

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
Horace M. Albright Training Center
Grand Canyon, Arizona

MANAGEMENT OF PARK RESOURCES

I. Any discussion of resources management must start with a definition of resources.

A. Resources defined - (use handcut and discuss)

1. Park or Area
2. Resources
 - a. Natural
 - b. Cultural
3. Facilities

II. The Historic Concept of Resources Management

A. The Protection of Things

1. Yellowstone Act (1872) - "...for the preservation from injury or spoliation of all timber, mineral deposits, natural curiosities, or wonders...and their retention in their natural condition..."
2. Lacey Act (1894) - "...The Secretary of the Interior shall make and publish...rules and regulations...for the management and care of the park (Yellowstone) and for the protection of the property therein, especially for the preservation from injury or spoliation of all timber, mineral deposits, natural curiosities or wonderful objects; and for the protection of the animals and birds..." (Parenthetical words and under-scoring provided).
3. These acts established the overall concept of resource "management through protection."
 - a. Protection was an early need:
 - (1) Wildlife from meat and hide hunters
 - (2) Forests from loggers
 - (3) Ranges from grazers
 - (4) Artifacts from vandals

b. Resource protection meant resource management

(1) "Let nature take its course" became the hallmark of the Service.

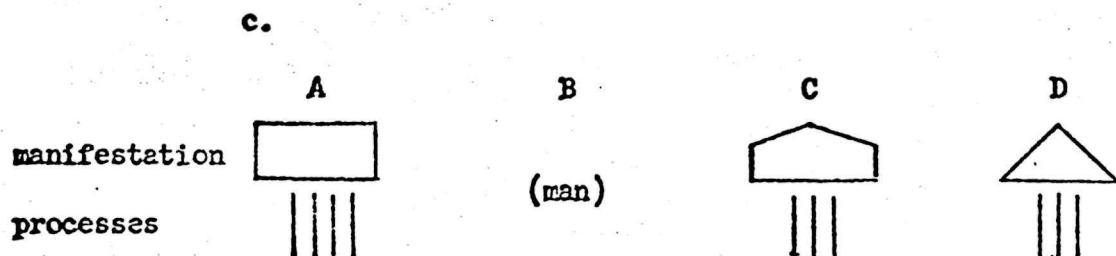
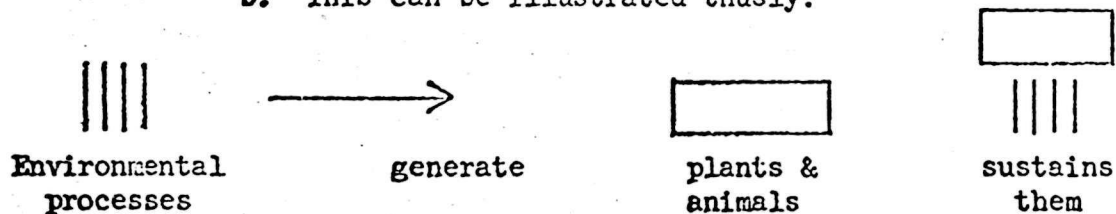
(a) Nature did not run its natural course

(b) Nature was "aided" by "selective protection." "Good" resources were protected from "bad" resources. Ungulates were good - predators were bad; trees were good but nature, insects and diseases were bad; fire was all bad; reptiles were generally bad; flowers were good but poison ivy was bad; porcupines were bad; etc., etc.

4. Protection as a management concept was steeped in emotionalism and sentiment and coated with the best intentions but unfortunately it was misdirected.

a. If protection had been applied the environmental processes that generated and sustained the manifestations of those processes, nature would have taken its course and we would have had natural conditions today.

b. This can be illustrated thusly:



In the above illustration, natural conditions of succession prevailed; (A) before man came on the scene; (B) and altered the environment by removal of one of the factors and set in motion altered environmental processes which covered changes in the manifestation of natural processes; (C) and which if allowed to continue will generate an

entirely different manifestation; (D) man existed under natural conditions. If protection had been applied to the environmental processes at (A) rather than to the manifestation, nature would have taken its course and natural conditions would have prevailed.

d. The following examples can be cited:

- (1) The Giant Sequoias
- (2) Southern pines in Everglades
- (3) Lodgepole pine in Teton

III. The Leopold Concept of Resources Management

A. Resources Management defined - the following is paraphrased from the Committee Report, "Management of National Parks and Equivalent Areas," First World Conference on National Parks, Seattle, Washington, 1962, and contained in the "Leopold Report."

