INSTRUCTOR'S WORKSHOP IN FUNDAMENTALS OF RESOURCE MANAGEMENT
Stephen T. Mather Employee Development Center

Course Report

January 11-22, 1988

Submitted:

Program Coordinator, STMA

Date

Approved:

Superintendent, STMA

Date

cc: Flip Hagood, WASO, Employee Dev. Div.
    Stan Lock, Wolf Trap
    Gordon Olson, Antietam NB
    Larry Belli, WASO, Ranger Activities
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PART 1

FINAL REPORT
March 7, 1988

Memorandum

To: Superintendent, Stephen T. Mather Employee Development Center

From: Program Coordinator, Stephen T. Mather Employee Development Center


I. Overview

A memorandum sent to 12 planning team members, for development of the "Instructor’s Workshop in Fundamentals of Resource Management", emphasized the need to begin as soon as possible. That memo was dated January 10, 1985. I’m sure there are even earlier ones. The point is, the need for this workshop has been identified for a long time and many people have played a role in its development. The course was planned for April 15-26, 1985 and again May 12-23, 1986, when an owl announcement was issued for the course. Neither session was held. Funding was the primary missing link in each case.

On August 11-12, 1987, 14 people from across the service met at Mather to pull together the Instructor’s Workshop for 1988. The group drafted a statement of purpose for the course, instructional objectives and course design recommendations. (Copy in Appendix.) Shortly after this meeting, Stan Lock (NCR) replaced John Reed (WASO) as the program manager, detailed to the Assistant Director for Operations, responsible for seeing the course through to completion.

Funding for the 1988 course was in place. Support came from:

- Operations (Stanton, Ritter) $30,000
- Cultural Resources (Rogers) $10,000
- Natural Resources (Hester) $10,000
- Employee Dev. Division (Hagood) $10,000

Up to $40,000 was allotted for course development with the final $20,000 set aside for "seed" money for the regional teams. The history of previous instructor workshops has shown the value of "seed" money. The money provided the regional teams with a source of funding for instructor travel and purchase of supplies and materials. More importantly, the money emphasized to the regional training officer and regional managers the servicewide importance placed on the program.

As mentioned above, many people have played a role in the development of this workshop. Perhaps it is appropriate then,
that the goal of this course is embodied in an anonymous hand-written note found in an early course file with the notation, "put this in owl" scrawled across the top. The note reads: "Present an orientation for field personnel...to provide basic knowledge and understanding of park natural and cultural resource activities and to promote the sense of responsibility and teamwork required of all NFS employees in managing park resources". The planning process was conducted with that outcome in mind.

2. Planning

Ann Castellina conducted the planning meeting on August 11 and 12 and prepared the Owl Announcement which was sent out on October 19, 1987. I arrived at Mather in late October and on the 29th met with Ann and Stan Lock to assume the coordinator duties for the workshop.

At that meeting we talked about the time to be spent on presentation of resource management subject matter and train-the-trainer instruction. We determined to select 4 nominees from each region instead of three, dependent on the Chief, Employee Development Division’s approval. This was based on experience from previous instructor’s workshop where three instructors per region were just not sufficient. Gordon Olson, resource management specialist at Antietam, was confirmed as a detailee for the course (copy of letter in Appendix) and we agreed on the policy of not allowing applicants to be on more than one skills team. A memo (copy in Appendix) to that effect was forwarded to the regional training officers as an addition to the selection criteria for the workshop.

Stan, Gordon and I met on several occasions in November to work out the agenda, session objectives and course coordination. From the outset one objective was to achieve a balance of cultural and natural resource issues in the workshop that would be a model for the regional Orientation courses. Roland Bowers, assistant director for cultural resources, expressed some concern as to the cultural representation in the planning process. He was invited to send a representative to work with us on the development of the course materials. Harry Butowsky and Ben Levy, CR-History, participated, at separate meetings, and offered valuable input in the design of the subject matter sessions. A natural and a cultural component was included in the objectives for each of the subject matter sessions.

The three main training objectives of the workshop were: 1. Make the participants good trainers up front! 2. Raise the sensitivity of the participants in relation to all NPS resources (although all the participants were "resource managers" many were focused on only their own area of expertise). 3. Develop and test an "Orientation to NFS Resource Management" curriculum.

A minor obstacle in planning, one that became critical during the session, was the loss of a training day (8 hours) due to the scheduling of this workshop over the Martin Luther King Holiday weekend. In the future, due to the time needed to practice
Leuc.lt, cover subject matter and develop curriculum, this course should be held when a full 80-hours is available.

Stan drafted a memo, dated Nov. 19, 1988, for the Director's signature, which was sent out to the regional directors to solicit their support for the Resource Management Instructor Teams. The regions were to identify a regional coordinator for their region's team. (Copy of memo and coordinator list in Appendix.)

A major logistic challenge was setting up ten sites at nearby NPS areas for the teams to present a 4 hour practice "Orientation" course. In all cases the park contacts were excited about the concept and made their staff and facilities available to us. Each site was forwarded information about the program and a generic owl announcement to advertise the "Orientation" session. (A copy of the generic owl and a list of the practice sites and contacts is attached in Appendix.)

3. The Course.

Once the agenda was approved, resource speakers were contacted. Stan confirmed all the speakers involved with the subject matter development sessions. With only one major exception all the top resource speakers were available. Ro Wauer was the exception. Scheduling problems did not allow his participation. Due to Ro's role in the "Threats" report of 1980, and the reports direct relation to the identification of this type of training, we should aim for his presence at future sessions.

All regional nominations were received by the December 1, 1987 deadline. Four individuals were selected from each region. The participants were sent an agenda, objectives, a roster, a course profile and a pre-course assignment sheet. Participants were asked to read Mager's book on objectives, review the NPS Training Methods Manual, identify resource materials to bring and identify significant areas of instruction that could be included in the curriculum.

Of those selected; Fred Doyle (NCR), Jim Shives (AR), and William Heard (MWR) were active Interpretive Skills Team members in their respective regions. Based on the policy concerning dual team membership a formal letter was sent to document their removal from their regions interpretive skills team. Copies were sent to their; regional training officer, regional chief of interpretation, and their immediate supervisor. (Copy in Appendix)

As experienced trainers, Doyle, Shives and Heard, were asked to conduct three of the training methods sessions and to assist others during the development and presentation of lesson plans. This saved us from having to identify and fund other instructors for those sessions and their presentations were an example of regional team instructors at work.

Colleen Crowley, from the interpretive division in WASO, was selected to act as a liason with the WASO interpretive office and
Larry Belli, Ranger Activities, WASO and Frank Buono, Albright EDC, were invited to participate during the course. Larry would be assuming the program managers role for ranger activities in WASO and Frank offered an opportunity for the participants to develop a liaison with HOAL.

The only last minute schedule change allowed for regional team meetings on Monday and subject matter meetings on Tuesday. These meetings were designed to allow some exchange of ideas about the curriculum prior to the nominal group process Tuesday afternoon.

All the participants arrived without incident. Bill Heard called in with the Flu but planned to fly in on Monday. His illness did not subside and he did not attend the course at all.

Note: A high level of anxiety among the participants manifested itself in some suggestions for a major change in the agenda at mid-course. There were many elements involved and differences of opinion expressed as to the resolution of the situation. Comments concerning this process are kept in context of the agenda as the week progressed. The narrative follows.

4. The Agenda.

We started on time with a standard introduction routine that was fairly flat. A more creative activity needs to be developed for the next course.

Stan took a few minutes prior to the keynote to give a history of the development of the Instructor’s Workshop. Questions by participants prior to the course led us to believe this explanation was necessary. There indeed was uncertainty as to how this came about.

Session 1. ORIENTATION TO NPS RESOURCES

Assistant Director Ritter opened with some good comments about the reason operations is involved with the program. He explained that when speaking about resource management we must included both cultural and natural resources. Participant comments noted a need for more background and history of RM in the NPS. Most felt Ritter set the appropriate tone and direction for the course.

One item to keep in mind for future sessions is the use of the term "skills" in reference to the RM teams. Ritter’s and our use of this title is not appropriate for presenting basic, fundamental information, in effect, conducting orientation. The term "skills" implies the teams are doing something much more. This can be avoided by using the title, Team Resources.

Session 2. "THE ORIENTATION TO PARK RESOURCES COURSE"

Gordon provided an overview of the course by reviewing the agenda and emphasizing the grouping of sessions, i.e. train-the-trainer, subject matter, and curriculum development. In the future we
should expand on the ultimate goals of the regional teams, intended audiences and overall course objectives.

A lot of the uncertainty of the participants should have been taken care of by the course profile and objectives in the pre-course mailing. However, it was apparent that few either read or absorbed that information.

Team Meetings.

Following session 2, time was allotted for regional team meetings. The teams selected a team leader (for the course only), set a time for a curriculum discussion later that day and were given their practice teaching site information.

Session 3. THE COMPETENT INSTRUCTOR

The "Competent Instructor" session was well-received and served as an enthusiastic beginning for the train-the-trainer block. If anything, we should follow this session at some point with the nuts and bolts of course coordination. A handout was developed on just this topic to be included with the lesson plans.

Session 4. LEARNING VS SCHOOLING

Basics of adult learning (motivation) as applicable to the intended audiences for the Orientation to Resource Management courses should be expanded on in this session. Otherwise, the session was well-received; few written comments but high ratings.

Session 5. DISCUSSIONAL METHOD

"Discussional Methods" went extremely well, comments on other sessions during the week referred back to good discussional techniques outlined here. Participant comments referred to: very good techniques for audience interactions and well-directed session.

Session 6. USING COMMON INSTRUCTIONAL AIDS EFFECTIVELY

Jim Shives conducted the session: Using Instructional Aids Effectively. Listed as an optional session almost 100% of the participants were in attendance. The session lent itself to an evening activity and Jim presented the information in a humorous fashion. Comments stated: very effective demonstration of poor/inappropriate use, excellent presence and rapport.

NOTE: Due to questions concerning who the intended audience was and the objectives for the regional orientation courses, we changed the schedule for Tuesday to allow discussion time.

The course statement of purpose (including intended audiences), instructional objectives, and design recommendations developed by the August, 1987 planning group was handed out for discussion. This, along with a review of the overall course objectives and profile seemed to relieve the uncertainty. One question that remained unanswered, by design, was how long the orientation sessions were to be. We felt that the curriculum
development process would show what was important enough to be included and the time needed to cover that material would be the course length (at least for the core information). By telling the teams they would be teaching a amount of hours without any idea of what needed to be covered seemed like putting a square peg into a round hole.

Session 7. PARTICIPATIVE LECTURE METHOD

As Bill Hoard was unable to present this session we decided to utilize the FNA workbooks and tapes to cover the material. We asked the group to work in teams of 8-10 and to not only evaluate the subject matter but the method of workbooks and tapes as a training tool. The comments were overwhelmingly against the use of this method for group instruction. The subject matter was important however, and a back-up instructor for the session would be preferred in similar circumstances.

Session 8. CURRICULUM DEVELOPMENT

Utilizing the lists generated by the regional teams and the subject matter groups as guidance we divided the class into 4 small groups and led them through the nominal group training process. The small groups worked extremely well. The next step, with everyone involved, was combining the four lists. The process was like pulling teeth. Individual ownership in subjects and titles was hard to overcome. However, we made it through the exercise with a manageable list of 39 topics. (copy in Appendix)

There was a lot of concern voiced about having enough time to develop lesson plans and focus the curriculum. Based on past instructor’s workshops this seemed manageable and, in fact, an acceptable level of stress for this point in the course.

Session 9. INTRO. TO NR: A WORKING PROGRAM

Doug Morris did an excellent job of outlining the NR Management course developed at Albright. The pros and cons of that course were applicable to what the regional teams would be doing. It was planned to have Doug follow the curriculum development process as we did not want what Albright did to effect the nominal group process, i.e. pre-determining what should be included in an "Orientation" course.

At this point there was some question as to why the curriculum for the orientation courses was not just established by the program areas and then have the participants (subject matter experts) just prepare lesson plans. We passed along the philosophy of group/peer ownership in the program. The field subject matter experts should know better what is required at the field level.

Part of having Doug do this session was to show what had been done, also that the program, video and workbooks, was available to the regional teams to use in part or as a package program. A copy of the text was given to each participant and a copy of the videotape was provided to each region. In addition, the group was told that Employee Development Division personnel were
available to assist. The NR program was developed in part to fill the gap until the regional teams were developed, then the program would no longer be presented by Em. Dev. Div. staff as it would conflict with the regional courses. This was confirmed with the Chief, Employee Development Division and related to the group.

The concern about how long the course should be came up again as Doug felt 8 hours was all that was needed. The coordinator and program manager emphasized that the curriculum development process would identify the time needed.

Session 10. EXPERIENTIAL METHODS

Experiential methods, another PMA block, was conducted by Fred Doyle. Fred did a good job of covering the material, few comments, however the need for training methods instruction was noted.

Session 11. LAWS/REGS/POLICY/PHILOSOPHY

A highly rated session for both speakers, Walt Dabney and Benjamin Levy. This, as other subject matter sessions was under great time restraints. An awful lot of material to cover by nature of the objectives. These should be re-evaluated for the future direction of the subject matter coverage. This session definitely needs to be included.

Session 12. LESSON PLANNING AND OBJECTIVES

Excellent, concise and thorough! Those, amoung other comments summarized Lucia’s session. No matter how long someone has been an instructor, this is a must session.

Session 13. USING MATHER COMPUTERS

This session was delayed to Friday and then only for those who needed it. About half the class indicated they were familiar with WordPerfect. We did have some bugs appear with the process of loading lesson plans. Most of which had to do with the format. Compare notes with the Interpretive Instructor’s course final report to see how a different system worked.

This hour was utilized for a discussion to clear the air on a number of the issues a-fore-mentioned; primarily the objectives for the regional orientation courses. As a group we re-worked the objectives that were drafted at the August meeting. Some wording was changed and we combined some information to come up with a list of four. This was re-typed and handed out to the group. (Copy in Appendix)

Session 14. THREATS

The threats session went very well, some comments expressed the desire to have more examples of current threats to NPS areas. Mssrs. Bearss and Supernaugh covered the material presenting both the cultural and natural programs.
Session 15.  HISTORIC STRUCTURES/LANDSCAPES/SCENES

Historic structures/landscapes/scenes was another example of trying to cover too much material in the time allowed. Rand received high points from the group although they felt he read too much of the material. Other comments referred to thought-provoking, new interesting material, etc. This needs to be covered, objectives need to be reviewed if we can only allow this much time for the subject.

Session 16.  CURATORIAL

Ann Hitchcock's session on curatorial started off on the wrong foot with a miscommunication concerning Ann's handouts. She had three stacks of material over a foot high. We received her originals the Friday before the course and were lucky just to get them copied. Ann, however thought we would have them collated and in the participants notebooks by class time. Needless to say this caused confusion as to covering the material and referring to handouts that were being passed out. Definitely curatorial needs to be highlighted, but at the level of what regional teams need to pass on as "orientation", not some of the skills and processes presented here. The confusion should not be misconstrued as poor instruction. Ann is the subject matter expert.

Session 17.  AIR QUALITY

Air quality was one of the highest rated subject matter sessions. Molly was given comments on her preparation and excellent presentation. One comment suggested better coverage of air quality and cultural resource issues.

Session 18.  ACID RAIN

The primary suggestion here, from participants, was that having two instructors for this session did not work. The material could have been presented in a more orderly fashion by a single person. (It should be noted that cultural resources insisted on a separate instructor for the cultural component.) Both Manor and Pavich did well, too much emphasis on chemistry and science. Participants emphasized need for more basic information.

Lesson plans developed at Acid Rain/Air Quality Interpretation Workshop in late February will be passed along to the regional teams.

Session 19.  WATER RESOURCES

Ray was well prepared and presented his material effectively. Again common comments concerning too much to cover in time allotted.

Session 20.  VEGETATION/SOILS

Comments indicated Keith was a good selection for this session, well prepared. Soils were not covered adequately, if at all. Need also to mesh cultural and natural resources more in this
Session 21. ARCHEOLOGY

Next to Donny Gallin's closing remarks, Dave Reid's session was the highest rated. He not only covered the material effectively, keeping in mind our goal of orientation, but did it in a creative way. He planned his session for the evening as we knew his style and approach would spark the group.) Everyone left with the idea that even a tough subject like archeology can be fun, and thought provoking.

Session 22. WILDLIFE/FISHERIES

John did an excellent job covering wildlife, however, little was covered on fisheries and need more connection to cultural resources.

Session 23. LESSON PLAN ASSIGNMENTS

At this point there was a major discussion on the direction of the remainder of the course. Changing the agenda several times and adding discussions to clear up uncertainties concerning the development of curriculum were appreciated, however, the group felt that they did not have the time needed to complete and refine the lesson plans and curriculum. They wanted to completely abandon the practice teaching exercises including the 4-hour off-site sessions. The group indicated that they were all good instructors already, that they felt it was better to spend the time on developing the lesson plans, and working together as a team, taking advantage of the group assembled.

Our reasoning for continuing with the practice exercises included: pointing out that even though they were good instructors they had not instructed as a regional team, the practice session would allow them to see each others strengths and weaknesses; that no matter how much time we allotted at the course each individual would have to make each lesson plan his/her own when they teach it, they would not be just pulled of the shelf and taught; and that the employee development division needed to have some feedback on the subject matter developed, was the group heading in the right direction. In the end the group was told out-right that they would be teaching off-site on the following Thursday. This was not accepted all that well, nor, looking back, was it presented with as much tact as probably was needed. (Irregardless, the decision was the right one at the time and as evidenced at the course conclusion by comments after the practice exercise.)

A compromise was reached in that the group did not have to perform the practice exercises in the classroom if they chose not to (and they chose not to). This allowed another 8 hours of lesson plan development. We did set-aside the lower classroom for anyone who wished to practice in front of peers and a video-camera and be critiqued. The Southeast team (with Colleen Crowley of WASO) elected to take advantage of the opportunity and later commented on the value of the exercise. (Which we had
After a break from the discussion, and realizing that they were going to do the off-site sessions, the group got down to the work of assigning lesson plans. Here the program differed from the lesson plan development in other workshops, the group felt that many of the 99 topics listed could be joined together under larger headings; everyone agreed and we winnowed the list to five main areas. At that point the group divided to develop the five main lesson plans (about 8 people in each group) and began working. In addition a number of special resource issues were identified as separate lesson plans and assigned to individuals for completion. A draft curriculum was typed and handed out. (Copy in Appendix)

On the following Monday, Martin Luther King Holiday, a good majority of the participants were at work on lesson plans.

Session 24. SCHEDULE UPDATE/TEAM ASSIGNMENTS/ETC.

This session was actually a process that was started on the first Monday as the teams were given their assignments and were to contact and set up their off-site programs. One of the purposes here was to let the teams realize what is required for coordination of a course, even for a one day session with four hours of presentation.

Session 25. PRACTICE TEACHING EXERCISE

As mentioned above, only the Southeast team availed itself of the opportunity to practice teach to peers. We believe this is a valuable exercise, but it was a good compromise to allow the time for lesson plan development.

Session 26. This session was not done formally but was carried out by individual regional team meetings.

Session 27. OFF-SITE PRACTICE PRESENTATIONS

Enough discussion concerning this is above under sessions 23 and 24. Participant comments range from "Waste of Valuable time" to "Thanks for sticking to your guns and making us do this" and "Best part of the Course". Overall this session rated a 3.81 out of a possible five. Given the circumstances in having to tell the group this was going to happen that is a remarkable rating!

Session 28. TEAM REPORTS ON THURSDAY’S ASSIGNMENT

The class party on Thursday night was perhaps the biggest testimony to the overall class success. Most of the discussion concerning the practice sessions took place informally between participants and to the coordinators. The discussion on Friday morning reinforced the need servicewide for this type of training, that all divisions are interested, that there is an interest by all divisions in understanding laws, regulations and policy applicable to the NPS, that is, we do need to refine our lesson plans as was evidenced by some incorrect information in the drafts. The group emphasized the need to point out the
management of resources rather than resource management, as that simple wording puts the emphasis on a division and not everyone's job. Again the evidence pointed to a valuable exercise.

Perhaps the most important aspect of this process was that the question of the length of the regional orientation courses was finally answered. Based on the final outcome of the lesson plan process and the trial on Thursday the group decided to make the core a minimum of 16 hours. This could easily extend to 40 hours by covering a number of the special issue lesson plans developed. A good example of the fact that a course can still be orientation and cover a longer period is the two days of this workshop in that each of the subject matter sessions we planned were rated as much too short, and yet were just an overview!

Session 29. BRINGING IT ALL TOGETHER

The highest rated session. Deputy Director Galvin took the time to research the material and met the objectives as written. An excellent close-out. Need someone like that to emphasize the Director's priorities.

