and where any river or stream forms any part of said international boundary line, this reservation shall be construed and taken as extending to and including all public lands belonging to the United States which lie within sixty feet of the margin of such river or stream.*

*Excepting from the force and effect of this proclamation all lands which are at this date embraced in any legal entry or covered by any lawful filing, selection or rights of way duly of record in the proper United States Land Office, or upon which any valid settlement has been made pursuant to law, and the statutory period within which to make entry or filing of record has not expired; and also excepting all lands which at this date are embraced within any withdrawal or reservation for any use or purpose to which this reservation for customs purposes is repugnant; PROVIDED, that these exceptions shall not continue to apply to any particular tract of land unless the entryman, settler or claimant continues to comply with the law under which the entry, filing or settlement was made, or unless the reservation or withdrawal to which this reservation is inconsistent continues in force; PROVIDED FURTHER, that the said strips, tracts, or parcels of land, reserved as aforesaid, may be used for public highways but for no other purpose whatever, so long as the reservation of same under this proclamation shall continue in force.*

*IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the United States to be affixed.*

*DONE at the City of Washington this 27th day of May, in the year of our Lord one thousand nine hundred and seven, and of the Independence of the United States the one hundred and thirty-first.*

*By the President:*  
*Elihu Root, Secretary of State.*

*Theodore Roosevelt*

**APPENDIX XII**

**NATURE CONSERVANCY AGREEMENT  
WITH THE CENTRO ECOLOGICO DE SONORA**



# The Arizona Nature Conservancy

300 East University Boulevard, Suite 230, Tucson, Arizona 85705  
(602) 622-3861

## COOPERATIVE AGREEMENT BETWEEN THE ARIZONA NATURE CONSERVANCY AND THE CENTRO ECOLOGICO DE SONORA

### Declarations:

The Arizona Nature Conservancy declares that it is a chapter of a private, non-profit, international-membership organization committed to the global preservation of natural diversity. Its mission since 1951 has been to identify, protect, and maintain the best examples of communities, ecosystems and endangered species in the natural world.

The Centro Ecologico de Sonora declares that it is a decentralized public institution of the government of the State of Sonora, Mexico, that has the basic objective of performing research that is directed toward the conservation of the wild flora and fauna of that State.

Both institutions declare that they subscribe to the present cooperative agreement with the aim of establishing a framework to facilitate coordination and collaboration for developing scientific investigations and conservation of the wild flora and fauna in the states of Arizona and Sonora in areas where mutual interest exists.

### Areas of Collaboration:

The principal areas in which collaboration or coordination can be realized include, but are not limited to, the following biological fields: Botany, Ichthyology, Herpetology, Mammalogy, Ornithology, and Entomology.

The specific activities in which collaboration will be undertaken are of a diverse spectrum since they may range from exchange of information to joint participation in field and laboratory studies, as well as those activities leading to the reinforcement of both institutions as entities advocating the ecological conservation of natural resources.

The activities that both institutions begin and carry out will be directed toward proposing and designing effective systems or models for the ecological conservation of natural resources, principally of flora and fauna, that the institutions take upon themselves or suggest and promote to their respective governments for implementation.



Mechanics of Implementation:

For the implementation of this agreement, each party will present to the other proposals for specific projects and agreements that each institution wants to undertake, to be appended to this general agreement.

Said agreements should contain the specific activities to be undertaken, specifying in all cases the methods of work, the human, material and economic requirements, as well as the scheduling of the activities.

Both parties agree to communicate on a regular basis and to meet in person once each year, during which time this agreement will be reviewed.

SIGNING THE PRESENT AGREEMENT

Dan K Campbell  
Dan Campbell, Executive Director  
The Arizona Nature Conservancy

Dinorah Retes Dousset  
Dinorah Retes Dousset, Director General  
El Centro Ecologico de Sonora

**APPENDIX XIII**  
**LIST OF AGENCIES AND INSTITUTIONS**

## AGENCIES AND INSTITUTIONS

Following is a listing of the Ministries of the Executive Branch of the Federal Government of Mexico. In addition, each Ministry has a representative who heads a delegation at the State level. This list includes the agencies that are most closely associated with the activities that are the subject of the report. Following the governmental agency listing there are other organizations of interest.

### A. FEDERAL MINISTRIES

|         |                                                                                                                                                                                                         |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SARH    | SECRETARIA DE AGRICULTURA Y RECURSOS HIDRAULICOS<br>Ministry of Agricultura and Water Resources                                                                                                         |
|         | COMISION NACIONAL FORESTAL<br>National Forestry Commission                                                                                                                                              |
|         | NORMATIVIDAD FORESTAL<br>Forestry Regulation                                                                                                                                                            |
| CIFAPES | CONSEJO ESTATAL PARA LA PROGRAMACION Y EVALUACION<br>DE LA INVESTIGACION AGRICOLA/ FORESTAL/ PECUARIA<br>State Council for Programming and Evaluation<br>of the Forestry/Agriculture/Livestock Research |
| SEDUE   | SECRETARIA DE DESARROLLO URBANO Y ECOLOGIA<br>Ministry of Urban Development and Ecology                                                                                                                 |
| SRE     | SECRETARIA DE RELACIONES EXTERIORES<br>Ministry of Foreign Affairs                                                                                                                                      |
| SG      | SECRETARIA DE GOBERNACION<br>Ministry of the Interior<br>Department of Immigration and Population                                                                                                       |
| SHCP    | SECRETARIA DE HACIENDA Y CREDITO PUBLICO<br>Ministry of Treasury<br>Department of Customs                                                                                                               |
| CFE     | COMISION FEDERAL DE ELECTRICIDAD<br>Federal Commission of Electricity                                                                                                                                   |