1. Resource management is defined as any activity directed toward achieving or maintaining a given condition in plant and/or animal populations and/or habitats in accordance with the conservation plan for the area. A prior definition of the purposes and objectives of each park is assumed. Management may involve active manipulation of the plant and animal communities, or protection from modification or external influences.

a. Key words (write on board)

- (1) Activity - Doing Something
- (2) Achieving - Accomplishing something
- (3) Conservation plan - Documentation
- (4) Purposes & Objectives - Goals
- (5) Manipulation - Juggling
- (6) Protection - with reasons

B. What is the goal of resource management?

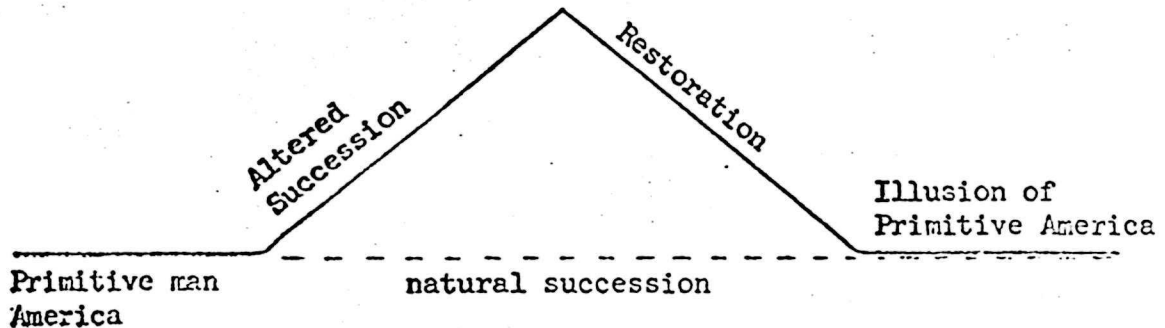
1. The Secretary's Advisory Board on-Wildlife Management (Leopold Committee) has suggested the following goal:

"As a preliminary goal, we would recommend that the biotic associations within each park be maintained, or where necessary recreated, as nearly as possible in the condition that prevailed when the area was first visited by the white man. A national park should represent a vignette of primitive America.

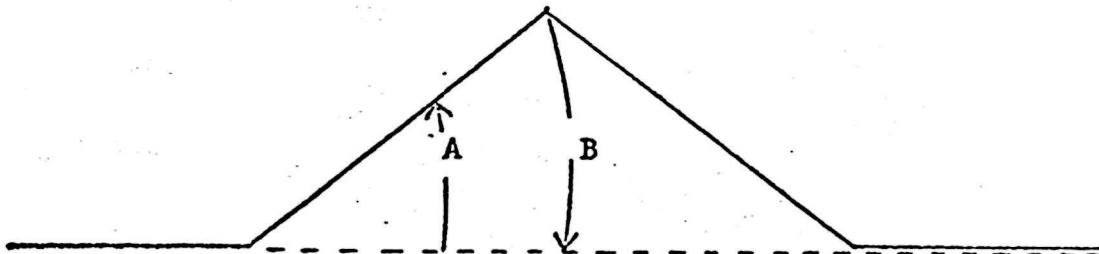
"...Restoring the primitive scene is not done easily nor can it be done completely. ...Yet, if the goal cannot be fully achieved it can be approached. A reasonable illusion of primitive America could be recreated, using the utmost in skill, judgment and ecologic sensitivity. This in our opinion should be the objective of every national park and monument."

- a. What does this mean? - It does not mean to turn back the "ecologic clock" to some time in the past and then stop ecologic succession as of that time. The meaning can best be described by the following diagrams.

(1)