Session 30. FINAL INSTRUCTIONS

Gave the group an updated curriculum based on what they developed and a listing of who was assigned lesson plans on specific resource issues. Also provided the group with a form for reporting to Mather and Ranger Activities/WASO on their regional courses (Copy in Appendix). Final lesson plans are due by March 7, will mail final copies and additional handouts following that due date. Bob Valen set up a file on the NPS Bulletin Board as a way of keeping communications going between teams.

5. Evaluation and Follow-up.

A copy of the overall class rating for each session and the overall class is found in Part V. Individual evaluation sheets can be found in the course file. Most ratings were around 4.0 out of a possible 5.0.

Sessions rated highest by the group were: "Bringing it all Together" by Denny Galvin; Archeology with Dave Orr; NR Management, a Working Program, Doug Morris; Lesson Planning and Objectives, Lucia Bragan; The Competent Instructor, Flip Hagood; Learning vs. Schooling, Dale Ditmanson; and Dicussional Methods, Dave Dahlen.

Asked if the overall course objectives were met the group indicated affirmative with a 3.91. Asked if the objectives were appropriate the average was 4.17.

Agreeable ratings were given to the statements: "I would recommend this course to my colleagues", 4.04; "This course will help me immediately in my job when I return", 4.09; "What I learned in this course will be put to use in the next six months", 4.74; "This course was worth the time spent away from the job", 4.39.
The frustration felt in not having the time to complete and refine lesson plans is probably the reason the average for expectations fell from 4.70 before the course to 3.68 at the end.

The group was very supportive of the Mather support staff with a 4.61, the Mather facilities, 4.37, and the Mather coordinator with a 4.12.

The class cited the following strong points on their written reactions:

- the participants in the class
- team development
- extremely supportive Mather staff
- facilities, AV and computers
- the field teaching exercise, the experience brought the class together
- the first week is a painful process but a necessary one and is a process that must continue
- the diversity of experience of the group
- instructor’s; Orr, Hitchcock, Biallas
- all the natural resource speakers
- the assertiveness of the group but with a willingness to compromise
- instructors who understood the concept of the course
- excellent job by course coordinator, adjusted to conflict effectively
- working on the core curriculum subjects
- the subject matter experts
- multi-discipline approach
- top-notch instructors

Areas of improvement suggested by the class:

- difficulty in grasping basic objectives at first
- course length, need extra day (the Holiday) in order to develop the curriculum
- have a group spokesperson for each small group in Nominal Group Process
- housing, quiet hours, single rooms
- objectives for resource instructors
- keynote needs to be stronger and more explicit
- get to work earlier on lesson plans
- delete the practice session at nearby parks
- the process for development of curriculum
- if you want to train people to be instructors than set up a class to do that; if you want to develop a course, then set up a flexible workshop on which that creative process occurs.
- disappointed that mature professionals were not able to accept given assignments
- at the most we should have had only a half day of instructional techniques
- lesson plans are incomplete, have not been refined
- the course attempted too much (training instruction, subject area presentations, curriculum development)
- no night sessions
- too many handouts with material that was unuseable, needed more bibliographies
- subject matter experts were often poor instructors
- too much time devoted to practice teaching

Other Comments:
- We will need direction and support for the Director’s office and each Regional Director to give this effort life.
- Draft an article for the Courier
- It was worthwhile and I am looking forward to making a contribution to the NPS mission
- It was obvious from the lively discussion Thursday night that the Thursday exercise was very beneficial
- Good course, produced expected results
- I believe we are very much on a desirable course.

- Evaluate the amount of time spent on training methods and subject matter development. NOTE: both areas need to be included in this type of training.
- Focus the objectives for the subject matter sessions to be able to adequately cover what is expected.
- Keep the practice teaching sessions and field exercise, allowing more time for lesson plans by shortening methods and holding the course for a full 80 hours. (avoid holidays)
- Add more in-depth information on the history of resource management in the NPS.
- Allow discussion time on Monday of the first week to clear up schedule and agenda questions. Clearly define the objectives.
- Avoid evening sessions.
- Refine the nominal group techniques, although the next group that attends this course will not be creating the foundation curriculum.
- Solicit information from active regional teams as to what needs to be refined, added, changed, etc.
- The coordinator and program manager need to work closely with natural and cultural resources in the planning process.
- Hold another workshop in early FY89, to refine lesson plans and curriculum and add additional team members.

7. Coordinator Comments.
- Although only mentioned above in the context of planning, the
Time and dedication put forth by Gordon Olson was appreciated by the course coordinator and the group. A self-proclaimed "Gopher", Gordon performed many coordination duties that kept the instructors and participants on track. Gordon's background in resource management and the amount of research he has performed has not been fully recognized. Hopefully his research paper will become an NPS publication.

I can't emphasize enough the role played by Stan Lock as Program Manager. His enthusiasm and dedication to achieving a quality product from this group was evident throughout the course. His management abilities and experience was sought out many times by this inexperienced class coordinator.

Thank you Stan and Gordon!

Dale Ditmanson

Final Note: The success of this course may be measured by the activity of regional teams. As of this writing; Rocky Mountain Region, Southwest Region, and Mid-Atlantic Region have courses scheduled in March and April. In addition, the Alaska Region is doing a short course as part of a regional Orientation to NPS Operations class.
PART II

FINAL AGENDA
INSTRUCTOR'S WORKSHOP IN FUNDAMENTALS OF RESOURCE MANAGEMENT
Stephen T. Mather Employee Development Center
January 11-22, 1988

COURSE AGENDA

SUNDAY: Jan. 10
8:30 p.m. Evening Social

MONDAY: Jan. 11
8:00 a.m. Welcome  Stan Lock  Resource Mgmt.
Introductions  Resource Mgmt.
Administrivia  Specialist/NCR

Dale Ditmanson
Program Coordinator/Mather
Employee Development Center

Gordon Olson  Resource Mgmt.
Specialist
Antietam NB

8:45  SESSION 1
Keynote: Orientation to NPS Resources  Tom Ritter  Assistant Dir. for Visitor Services

9:45 a.m. Break

10:00 a.m. SESSION 2
"The Orientation to Park Resources Course"  Olson

10:30 a.m. Team Meetings  Ditmanson

10:50 a.m. Break

11:00 a.m. SESSION 3
The Competent Instructor  Flip Hagood
Lunch  Chief, Employee Development Div.
WASO

Noon 

1:15 p.m. SESSION 4
Learning vs Schooling  Ditmanson
PMA # 1
3:00 p.m.  Break

3:15 p.m.  SESSION 5
Discussional Method  Dave Dahlen
PMA # 3  Training Spec.
Mather Employee  Mather Employee
Dev. Center  Dev. Center

5:00 p.m.  Dinner

7:00 p.m.  SESSION 6
Using Common Instruc-
Jim Shives  Interp. Spec. ARO
tional Aids Effectively  PMA # 4
(optional evening session)
INSTRUCTOR'S WORKSHOP IN FUNDAMENTALS OF RESOURCE MANAGEMENT
MATHER EMPLOYEE DEVELOPMENT CENTER

SCHEDULE: TUESDAY, JANUARY 12, 1988

8:00 a.m.  Today's Agenda                  Ditmanson
8:15 a.m.  What is our Goal                Ditmanson
           Who is our Audience
8:30 a.m.  Subject Matter Small Group Meetings

Objective: develop a list of appropriate topics, in the assigned subject area, for possible inclusion in an "Orientation to NPS Resources" course.

Group                   Room
Archeology              Supt. Office
Acid Rain               Upper Classroom
Vegetation              Lower Classroom
Wildlife                LRC
Curatorial              Small Conference Room
Hist. Structures        Computer Lab
Threats/Laws            Lounge

9:15 a.m.  Break (hand-in group lists)

9:30 a.m.  SESSION_7
           Participative Lecture Method
           Small group (self) study (workbooks and tapes)

Group                   Room
SWR-MAR                  Upper Classroom
PNWR-NAR                 Lower Classroom
SER-NCR                  LRC
AR-MWR                   Computer Lab
WR-RMR                   Lounge

10:45 a.m.  Break

11:00 a.m.  SESSION_8
           Curriculum Development        Ditmanson

Noon          Lunch

1:15 a.m.  Session 8 continues
3:00 p.m. Break
3:15 p.m. NAR Report
3:30 p.m. Session 9
  Intro. to Natural Resources
  Doug Morris
  A: Working Program
WEDNESDAY: Jan. 13

9:00 a.m.  SESSION 11
Laws/Regs/Policy/Philosophy
Walt Dabney
Chief, Ranger Activities Div. WASO
Ben Levy
Senior Historian WASO

9:45 a.m.  Break

10:00 a.m.  SESSION 12
Lesson Planning and Objectives
Lucia Bragan
Employee Dev. Specialist/WASO

Noon  Lunch

1:15 p.m.  Session 12 Continues

2:00 p.m.  SESSION 13
Using Mather Computers
Katrina Tucker
Sec. Mather Employee Dev. Center

3:00 p.m.  Break

3:15 p.m.  SESSION 14
Threats
Bill Supernauugh
Supv. Park Ranger FLETC
Edwin C. Bearss
Chief Historian WASO

5:00 p.m.  Dinner

THURSDAY: Jan. 14

8:00 a.m.  SESSION 15
Historic Structures/Landscapes/Scenes
Randy Biallass
Assistant Chief Historical Architecture Div. WASO

9:45 a.m.  Break
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker</th>
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</thead>
</table>
| 10:00 a.m. | **SESSION 16** Curatorial | Ann Hitchcock  
Chief Curator  
WASO               |
| 10:50 a.m. | Break                 |                                            |
| 11:00 a.m. | **SESSION 17** Air Quality | Molly Ross  
Assistant Chief  
Air Quality  
WASO               |
| Noon     | Lunch                 |                                            |
| 1:00 p.m. | **SESSION 18** Acid Rain | Kathleen Manor  
NR Acid Rain  
Research Coord.  
WASO               |
| 1:50 p.m. | Break                 |                                            |
| 2:00 p.m. | **SESSION 19** Water Resources | Dr. Ray Herrmann  
Chief Applied Research Branch  
Ft. Collins/WASO  |
| 2:50 p.m. | Break                 |                                            |
| 3:00 p.m. | **SESSION 20** Vegetation/Soils | Keith Langdon  
NR Specialist  
Great Smoky Mts.  |
| 5:00 p.m. | Dinner                |                                            |
| 7:00 p.m. | **SESSION 21** Archeology | Dave Orr  
Reg. Archeologist  
MAR               |
| FRIDAY: Jan. 15 |              |                                            |
| 8:00 a.m. | **SESSION 22** Wildlife/Fisheries | John Dennis  
Supv. Biologist  
WASO               |
9:45 a.m. Break
10:00 a.m. SESSION 23
Lesson Plan Assignments Ditmanson
11:00 a.m. Work On Lesson Plans
4:30 p.m. Week One Wrap-up/
Next Weeks Agenda and Lock/Olson/
Assignments Ditmanson
5:00 p.m. End Week One

MONDAY: Jan. 18
All Day HOLIDAY
Martin Luther King, Jr. Birthday

Building will be open for Lesson Plan Development
INSTRUCTOR'S WORKSHOP IN FUNDAMENTALS OF RESOURCE MANAGEMENT
Stephen T. Mather Employee Development Center

January 11-22, 1988

Schedule update:

Tuesday: Jan. 19

8:00 a.m. SESSION 24
- Schedule Changes
- Team Assignments
- Lesson Plan Update

9:00 a.m. Regional Team Meetings

9:30 a.m. Continue Lesson Plan Development

4:00 p.m. Lesson Plan Status

Wednesday: Jan. 20

8:00 a.m. Lesson Plan Status

9:30 a.m. Regional Team Meetings

9:00 a.m. Continue Lesson Plan Development

1:00 p.m. Practice teaching (optional)
- peer critique/video tape self critique

Downstairs Classroom - Let Dale know by this afternoon if you would like to participate.

1:00 p.m. All others, finalize lesson plans and complete xeroxing

4:00 p.m. Practice Teaching Logistics

5:00 p.m. End-of-Day
THURSDAY: Jan. 21

8:00 a.m. SESSION 27
Presentation of Orientation to Resource Management Courses at Designated Sites

7:00 p.m. Class Dinner

FRIDAY: Jan. 22

8:00 a.m. SESSION 28
Team Reports on Thursday's Assignment

10:00 a.m. Break

10:15 a.m. Regional Interpretive Skills Teams - Friends In Deed!! WASO

10:45 a.m. SESSION 29
Bringing it all Together Denny Galvin Deputy Director

11:30 a.m. SESSION 30
Final Instructions Lock/Olson Wrap-up Ditmanson

Noon End of course

1-7-88
PART III

FINAL OBJECTIVES
WORKSHOP OBJECTIVES

At the end of this workshop, each participant/regional team will be able to:

- conduct a regional "Orientation to Resource Management" course;

- develop and teach a variety of specific lessons for resource management skills;

- contribute resource management skills, knowledge, and ability to a team teaching situation;

- plan a strategy of regional implementation for resource management workshops involving all team members;

- train adults using a practical, adult-oriented approach.
SESSION OBJECTIVES

SESSION 1  KEYNOTE: ORIENTATION TO NPS RESOURCE MANAGEMENT: at the end of this session each participant will be able to:
- outline the historical background of resources management in the NPS prior to 1980;
- define the effect of the "Threats" report on NPS resource management since 1980;
- describe the relationship of cultural and natural resource management in the WASO office;
- list the applicable guidelines for resource management; i.e. NPS-2, NPS-28, and that there is not a natural resources guideline;
- describe other important resource management documents; i.e. RMP's, CRMP's, MOU's, etc.
- define the NPS role in resource management beyond park boundaries.

SESSION 2  "THE ORIENTATION TO PARK RESOURCES COURSE": at the end of this session each participant will be able to:
- describe the overall objectives and profile of this workshop;
- describe what is expected of him or her during the workshop;
- list and describe the weeks assignments and ultimate product.

SESSION 3  THE COMPETENT INSTRUCTOR: at the end of this session each participant will be able to:
- list several roles of a trainer;
- discuss several characteristics and attitudes of a competent instructor;
- compare and contrast several techniques used by a competent instructor;
- list various behaviors exhibited by the competent instructor;
- discuss the Division of Training's expectations for the Resource Management Instructors Teams.
SESSION 4 LEARNING VS. SCHOOLING: at the end of this session each participant will be able to:

- list several common learning motivations for adults;
- distinguish between learner-focused vs. teacher-focused instruction;
- discuss three key concepts for adult instruction;
- list the prime methods of instruction, and tell how to choose the most suitable ones;
- describe how to start the first class meeting.

SESSION 5 DISCUSSIONAL METHOD: at the end of this session each participant will be able to:

- list the typical shortcomings and misuses of the discussional method;
- list the requirements for creating learning through discussion;
- describe where discussional methods apply;
- train others using the two main types of discussional processes of "gathering" and "exchanging";
- list and use four common types of discussional aids and two less common methods;
- describe how to get ready for a discussional session, how to keep it under control, how to handle problem situations and problem participants, and to assure learning occurs.

SESSION 6 USING COMMON INSTRUCTIONAL AIDS EFFECTIVELY: at the end of this session each participant will be able to:

- describe a variety of visual aids used in training and when they are appropriate;
- describe how to use textbooks, workbooks, handouts;
- describe the proper use of demonstrations in a training situation;
- discuss the use of "gimmicks";
- discuss the proper use of pre-post tests;
- describe the proper room arrangements for learning situations.

SESSION 7 PARTICIPATIVE LECTURE METHOD: at the end of this session each participant will be able to:

- list the typical shortcomings and classic misuses of the lecture method;
- describe the learning barriers created by poorly handled lectures;
- train others with a lecture method which makes it a participative learning experience for the student;
- list techniques for making the lecture method clear and interesting and techniques for involvement and reinforcement;
- question students as he or she uses the lecture method to check for learning.

SESSION 3   CURRICULUM DEVELOPMENT: at the end of this session the group will:

- formulate a list of lesson plan topics for an "Orientation to NPS Resource Management" curriculum;
- refine the list to a set of core modules.

SESSION 9   INTRODUCTION TO NATURAL RESOURCES MANAGEMENT - A WORKING PROGRAM: at the end of this session each participant will be able to:

- identify one way to present an orientation to resources management course;
- list positive techniques and subject matter than can be utilized in regional sessions;
- avoid pitfalls learned from the "Introduction to Natural Resources Management" course.

SESSION 10   EXPERIENTIAL METHODS: at the end of this session each participant will be able to:

- describe how and when to use role-playing, games and simulations, demonstrations and workshops, "T" groups, and laboratory training techniques;
- list the necessary conditions for "transfer of training" from classroom situations to real life.

SESSION 11   LAWS/REGULATIONS/POLICY/PHILOSOPHY - AS APPLICABLE TO RESOURCES MANAGEMENT: at the end of this session each participant will be able to:

- develop an understanding of NPS management policy, the evolution of that policy, and its relationship to other agencies;
- describe appropriate laws including; ARPA, NEPA, 36CFR, 106, individual parks enabling legislation;
- identify sources for further information;
- list books, periodicals, articles, films, etc. which will be useful in teaching this subject;
- prepare a lesson plan for presentation on this subject.

SESSION 12   LESSON PLANNING AND OBJECTIVES: at the end of this
SESSION 13  USING MATHER COMPUTERS: at the end of this session each participant will be able to:

- repeat the fundamental operations of an IBM, Compaq, or other Mather computer;
- repeat the fundamental commands for using the Word Perfect word processing software.

SESSION 14  THREATS: at the end of this session each participant will be able to:

- outline the "Threats" program, including a condensation of the threats report;
- describe significant threats to NPS resources including; hazardous waste, solid waste disposal, urban encroachment, oil spills, 1987 COMMON, etc.
- describe the servicewide inventory and monitoring program;
- identify and report threats;
- describe how the NPS addresses threats (both within and outside our boundaries) through specific examples, such as; easement violations, boundary control, carrying capacities, etc.;
- identify sources for further information;
- list books, periodicals, articles, films, etc. which will be useful in teaching this subject;
- prepare a lesson plan for presentation on this subject.

SESSION 15  HISTORIC STRUCTURES/LANDSCAPES/SCENES: at the end of this session each participant will be able to:

- provide an overview of NPS cultural resources;
- define what is an historic structure (historic context and/or architecture), a historic or cultural landscape, a historic scene, and an historic landmark;
- describe the importance of research and documentation in relation to cultural resources;
- describe the inventory of historic structures and the list of classified structures;
- describe the process of nomination to the historic register;
- identify threats (structural and/or historic fabric) to cultural resources; (also integrated pest management);
- describe the historic structures leasing program;
- identify sources for further information;
- list books, periodicals, articles, films, etc. which will be useful in teaching this subject;
- prepare a lessor plan for presentation on this subject.

SESSION 16 CURATORIAL: at the end of this session each participant will be able to:

- describe the NPS curatorial responsibility;
- understand the scope of the NPS collection;
- describe care and feeding of collections, in-parks, servicewide, and outside the NPS;
- outline what a Scope of Collections statement encompasses;
- describe the automated national catalog;
- discuss property management responsibilities and legal compliance issues;
- identify causes of deterioration and list sources for assistance, (includes integrated pest management);
- list books, periodicals, articles, films, etc. which will be useful in teaching this subject;
- prepare a lesson plan for presentation on this subject.

SESSION 17 AIR QUALITY: at the end of this session each participant will be able to:

- define air quality;
- describe the NPS responsibility concerning the air quality program;
- define what a pollutant is;
- list current identified pollutants, problems and issues;
- discuss what the NPS is doing about air quality, i.e. research/monitoring;
- list sources for further information;
- list books, periodicals, articles, films, etc. which will be useful in teaching this subject;
- prepare a lesson plan for presentation on this subject.

SESSION 18 ACID RAIN: at the end of this session each participant will be able to:

- define acid rain;
- describe the NPS responsibility concerning the acid rain program;
- describe how acid rain effects NPS resources, (aquatic, terrestrial, cultural):
- discuss what the NPS is doing about acid rain, i.e. research/monitoring;
- discuss political realities concerning the interpretation and public information aspect of acid rain;
- list sources for further information;
- list books, periodicals, articles, films, etc. which will be useful in teaching this subject;
- prepare a lesson plan for presentation on this subject.

SESSION 19  WATER RESOURCES: at the end of this session each participant will be able to:

- list NPS water resources;
- describe the NPS responsibility concerning water resources;
- describe the basic science, (water cycle);
- describe water quality, (criteria and standards);
- discuss current problems including; water rights and pollutants;
- discuss what the NPS is doing about water resources, i.e. consulting, research, and monitoring;
- list sources for further information;
- list books, periodicals, articles, films, etc. which will be useful in teaching this subject;
- prepare a lesson plan for presentation on this subject.

SESSION 20  VEGETATION/SOILS: at the end of this session each participant will be able to:

- describe basic ecological principles including; biological diversity, vegetative communities and systems;
- discuss related problems such as; Threatened and Endangered species, exotics, noxious vegetation, and integrated pest management;
- describe vegetative management programs and initiatives including; fire, research, inventories, etc;
- discuss the relationship and impact of vegetation on cultural resources;
- list sources for further information;
- list books, periodicals, articles, films, etc. which will be useful in teaching this subject.
- prepare a lesson plan for presentation on this subject.