## **B. FEDERAL GOVERNMENT DELEGATIONS**

### **State Level**

|       |                                          |
|-------|------------------------------------------|
| SEDUE | Delegado Estatal<br>Sub-Delegado Estatal |
| SARH  | Delegado Estatal                         |
| CFE   | Director Estatal                         |
| SCT   | Director Estatal                         |

## **C. STATE AGENCIES - SONORA**

Parallel to the Federal system each individual State has its own Executive structure with State Secretariats or Ministries.

|        |                                                                                                                                      |
|--------|--------------------------------------------------------------------------------------------------------------------------------------|
| SDUE   | SECRETARIA DE INFRAESTRUCTURA Y DESARROLLO URBANO<br>Ministry of Infrastructure and Urban Development<br>Undersecretariat of Ecology |
| SA     | SECRETARIA DE AGRICULTURA<br>Ministry of Agriculture                                                                                 |
| SECTUR | SECRETARIA DE TURISMO<br>Ministry of Tourism                                                                                         |
| SFEyC  | SECRETARIA DE FOMENTO EDUCATIVO Y CULTURA<br>Ministry of Education and Culture                                                       |

## **D. MUNICIPAL LEVEL**

There are Federal Agency Representatives at regional and local offices as well as at the State capital.

## **E. MUNICIPAL GOVERNMENT**

MAYOR- PUERTO PENASCO

COMISARIO, SONOYTA

## F. CIVIC ORGANIZATIONS

CLUB DE LEONES

Sonoyta, Sonora

PRONATURA, A.C.

Mexico, D.F.

This organization was created in Mexico City as a grass roots organization to help communities and government agencies develop sound environmental policies in the area of natural resource management. PRONATURA has chapters in six states of Mexico. In 1985 Friends of PRONATURA was created in Arizona, as a non-profit organization, to assist the dialogue about border natural resources between concerned individuals in Mexico and the U.S.

## G. INSTITUTIONS OF HIGHER LEARNING AND RESEARCH

COLEF

COLEGIO DE LA FRONTERA NORTE  
Tijuana, Baja California

The Colegio de la Frontera Norte is an institution that emerged in response to the unique character of the problems in the border region. It was created to study and report on the phenomena of the U.S./Mexico relationship in the borderlands and to make practical recommendations for creating public policy. It has seven branches in key cities along the border region.

One of these branches is in Nogales, Sonora. This office is assigned the responsibility of border environmental information and studies. Although much emphasis is placed on urban and industrial contamination, there is a strong interest in the natural resource base.

## CENTRO ECOLOGICO DE SONORA

The Centro Ecologico was created from the interest that the former Governor of Sonora, Samuel GARCIA Ocana developed from one of a series of Symposia on the Gulf of California Environment in 1981. At that time the Governor established a strong support for ecological concerns in the state, including the creation of a State Ecologic Center and living natural history park and museum.

There should be strong ties developed with the Center and there should be a regular exchange of personnel and communication now that the Centro is beginning to strengthen its role in natural resource conservation and research.



## F. OTHER ORGANIZATIONS

### UNIVERSITY OF NEW MEXICO LAW SCHOOL INTERNATIONAL TRANSBOUNDARY RESOURCE CENTER

This institution has been very active in developing and discussing public policy concerning border natural resources. The Law School, in collaboration with the Natural Resources Journal, was responsible for sparking the work on the Ixtapa Draft of an Agreement on Groundwater U.S./Mexico. (Appendix II) More recently the Law School has been instrumental in creating the Centro Internacional de Recursos Transfronterizos (CIRT), International Transboundary Resources Center, to study and discuss border natural resources.

### ARIZONA/MEXICO COMMISSION

The Arizona-Mexico/Sonora-Arizona Commission is a bilateral body that was created in 1959 to provide a forum for discussing topics of interest to the citizens of each of the member states. The Commission consists of 11 committees that meet at plenary sessions twice a year. Of particular interest is the formation of an Environment Committee in 1985. This committee has been given a great boost by the increased interest of Sonorans in environmental matters. There are approximately 60 participants from both states at Committee meetings.

The past several meetings of the Environment Committee have focused on the Puerto Penasco-Pinacate region and the Committee has proposed that a major symposium on the Pinacate be held in the Fall of 1988. This will be an opportunity to discuss many of the bilateral concerns associated with the biosphere reserves.

### TOHONO O'ODHAM TRIBE

The National Park staff at ORPI have had interaction with the tribal government at Sells as well as with individuals from the reservation who have visited within the park boundaries or who have been employed at the ORPI.