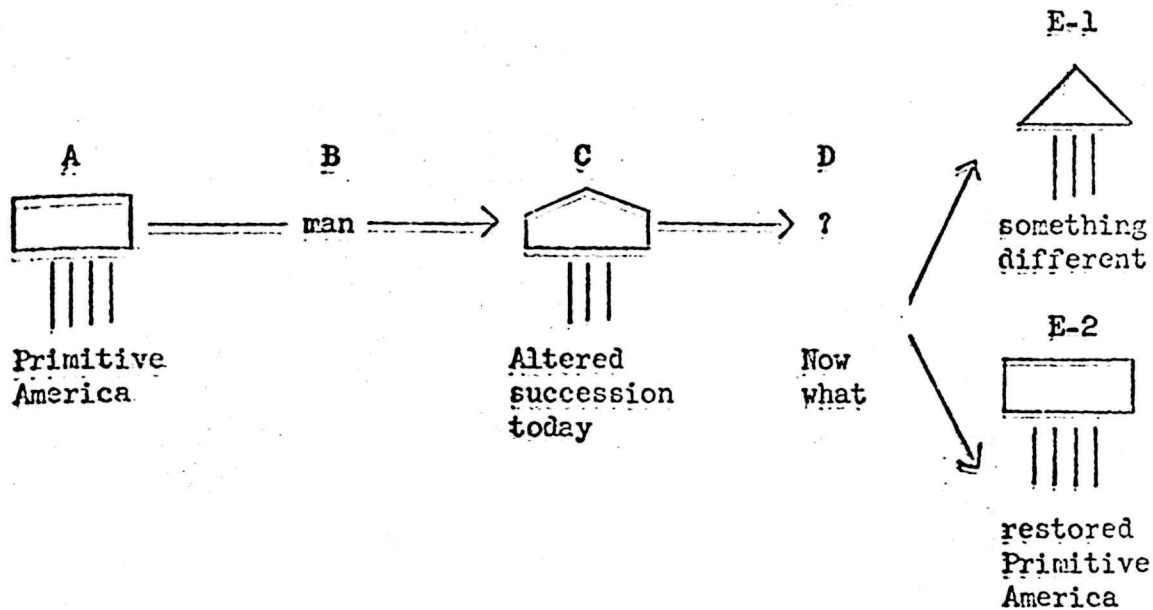
- (2) Using the same diagram for a relationship between research and management we would have the following:



"A" represents finding out how far present conditions are from original natural conditions.

"B" represents the magnitude of the management job - reestablishment of natural condition resource manipulation.

- (3) Let's go back to the original diagram



In this diagram resources at "A" were in a "steady state" condition. The environmental factors had produced a biocomplex of plants and animals in balance with and being perpetuated by that environment.

At "B", man entered the situation and altered the environment by removal of one factor, the control of all fires, for example. The biocomplex responded to this alteration and changes began to occur. "C" Fire control would permit fire intolerant species to become established. "D" represents the point of decision.

What management decision must be made? What will happen if no action is taken? If the missing environmental factor is not replaced, a new biocomplex will result as at E-1. This complex will represent the new act of environmental factors. If management is applied before irreversible changes occur as a result of the changed environment, the original biocomplex can be reestablished as at E-2. This is what the "Leopold Report" is all about.

IV. The Ecosystem Concept of Resources Management

A. Ecosystem defined - an ecosystem is an interaction system consisting of an organism-complex and related environmental factors.

B. In 1966 Dr. Stanley Cain, Assistant Secretary, Fish and

Wildlife and Parks said in an address,

"Until recently, our thinking has not been ecological. It has dealt with individual resources, not the whole natural resource complex. Development and utilization have been piecemeal. We have held back from viewing the environment as a whole composed of individual parts.

"We must try to see the world about us as a whole working mechanism. We must understand the species of primary interests, and we need to understand the ecosystem of which they are a part. We need to take a long, hard look at any program element and any way of doing things that we have become accustomed to.

"It is not enough to be able to build a road, a dam, a bomb, a rocket, as to make a new pesticide or drug. If it accomplishes one purpose, we must ask ourselves what other consequences there may be. What are the side effects? What dis-services occur that may diminish or counterbalance the benefits? How can adverse results be minimized? And if they cannot, then should we embark on a project at all?"

C. An ecological approach

1. What we are asking is that we view natural resources in the light of the total resource mosaic of the area concerned - not just in terms of trees, grass, soil, deer, elk, beaver, fish, etc., but instead, in the totality of the ecosystem - the composition of the whole in terms of components and their interrelationships.
2. The ecosystem will constitute the unit for management of resources in natural areas and for the management of natural-area enclosures within historical and recreational areas.
3. Ecosystem identification - an ecosystem may be identified on any logical basis. For the most part, these are known and readily recognized. In many cases, the ecosystem will be confined to one community type, such as a desert, alpine tundra, pinon-juniper, oak woodland, tall grass prairie, cavern, geyser basins, etc.
4. Ecosystem management - in the words of The Secretary's Advisory Board on wildlife management, finding out what aspect of the ecosystem needs rectifying, and doing so, would appear to be the primary function resource management.