SESSION 21  ARCHEOLOGY: at the end of this session each participant will be able to:

- describe how varieties of archeological sites can accumulate over time and the difficulties of understanding and properly managing such sites;
- describe historic and prehistoric preservation philosophy and legal responsibilities as they apply to NPS archeological sites;
list ways to properly implement historic and prehistoric preservation techniques for archeological resources;
- recognize potential cultural resource areas which would require compliance actions prior to federal undertakings;
- list sources for further information;
- list books, periodicals, articles, films, etc. which will be useful in teaching this subject;
- prepare a lesson plan for presentation on this subject.

SESSION 22 WILDLIFE/FISHERIES: at the end of this session each participant will be able to:
- describe basic ecological principles including; biological diversity and habitat;
- discuss the NPS role in wildlife management;
- discuss related problems such as; Treatened and Endangered Species, exotics, noxious species, and integrated pest management;
- describe wildlife management programs and intiatives including; biological dizeristy and reintroduction of species;
- discuss wildlife management and its relation to cultural resources;
- list sources for further information;
- list books, periodicals, articles, films, etc. which will be useful in teaching this subject;
- prepare a lesson plan for presentation on this subject.

SESSION 23 LESSON PLAN ASSIGNMENTS: at the end of this session each participant will be able to:
- develop the assigned resource management lesson plan(s)

SESSION 24 TEAM TEACHING ASSIGNMENTS: at the end of this session, each team will:
- develop a plan to practice teach various lesson plans with other teams;
- contact the assigned park area representative and determine the needs of the group to be taught on Thursday;
- develop a mini-orientation workshop for the practice teaching session on Thursday and develop a plan of action for implementation.

SESSION 25 TEAM PRACTICE TEACHING: at the end of this session each team will:
- conduct a minimum of 1 hour practice instruction by each team member for other team members;
- participate in the practice instruction in "Orientation to
Resource Management" by other team members;
- critique freely in a constructive manner the strengths and
  weaknesses of each lesson conducted or participated in;
- review performance by video tape.

SESSION 26    CURRICULUM REFINEMENT AND LAYOUT OF REGIONAL
COURSE AGENDAS: at the end of this session each team will:

- review the curriculum and lesson plans developed in order to
  focus the "Orientation to Resource Management" course on
  their specific regional needs;
- identify any resource management topics not identified
  earlier and assign lesson plans for future development.

SESSION 27    PRESENTATION OF ORIENTATION TO RESOURCE MANAGEMENT
COURSES AT DESIGNATED SITES: at the end of this session each
team will:

- conduct a 4-6 hour mini-workshop in "Orientation to Resource
  Management" tailored for a specific group of assigned NPS
  employees and VIP's with each team member giving a session.

SESSION 28    TEAM REPORTS ON THURSDAY'S PROGRAM: at the end of
this session each team will:

- report on its Thursday experience, listing successes,
  challenges, failures and recommendations for best use
  overall of curriculi and lesson plans.

SESSION 29    BRINGING IT ALL TOGETHER: at the end of this
session each participant will be able to:

- outline the NPS resource skills team initiative;
- list the Director's resource management priorities'
- promote a combined "Resource Management" approach to the
  orientation training and not a natural or cultural bias;
- discuss resource management/the NPS/and the 21st century.

SESSION 30    FINAL INSTRUCTIONS: at the end of this session
each participant will be able to:

- describe the assistance they can expect from Mather Training
  Center, the division of natural resources, the division of
  cultural resources, and operations as they give regional
  workshops.

1-5-88
PART IV

FINAL ROSTER
INSTRUCTOR'S WORKSHOP IN FUNDAMENTALS OF RESOURCES MANAGEMENT
Stephen T. Mather Employee Development Center
Harpers Ferry, West Virginia 25425-0077
January 11-22, 1988

ROSTER

Alaska
William B. Cella, Resource Management Specialist, ARO 8-2192
Jean Swearingen, Regional Curator, ARO 8-2193
James Hannah, District Ranger, Wrangel -St. Elias NP 8-2194
James Shives, Interpretive Specialist, ARO 8-2195

Mid-Atlantic
Kathy Jope, Natural Resource Specialist, MARO 8-2196
Teresa Shirakawa, Supv. Park Ranger, Shenandoah NP 8-2197
Tom Schiller, Exhibit Specialist, Hampton House NHS 8-2198
William Fink, Superintendent, Ft. Necessity NB 8-2199

Midwest
James A. Mack, Chief, VS & RM, Apostle Island NS 8-2200
William E. Herd, Park Ranger, Sleeping Bear Dunes NL 8-2201
James P. Corless, Historian, Ozark NSR 8-2202
George T. Oviatt, Resource Management Specialist, Scotts Bluff NP 8-2203

North Atlantic
John Donahue, Resource Management Specialist, Morristown NHP 8-2208
David Griese, Supv. Park Ranger, Fire Island NS 8-2209
Jim Gott, Superintendent, Saugus Iron Works 8-2210
Edward McManus, Acting Regional Curator, NARO 8-2211

Pacific Northwest
Randall L. Brooks, Supv. Park Ranger, Mount Rainier NP 8-2212
Peter Thompson, Park Ranger, Crater Lake NP 8-2213
Ray M. Dashiell, Maint. Mechanic Foreman, Coulee Dam NP 8-2214
Paul Henderson, Park Ranger, Klondike Gold Rush NHP 8-2215

Rocky Mountain
John Daugherty, North District Naturalist, Grand Teton NP 8-2216
Michael G. Schene, Acting Chief, Historic Preservation, RMRO 8-2217
Stephen J. Petersburg, Resource Management Specialist, Dinosaur NP 8-2218
John C. Benjamin, District Ranger, Glen Canyon NRA 8-2219

1/05/87
Southeast
Ellen K. Foppes, Historian, SERO 8-2220
John Breen, Supv. Park Ranger, Canaveral NS 8-2221
John Miller, Chief, Resource Management, Virgin Islands NP 8-2222

Southwest
Diane Jung, Historian, SWRO 8-2224
Robert J. Valen, Chief, I & VS, Guadalupe Mountains NP 8-2225
Bruce W. Reed, Facility Manager, Guadalupe Mountains NP 8-2226
Keith Yarborough, Physical Scientist, SWRO 8-2227

WASO
Colleen Crowley, Secretary, Division of Interpretation

Western
Michael Shields, Facility Manager, Sequoia & Kings Canyon NP 8-2228
Terrence Jofstra, Ecologist, Redwood NP 8-2229
John Martini, Park Ranger, Golden Gate NRA 8-2230
Connie Rudd, Lead Park Ranger, Grand Canyon NP 8-2231
PART V

EVALUATION RATINGS
SESSION OBJECTIVES

SESSION 1: KEYNOTE: ORIENTATION TO NPS RESOURCE MANAGEMENT:
at the end of this session each participant will be able to:

- outline the historical background of resources management in the NPS prior to 1980;
- define the effect of the "Threats" report on NPS resource management since 1980;
- describe the relationship of cultural and natural resource management in the WASO office;
- list the applicable guidelines for resource management; i.e. NPS-2, NPS-28, and that there is not a natural resources guideline;
- describe other important resource management documents; i.e. RMP's, CRMP's, MOU's, etc.
define the NPS role in resource management beyond park boundaries.

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<thead>
<tr>
<th>Strongly Agree</th>
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<tr>
<td>The stated objectives were appropriate</td>
<td>5 - 7</td>
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<tr>
<td>The stated objectives were met</td>
<td>5 - 1</td>
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<tr>
<td>The instructor(s) was appropriate for this session</td>
<td>5 - 6</td>
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<tr>
<td>The instructor(s) was effective</td>
<td>5 - 4</td>
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<tr>
<td>The session was applicable to my job</td>
<td>5 - 6</td>
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Comments, Suggestions, Reactions, Recommendations:
(Please use back of sheet if necessary)

Overall: 3.73
SESSION 2  "THE ORIENTATION TO PARK RESOURCES COURSE": at the end of this session each participant will be able to:
- describe the overall objectives and profile of this workshop;
- describe what is expected of him or her during the workshop;
- list and describe the weeks assignments and ultimate product.

Strongly Agree | Strongly Disagree
---|---
The stated objectives were appropriate | 5 4 3 2 1 4.41
The stated objectives were met | 5 4 3 2 1 3.46
The instructor(s) was appropriate for this session | 5 4 3 2 1 4.04
The instructor(s) was effective | 5 4 3 2 1 3.63
The session was applicable to my job | 5 4 3 2 1 3.70

Comments, Suggestions, Reactions, Recommendations:
(Please use back of sheet if necessary)

Overall: 3.85

SESSION 3  THE COMPETENT INSTRUCTOR: at the end of this session each participant will be able to:
- list several roles of a trainer;
- discuss several characteristics and attitudes of a competent instructor;
- compare and contrast several techniques used by a competent instructor;
- list various behaviors exhibited by the competent instructor;
- discuss the Division of Training's expectations for the Resource Management Instructors Teams.

Strongly Agree | Strongly Disagree
---|---
The stated objectives were appropriate | 5 4 3 2 1 4.60
The stated objectives were met | 5 4 3 2 1 4.40
The instructor(s) was appropriate for this session | 5 4 3 2 1 4.68
The instructor(s) was effective | 5 4 3 2 1 4.64
The session was applicable to my job | 5 4 3 2 1 4.44

Comments, Suggestions, Reactions, Recommendations:
(Please use back of sheet if necessary)

Overall: 4.55
SESSION 4  
**LEARNING VS. SCHOOLING:** at the end of this session each participant will be able to:

- list several common learning motivations for adults;
- distinguish between learner-focused vs. teacher-focused instruction;
- discuss three key concepts for adult instruction;
- list the prime methods of instruction, and tell how to choose the most suitable ones;
- describe how to start the first class meeting.

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<td>5-15 4-8</td>
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<td>The session was applicable to my job</td>
<td>5-15 4-7</td>
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Comments, Suggestions, Reactions, Recommendations:
(Please use back of sheet if necessary)

**Overall:** 4.51

SESSION 5  
**DISCUSSIONAL METHOD:** at the end of this session each participant will be able to:

- list the typical shortcomings and misuses of the discusional method;
- list the requirements for creating learning through discussion;
- describe where discusional methods apply;
- train others using the two main types of discusional processes of "gathering" and "exchanging";
- list and use four common types of discusional aids and two less common methods;
- describe how to get ready for a discusional session, how to keep it under control, how to handle problem situations and problem participants, and to assure learning occurs.

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<td>5-14 4-9</td>
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<td>5-12 4-11</td>
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<td>The instructor(s) was appropriate for this session</td>
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<td>5-12 4-7</td>
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Comments, Suggestions, Reactions, Recommendations:
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**Overall:** 4.49
SESSION 6 USING COMMON INSTRUCTIONAL AIDS EFFECTIVELY: at the end of this session each participant will be able to:

- describe a variety of visual aids used in training and when they are appropriate;
- describe how to use textbooks, workbooks, handouts;
- describe the proper use of demonstrations in a training situation;
- discuss the use of "gimmicks";
- discuss the proper use of pre-post tests;
- describe the proper room arrangements for learning situations.

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<td>The instructor(s) was appropriate for this session</td>
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<td>The instructor(s) was effective</td>
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<tr>
<td>The session was applicable to my job</td>
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Comments, Suggestions, Reactions, Recommendations:
(Please use back of sheet if necessary)

Overall: 4.42

SESSION 7 PARTICIPATIVE LECTURE METHOD: at the end of this session each participant will be able to:

- list the typical shortcomings and classic misuses of the lecture method;
- describe the learning barriers created by poorly handled lectures;
- train others with a lecture method which makes it a participative learning experience for the student;
- list techniques for making the lecture method clear and interesting and techniques for involvement and reinforcement;
- question students as he or she uses the lecture method to check for learning.

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Comments, Suggestions, Reactions, Recommendations:
(Please use back of sheet if necessary)

Overall: 3.04
SESSION 8  CURRICULUM DEVELOPMENT: at the end of this session the group will:

- formulate a list of lesson plan topics for an "Orientation to NPS Resource Management" curriculum;
- refine the list to a set of core modules.

Strongly Agree Strongly Disagree

| The stated objectives were appropriate | 5-14 4-7 | 3-2 2-1 1-1 |
| The stated objectives were met         | 5-12 4-9 | 3-6 2-2 1-1 |
| The instructor(s) was appropriate for this session | 5-6 4-13 | 3-3 2-1 1 |
| The instructor(s) was effective        | 5-7 4-7  | 3-8 2-1 1 |
| The session was applicable to my job   | 5-8 4-9  | 3-5 2-2 1 |

Comments, Suggestions, Reactions, Recommendations:
(Please use back of sheet if necessary)

Overall: 3.98

SESSION 9  INTRODUCTION TO NATURAL RESOURCES MANAGEMENT - A WORKING PROGRAM: at the end of this session each participant will be able to:

- identify one way to present an orientation to resources management course;
- list positive techniques and subject matter than can be utilized in regional sessions;
- avoid pitfalls learned from the "Introduction to Natural Resources Management" course.

Strongly Agree Strongly Disagree

| The stated objectives were appropriate | 5-15 4-10 | 3 2 1 |
| The stated objectives were met         | 5-16 4-9  | 3 2 1 |
| The instructor(s) was appropriate for this session | 5-20 4-9 3-1 2 1 |
| The instructor(s) was effective        | 5-14 4-10 | 3-1 2 1 |
| The session was applicable to my job   | 5-14 4-9  | 3-1 2 1 |

Comments, Suggestions, Reactions, Recommendations:
(Please use back of sheet if necessary)

Overall: 4.60
SESSION 10  EXPERIENTIAL METHODS: at the end of this session each participant will be able to:

- describe how and when to use role-playing, games and simulations, demonstrations and workshops, "T" groups, and laboratory training techniques;
- list the necessary conditions for "transfer of training" from classroom situations to real life.

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Comments, Suggestions, Reactions, Recommendations:
(Please use back of sheet if necessary)

Overall: 3.97

SESSION 11  LAWS/REGULATIONS/POLICY/PHILOSOPHY - AS APPLICABLE TO RESOURCES MANAGEMENT: at the end of this session each participant will be able to:

- develop an understanding of NPS management policy, the evolution of that policy, and its relationship to other agencies;
- describe appropriate laws including; ARPA, NEPA, 36CFR, 106, individual parks enabling legislation;
- identify sources for further information;
- list books, periodicals, articles, films, etc. which will be useful in teaching this subject;
- prepare a lesson plan for presentation on this subject.

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Comments, Suggestions, Reactions, Recommendations:
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Overall: 4.05
SESSION 12  LESSON PLANNING AND OBJECTIVES: at the end of this session each participant will be able to:

- compare and contrast learning vs. learner vs. teaching objectives;
- describe a simple technology for defining learning objectives;
- describe a hierarchy of four types of objectives for any adult course;
- write sample student objectives and learning contracts;
- write objectives to determine the lesson plan;
- describe the three stages of lesson planning;
- evaluate whether learning has resulted or not as a result of the lesson given.

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Overall: 4.58

SESSION 13  USING MATER COMPUTERS: at the end of this session each participant will be able to:

- repeat the fundamental operations of an IBM, Compaq, or other Mather computer;
- repeat the fundamental commands for using the Word Perfect word processing software.

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Comments, Suggestions, Reactions, Recommendations:
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N/A
SESSION 14  THREATS: at the end of this session each participant will be able to:

- outline the "Threats" program, including a condensation of the threats report;
- describe significant threats to NPS resources including; hazardous waste, solid waste disposal, urban encroachment, oil spills, 1987 COMMON, etc.
- describe the servicewide inventory and monitoring program;
- identify and report threats;
- describe how the NPS addresses threats (both within and outside our boundaries) through specific examples, such as; easement violations, boundary control, carrying capacities, etc.;
- identify sources for further information;
- list books, periodicals, articles, films, etc. which will be useful in teaching this subject;
- prepare a lesson plan for presentation on this subject.

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Comments, Suggestions, Reactions, Recommendations:
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Overall: 4.30
SESSION 15 HISTORIC STRUCTURES/LANDSCAPES/SCENES: at the end of this session each participant will be able to:

- provide an overview of NPS cultural resources;
- define what is an historic structure (historic context and/or architecture), a historic or cultural landscape, a historic scene, and an historic landmark;
- describe the importance of research and documentation in relation to cultural resources;
- describe the inventory of historic structures and the list of classified structures;
- describe the process of nomination to the historic register;
- identify threats (structural and/or historic fabric) to cultural resources; (also integrated pest management);
- describe the historic structures leasing program;
- identify sources for further information;
- list books, periodicals, articles, films, etc. which will be useful in teaching this subject;
- prepare a lesson plan for presentation on this subject.

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Comments, Suggestions, Reactions, Recommendations:

(Please use back of sheet if necessary)

Overall: 3.92
SESSION 16 CURATORIAL: at the end of this session each participant will be able to:

- describe the NPS curatorial responsibility;
- understand the scope of the NPS collection;
- describe care and feeding of collections, in-parks, servicewide, and outside the NPS;
- outline what a Scope of Collections statement encompasses;
- describe the automated national catalog;
- discuss property management responsibilities and legal compliance issues;
- identify causes of deterioration and list sources for assistance, (includes integrated pest management);
- list books, periodicals, articles, films, etc. which will be useful in teaching this subject;
- prepare a lesson plan for presentation on this subject.

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Comments, Suggestions, Reactions, Recommendations:
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Overall: 3.60

SESSION 17 AIR QUALITY: at the end of this session each participant will be able to:

- define air quality;
- describe the NPS responsibility concerning the air quality program;
- define what a pollutant is;
- list current identified pollutants, problems and issues;
- discuss what the NPS is doing about air quality, i.e. research/monitoring;
- list sources for further information;
- list books, periodicals, articles, films, etc. which will be useful in teaching this subject;
- prepare a lesson plan for presentation on this subject.

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Comments, Suggestions, Reactions, Recommendations:
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Overall: 4.44
SESSION 18  ACID RAIN: at the end of this session each participant will be able to:

- define acid rain;
- describe the NPS responsibility concerning the acid rain program;
- describe how acid rain effects NPS resources, (aquatic, terrestrial, cultural);
- discuss what the NPS is doing about acid rain, i.e. research/monitoring;
- discuss political realities concerning the interpretation and public information aspect of acid rain;
- list sources for further information;
- list books, periodicals, articles, films, etc. which will be useful in teaching this subject;
- prepare a lesson plan for presentation on this subject.

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Comments, Suggestions, Reactions, Recommendations:
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Overall: 3.94

SESSION 19  WATER RESOURCES: at the end of this session each participant will be able to:

- list NPS water resources;
- describe the NPS responsibility concerning water resources;
- describe the basic science, (water cycle);
- describe water quality, (criteria and standards);
- discuss current problems including; water rights and pollutants;
- discuss what the NPS is doing about water resources, i.e. consulting, research, and monitoring;
- list sources for further information;
- list books, periodicals, articles, films, etc. which will be useful in teaching this subject;
- prepare a lesson plan for presentation on this subject.

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Comments, Suggestions, Reactions, Recommendations:
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Overall: 4.05
SESSION 20  VEGETATION/SOILS: at the end of this session each participant will be able to:

- describe basic ecological principles including; biological diversity, vegetative communities and systems;
- discuss related problems such as; Threatened and Endangered species, exotics, noxious vegetation, and integrated pest management;
- describe vegetative management programs and initiatives including; fire, research, inventories, etc;
- discuss the relationship and impact of vegetation on cultural resources;
- list sources for further information;
- list books, periodicals, articles, films, etc. which will be useful in teaching this subject.
- prepare a lesson plan for presentation on this subject.

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Comments, Suggestions, Reactions, Recommendations:
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Overall: 4.13
SESSION 21 ARCHEOLOGY: at the end of this session each participant will be able to:

- describe how varieties of archeological sites can accumulate over time and the difficulties of understanding and properly managing such sites;
- describe historic and prehistoric preservation philosophy and legal responsibilities as they apply to NPS archeological sites;
- list ways to properly implement historic and prehistoric preservation techniques for archeological resources;
- recognize potential cultural resource areas which would require compliance actions prior to federal undertakings;
- list sources for further information;
- list books, periodicals, articles, films, etc. which will be useful in teaching this subject;
- prepare a lesson plan for presentation on this subject.

The stated objectives were appropriate

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The instructor(s) was effective

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Comments, Suggestions, Reactions, Recommendations:
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Overall: 4.70
SESSION 22  WILDLIFE/FISHERIES: at the end of this session each participant will be able to:

- describe basic ecological principles including; biological diversity and habitat;
- discuss the NPS role in wildlife management;
- discuss related problems such as; Treated and Endangered Species, exotics, noxious species, and integrated pest management;
- describe wildlife management programs and initiatives including; biological diversitv and reintroduction of species;
- discuss wildlife management and its relation to cultural resources;
- list sources for further information;
- list books, periodicals, articles, films, etc. which will be useful in teaching this subject;
- prepare a lesson plan for presentation on this subject.

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Comments, Suggestions, Reactions, Recommendations:
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Overall: 4.17

SESSION 23  LESSON PLAN ASSIGNMENTS: at the end of this session each participant will be able to:

- develop the assigned resource management lesson plan(s)

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Overall: 3.80
SESSION 24  TEAM TEACHING ASSIGNMENTS: at the end of this session, each team will:

- develop a plan to practice teach various lesson plans with other teams;
- contact the assigned park area representative and determine the needs of the group to be taught on Thursday;
- develop a mini-orientation workshop for the practice teaching session on Thursday and develop a plan of action for implementation.

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Overall: 3.74

SESSION 25  TEAM PRACTICE TEACHING: at the end of this session each team will:

- conduct a minimum of 1 hour practice instruction by each team member for other team members;
- participate in the practice instruction in "Orientation to Resource Management" by other team members;
- critique freely in a constructive manner the strengths and weaknesses of each lesson conducted or participated in;
- review performance by video tape.

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SESSION 26  CURRICULUM REFINEMENT AND LAYOUT OF REGIONAL COURSE AGENDAS: at the end of this session each team will:

- review the curriculum and lesson plans developed in order to focus the "Orientation to Resource Management" course on their specific regional needs;
- identify any resource management topics not identified earlier and assign lesson plans for future development.

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<td>5</td>
<td>1</td>
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<tr>
<td>The instructor(s) was effective</td>
<td>5</td>
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<tr>
<td>The session was applicable to my job</td>
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Comments, Suggestions, Reactions, Recommendations:
(Please use back of sheet if necessary)

Overall: 3.68

SESSION 27  PRESENTATION OF ORIENTATION TO RESOURCE MANAGEMENT COURSES AT DESIGNATED SITES: at the end of this session each team will:

- conduct a 4-6 hour mini-workshop in "Orientation to Resource Management" tailored for a specific group of assigned NPS employees and VIP's with each team member giving a session.

<table>
<thead>
<tr>
<th>The stated objectives were appropriate</th>
<th>Strongly Agree</th>
<th>Strongly Disagree</th>
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<tr>
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<tr>
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<tr>
<td>The instructor(s) was effective</td>
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<tr>
<td>The session was applicable to my job</td>
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Comments, Suggestions, Reactions, Recommendations:
(Please use back of sheet if necessary)

Overall: 3.81
SESSION 28  TEAM REPORTS ON THURSDAY'S PROGRAM: at the end of this session each team will:

- report on its Thursday experience, listing successes, challenges, failures and recommendations for best use overall of curricula and lesson plans.

<table>
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</thead>
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<tr>
<td>The stated objectives were appropriate</td>
<td>5.10 4.7 3.5 2.1 1</td>
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<td>5.9 4.6 3.3 2.1 1</td>
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<tr>
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<td>5.6 4.3 3.3 2.1 1</td>
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<tr>
<td>The instructor(s) was effective</td>
<td>5.5 4.7 3.3 2.1 1</td>
</tr>
<tr>
<td>The session was applicable to my job</td>
<td>5.5 4.3 3.6 2.1 1</td>
</tr>
</tbody>
</table>

Comments, Suggestions, Reactions, Recommendations:
(Please use back of sheet if necessary)

SESSION 29  BRINGING IT ALL TOGETHER: at the end of this session each participant will be able to:

- outline the NPS resource skills team initiative;
- list the Director's resource management priorities;
- promote a combined "Resource Management" approach to the orientation training and not a natural or cultural bias;
- discuss resource management/the NPS and the 21st century.

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<thead>
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<td>The instructor(s) was effective</td>
<td>5.14 4.3 3 2 1</td>
</tr>
<tr>
<td>The session was applicable to my job</td>
<td>5.13 4.3 3 2 1</td>
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</table>

Comments, Suggestions, Reactions, Recommendations:
(Please use back of sheet if necessary)
SESSION 30  FINAL INSTRUCTIONS: at the end of this session each participant will be able to:

- describe the assistance they can expect from Mather Training Center, the division of natural resources, the division of cultural resources, and operations as they give regional workshops.

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<td>4.6</td>
<td>1.13</td>
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<tr>
<td>The stated objectives were met</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>The instructor(s) was appropriate for this session</td>
<td>4.08</td>
<td>4.08</td>
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<tr>
<td>The instructor(s) was effective</td>
<td>4.00</td>
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<tr>
<td>The session was applicable to my job</td>
<td>4.00</td>
<td>4.00</td>
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</tbody>
</table>

Comments, Suggestions, Reactions, Recommendations:
(Please use back of sheet if necessary)

Overall: 4.06

1-7-88
OVERALL COURSE EVALUATION: Please circle the appropriate ratings and write comments which will help in future planning of this course.

<table>
<thead>
<tr>
<th></th>
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<td>B. The stated objectives were appropriate</td>
<td>4.14</td>
<td>5 4 1 4 7 3 3 2 2 1</td>
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<td>C. I came to the course with high expectations</td>
<td>4.70</td>
<td>5 4 1 4 5 3 1 2 1</td>
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<tr>
<td>D. I was highly satisfied with the overall course, considering my original expectations</td>
<td>3.68</td>
<td>5 4 1 3 4 2 4 1 1</td>
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<tr>
<td>E. The course was well organized</td>
<td>3.17</td>
<td>5 1 4 9 3 8 2 5 1</td>
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<td>F. The instructors used were appropriate</td>
<td>3.87</td>
<td>5 5 4 12 3 4 2 2 1</td>
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<td>G. The Mather Coordinator(s) was effective</td>
<td>4.13</td>
<td>5 4 1 4 12 3 4 2 1</td>
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<tr>
<td>H. The Mather Support Staff was effective</td>
<td>4.61</td>
<td>5 1 4 5 2 7 3 1 2 1</td>
</tr>
<tr>
<td>I. The instructional materials were suitable</td>
<td>3.78</td>
<td>5 6 4 7 3 9 2 1 1</td>
</tr>
<tr>
<td>J. The facilities were suitable</td>
<td>4.39</td>
<td>5 1 4 10 3 2 2 1</td>
</tr>
<tr>
<td>K. The course length was appropriate</td>
<td>3.54</td>
<td>5 5 4 10 3 4 2 3 1 2</td>
</tr>
<tr>
<td>L. I would recommend this course to my colleagues</td>
<td>4.04</td>
<td>5 4 1 4 6 3 7 2 1 1</td>
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<tr>
<td>M. What I learned in this course will help me immediately in my job when I return</td>
<td>4.09</td>
<td>5 4 1 4 8 3 2 2 3 1</td>
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<tr>
<td>N. What I learned in this course will be put to use in the next six months</td>
<td>4.74</td>
<td>5 1 7 4 6 3 2 1</td>
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<tr>
<td>O. This course was worth the time spent away from the job</td>
<td>4.39</td>
<td>5 4 2 4 8 3 3 2 1</td>
</tr>
<tr>
<td>P. What were the strong points of the course?</td>
<td>Overall: 4.08</td>
<td></td>
</tr>
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</table>
PART VI

PARTICIPANT LETTER AND
PRE-COURSE ASSIGNMENTS
December 4, 1987

Memorandum

To:

Through:

From: Program Coordinator, Stephen T. Mather Employee Development Center


I am pleased to inform you that you have been selected to attend the Instructors Workshop in Fundamentals of Resource Management. The first session begins at 8:00 a.m. on January 11, 1988; the final session ends at 12:00 on Friday, January 22. Departures by airline should be scheduled no sooner than 2:45 p.m. on Friday, the 22nd. If you cannot stay the entire course, let us know so we can fill your slot with someone who can.

As the Mather Program Coordinator, I am working closely in the development of this course with Stan Lock, Regional Resource Management Specialist, NCR. If you have any questions before arrival, please call me at FTS 925-6401 or 304-535-6371, or TTY 304-535-2363.

Enclosed are a roster, the overall objectives, and a draft agenda. The agenda is subject to revision before arrival, but overall, it represents the anticipated course of events. Also enclosed is a course profile which should answer most of your questions about the workshop. Please note that an optional get-acquainted social is scheduled in the Cook Hall Dormitory at 8:30 p.m. on Sunday evening, January 10. If you are able to attend, you will have an opportunity to informally meet other workshop participants and instructors.

If you fly, make your travel arrangements following standard regional procedures. If you wish transportation from the airport to Mather, you must schedule your flight to arrive at either National or Dulles Airports (Dulles is the closest and easiest airport to use when coming to Mather) on Sunday, between 1:00 p.m. and 5:00 p.m. Please call Corrinne Thomas of the Mather staff at the above number by January 4, 1988, with your flight information and she will arrange your transportation from the airport. If we have not heard from you by this date we will assume you are making your own travel arrangements.
Please use your training order number, shown on the enclosed participant list, and your reimbursable Regional Training Account Number (obtained from your Regional Training Office) on all travel documents. If you have not completed your Request, Authorization, Agreement and Certification of Training (SF-182), please do so and forward it to your Regional Training Office.

Meals and incidental expenses in Harpers Ferry are $25 per day. Lodging is provided in the Cook Hall Dormitory. Meals are on your own at local restaurants. A copy of your final travel voucher must be sent to Peggy Woodward at Mather, no later that 30 days following the course.

If you are disabled or need any special type of assistance while at the Center, or if you wish to room with a particular individual or prefer a smoker or non-smoker as a roommate, please let Corrinne know. Otherwise, we will assign roommates at random.

When you arrive at Harpers Ferry, go to the Cook Hall Dormitory basement where you will find your room key. I can be reached at 304-535-2363 (collect if necessary) or 304-535-2767 from 2:00 p.m. to 8:00 p.m. if you have any travel problems.

I look forward to a stimulating, productive course. The effort you put into the course and your interactions with other participants and instructors, both inside and outside the classroom, will be key elements in assuring that the course will be a worthwhile and successful endeavor. Have a safe trip.

Dale A. Ditmanson

Enclosures
Assignment

Each participant is asked to do the following before coming to the workshop:

1. Make a list of the most significant areas of instruction that he or she thinks should be included in an "Orientation to Resource Management" (cultural and natural) course.

2. Examine course agenda, handouts, objectives, etc. from past resource courses he or she attended or helped teach. Bring significant materials to the workshop for examination and possible inclusion. Also bring training aids, films, etc. that may be helpful.

3. If possible, review NPS Training Methods Manual and Preparing Instructional Objectives by Robert F. Mager. If not possible, copies will be available for review at Mather upon arrival.

Questions

Call Dale Ditmanson at Mather Employee Development Center, FTS 925-6401 or 304-535-6371, ex. 6401.
PART VII

COURSE PROFILE
WORKSHOP PROFILE

What It Is

This workshop will be conducted like a college seminar. Several formal sessions are scheduled the first week; much of the remainder of the time will be spent in small group activity. The workshop is really a "think tank" in which an interdisciplinary team of skilled resource managers develop and practice-teach curricula and lesson plans.

What It Does

The workshop encourages individual and collective input for the formulation of an NPS servicewide orientation to resource management course for presentation to National Park Service employees other than Natural and Cultural Resource Management Specialists. Interdisciplinary skills teams will develop these courses and implement them in the field.

For Whom

The workshop will consist of recognized skilled resource management employees who possess training skills or exhibit potential for training. Regional resource skills teams of four members each will adapt the results of this workshop to meet the specific needs of their respective regions. Each team will do so in consultation with its regional coordinator, regional training officer and Mather Employee Development Center. During FY88, each team will conduct at least one "Orientation" course in its region. The audiences will be individually identified according to each region's needs.

Why

All National Park Service employees should have an understanding of cultural and natural resource management concepts and principles. The resource skills team will present an overview of this material to provide the participants an appreciation for resource preservation. Participants will return to their parks with a better understanding of park resources and effectively relate their jobs to the management of these resources.

The expected results are a more interactive and enlightened workforce to better preserve resources and inform park visitors.
How

This workshop asks participants and teams to develop and to practice presenting an orientation to resource management course. The first week of the course is largely devoted to developing training skills and a review of resource management subject matter. A nominal group process will be used to decide what subject matter should be included in the "Orientation" course. Time will also be allotted for group formulation of curricula and shared team responsibilities for development of lesson plans. The second week will largely consist of practicing and refining curricula and lesson plans, by practicing lessons among the teams, by self evaluating using video tapes, and by practicing on outside groups. Regional implementation strategies will also be developed the second week of the workshop.

By Whom

Stephen T. Mather Employee Development Center will coordinate the workshop and work closely with subsequent regional resource skills workshops. Having an overall coordination from a servicewide training center will assure consistency across the NPS system. It will also allow a consolidated approach for evaluation of the program. The overall Mather coordinator is Dale Ditmanson, park ranger/training specialist on the Mather staff. Dave Dahlen, also a park ranger/training specialist, at Mather will also assist. They will act as liaisons to the various regional teams during the workshop and later on during the regional workshops. An account (amount to be determined) will be maintained at Mather for each regional team to help conduct the regional workshops. Other monies for the workshops will be provided through regional training accounts, regional resource management accounts, individual park benefitting accounts, or other sources negotiated by the regional teams. Mather personnel will provide assistance and support to the teams as funding, scheduling, and needs exist for each regional team.
PART VIII

TRAINING ANNOUNCEMENT
It is important that all members of the park management team including operations personnel (maintenance, interpretation and protection) have a basic knowledge and understanding of park natural and cultural resources management activities (planning, research, techniques and skills). With this knowledge, an employee's ability to actively support a specific park's resources management program is enhanced; also one gains a sense of individual responsibility in the program, and recognizes that a team approach is required of all NPS employees in managing park resources. To this end, this workshop seeks to train a Team of Regional instructors who will come to Mather Employee Development Center and will: a) develop a Servicewide curriculum for an "Orientation to Park Resources Management Course, b) prepare appropriate lesson plans, c) devise a Regional implementation plan, and d) instruct an "Orientation" course in their region in FY-88 and/or FY-89.

Applicants in all grades and job series are eligible. Maintenance, interpretation, protection, administration and resource management employees are encouraged to apply.

Participants must have a commitment from their immediate supervisor and superintendent or regional supervisor that they will be allowed the time from their normal duties (approximately two weeks) to conduct at least one "Introduction to Park Resources Management" course in late FY-88 and/or FY-89.

PROGRAM CODE: 3616
TITLE CODE: INST WK FU RE MGT
CLASS SIZE: 30
COURSE DATES AND LENGTH: January 11-22, 1988
80 Hours (2 Weeks)
LOCATION AND FUNDING:
Stephen T. Mather Employee Development Center
Harpers Ferry, West Virginia 25425-0077

APPLICATION:
The attached training nomination form should be received at Mather Employee Development Center, in priority order, no later than COB December 1, 1987. Late nomination forms will be returned without action.

COURSE COORDINATOR:
Dale Ditmanson
Program Coordinator
Stephen T. Mather Employee Development Center

PHONE:
Direct: 304/535-6371
FTS: 925-6215
TTY: 304/535-2363
INSTRUCTORS WORKSHOP IN FUNDAMENTALS OF RESOURCES MANAGEMENT
Stephen T. Mather Employee Development Center
Harpers Ferry, West Virginia 25425-0077
January 11-22, 1988

SELECTION CRITERIA

1. Applicant possess a variety of accomplished resource management skills, (as evidenced by the employee statement, performance evaluation or other supporting documents.) 0-5

2. Applicant has a demonstrated record of accomplishments in a specific area of resource management (i.e., Integrated Pest Management, trails management, building preservation, collections management, etc.) 0-5

3. Applicant has an interest in resource management. 0-10

4. Applicant exhibits potential or demonstrated ability as a trainer based upon supervisory or other recommendations or field experience. 0-10

5. Applicant has the support from superintendent or regional supervisor granting permission for applicant to spend at least two weeks away from normal duties during FY-88 and/or FY-89 in order to conduct at least one week-long regional resources management orientation course. MANDATORY CRITERIA
NOTES TO REGIONAL TRAINING OFFICERS

- RTO's are requested to coordinate with appropriate Associate Regional Directors, and designated Team Resources Coordinators in ranking of course nominees and selection of Regional Training Teams.

- Each Region will be allotted three to five slots in this course depending on the number of applicants Servicewide. Encourage nominations from all grades and job series. The compositional make-up of the Regional teams should be "peers teaching peers" not Resource Management Specialists training non-specialists.

- The first three people on your prioritized list must be from three different disciplines.

Remember, the goal is for you to nominate a team who together can interact well in order to teach an "Introduction to Park Resource Management" course in your Region in FY-88 and/or FY-89.

- We anticipate there will be "seed money" available to help support Regional courses scheduled for FY-88; similar funds may also be available in FY-89 as well.

- Any questions about the course, feel free to contact Dale Ditmanson, Mather Employee Development Center, PTS 925-6215.

- If your nominee is a Resource Management Specialist, identify either cultural or natural.
PART IX

EO STATISTICS
INSTRUCTOR’S WORKSHOP IN FUNDAMENTALS OF RESOURCES MANAGEMENT  
JANUARY 11-22, 1988

EO STATISTICS

PARTICIPANTS:

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<tr>
<td>FEMALE:</td>
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INSTRUCTORS:

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PART X

APPENDICES
Part X Appendices

A. Recommendations, Planning Meeting, August, 1987
B. Detail for Gordon Olson
C. Skills Team Policy
D. Director's Memo, Nov. 19, 1987
E. Regional Coordinators
F. Generic "Owl" for practice sites
G. Practice sites and contacts
H. Removal from Interpretive Skills Teams
I. 39 topics (Nominal Group Process)
J. 1-13-88 Objectives
K. Draft Curriculum
L. Regional Course Report Form
Participants

Craig Axtell, Rocky Mountain National Park, 303/586-2371
Anne Castellina-Dudley, Mather Training Center, 304/535-6371; FTS 925-6402
Ed Drotos, NCR0, FTS 472-7996
Anne Froiedorf, WASO, FTS 343-5193
Jim Gott, Saugus Iron Works, 617/233-0050, 233-0921
Mac Heebner, LBJ, FTS 770-5123; 512/868-7128
Warren Hill, MWRO, FTS 864-3435; 402/221-3435
Roger Kelly, WRO, FTS 556-6893; 556-4165
Nora Mitchell, NARO, FTS 835-8852; 617/565-8852
John Reed, WASO, FTS 343-3227; 343-6380
Tom Ritter, WASO, FTS 343-3227
Bart Truesdale, NCRO, FTS 426-6770
Jean Swearingen, ARO, 907/271-2656
Joe Wagoner, Mammoth Cave, 502/758-2251
STATEMENT OF PURPOSE (SCOPE)

The Resource Management training teams will present an overview of Cultural and Natural Resource Management concepts and principles that will enable the participants to assist in resource preservation. The course is designed for National Park Service employees other than Natural Resource Management and Cultural Resource Management specialists.

Participants will return to their parks with a better understanding of park resources and effectively relate their jobs to the management of these park resources.

The expected results are a more interactive and enlightened workforce to better preserve the resources and inform the visitor.

INSTRUCTIONAL OBJECTIVES

After leaving this session the employee will be able to:

1. Define the basic mission of resource management in the National Park Service.
2. Return to their park and define the primary resource(s) and resource issue(s) of their park.
3. Write a statement describing what is important to them about their park's resources.
4. Determine their role in the park resource management program.
5. Describe how they can become more involved in the park's resource management program through their job. (eg: monitoring, observing, reporting, assisting, etc.)

COURSE DESIGN RECOMMENDATIONS

The course should be designed so it can be broken into "modules" to be used by each Regional Team as a scheduled course or as the opportunity arises (as part of other meetings or courses). Therefore, the time for presentation should range from 4 hours to 24 hours with combinations up to 40 hours. Although this presents a challenge, this design will help to ensure that the course (or at least some modules of the course) will be presented in each Region.
November 13, 1987

Memorandum

To: Superintendent, Antietam National Battlefield

From: Acting Superintendent, Stephen T. Mather Employee Development Center

Subject: Detail of Park Ranger Gordon Olson

I would like to request the assistance of Park Ranger Gordon Olson of your staff for our January course "Instructors Workshop in Fundamentals of Resource Management" scheduled to be held at Mather Employee Development Center January 11-22, 1988. Dale Ditmanson of the training center staff is the course coordinator. This particular course will address resource management concerns and will result in the development of an "Orientation to Resources Management" course that will be taught by regional teams trained in this workshop. As with other instructors workshops of this nature, there is a tremendous amount of topic specific work that needs to be done. Gordon's participation in the resources management training program and his attendance at the Instructors Workshop in Interpretive Skills have left him highly qualified to assist with this course. Dale would like to have Gordon participate in pre-planning sessions here at Mather and in Washington and help provide on-site coordination during the course itself. Gordon's involvement would be spread out between now and the course with the only long stretch during the actual course January 11-22.

Mather is currently involved in providing developmental experiences for NFS employees on a regular basis with detail assignments such as this one. The details have assisted us greatly and have been a good source of job enrichment and career development for those assigned to them.

If you approve of Gordon's participation with the January course, please sign below and return this letter to me in the enclosed envelope. I look forward to hearing from you soon.

Enclosure

Approved:

Superintendent ____________________ Date ____________________
October 30, 1987

Memorandum

To: Regional Training Officers

From: Program Coordinator, Stephen T. Mather Employee Development Center

Subject: Selection Criteria for the Instructors Workshop in Fundamentals of Resources Management

Add the following to element number five (5) when selecting applicants for the Instructors Workshop, (Program Code 3616).

Applicants may not be on more than one skills team, i.e., an instructor. Applicants who elect to drop another team assignment may do so. If selected, formal removal from the other team will be documented.

This policy is established to allow more employees the opportunity to participate on skills teams and to avoid the strain on supervisors by minimizing time required away from normal duties by any individual employee.

Please give me a call if you have any questions; 304/535-6371, ext. 6401 or FTS 925-6401.

Dale Ditmanson
Memorandum

To: Regional Directors
From: Director
Subject: Team Resource Program

Last spring, the Associate Director, Operations was asked to coordinate training needed to educate our employees on basic responsibilities and management activities of natural and cultural resources. A Servicewide Resource Management Training Program for nonresource management personnel had been earlier identified as a basic need, and has been under consideration for several years. We have since moved this project to the forefront by asking each region to identify a Regional Team Resource Coordinator. These coordinators conducted our first Servicewide developmental workshop at Mather Training Center on August 11-12, 1987.

Additionally, we have just released the Servicewide Training Opportunity announcing the "Instructors' Workshop in Fundamentals of Resources Management," which will be held at Mather Employee Development Center, January 11-22, 1988. As identified in the announcement, the objective will be for participants to become members of a Team of Regional Instructors. While at the Center, these trainees will a) develop a Servicewide curriculum for an "Orientation to Park Resources Management Course," b) prepare appropriate lesson plans, c) devise a regional implementation plan, and d) begin instruction of "Introduction to Park Resources Management Course" in their region during FY'88. To develop a cross disciplined training team to complete these objectives, it is important that nominations of your prioritized list of candidates be from three different disciplines.

It is important that we bring together a select cadre of trainers to go back to their regions to continue this process. These groups, made up of people from resource management, interpretation, protection maintenance, and administration, will go back to their respective regions to communicate the basic principles and techniques of resource management. A cross disciplined team approach will ensure these efforts—with peers communication with peers so that information will be communicated throughout the Service.

We are excited about the merits of this program. This is an excellent opportunity to develop the interface of various disciplines that comprise the National Park Service. We look forward to meeting your representatives during the training sessions, and to learn of your succeeding resource management training programs during the next few years.
Park Ranger Stan Lock has been detailed to Tom Ritter's office to coordinate this program through completion. Stan will be contacting your regional coordinator in the next few weeks regarding additional information. If you have any questions regarding the overall program, you can contact Stan at 202-472-7996, or Tom at 202-343-3227.
<table>
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<tr>
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<td>Jim Gott</td>
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<td>Warren Hill</td>
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<td>ROCKY MOUNTAIN</td>
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<td>WESTERN</td>
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<tr>
<td>John Martin</td>
</tr>
<tr>
<td>ALASKA</td>
</tr>
<tr>
<td>Brad Cella</td>
</tr>
</tbody>
</table>
It is important that all members of the park management team including operations personnel (administration, maintenance, interpretation, and protection) have a basic knowledge and understanding of park natural and cultural resource management activities (planning, research, techniques and skills). With this knowledge, an employee's ability to actively support a park's resource management program is enhanced; also one gains a sense of individual responsibility in the program, and recognizes that a team approach is required of all NPS employees in managing park resources. To this end a NPS Regional Resource Skills Training Team will present an overview of cultural and natural resource management concepts and principles that will enable the participants to return to their duties with a better understanding of park resources and effectively relate their jobs to the management of those resources.

COURSE DATE: January 21, 1988
COURSE LENGTH: 4 hours
COURSE LOCATION: ________________________________
CONTACT: (IN PARK) ________________________________

This course is sponsored by Stephen T. Mather Employee Development Center as a training exercise for the Instructor's Workshop in Fundamentals of Resource Management. The sessions will be presented by members of individual regional resource management skills teams.
December 20, 1987

Memorandum

To: Program Coordinator, Mather Employee Development Center

From: Program Coordinator, Mather Employee Development Center

Subject: Practice Teaching Site for "Orientation to NPS Resource Management Course"

Thank you for agreeing to hold an "Orientation to NPS Resource Management" practice teaching session at your site. This session will be a valuable training exercise for the regional resource management instructor teams and a worthwhile training session for your staff. The 4-hour session will take place on Thursday, January 21, 1988. Unless otherwise negotiated with the individual team assigned to your area, plan on the 4 hours of instruction being offered from 10:00 a.m. to 3:00 p.m. with an hour break for lunch. This will allow for morning and evening travel time for the team from Mather Employee Development Center.

Enclosed is a course agenda and a workshop profile for the Instructor's Workshop here at Mather. The course is designed around the development of course material and training methods. The culmination of the course is the practice teaching sessions. A generic training announcement for your site's "Orientation" session is also attached. Note that several blanks, specific to your area need to be filled in.

During the first week of the course (January 11-15) you will be contacted by a team-member to finalize your site's training session. At that time he/she will need to know the location of the training/conference room, availability of AV equipment, any special resource training needs, approximate number of participants (minimum of 5), and other site specific information.

Please give me a call if you have any questions about the attached materials or the course overall. My number is FTS: 925-6401 or Comm: 304-535-6371, ex. 6401.

Dale Ditmanson

Enclosures
INSTRUCTOR’S WORKSHOP IN FUNDAMENTALS OF RESOURCE MANAGEMENT
MATHER EMPLOYEE DEVELOPMENT CENTER
January 11-22, 1988

PRACTICE TEACHING SITES  January 21, 1988

ANTIETAM NB
Contact: Gordon Olson/Resource Management Specialist
Phone: 301-432-2243

HARPERS FERRY NHP
Contact: Harvey Sorenson/Chief Ranger
Phone: 6232
Alt: Paul Lee/Chief of Interpretation
Phone: 6222

C&O/GREAT FALLS
Contact: Linda Toms/Area Manager
Phone: FTS: 443-0024

CATOCTIN MOUNTAIN PARK
Contact: Bob Hickman/Assistant Supt.
Phone: 301-293-9536 or 301-663-9343

GETTYSBURG NMP
Contact: Joe Bowden/Acting Chief Ranger
Phone: 717-334-0909
Alt: Laurie Coughlin/Supv Park Ranger/Interpretation
Phone: 717-334-1124

MANASSAS NB
Contact: Roland Swain/Superintendent
Phone: 703-754-7107

FORE MCHENRY
Contact: John Tyler/Acting Superintendent
Phone: 301-962-4290

PRINCE WILLIAM FOREST PARK
Contact: Jim Fugate/Assistant Supt.
Phone: 703-221-7181
Alt: Phil Brueck/Supt.
Phone: Same

NATIONAL CAPITAL REGION
Contact: Fred Doyle/Interpretive Specialist
Phone: FTS 426-6770

GEORGE WASHINGTON MEMORIAL PARKWAY
Contact: Bill Shields/Assistant Supt.
Phone: FTS 285-2600
Alt: John Byrne/Supt.
Phone: same
December 14, 1987

Memorandum

To: Regional Training Officer, ARO

From: Program Coordinator, Mather Employee Development Center

Subject: Removal of Jim Shives from Regional Interpretive Skills Team.

Please document the removal of Jim Shives from your Regional Interpretive Skills Team as Jim has been accepted to the Instructor's Workshop in Fundamentals of Resource Management. Per our memorandum, dated October 30, 1987, concerning applicants for the Resource Management Instructors' Workshop, employees may not be on more than one skills team.

This policy was established to allow more employees the opportunity to participate on skills teams and to avoid the strain on supervisors by minimizing time required away from normal duties by any individual employee.

Thank you for your assistance.

Dale Ditmanson

cc: employee, ARO
Regional Director, ARO
Regional Chief of Interpretation, ARO
December 14, 1987

Memorandum

To: Regional Training Officer, NCR

From: Program Coordinator, Mather Employee Development Center

Subject: Removal of Fred Doyle from Regional Interpretive Skills Team.

Please document the removal of Fred Doyle from your Regional Interpretive Skills Team as Fred has been accepted to the Instructor's Workshop in Fundamentals of Resource Management. Per our memorandum, dated October 30, 1987, concerning applicants for the Resource Management Instructors' Workshop, employees may not be on more than one skills team.

This policy was established to allow more employees the opportunity to participate on skills teams and to avoid the strain on supervisors by minimizing time required away from normal duties by any individual employee.

Thank you for your assistance.

Dale Ditmanson

cc: employee, NCR
    Regional Director, NCR
    Regional Chief of Interpretation, NCR
December 14, 1987

Memorandum

To: Regional Training Officer, MWRO
From: Program Coordinator, Mather Employee Development Center
Subject: Removal of William Heard from Regional Interpretive Skills Team.

Please document the removal of William Heard from your Regional Interpretive Skills Team as Bill has been accepted to the Instructor's Workshop in Fundamentals of Resource Management. Per our memorandum, dated October 30, 1987, concerning applicants for the Resource Management Instructors' Workshop, employees may not be on more than one skills team.

This policy was established to allow more employees the opportunity to participate on skills teams and to avoid the strain on supervisors by minimizing time required away from normal duties by any individual employee.

Thank you for your assistance.

Dale Ditmanson

cc: employee, Sleeping Bear Dunes NL
    Superintendent, Sleeping Bear Dunes NL
    Regional Chief of Interpretation, MWRO
December 14, 1987

Memorandum

To: Regional Training Officer, NCR

From: Program Coordinator, Mather Employee Development Center

Subject: Removal of Gordon Olson from Regional Interpretive Skills Team.

Please document the removal of Gordon Olson from your Regional Interpretive Skills Team as Gordon has been accepted to assist with the development and coordination of the Instructor's Workshop in Fundamentals of Resource Management. Per our memorandum, dated October 30, 1987, concerning applicants for the Resource Management Instructors' Workshop, employees may not be on more than one skills team.

This policy was established to allow more employees the opportunity to participate on skills teams and to avoid the strain on supervisors by minimizing time required away from normal duties by any individual employee.

Thank you for your assistance.

Dale Ditmanson

cc: employee, Antietem NB
Superintendent, Antietem NB
Regional Chief of Interpretation, NCR
INSTRUCTORS'S WORKSHOP IN FUNDAMENTALS OF RESOURCES MANAGEMENT

CURRICULUM

1. Philosophy, Objectives & History of R.M.
2. Laws, Regulations, Policy, Guidelines.
3. RM Processes: Inventory, Assessment, Monitoring, Mgmt.
4. RM in your daily work:
   How to get involved
   Res. Protection: Main Goal of all Divisions
5. Sensitivity to Deterioration (Natural & Cultural)
6. Compliance (Sec. 404. Sec. 106. Sec. 7, XXX)
7. R.M. Planning ( & Basic Documents: GN4MP, RMP, SFM)
8. Funding
9. Maintenance of Natural & Cultural Resources
10. External & Internal Threats
11. Definition of Resources & Resource Mgmt.
12. Resource Mgmt & Park Operations
13. NPS Area as a Museum
14. Intro. to Resources of Region/Park/Area
15. Archeology
16. Wildlife Mgt. Programs (incl. Fisheries) (End. Species)
17. Current R.M. Issues/Thrusts/Trends; Present & Future
18. Land use Issues
19. Visitor Impacts
20. Historic Scene Maint.
21. Mgt. of Cultural Resources
22. NPS Involvement in World Bio-Diversity
23. Endangered Species
24. Vegetation Mgmt
25. Collections Mgmt
26. Interp. of R.M.
27. Historic Preserv.
28. Acid Rain, Air Quality
29. Conclusion: How It All Fits Together
31. Water Resources
32. IPM
33. Public Relations Awareness
34. Tools for Resource Mgmt
35. National Perspective
36. Maintenance
37. Historical Significance
38. Boundary Mgmt.
39. Political Realities.
Orientation to NPS Resources Management

Statement of Purpose

The Resource Management training teams will present an overview of Cultural and Natural Resource Management concepts and principles that will enable the participants to assist in resource preservation. The course is designed for National Park Service employees other than Natural and Cultural Resource Management Specialists.

Participants will return to their parks with a better understanding of park resources and effectively relate their jobs to the management of these park resources.

The expected results are a more interactive and enlightened workforce to better preserve the resources and inform the visitor.

Instructional Objectives

After leaving this session the employee will be able to:

1. Define the basic mission of resource management in the National Park Service;

2. Return to their park and identify the resource(s) and resource issue(s) of their park/area/region;

3. Write a statement describing what is important to them about their park's resources;

4. Describe how they can become more involved in the park's resource management program through their job. (e.g: monitoring, observing, reporting, assisting, etc.)

1-13-88
INSTRUCTOR'S WORKSHOP IN FUNDAMENTALS OF RESOURCE MANAGEMENT
Stephen T. Mather Training Center

January 11-22, 1988

Curriculum Draft
Orientation to NPS Resources Management

1. Course Introduction

2. Philosophy, objectives and history of resources management.

3. Laws, regulations, policies and guidelines.


5. Resource Management in your daily work.

6. Resource Management Issues (Individual lesson plans)
   - external and internal threats
   - visitor impacts
   - land use/boundary issues
   - vegetation issues
   - endangered species
   - acid rain/air quality
   - integrated pest management
   - water resources
   - NPS involvement in bio-diversity
   - paleontology
   - curatorial
   - archeology
   - historic preservation
   - ecological principles
   - wildlife issues
   - mining/minerals
   - wilderness
   - cultural landscapes
   - Natural processes impacting cultural resources
   - Fire Management

7. Course Conclusion: How it all fits together.

1-21-88
ORIENTATION TO NPS RESOURCES MANAGEMENT

COURSE REPORT: Send To: Team Resources Coordinator
Mather Employee Development Center
P. O. Box 77
Harpers Ferry, WV 25425

Region:_________________________
Coordinator:_________________________

THE COURSE:
-Location:_________________________
-Date(s):_________________________
-Length (# of hrs):_________________________
-# of participants:_________________________
-Participant Breakdown:
  1. by division: ____________________
  2. by grade:_________________________

-Instructor's:_________________________

COSTS: (Estimates)

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<tr>
<th>ITEM</th>
<th>BEN. ACC.</th>
<th>REGION/DIV.</th>
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<tr>
<td>Supplies/Materials</td>
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<td>Instructor Travel</td>
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<tr>
<td>Participant Travel</td>
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COMMENTS: (On back)

-Highlights: pro-con

ATTACHMENTS:

Course Agenda
New Lesson Plans/Handouts
Course Report/etc - (optional)
LESSON PLAN

Session Title: Orientation to Resources Management: Philosophy, and History

Session Length: 2 hours

Objective: 1. Participants will be able to explain in their own words their personal value of resources (cultural and natural) and be able to relate that to their park’s resources.

2. Participants will be able to explain how the intent of setting aside Yellowstone evolved into the National Park concept.

3. Participants will be able to list some of the major events that occurred in the history of Resources Management.

4. Participants will be able to define Resources Management in the National Park Service.

Handouts: Shaping the System, NPS publication

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<tr>
<th>Time</th>
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| 30 min. | Class participation | A. (Philosophy) Why we preserve (activity here to ask each trainee to come up with some object or place that is special to them and explain why they feel that way). 
**Personal Experience** - a. unique 
b. irreplaceable 
c. emotion 
d. nostalgia 
e. self-value |
Family - a. unique
b. irreplaceable
c. emotion
d. nostalgia/tradition
e. group value
f. value is expressed by more than one family member and each member may perceive the value slightly different.

Community - a. unique
b. irreplaceable
c. emotion/practical
d. tradition
e. all do not share the value
f. individual members can not influence value to a great degree.

State - a. unique
b. irreplaceable
c. emotion
d. tradition
e. all do not share the value
f. individual members have less influence over the value.
g. members have less personal involvement/experience.

National - a. unique
b. irreplaceable
c. emotion
d. tradition
e. all do not share the value.
f. individual members have less influence over the value.
g. members have less personal involvement/experience. The value is taught.
h. symbolic value is paramount (a person may not even have had personal experience)

This is the level of NPS involvement.
Transition from A to B. There are 2 options. Use either one.

1. We have talked about things that we value and how they vary from individuals to the nation as a whole. We also have talked about taking care of those things that we each value. Now we would like to show you a film dealing with these topics and other related issues. As you watch the Challenge of Yellowstone ask yourself these questions: 1. Why did it take the country so long to preserve these areas? 2. What were the reasons for setting aside the first parks? 3. What are the differences between national parks then and now?

2. What steps have you taken to preserve your own object or place? Discussion on how we preserve our national values. Let’s look at the history of this process and how it evolved. Show film and ask above questions.

B. (History) Preserving the best idea that we ever had.

1. Before Preservation:
   a. Nation was too young to have a heritage of its own.
   b. Too busy building a nation.
   c. Emphasis on survival and "subduing the earth"
   d. Perception of limitless resources/not unique or rare.
   e. People had intimate involvement with the resources.
   f. Resources begin to decline without awareness.
   g. Little interest in preserving cultural values.

2. Hot Springs to Yellowstone - This was the first evidence of the National Park Idea.
   a. Hot Springs 1832 - first area set aside by the federal government for the enjoyment and benefit of
the people.
b. Yellowstone 1872 - set aside as a "national pleasuring ground"
c. Civil War sites set aside under the Dept. of War. Cultural resources are windows that help us look into our past.
d. Consumption of resources increased with the coming of the industrial age.

3. The early 20th century
a. Army was "caretaker" of parks but not managers.
b. More parks, under the control of various agencies, plus more visitation lead to the need for an agency to "manage" the parks=the Organic Act.
c. Building a "constituency" for the parks by advertising, building facilities and developing access to the parks was a top priority in the early years.
d. The management of resources was based on the protection of "good" resources; eg: predator control.
e. Antiquities Act of 1906 -- First recognition of the national value of cultural resources.
f. By 1936 - the government had reorganized to place all nationally significant (federally owned) historic buildings, monuments and memorials under one agency for effective management.

4. Leopold Report - 1964 - "The earth does not belong to man, man belongs to the earth"
a. Realization that intuitive management was not protecting the resources.

b. National Park Service needed a systematic approach to management of resources.

c. Park boundaries do not encompass ecosystems.

d. Recognize that the National Park Service must manage the processes that effect resources.

e. To manage resources you need objective data.

f. A building alone may not sufficiently represent its values. Context - natural or historic is important. eg. historic landscapes.

C. Management of resources today.

1. Definition of Resource Management: The scientific preservation of the resources, with the context (looking at the resources as a whole) and processes that shaped them, so that their entire value is protected for future generations.

Concluding statement: We as employees of the National Park Service are different than most other government employees because we work toward an idea rather than simply compiling facts and figures or producing a product. The National Park idea that some of the best pieces of America should be preserved so that we and future generations can understand our beginnings and realize that this may indeed have been the best idea that we ever had.
LESSON PLAN

Session Title: "Building a Preservation Ethic"

Session Length: 1 hour Prepared by: Jim C. Gott

Objectives:

1. Explain in your own words your own personal value of resources (cultural and natural) and be able to relate this to your park's resources.

2. Explain how the intent of setting aside Yellowstone evolved into the National Park concept.

3. List some of the major events that occurred in the history of Resources Management.

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Opening Statement: The purpose of the first session this morning is to define what resources are, discuss why they are important, and look at how we got from there to here.

3 min. Personal Activity Have each participant take a blank piece of paper and write their own definition of "resource management". Keep for later discussion.

15 min. Flip Chart Ask each participant to name an object or place that is special to them personally and explain why they feel that way.

Discussion Discuss the values associated with these experiences. Key thoughts to look for are:

- nostalgia
- tradition
- self-value
- emotion
- family related
- etc.

Flip Chart Ask each participant to name something (object or place) that they think is important to the nation.
Discussion

Discuss the values associated with these topics. Key thoughts to look for are:

unique
irreplaceable
emotion
tradition
not all share the value
value is taught
Individual less likely to have first-hand experience
Symbolic value is paramount
Defined by others
May have global value

Transitional Statements: We have talked about things we value and how they vary from individuals to the Nation as a whole. We also have talked about taking care of those things we value.

Now we want to show a film dealing with these topics and expanding on them.

As you watch The Challenge of Yellowstone, ask yourselves the questions:

1. Why didn’t we preserve?
2. What were the reasons for setting aside our first parks?
3. What are the differences between National Parks then and now?

25 min. Film

The Challenge of Yellowstone

5 min. Discussion

Have class members read their definitions of "resource management". Conclude by reading the following:

"The scientific preservation of resources, with the context (looking at the resources as a whole) and processes that shaped them, so that their entire value is protected for future generations."

Transitional Statement: Now that we have talked about why things have special meanings and touched on why we preserve, let’s take a few minutes to discuss how we got from there to here.
Before Preservation

1. Too busy building a nation.
2. No heritage of its own.
3. Emphasis on survival and "subduing the earth".
4. Perception of limitless resources. Not unique or rare.
5. People were intimately involved with the resources.

Hot Springs to Yellowstone

1. Hot Springs, 1932, was the first area set aside by the Federal Government for the enjoyment and benefit of the people.
2. Yellowstone, 1872, set aside as a "national pleasuring ground."
3. Civil War Sites were set aside under the Department of War.
4. Consumption of resources increased with the coming of the industrial age.

Early Twentieth Century

1. The Army was "caretaker" of the parks, but not managers.
2. More parks were established under the control of various agencies.
3. Advertising, building facilities and developing access to the parks was a top priority in the early years.
4. Management of resources was based on protection of "good" resources; i.e., predator control.
5. Antiquities Act, 1906, was the first recognition of the national value of Cultural Resources.

6. 1936. National Park Service established to place all nationally significant Federally owned historic buildings, monuments and memorials under one agency for effective management.

Leopold Report, 1964

1. "The earth does not belong to man, man belongs to the earth."

2. Realization that intuitive management was not protecting the resources.

3. NPS needed a systematic approach to the management of resources.

4. Park boundaries do not encompass ecosystems.

5. Recognition that the NPS must manage processes that affect resources.

6. To manage resources, you need objective data.

7. Things do not stand alone. Natural and Cultural are important and interface. 
Example: Cultural Landscapes.

Management of Resources Today

Concluding Statement: We, as employees of the National Park Service are different from most other government employees because we work toward an idea.

The concept that the Crown Jewels of America must be preserved so that we and future generations can understand and preserve our heritage may be the best idea we ever had.
## Orientation to Management of Resources

### LESSON PLAN

**Session Title:** Laws, Policies, Regulations, and Guidelines  
**Session Length:** (varies)  
**Prepared by:** Team 2

**Goal:** To convey that the NFS mandate is to preserve and protect resources.

**Objective:** When the lesson is completed the student will be able to:
- identify the single purpose of the NFS as management of resources.
- diagram the relationship of philosophy, law, policies, regulations, and guidelines.

**Teaching aids:** laws pyramid, Constitutional exceptions, laws reference (get locally), completed "tree", Nook Noggin exercise notes, Dept. Manual, Blue Book, CFR, Compendium (locally)

**Handouts:** blank tree, tree chart, MPS related mandates, Resource related mandates, NFS Guideline list

<table>
<thead>
<tr>
<th>Content</th>
<th>Method</th>
<th>Time</th>
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<tbody>
<tr>
<td>1. Introduction (lecture) (pyramid display)</td>
<td>- Philosophy must be enacted as law to be effective.</td>
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<tr>
<td>2. Constitutional Authority for Congress (participative lecture)</td>
<td>(see teaching aid)</td>
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<tr>
<td>a. property clause (Article IV, section 3)</td>
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<tr>
<td>b. general welfare clause (Preamble, Article I, section 8)</td>
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<tr>
<td>3. MPS related mandates: (handout blank &quot;tree&quot;)</td>
<td>(have detailed laws reference &amp; completed tree)</td>
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<tr>
<td>a. Hot Springs - 1832</td>
<td></td>
<td></td>
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<tr>
<td>b. Yellowstone Act - 1872</td>
<td></td>
<td></td>
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<tr>
<td>(others)</td>
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<tr>
<td>c. Antiquities Act - 1906</td>
<td></td>
<td></td>
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<td>d. Organic Act - 1916</td>
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<tr>
<td>e. Historic Sites Act - 1935</td>
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<td>f. Act for Administration - 1970</td>
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<td>g. Redwood Act Amendment - 1978</td>
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<tr>
<td>h. park enabling legislation (handout expanded tree chart)</td>
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<td>4. Resource related mandates:</td>
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<tr>
<td>a. Lacey Act - 1900/1981</td>
<td></td>
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<td>b. Wilderness Act - 1964</td>
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<td>Executive Order 11593 - 1971</td>
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<td>e. Endangered Species Act - 1973</td>
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<td>f. Clean Air/Water Acts - 1977</td>
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<tr>
<td>g. Archeological Resources Protection Act - 1979 (handouts)</td>
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<tr>
<td>h. (show US Code book)</td>
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</table>
5. Policy  
   a. Departmental Manuals (show one)  
      a. NPS, Blue Book (Ch 4 & 5) (show book)
6. Regulations  
   a. 36 CFR (show book)  
   b. Supt. Compendium (show park’s if available)
7. Guidelines: (handout complete list)  
   a. NPS - 2, Planning  
   b. NPS - 12, NEPA Compliance  
   c. NPS - 18, Fire Management  
   d. NPS - 28, Cultural Resources  
   e. NPS - 38, Historical Property Management  
   f. NPS - 53, Special Park Uses  
   g. NPS - ?, Natural RM (being developed)
8. Compliance exercise (group participation)  
    (see teaching aid)
9. Summary (pyramid exercise, or follow a sample issue through the pyramid.)
10. Break
Preamble

We the People of the United States, in Order to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common defence, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity, do ordain and establish this Constitution for the United States of America.

Article I

Section 1. All legislative Powers herein granted shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives.

Section 2. The House of Representatives shall be composed of Members chosen every second Year by the People of the several States, and the Electors in each State shall have the Qualifications requisite for Electors of the most numerous Branch of the State Legislature.

No Person shall be a Representative who shall not have attained to the Age of twenty five Years, and been seven Years a Citizen of the United States, and who shall not, when elected, be an inhabitant of that State in which he shall be chosen.

Representatives and direct Taxes shall be apportioned among the several States which may be included within this Union, according to their respective Numbers; [which shall be determined by adding to the whole Number of free Persons, including those bound to Service for a Term of Years, and excluding Indians not taxed, three fifths of all other Persons.]

The actual Enumeration shall be made within three Years after the first Meeting of the Congress of the United States, and within every subsequent Term of ten Years, in such Manner as they shall by Law direct. The Number of Representatives shall not exceed one for every thirty Thousand, but each State shall have at Least one Representative; and until such enumeration shall be made, the State of New Hampshire shall be entitled to choose three. Massachusetts eight, Rhode-Island and Providence Plantations one, Connecticut five, New-York six, New Jersey four, Pennsylvania eight, Delaware one, Maryland six, Virginia ten, North Carolina five, South Carolina five, and Georgia three.

When vacancies happen in the Representation from any State, the Executive Authority thereof shall issue Writs of Election to fill such Vacancies.

The House of Representatives shall chuse their Speaker and other Officers; and shall have the sole Power of Impeachment.

Section 3. The Senate of the United States shall be composed of two Senators from each State, [chosen by the Legislature thereof.]

for six Years; and each Senator shall have one Vote.

Immediately after they shall be assembled in Consequence of the first Election, they shall be divided as equally as may be into three Classes. The Seats of the Senators of the first Class shall be vacated at the Expiration of the second Year, of the second Class at the Expiration of the fourth Year, and of the third Class at the Expiration of the sixth Year, so that one third may be chosen every second Year; [and if Vacancies happen by Resignation, or otherwise, during the Recess of the Legislature of any State, the Executive thereof may make temporary Appointments until the next Meeting of the Legislature, which shall then fill such Vacancies.]

No Person shall be a Senator who shall not have attained to the Age of thirty Years, and been nine Years a Citizen of the United States, and who shall not, when elected, be an Inhabitant of that State for which he shall be chosen.

The Vice President of the United States shall be President of the Senate, but shall have no Vote, unless they be equally divided.

The Senate shall chuse their other Officers, and also a President pro tempore, in the Absence of the Vice President, or when he shall exercise the Office of President of the United States.

The Senate shall have the sole Power to try all Impeachments. When sitting for that Purpose, they shall be on Oath or Affirmation. When the President of the United States is tried, the Chief Justice shall preside: and no Person shall be convicted without the Concurrence of two thirds of the Members present.

Judgment in Cases of Impeachment shall not extend further than to removal from Office, and disqualification to hold and enjoy any Office of honor, Trust or Profit under the United States: but the
lay and collect Taxes, Duties, Imposts and Excises, to pay the Debts and provide for the common Defence and general Welfare of the United States; but all Duties, Imposts and Excises shall be uniform throughout the United States;

To borrow Money on the credit of the United States;

To regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes;

To establish an uniform Rule of Naturalization, and uniform Laws on the subject of Bankruptcies throughout the United States;

To coin Money, regulate the Value thereof, and of foreign Coin, and fix the Standard of Weights and Measures;

To provide for the Punishment of counterfeiting the Securities and current Coin of the United States;

To establish Post Offices and post Roads;

To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries;

To constitute Tribunals inferior to the supreme Court;

To define and punish Piracies and Felonies committed on the high Seas, and Offences against the Law of Nations;

To declare War, grant Letters of Marque and Reprisal, and make Rules concerning Captures on Land and Water;

To raise and support Armies, but no Appropriation of Money to that Use shall be for a longer Term than two Years;

To provide and maintain a Navy;

To make Rules for the Government and Regulation of the land and naval Forces;

To provide for calling forth the Militia to execute the Laws of the Union, suppress Insurrections and repel Invasions;

To provide for organizing, arming, and disciplining, the Militia, and for governing such Part of them as may be employed in the Service of the United States, reserving to the States respectively, the Appointment of the Officers, and the Authority of training the Militia according to the discipline prescribed by Congress;

To exercise exclusive Legislation in all Cases whatsoever, over such District (not exceeding ten Miles square) as may, by Cession of particular States, and the Acceptance of Congress, become the Seat of the Government of the United States, and to exercise like Authority over all Places purchased by the Consent of the Legislature of the State in which the Same shall be, for the Erection of Forts, Magazines, Arsenals, dock-Yards, and other needful Buildings;—And

To make all Laws which shall be necessary and proper for carrying into Execution the foregoing Powers, and all other Powers vested by this Constitution in the Government of the United States, or in any Department or Officer thereof.

Section 9. The Migration or Importation of such Persons as any of the States now existing shall think proper to admit, shall not be prohibited by the Congress prior to the Year one thousand eight hundred and eight, but a Tax or duty may be imposed on such Importation, not exceeding ten dollars for each Person.

The Privilege of the Writ of Habeas Corpus shall not be suspended, unless when in Cases of Rebellion or Invasion the public safety may require it.

No Bill of Attainder or ex post facto Law shall be passed.

No Capitation, or other direct, Tax shall be laid, unless in Proportion to the Census or Enumeration herein before directed to be taken.\footnote{Modified by the Sixteenth Amendment.}

No Tax or Duty shall be laid on Articles exported from any State.

No Preference shall be given by any Regulation of Commerce or Revenue to the Ports of one State over those of another; nor shall Vessels bound to, or from, one State, be obliged to enter, clear, or pay Duties in another.

No money shall be drawn from the Treasury, but in Consequence of Appropriations made by Law; and a regular Statement and Account of the Receipts and Expenditures of all public Money shall be published from time to time.

No Title of Nobility shall be granted by the
peachment, shall be by Jury: and such Trial shall be held in the State where the said Crimes shall have been committed; but when not committed within any State, the Trial shall be at such Place or Places as the Congress may by law have directed.

Section 3. Treason against the United States, shall consist only in levying War against them, or in adhering to their Enemies, giving them Aid and Comfort. No Person shall be convicted of Treason unless on the Testimony of two Witnesses to the same overt Act, or on Confession in open Court.

The Congress shall have Power to declare the Punishment of Treason, but no Attainder of Treason shall work Corruption of Blood, or Forfeiture except during the Life of the Person attainted.

Article IV

Section 1. Full Faith and Credit shall be given in each State to the public Acts, Records, and judicial Proceedings of every other State. And the Congress may by general Laws prescribe the Manner in which such Acts, Records and Proceedings shall be proved, and the Effect thereof.

Section 2. The Citizens of each State shall be entitled to all Privileges and Immunities of Citizens in the several States.

A Person charged in any State with Treason, Felony, or other Crime, who shall flee from Justice, and be found in another State, shall on Demand of the executive Authority of the State from which he fled, be delivered up, to be removed to the State having Jurisdiction of the Crime.

[No Person held to Service or Labour in one State, under the Laws thereof, escaping into another, shall, in Consequence of any Law or Regulation therein, be discharged from such Service or Labour, but shall be delivered up on Claim of the Party to whom such Service or Labour may be due.]

Section 3. New States may be admitted by the Congress into this Union; but no new State shall be formed or erected within the Jurisdiction of any other State; nor any State be formed by the Junction of two or more States, or Parts of States, without the Consent of the Legislatures of the States concerned as well as of the Congress.

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; and nothing in this Constitution shall be so construed as to Prejudice any Claims of the United States, or of any particular State.

Section 4. The United States shall guarantee to every State in this Union a Republican Form of Government, and shall protect each of them against Invasion; and on Application of the Legislature, or of the Executive (when the Legislature cannot be convened) against domestic Violence.

Article V

The Congress, whenever two thirds of both Houses shall deem it necessary, shall propose Amendments to this Constitution, or, on the Application of the Legislatures of two thirds of the several States, shall call a Convention for proposing Amendments, which, in either Case, shall be valid to all Intents and Purposes, as Part of this Constitution, when ratified by the Legislatures of three fourths of the several States, or by Conventions in three fourths thereof, as the one or the other Mode of Ratification may be proposed by the Congress; Provided that no Amendment which may be made prior to the Year One thousand eight hundred and eight shall in any Manner affect the first and fourth Clauses in the Ninth Section of the first Article; and that no State, without its Consent, shall be deprived of its equal Suffrage in the Senate.

Article VI

All Debts contracted and Engagements entered into, before the Adoption of this Constitution, shall be as valid against the United States under this Constitution, as under the Confederation.

This Constitution, and the Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.

The Senators and Representatives before mentioned, and the Members of the several State Legis-
NPS Mission

Historic Sites Act
Organic Act
Antiquities Act

Yellowstone

1872

Hot Springs

1832

Lacey Act

1906

1900

Yellowstone

National Environ. Policy Act
National Historical Act (Amend 1980) (E.O. 11453-1972)
Wilderness Act
Endangered Species Act
1969
1966
1964

Redwood Act Amendment
Act for Adminis.

1970
1978
1977
1979

Arch. Resources Protection Act
Clean Air Act/Clean Water Act

1935
1916

NPS Related Mandates
NPS-RELATED MANDATES

Hot Springs Reservation - April 20, 1832

**first Federal involvement in setting aside properties for public good.

--area set aside to protect 47 hot springs thought to have medicinal properties.

Act of March 1, 1872 - Yellowstone Park Act

**establishment of new public policy that public lands could be withdrawn from settlement or resource use as public parks for the benefit and enjoyment of the public.

--charged Secretary of the Interior with preservation of resources and their retention in their natural condition.

Act of June 8, 1906 - Antiquities Act

**recognized the value of archeological resources.

--authorized the President to reserve and establish by executive order or proclamation national monuments containing sites and structures of historic or scientific value on public lands.

--required permits to examine or excavate historic or prehistoric ruins and limited permits to recognized scientific institutions.

--prohibited the removal or destruction of any object of antiquity on public lands and provided penalties for violations.

Act of August 16, 1916 - National Park Service Organic Act

**established the National Park Service to protect resources.

--"The Service thus established shall promote and regulate the use of the Federal areas known as National Parks, Monuments, and Reservations ...by such means and measures as conform to the fundamental purpose of the said Parks, Monuments, and Reservations, which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

--granted authority to the Secretary to make rules and regulations.
Executive Order 6166 - June 10, 1933 - Reorganization

**made the NPS the sole Federal agency responsible for all Federally owned public parks, monuments and memorials.**

--pursuant to the Act of March 3, 1933 that authorized the President to reorganize the executive branch of the Federal Government.

--enlarged the system to include at least four types of areas not included in the system prior to 1933: National Memorials, National Military Parks with their adjoining National Cemeteries, National Capital Parks, and the first recreational area (George Washington Memorial Parkway).

Historic Sites Act of 1935

**authorized the preservation of properties "of national historic or archeological significance."**

--authorized the establishment of National Historic Sites.

Act of August 18, 1970 -- Administration of the National Park Service

**clarified that all types of areas, including recreational areas, were to be managed pursuant to the provisions of the Organic Act.**

--recognized that the system now comprised a great variety of areas in every major region of the United States.

Amendment to the Act to Establish Redwood National Park -- 1978

**amended the Act of August 18, 1970 to reaffirm that all areas of the NPS were to be regulated consistent with the Organic Act.**

--directed the Secretary to afford the highest standard of protection and care to the resources of the National Park System.

--stated that no decisions could be made to compromise these resources except as Congress may have specifically provided.

Park Enabling Legislation

**identifies the significance and exceptions, if any, to the Organic Act for each unit.**
Lacey Act - 1900 - First Federal Wildlife Law

(18 U.S.C. 42-44)

The Lacey Act was one of our first Federal wildlife laws to outlaw interstate traffic in birds and other animals illegally killed in their State of origin. It was aimed at the so-called "pot hunter," those people who killed large amounts of wildlife for sale. This is a Federal tool to aid the States in enforcing their own conservation laws. The Black Bass Act of 1926 was based on the same law as well as the State law. In 1969 the Black Bass Act was expanded to cover all species of fish taken, bought, sold, or possessed in violation of State or foreign law.

The Lacey Act Amendments of 1981 combine the Lacey and Black Bass Acts to provide more effective enforcement of State, Federal, Indian tribal, and foreign conservation laws protecting fish, wildlife, and rare plants.

Highlights of the Lacey Act, as amended in 1981 are:

---generally prohibits the import, export, transport, sale, acquisition, or receiving of any fish or wildlife or rare plant taken or possessed in violation of Federal, State, foreign, or Indian tribal laws.

criminal penalties up to $20,000, forfeiture of all vessels, vehicles, aircraft and other equipment used to aid in criminal violations.

The Wilderness Act of 1964

(16 U.S.C. 1131-1136)

directs the Secretaries of Interior and Agriculture to study all roadless areas of 5,000 acres or more and any size roadless islands, for designation by Congress as wilderness.

defined wilderness as undeveloped Federal land of primeval character, without permanent improvements or human habitation, where the forces of nature predominate, and the imprint of human civilization is not readily perceived, and provides outstanding opportunities for solitude and an unconfined type of recreation.

(16 U.S.C. 470)

--declared a national policy of historic preservation ("protection, rehabilitation, restoration, and reconstruction of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, or culture.")

--instructed all Federal agencies to provide national leadership in historic preservation and to ensure preservation of cultural properties in Federal ownership.

--specifically directed all Federal agencies to "locate, inventory, and nominate all properties that appear to qualify for the National Register of Historic Places."

--directed that "any Federal or federally assisted undertaking shall take into account the effect of the undertaking on any district, site, building, structure, or object that is included or eligible for the National Register."

National Environmental Policy Act of 1969

(42 U.S.C. 4321-4347)

--requires all Federal agencies to utilize a systematic interdisciplinary approach in planning and decision-making for projects that may have an impact on the environment.

--Section 102 states that a significant impact or controversy triggers an Environmental Assessment/Environmental Impact Statement which assesses impact and unavoidable environmental effects to both natural and cultural resources and establishes alternatives including no-action.
**Endangered Species Act of 1973**

(16 U.S.C. 1531-1543)

--defines endangered species as those in danger of extinction throughout all or a significant portion of their range.

--defines threatened species as those likely to become endangered.

--prohibits taking, possession, sale, transport, etc. of endangered species.

--authorizes habitat acquisition, establishment of cooperative agreements, and grant-in-aid to States which establish and maintain an acceptable program.

--establishes penalties for Act or regulations violations.

--Section 7 requires Federal agencies to consult with Secretaries of Interior or Commerce on Federal actions (authorized, funded, or conducted) potentially impacting threatened and/or endangered species or their habitat.

**Clean Air Act of 1977**

(42 U.S.C. 1857)

Its main purpose is the preservation, protection and enhancement of air quality in NPS areas. Most important is the classification of National Parks and Wilderness areas as Class I airsheds and mandates special protection against significant deterioration of air quality. Limited regulatory powers were derived from this act which stressed early improvement in State permit and implementation plans.

**Clean Water Act**

(33 U.S.C. 1251)

Established in 1977 with the objective "to restore and maintain the chemical, physical and biological integrity of the nation's waters." Its success is dependent on six national goals ranging from the elimination of pollution discharge into navigable waters to major research efforts. Compliance is mandated through strict standards and through enforcement of permit systems.
Archeological Resources Protection Act of 1979

16 U.S.C. 470)

—provided for protection of archeological resources located on public lands and Indian lands.

—exempted information relating to location of archeological resources from the Freedom of Information Act.

—established civil and criminal penalties for violation of the act.
<table>
<thead>
<tr>
<th>NUMBER</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPS-1</td>
<td>DIRECTIVES MANAGEMENT</td>
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<td>NPS-2</td>
<td>PLANNING PROCESS</td>
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<td>NPS-4</td>
<td>DIVING MANAGEMENT</td>
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<td>NPS-5</td>
<td>CORRESPONDENCE PROCEDURES</td>
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<td>NPS-7</td>
<td>VOLUNTEERS IN PARKS</td>
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<td>NPS-9</td>
<td>LAW ENFORCEMENT</td>
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<td>NPS-10</td>
<td>DRAFTING GUIDELINES FOR DESIGN AND CONSTRUCTION</td>
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<tr>
<td>NPS-12</td>
<td>NATIONAL ENVIRONMENTAL POLICY ACT</td>
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<tr>
<td>NPS-14</td>
<td>CAVE RADIATION SAFETY AND OCCUPATIONAL HEALTH AMMENDMENT</td>
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<td>NPS-15</td>
<td>RADIO FACILITY MANAGEMENT</td>
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<td>FIPE MANAGEMENT</td>
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<td>NPS-19</td>
<td>RECORDS MANAGEMENT</td>
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<td>NPS-20</td>
<td>FEDERAL ASSISTANCE AND INTERAGENCY AGREEMENT</td>
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<tr>
<td>NPS-21</td>
<td>FILMING</td>
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<td>NPS-22</td>
<td>RECREATION FEE COLLECTION</td>
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<td>NPS-25</td>
<td>LAND ACQUISITION POLICY</td>
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<td>NFS-28</td>
<td>CULTURAL RESOURCES MANAGEMENT</td>
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<tr>
<td>NPS-29</td>
<td>DRAWING AND MAP NUMBERS</td>
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<td>NPS-30</td>
<td>HOSTEL PLANNING AND MANAGEMENT</td>
</tr>
<tr>
<td>NPS-31</td>
<td>TRAVEL POLICIES AND PROCEDURES</td>
</tr>
<tr>
<td>Code</td>
<td>Title</td>
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<td>-------</td>
<td>----------------------------------------------------------------------</td>
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<tr>
<td>NPS-32</td>
<td>NPS COOPERATING ASSOCIATIONS POLICIES STANDARDS AND GUIDELINES</td>
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<tr>
<td>NPS-34</td>
<td>LAND AND WATER CONSERVATION FUND GRANTS MANUAL</td>
</tr>
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<td>NPS-36</td>
<td>GOVERNMENT FURNISHED HOUSING</td>
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<tr>
<td>NPS-38</td>
<td>HISTORIC PROPERTY LEASING</td>
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<td>NPS-39</td>
<td>WORD PROCESSING RESOURCE MANAGEMENT</td>
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<td>NPS-40</td>
<td>DAMS AND APPURTENANT WORK, MAINTENANCE, OPERATION, AND SAFETY</td>
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<td>NPS-43</td>
<td>SERVICEWIDE UNIFORM PROGRAM</td>
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<td>NPS-44</td>
<td>PERSONAL PROPERTY MANAGEMENT</td>
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<td>NPS-46</td>
<td>MICROGRAPHIC RESOURCES MANAGEMENT</td>
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<td>NPS-47</td>
<td>GOVERNMENT PROPERTY IN POSSESSION OF CONTRACTORS</td>
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<td>PS-48</td>
<td>CONCESSION MANAGEMENT</td>
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<td>NPS-49</td>
<td>NATIONAL REGISTER PROGRAM</td>
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<td>NPS-50</td>
<td>LOSS CONTROL MANAGEMENT PROGRAM</td>
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<td>NPS-51</td>
<td>EMERGENCY MEDICAL SERVICES</td>
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<tr>
<td>NPS-52</td>
<td>NPS SIGN SYSTEM SPECIFICATION</td>
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<td>NPS-53</td>
<td>SPECIAL PARK USES</td>
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<td>NPS-54</td>
<td>INTERNAL CONTROL SYSTEM</td>
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<tr>
<td>NPS-61</td>
<td>NATIONAL CEMETERIES</td>
</tr>
<tr>
<td>NPS-62</td>
<td>ACQUISITION</td>
</tr>
</tbody>
</table>
You have just been hired to work at a brand new, roadless, 5001 acre, park area, established as a National Historical Site because it was the actual place (previously thought to be in Europe) where THE apple fell on Isaac Newton’s head (although the exact apple tree has not been identified). There is a small building in the park that is on the National Register of Historic Places. This building was used by Newton to clean fish (brought by him from Italy) caught from one of the small streams running through the area. The new maintenance division is using the building to store explosives.

A new Visitor Center is to be constructed in the center of the unit which is heavily forested. The site needs to be cleared, parking lot and access road built, restrooms and septic tanks installed, and an incinerator constructed to burn all the memos that accompany a new area and that emanate from the Regional Office.

It is decided that a well needs to be dug, and a contractor is located. She arrives on the site and decides on the best location to begin digging. After clearing the leaves away, it looks like there may be an old foundation at that spot, which she cannot drill through, so she moves the operation slightly. The foundation is there also, but this time she decides to drill right through it.

A regionally unique population of green, dwarf moose, protected by State game laws, lives on the site and occasionally wander onto adjacent farmland, harass the chickens, and are subsequently shot by the chicken owners. There is little concern expressed by the new superintendent over this problem as the park was established because of its unique place in the discovery of physics.

Contractors have been finding a lot of arrowheads on the site; but, recognizing the importance of this resource, the superintendent has ordered all arrowheads discovered in the park to be placed in a box on his front porch.

Everything is progressing nicely. Isn’t it?

What would you do differently and why?
### Instructor's Discussion Key

**Nock Hoggin National Historic Site**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Related Mandate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Para. 1</td>
<td></td>
</tr>
<tr>
<td>Roadless, 5001 acres</td>
<td>Wilderness Act</td>
</tr>
<tr>
<td>NHS</td>
<td>Historic Sites Act, NPS 28</td>
</tr>
<tr>
<td>Fish-cleaning bldg.</td>
<td>National Register, NHPA, Section 106, therefore the whole site requires 106 compliance.</td>
</tr>
<tr>
<td>Exotic fish</td>
<td>NPS Mgmt. Policies</td>
</tr>
<tr>
<td>Explosives in bldg.</td>
<td>Section 106 compliance</td>
</tr>
<tr>
<td>Para. 2</td>
<td></td>
</tr>
<tr>
<td>Visitor's Center</td>
<td>NPS-2, NEPA</td>
</tr>
<tr>
<td>Clearing</td>
<td>Section 106, NEPA</td>
</tr>
<tr>
<td>Road/parking lot/restrooms</td>
<td>Clean Water Act, NEPA</td>
</tr>
<tr>
<td>Incinerator</td>
<td>Clean Air Act</td>
</tr>
<tr>
<td>Para. 3</td>
<td></td>
</tr>
<tr>
<td>New well</td>
<td>Section 106, Clean Water Act, Archeological Survey, Prosecution under ARPA</td>
</tr>
<tr>
<td>Para. 4</td>
<td></td>
</tr>
<tr>
<td>Unique species</td>
<td>Endangered Species Act, Lacey Act, Redwood Amendment</td>
</tr>
<tr>
<td>Para. 5</td>
<td></td>
</tr>
<tr>
<td>Arrowheads found</td>
<td>ARPA (OK to pick up arrowheads on Fed. property other than NPS), NPS 28, Antiquities Act</td>
</tr>
</tbody>
</table>
LESSON PLAN

INTRODUCTION TO RESOURCES MANAGEMENT

Session Title: Internal & External Threats to the Parks

Session Length:

Prepared by: Mid Atlantic Regional Resource Management Team

Objectives: At the end of this session, the student will:

1. Define threats in terms of management objectives.
2. Recognize internal and external threats to park resources (N & C).
3. Develop possible strategies for resolving threats.

Handouts:

Time:
Method: Learner participation

Content:

"What do you think is a threat to your National Park?"

Generate class discussion and list of threats on board or flip chart

Pick one specific threat (or more if desired) and discuss what is being threatened (and why this is a specific problem).

Define - What is a THREAT?

Tie "threat" into Organic Act (i.e. conservation/protection/unimpaired for future generations).

Threat = That which keeps us from achieving our conservation/enjoyment objectives in our National Parks.

NOTE: Threat identification requires information information (i.e. do you have a large enough database?)
Time: 15-20 minutes
Method: Small group discussion

Handout: "Case Studies in Protecting Parks"
by National Park Service
Natural Resources Report 87-2
prepared by Denver Service Center

Break class out into small groups of 5-6 students. Pass out copy of one specific case study to each group (different case study per group). Each group should meet for 15-20 minutes.

Purpose:

What resources (in the case study) are being threatened?

As a group, they will read their particular case study and determine what resource(s) are being threatened.

At the end of group discussion, groups will present their case study to the class.

This discussion should lead into discussion/lecture:

What tools can be used to address these threats?

Time:
Method: Lecture/Discussion
Content: Tools for Threats

PREVENTION ***** MITIGATION

PREVENTION

Public relations
Resource Management Plans
Permit compliance (i.e. zoning; air/water quality; liaison with corporations or involved parties...)
ARPA
NEPA
Interpretation

MITIGATION

Baseline data
Modify project to meet both parties
Manage the impacts
Interpretation
Additional Summary Information:

OVER 1700 THREATS REPORTED FOR MORE THAN 200 PARK UNITS

80% are existing threats
20% are prospective threats
33% +/- are attributed to external sources
33% +/- are attributed to internal sources
33% +/- are due to sources located both in and out of Parks

Exotic plants the single most significant threat source
General construction and development
Agricultural pesticide use
Grazing
Poaching

Time:  
Method:  
Content: Conclusion

- Be able to address threats  
  (in a knowledgeable/sensitive manner)
- Early warning system
- Know both sides of the story
- Political realities & trade offs
- Provide knowledge to public for public support
- National public relations
Threats to Resources:

Geology - soils

Water quality
  flow
  hydrology
  ground water

Air quality

Plants & habitat

Aquatic organisms & habitat

Birds, mammals and other wildlife & habitats

Visual

Visitor opportunities

Archeology/artifacts

Historic
  structures
  objects
  scenes
  landscapes
**TABLE 5: THREAT SOURCE ACTIVITIES**

<table>
<thead>
<tr>
<th>Threat Source Activity</th>
<th>No. of Total Threats</th>
<th>No. of Parks Affected</th>
<th>No. of Regions Affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exotic Plants (Introduction/Invasion)</td>
<td>101</td>
<td>88</td>
<td>10</td>
</tr>
<tr>
<td>General Construction/Development</td>
<td>64</td>
<td>53</td>
<td>10</td>
</tr>
<tr>
<td>Insecticide/Herbicide Applic. (Agric.)</td>
<td>56</td>
<td>44</td>
<td>7</td>
</tr>
<tr>
<td>Exotic Animals (Introduction/Invasion)</td>
<td>56</td>
<td>44</td>
<td>10</td>
</tr>
<tr>
<td>Hunting/Fishing</td>
<td>50</td>
<td>33</td>
<td>10</td>
</tr>
<tr>
<td>Grazing/Trampling-Livestock (Domestic)</td>
<td>49</td>
<td>47</td>
<td>8</td>
</tr>
<tr>
<td>Poaching</td>
<td>49</td>
<td>47</td>
<td>8</td>
</tr>
<tr>
<td>Overcrowding</td>
<td>43</td>
<td>27</td>
<td>9</td>
</tr>
<tr>
<td>Road or Highway-Construction/Operate</td>
<td>40</td>
<td>34</td>
<td>9</td>
</tr>
<tr>
<td>Waste Disposal (Non-Hazardous)</td>
<td>40</td>
<td>34</td>
<td>10</td>
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<tr>
<td>Wildlife Harassment</td>
<td>39</td>
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<tr>
<td>Air Pollution-Particulates</td>
<td>38</td>
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<tr>
<td>Wildfire</td>
<td>38</td>
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<td>Off-Road Vehicle Use (Including Snowmobile)</td>
<td>37</td>
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<tr>
<td>Specimen/Artifact Collection (Illegal)</td>
<td>37</td>
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<tr>
<td>Waste Disposal (Toxic/Hazardous)</td>
<td>37</td>
<td>31</td>
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<td>Trail Use By Hikers or Horses</td>
<td>35</td>
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<tr>
<td>Air Pollution-Ozone</td>
<td>33</td>
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<tr>
<td>Residential Construction/Development</td>
<td>31</td>
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<tr>
<td>Water Supply/Control Projects (General)</td>
<td>31</td>
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<tr>
<td>Oil and Gas-Exploration</td>
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<tr>
<td>Aircraft Flight Paths</td>
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<tr>
<td>Ir Infestation</td>
<td>29</td>
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<td>Dam Artificial Reservoir</td>
<td>28</td>
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<tr>
<td>Water Erosion/Gullying</td>
<td>28</td>
<td>27</td>
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<tr>
<td>Feral Animals</td>
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<td>Acid Precip/Deposition (Particulates)</td>
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<td>Air Pollution-Sulfates</td>
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<td>Camping</td>
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<td>Vandalism</td>
<td>22</td>
<td>21</td>
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<td>Timber Harvest (Periodic)-Forest Management</td>
<td>21</td>
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<td>Mineral Extraction Activities (General)</td>
<td>21</td>
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<td>Oil and Gas-Extraction</td>
<td>21</td>
<td>18</td>
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<td>Plant Succession (Native)</td>
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<td>Acid Precip/Deposition (Wet Pollutants)</td>
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<td>Commercial Construction/Development</td>
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<td>Sewage Treatment Plant-Construct/Operate</td>
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<td>Powerline-Construct/Operate</td>
<td>18</td>
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<td>Noise (Visitor)</td>
<td>17</td>
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<tr>
<td>Power Generating Plant-Construct/Operate</td>
<td>16</td>
<td>14</td>
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<tr>
<td>Disease-Animal</td>
<td>16</td>
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<td>Coal-Extraction</td>
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<td>Siltation/Sedimentation</td>
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<td>Disease-Plants</td>
<td>14</td>
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<tr>
<td>Rip-Rap/Groins/Jetty/Breakwater</td>
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<td>Mineral Exploration Activities (General)</td>
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<tr>
<td>Campfire Building</td>
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<tr>
<td>Utilities (General)-Construction/Operate</td>
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<tr>
<td>Fe Fezer Application (Agriculture)</td>
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<td>Ph Pharmacal Processes (General)</td>
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<tr>
<td>Trail (Pedest/Horse)-Construct/Operate</td>
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<tr>
<td>Timber Harvest (One-Time)</td>
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<tr>
<td>Flooding/High River Discharge</td>
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### TABLE 6 (cont'd): THREATENED RESOURCES

<table>
<thead>
<tr>
<th>Resource Category</th>
<th>Total # of Threats</th>
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<tr>
<td>Aesthetics</td>
<td>680</td>
<td>Plants - General</td>
<td>126</td>
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<tr>
<td>Terrestrial Mammals</td>
<td>524</td>
<td>Animals - General</td>
<td>124</td>
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<tr>
<td>Forest/Woodland Vegetation</td>
<td>486</td>
<td>Desert Vegetation</td>
<td>117</td>
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<tr>
<td>Fresh Surface Water</td>
<td>461</td>
<td>Cliffs/Gorges/Canyons</td>
<td>80</td>
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<tr>
<td>Birds</td>
<td>406</td>
<td>Marine Fish/Invertebrate</td>
<td>72</td>
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<tr>
<td>Freshwater Fish/Invertebrates</td>
<td>397</td>
<td>Fossils</td>
<td>67</td>
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<td>Soils</td>
<td>284</td>
<td>Shores/Islands</td>
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<td>Freshwater Vegetation</td>
<td>195</td>
<td>Beach/Dune Vegetation</td>
<td>61</td>
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<tr>
<td>Reptiles/Amphibians</td>
<td>194</td>
<td>Air Quality - General</td>
<td>58</td>
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<tr>
<td>Mixed Shrubland Vegetation</td>
<td>175</td>
<td>Saltwater Vegetation</td>
<td>44</td>
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<td>Air - Purity</td>
<td>163</td>
<td>Salt Surface Water</td>
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<tr>
<td>Groundwater</td>
<td>162</td>
<td>Mountains/Volcanoes</td>
<td>38</td>
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<td>Air - Visibility</td>
<td>158</td>
<td>Water/Hydrologic Features</td>
<td>38</td>
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<td>Grassland/Prairie Vegetation</td>
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<td>Marine Mammals</td>
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<td>Caves/Sinkholes</td>
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<td>Terrestrial Invertebrates</td>
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<td>Geologic Features - General</td>
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<td>Plains/Plateaus</td>
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<td>Geysers/Hot Springs</td>
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### ANIMALS

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<tr>
<th>Action</th>
<th>AR</th>
<th>MAR</th>
<th>MWR</th>
<th>NAR</th>
<th>NMR</th>
<th>PRR</th>
<th>SRR</th>
<th>SWR</th>
<th>WRR</th>
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</thead>
<tbody>
<tr>
<td>Improve Baseline Data/Inventory/Monitoring</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
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<tr>
<td>Manage Hunting, Poaching and Consumption Uses</td>
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<td>X</td>
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<td>X</td>
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<tr>
<td>Control Surplus Animal Population</td>
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<td>X</td>
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<td>X</td>
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<tr>
<td>Restore Endangered Rare/Declining/Extirpated Species</td>
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<td>X</td>
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<td>X</td>
<td>X</td>
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<tr>
<td>Limit Recreational Visitor Disturbance</td>
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<tr>
<td>Control Exotic/Feral/Pest/Animals</td>
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<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Study/Restore Native Fisheries</td>
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<td>Eliminate Mining Impacts</td>
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<td>Control Wildlife/Human Diseases</td>
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<td>Protect Coral Reef Health</td>
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<tr>
<td>Increase Base Funding/Personnel</td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>Limit Impacts of Construction and Development on Habitat</td>
<td>X</td>
<td>X</td>
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### PLANTS

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<th>MWR</th>
<th>NAR</th>
<th>NMR</th>
<th>PRR</th>
<th>SRR</th>
<th>SWR</th>
<th>WRR</th>
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<tr>
<td>Lack of Baseline Information</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Consumptive Use</td>
<td>X</td>
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<tr>
<td>Lack of Funds/Personnel</td>
<td>X</td>
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<tr>
<td>Recreation Visitor Impacts</td>
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<td>X</td>
<td>X</td>
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</tbody>
</table>
## PLANTS (cont)

### Maintenance Cultural or Developed Landscapes
- ARO: X
- MAR: X
- SWR: X

### Exotic Species
- ARO: X
- MAR: X
- SWR: X

### Restoration of Native Plant Communities
- ARO: X
- MAR: X
- SWR: X

### Fire Management/Rehabilitation
- ARO: X
- MAR: X
- SWR: X

### Rare and Endangered Species
- ARO: X
- MAR: X
- SWR: X

### Biological Diversity
- ARO: X

### Boundary Protection/Encroachment
- ARO: X

### Mitigate Mineral and Energy Development
- ARO: X

### Reduce Hazard Tree
- ARO: X

### Control Grazing
- ARO: X

### Mitigate Development Impacts
- ARO: X

## AIR

### Need Baseline Information
- ARO: X
- MAR: X
- SWR: X

### Protect Visibility
- ARO: X
- MAR: X
- SWR: X

### Define/Limit Damage to Plants from Air Pollution
- ARO: X
- MAR: X
- SWR: X

### Limit Threat to Health from Ozone
- ARO: X
### WATER

<table>
<thead>
<tr>
<th>Present Landfill Poaching/Acid &amp; Toxic Mine Drainage/Oil Spills</th>
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<th>X</th>
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</thead>
<tbody>
<tr>
<td>Baseline Information (Includes Acid Precipitation/Monitoring)</td>
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<td>X</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Mitigate Impacts of Watershed Development (Including Agriculture)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Need More Treatment Capacity for Sewage &amp; Limit Visitor on Lakes/Ponds</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>Preserve Natural River Flows (Water Rights)</td>
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### GEOLOGICAL

<table>
<thead>
<tr>
<th>Control Soil Erosion/Rehabilitate Mined Areas</th>
<th>X</th>
<th>X</th>
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<tbody>
<tr>
<td>Beach/Dune Processes</td>
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<td></td>
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<td>X</td>
<td>X</td>
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<tr>
<td>Protect Caves</td>
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<td>X</td>
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<tr>
<td>Need More Information on Visitor Impacts</td>
<td>X</td>
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</tbody>
</table>
### ESTHETICS

| Urban Encroachment          | A | R | O | M | A | R | W | C | R | N | A | R | P | R | S | E | R | S | W | R | O |
| Vision Impacts on river corridors | X | X | X | X | X | X | X | X |
| Visitor Response to Degraded Vistas | X |

### OTHER

| Loss of Genetic Resources | A | R | O | M | A | R | W | C | R | N | A | R | P | R | S | E | R | S | W | R | O |
| Need Better Resource Planning/Management | X | X | X | X | X | X | X | X |
| Need Sociology Studies | X | X | X | X | X | X | X | X |
| Need Geographic Information Bases | X | X | X | X | X | X | X | X |
| Study Cumulative External Threats | X | X | X | X | X | X | X | X |
| Need for Facilities | X | X | X | X | X | X | X | X |
| Aircraft Noise | X | X | X | X | X | X | X | X |
LESSON PLAN

Session Title: PROCESSES AND PRINCIPLES FOR MANAGEMENT OF RESOURCES

Session Length: 2-4 hours

Prepared by Edwards, Grovert and Vets

Objective At the completion of this session the student will be able to:

1) List NPS resource components, natural and cultural
2) Identify natural and cultural processes,
3) Describe how resource processes relate to each other.

INSTRUCTORS' NOTE: Call ahead to find out what resources are found in or near the park or office where the class will be taught.

Handouts: List of principles, Primer of Ecological Principles by Vogel

Audio-visual: Overhead transparency with list of principles

Videos "Garden of Eden," "Diversity Endangered," and "Intro to NPS Resource Management"

Slides: Park specific case studies

Equipment Needed: 2 flip charts, overhead projector, video cassette player and TV monitor
<table>
<thead>
<tr>
<th>Time</th>
<th>Method</th>
<th>Content</th>
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<tbody>
<tr>
<td>Field trip</td>
<td>Discussion</td>
<td>A. Identify all types of resources in the area.</td>
</tr>
<tr>
<td>Flip chart-</td>
<td>write each resource and then group according to category</td>
<td>B. Refine list to natural and cultural</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C. Refine to categories under:</td>
</tr>
<tr>
<td>I. RESOURCES</td>
<td></td>
<td>1. Natural</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a) Air</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) Plants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) Animals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d) Water</td>
</tr>
<tr>
<td></td>
<td></td>
<td>e) Geologic Features</td>
</tr>
<tr>
<td>NOTE: Get 2 or 3 slides ahead of time to show and let the class identify that particular resource and group.</td>
<td>2. Cultural</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>a) Landscapes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) Sites</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) Structures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d) Cultures</td>
</tr>
<tr>
<td></td>
<td></td>
<td>e) Objects</td>
</tr>
<tr>
<td>D. State that there is no such thing as an entirely natural or cultural area. Each park has both resources.</td>
<td></td>
<td></td>
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<tr>
<td>Discussion:</td>
<td>II. ACTIVITIES AFFECTING RESOURCES</td>
<td>A. Identify various types of activities that may affect resources.</td>
</tr>
<tr>
<td>List activities on second flip chart then show relationships between resources (from first flip chart) and threats</td>
<td></td>
<td>1. Air pollution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a) Acid rain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) Dry acid deposition</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) Vehicle emissions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d) Coal fired power plants</td>
</tr>
<tr>
<td></td>
<td>2. Water pollution</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>a) Toxic waste dumps</td>
</tr>
<tr>
<td></td>
<td></td>
<td>b) Sewage disposal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c) Solid waste disposal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d) Agricultural runoff</td>
</tr>
<tr>
<td></td>
<td>3. Urban Development</td>
<td></td>
</tr>
</tbody>
</table>
VIDEOS: "Garden of Eden" 20 min. or "Diversity Endangered" 9 min. or "Intro to NPS Resource Management" 15 min.

Lecture/Discussion.  
Handout of list w/ space for notes.  
Overhead of same.  
4. Visitor Activities

5. Mining Operation 
6. Poaching 
7. Pests 
8. Erosion 
9. Decay 
10. Vandalism 

III. PRINCIPLES - ALL RESOURCES

A. Ecological Principles

1. Resources are either renewable or nonrenewable and must be treated accordingly.  (renewable=plants, animals etc.  Nonrenewable=cave resources, historic structures, virgin forests.)

2. Preservation/conservation is not a luxury, or an optional practice, but is one of the essentials for survival.  (i.e. Biodiversity and cultural heritage would be lost)
3. Alternatives should be considered before initiating action in any resource management decision. (ie., Section 106 Historic Preservation Act and NEPA, no action.)

4. Resource management practices or techniques that duplicate or approximate natural or cultural processes are most likely to succeed. (Those that duplicate = natural prescribed fire, replacement of historic fabric. Those that do not duplicate= artificial feeding of wildlife such as grizzly bear feeding at garbage dumps, control of predator such as wolf and cougar up until the 1930's, stocking lakes with alien fish species, reconstruction without historic documentation.)

5. Resource uses, regulations and management practices should consider the future. (ie., limited backcountry use, limited visitor access to fragile historic structures.)

6. Protection alone is seldom adequate without proper management. (Parks are not islands and cannot be managed in a vacuum.)

7. The first step in preservation of a resource is to stop further degradation. (ie., close trail to meadow that is heavily impacted by visitor use. Degradation must be stopped before rehabilitation begins. Historic structures must be stabilized before restoration can begin ie thorough cleaning, new roof, stabilized foundation. )

8. We must understand the resource in a normal undisturbed condition before identification, appraisal, and management recommendations can be made. (Research on history of site needed before historic landscape plans are developed. Furnishing plans must be historically accurate before refurnishing begins.)
9. The introduction of alien species or substances is to be avoided, and if it must be done, it should be with extreme caution and when there are no alternatives. (Non-native grasses may be used to protect earthworks. Kudzu escaped when planted to control erosion and now is major pest in the southeast. The mongoose in Hawaii was introduced to control rats and is now a major pest.)

10. There is generally a proportional relationship between the time of abuse and degradation and time required for recovery or restoration. (Suppressing fires for many years results in the accumulation of fuels. This condition is conducive to holocaustic fires.

11. Preservation implies perseverance; no resource is ever permanently preserved. (New threats always arise. Shenandoah restored from decimation by timber harvests is now facing gypsy moths and air pollutants. At Golden Gate NRA, improved water quality in the bay allowed marine insects to attack the hull of a historic ship.

Point of discussion

WE ARE NOT HERE TO MEET DEADLINES BUT TO PROTECT RESOURCES.

Planning - Implementation - Process

- Issues
- Resources
- Maps
- Lists
- Descriptive Statements

IV. IDENTIFICATION/DEFINITION OF PROCESSES

A. Inventory: What? How many? How much?

A list or count of resources systematically collected using scientific methods that are repeatable. The results are documented for future use.

Examples:
1. Audubon Christmas Bird Count, fish shocking (census), aerial survey for large mammals.

2. Archaeological survey, site testing, site excavation, automated national catalog system.

B. **Assessment/Evaluation:**

The determination of significance, importance or condition of resources. Determination of significance, importance or condition is based upon a wide variety of criteria and standards. These range from guidelines to current scientific thought.

Examples:

1. Review of inventory data (low ratio of male/female in wildlife population), increased particulate levels in air/water samples.

2. Use of National Register criteria, determine significance of cultural sites, determining "integrity".

C. **Planning:**

Process through which we reach decisions that guide management of resources.

Examples:

1. General Management Plan, Resources Management Plan, Scope of Collection Statement

2. Fire Management Plan, Development Concept Plan, Historic Structures Report

D. **Action:**
1. Monitoring: A systematic and repeatable determination of resource condition/change over time.

Examples:
   a. Air quality particulate samplers, visibility, water flow gauging, trail conditions, changes in vegetation resulting from fire.
   b. Installation of glass rods to monitor shift in masonry walls, inspection for insect damage, monitoring environmental conditions in museums.

2. Research: Studies or investigations performed to provide a body of knowledge regarding a specific resource.

Examples:
   a. Water quality, Acid Rain, anadromous fish studies, caribou population studies
   b. Paint analysis of buildings, historic base and groundcover study, literature search

3. Maintenance: The systematic upkeep and/or care of resources.

Examples:
   a. Mowing grass, trail maintenance, campground cleaning
   b. Collection housekeeping, repointing masonry,
4. **Mitigation:** The process of making impacts less severe, moderating or elimination of impacts.

Examples:

   a. Restoration of wildlife species, flood gate structures, fish ladders
   b. Stabilization, documentation, restoration

5. **Manipulation:** The management or control of resources for a specific goal.

Examples:

   a. Culling of Bison herd, revegetation, problem animal disposal
   b. Benign neglect, relocation of structures, reconstruction

**SUMMARY** Every action taken by an employee during their work involves one or more of the processes discussed above.
ORIENTATION TO MANAGEMENT OF NATIONAL PARK SERVICE RESOURCES

PRINCIPLES IN MANAGEMENT OF NATURAL/CULTURAL RESOURCES

1. Resources are either renewable or nonrenewable, and must be treated accordingly.

2. Preservation/conservation is not a luxury, or an optional practice, but is one of the essentials for survival.

3. Alternatives should be considered before initiating action in any resource management decision.

4. Resource management practices and techniques that duplicate or approximate natural/cultural processes are the most likely to succeed.

5. Resource uses, regulations and management practices that do not consider the future are nothing.
6. Protection alone is seldom adequate and must be superceded by proper management.

7. The first step in preservation of a resource is to stop any further degradation.

8. Before a resource can be appraised, and management recommendations made, the resource with normal undisturbed conditions must be identified and understood.

9. The introduction of alien species or substances is to be avoided, and if it must be done, it should be with extreme caution and when there are no alternatives.

10. There is generally a proportional relationship between the length of time of abuse, malfunction, and degradation and the time required for recovery or restoration.

11. Preservation implies perseverance: no resource is ever permanently preserved.

Adapted from:
CONTENTS - LESSON PLAN 4

TITLE: PROCESSES AND PRINCIPLES FOR MANAGEMENT OF RESOURCES

OBJECTIVES: At the completion of this session the student will be able to: 1) List and describe the types of activities that contribute to the management of resources; 2) Describe how these activities relate to each other; and 3) Describe his/her sensitivity to resources following case studies which use a range of activities.

I MAJOR RESOURCE CATEGORIES

A MAJOR RESOURCES

1 Natural Resource Components (LP4A)

2 Cultural Resource Components (LP4B & LP4C)

B DISCIPLINES (LP4D)

II PRINCIPLES IN MANAGEMENT OF NATURAL/CULTURAL RESOURCES (LP4E)

III INTRODUCTION TO PROCESSES

A Identify the Processes (LP4F)

B Explanation through Examples (LP4F & LP4G)

IV SUMMARY

**NOTE: Lesson Plan Outline "LP40" presents the entire section. Each individual lesson plan is noted on the outline as well as this table of contents.
LESSON PLAN

Session Title: PROCESSES AND PRINCIPLES FOR MANAGEMENT OF RESOURCES

Session Length: Prepared by:

Objective: At the completion of this session the student will be able to: 1) List and describe types of activities that contribute to the management of resources; 2) Describe how these activities relate to each other; and 3) Describe his/her sensitivity to resources following case studies which use a range of activities.

Handouts: NPS museum Handbook, Part I (draft)
Chapter 1 - Introduction to Service Museums
Definitions of Cultural Resources

Time Method Content

I MAJOR RESOURCE GROUPS/CATEGORIES

A Major Resources

OBJECTIVE: 1) Students will be able to list the major resource groups and write a description of each; 2) Students will be able to list several major issues within each major resource area; and 3) Students will be able to list the three collections types discussed in the NPS Museum Handbook.

INTENT: Student should recognize 1) that a wide variety of disciplines are used in the management of resources; 2) that effective management of any individual resource required integration of a variety of disciplines.

Discussion 1 Natural Resources

** Refer to attached lesson plan "LP4A"

ACTIVITY: Ask the students to list the major resource components.

Natural Resource Components
a) Air
b) Plants
c) Animals
d) Water
e) Minerals
** Cultural Resources

** Refer to attached lesson plan "LP4B"

Lecture
Before and after quiz
Flip Chart
Slides
Specimens

a) Museum Collections
b) Cultural Resources
c) Landscapes
d) Sites
e) Structures
f) Cultures

** Refer to attached lesson plan "LP4C"

** Refer to attached lesson plan "LP4D"

B Disciplines

OBJECTIVES: Student will be able to 1) list examples of scientific disciplines used in resource management; 2) Describe ways that disciplines must be integrated to effectively manage individual resources; and 3) Give examples of how your Resource Management Specialist has had to rely on assistance from other people or other agencies with other disciplines/specialties in resolution of park resource problems.

ACTIVITY:

Discussion

1) Ask class to identify and list (scientific) disciplines involved in management of park resources.

2) Ask students to categorize disciplines by Natural or Cultural.

3) How many of these disciplines work in your park?
II ECOLOGICAL AND CULTURAL PRINCIPLES RELATED TO MANAGEMENT OF RESOURCES

** Refer to attached lesson plan "LP4E"

OBJECTIVES: Student will be able to describe at least three principles important to the management of natural and cultural resources.

INTRODUCTION: Following is a discussion of principles applicable to management of natural and cultural resources. Session could be expanded considerably by also dealing with those principles applicable to only natural or cultural resources.

III INTRODUCTION TO PROCESSES

OBJECTIVE: Students will be able to identify and describe the formal/thought processes common to management of the park resources.

INTRODUCTION: Refer to the previous session, How the laws, regulations and guidelines effect our everyday management of resources.

Case study ACTIVITY:

** Refer to attached lesson plan "LP4F"

A Identify the Processes

1) Identification/Inventory
2) Assessment/Evaluation
3) Planning
4) Action
   a) Monitoring
   b) Research
   c) Maintenance
   d) Mitigation
   e) Manipulation

B Explanation through Examples
Use case studies, examples, etc. to demonstrate 1) the variety of potential solutions/resolutions to a resource problem; 2) the
biological/cultural/political ramifications of individual solutions; and 3) the inter-relationships among resources.

1) Identification/Inventory
   a) Natural
   b) Cultural

2) Assessment/Evaluation
   a) Natural
   b) Cultural

Lecture/ Discussion/ Participation ** Refer to attached lesson plan "LP4G"

Introduction: The National Park Service, as part of its total planning and management process, identifies, inventories, documents, and evaluates cultural and natural resources; and, utilizing this information, along with other information and management considerations, plans and implements appropriate management, preservation, interpretation and use of these resources.

Objective: Student will be able to list three types of plans/documents and describe how each type contributes/guides/directs park resource management program actions.

Discussion: Refer to attached lesson plan for this section.

OR

Participation: Refer to attached lesson plan for this section.

*NOTE: The documents/plans listed in this section are by no means a complete listing of those used or in effect within the NFS.
a. **General Planning Process**
   - General Management Plan
   - Statement for Management
   - Scope of Collection Statement
   - Resources Management Plan

b. **Implementation/Action of Plans/Documents**
   - Fire Management Plan
   - Integrated Pest Management
   - Development Concept Plan
   - Historic Structures Report
   - Collection Management Plan

c. **Other**
   - Maintenance Management System
   - Historic Structures Preservation Guide
   - Park Administrative History
   - Interagency Agreements
   - Archaeological Assessment and Overview

4. **Actions**
   a. Monitoring
   b. Research
   c. Maintenance
   d. Mitigation
   e. Manipulation

IV **SUMMARY**

A. Maintenance of resources is an active not passive process.

B. We all participate in the management of resources.

C. Recapitulate processes.
LESSON PLAN

Session Title: Major Resources: IA1 Natural Resource Components

Session Length: Prepared by:

Objective: Students will be able to list major resource groups and write a description of each. Students will also be able to list several major issues with each major resource area.

Handouts:

<table>
<thead>
<tr>
<th>Time</th>
<th>Method</th>
<th>Content</th>
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<tbody>
<tr>
<td>15-30 min</td>
<td>Discussion</td>
<td>Definition (Vogl): Natural Resources are all the natural components or processes inherent in a given region.</td>
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<tr>
<td></td>
<td>Ask students to list the major resource components.</td>
<td>I. Natural Resource Components</td>
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<tr>
<td></td>
<td>Instructor writes list on Flip Chart</td>
<td>A. Air (example)</td>
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<tr>
<td></td>
<td>or Chalk Board.</td>
<td>1. Air Quality</td>
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<td></td>
<td>Show slides illustrating natural resource components and their related issues.</td>
<td>2. Acid Rain Air Issues</td>
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<td>3. Visibility</td>
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<td>4. Weather</td>
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<td></td>
<td></td>
<td>B. Plants/Flora (examples)</td>
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<td></td>
<td></td>
<td>1. Trees</td>
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<td></td>
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<td>2. Grasses/Sedges</td>
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<td>3. Shrubs</td>
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<td>4. Timber</td>
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<td>5. Algae</td>
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<td>6. Kelp</td>
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<td></td>
<td></td>
<td>7. As Oxygen Producers</td>
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<td>8. Medicinal Purposes Issues</td>
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<td>9. As Food Sources</td>
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<td></td>
<td></td>
<td>10. Biodiversity</td>
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<td></td>
<td></td>
<td>C. Animals/Fauna (examples)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. Mammals (Game/Non-Game)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Birds (Game/Non-Game)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Fish</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Invertebrates</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Reptiles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. Amphibians</td>
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<td></td>
<td></td>
<td>7. Biodiversity (Issue)</td>
</tr>
</tbody>
</table>
D. Water
1. Water Quality
2. Water Projects Issues
3. Water Rights
4. Erosion

E. Minerals
1. Soils
2. Mining
3. Compaction
4. Erosion

Discussional with slides showing examples of interface of natural and cultural components.

AT THIS POINT EMPHASIZE THAT THESE NATURAL RESOURCE COMPONENTS VERY OFTEN INTERFACE WITH THE CULTURAL RESOURCE COMPONENTS AND THAT NATURAL RESOURCE ISSUES ALSO IMPACT THE CULTURAL COMPONENTS. LEAD-IN FOR CULTURAL RESOURCE COMPONENTS.
LESSON PLAN

Session Title: Museum Collections

Session Length: (Variable)

Prepared By: Edward McManus

Objective: Students will be able to list the three collection types discussed in the NPS Museum Handbook.

   Chapter 1 - Introduction to Service Museums

Time: Variable

Method: Lecture
   Before and After Quiz
   Flip Chart
   Slide Illustration
   Specimen Examples

Content:

CULTURAL COLLECTIONS

These collections document human habitation, activity, invention and creativity from prehistoric times to the present. They include both man-made materials and natural materials used in specific ways during human activity. Cultural collections encompass archaeological, ethnographic, and history materials.

In addition to their significance, NPS cultural collections need to be assessed in terms of the values of the object:

   Aesthetic value - Decorative and Fine Arts
   Associative value - Object Linked to Significant Person or Event
   Educational value - Information Objects Provide about People, Places, Events, Cultures, and Technology. (Including Interpretive Value)
   Research value - Usefulness for Inquiry and Analysis
   Symbolic value - Religious/Cultural
   Monetary value - (Least Important)
Archaeological Collections

Archaeological collections constitute approximately 70% of the Service's total museum collection. An archaeological collection consists of two general categories of materials: The objects (e.g., artifacts and environmental specimens), and the records that document the collection and the study of the collection (e.g., field and laboratory notes, photographs, maps, drawings, computer documents, reports and manuscripts). An archaeological collection is only as good as the records that document it. While these collections frequently bring to mind prehistoric Native American artifacts, archaeology is a method of study and does not indicate a specific time period or ethnic identification.

Ethnographic Collections

In contrast to archaeological collections, ethnographic collections constitute .1% of the total National Park Service museum collections. However they are an important part of these holdings. Ethnographic collections are those obtained from members of contemporary cultures. While in theory ethnological study may apply to any peoples in the world, most ethnology focuses on nonliterate tribal groups. Cultures with strong traditions of writing have their own documented histories and objects pertaining to such cultures are classified under history. As a matter of policy skeletal materials are never displayed and sacred objects are displayed only after consultation with appropriate groups. See NPS Native American Relationships Management Policy.

Historical Collections

History collections constitute about 6% of the Service's total museum collection and encompass the entire spectrum of materials made and used by literate cultures to the present. These collections may document people and events or represent inventions and occupations; they often provide insight into peoples' lifestyles and sometimes into their deaths. Taken together these diverse assemblages provide an important component for fully understanding and appreciating our past.

History Collections Include
Historic Furnishings
Architectural Elements
Military Accoutrements
Technological Collections
Personal Artifacts
History Collections Include (Cont)

Archival and Photographic Collections

Historical collections often consist of everyday items from the past, and it must be realized that their significance is their ordinariness and how they illustrate the life of Americans at some point in time.

NATURAL HISTORY COLLECTIONS

Whether a park is established for primarily natural or cultural values natural history collections may be one of the park resources. Natural history collections serve a number of purposes, and are of value to both scientists and the general public. They are generated as a part of approved research projects conducted by Service employees and/or outside investigators. All collecting is carried out in accordance with approved scientific collection permits and all applicable federal laws and regulations.

They can assist the park staff in learning more about the plants, animals, fossils, and geology of the area.

Natural history collections must be evaluated not only for scientific meaning, but also for historical value.

Biological Collections

Biological collections are generally created by obtaining living animals and plants and then preparing them for research and storage in a number of ways.

Types of Biological Collections
- Mammal Collections
- Bird Collections
- Amphibia, Reptiles and Fish Collections
- Insect Collections
- Mollusc Collections
- Plant Collections

Geological Collections

Geological collections provide information on the physical evolution of the earth. Geological specimens illustrate the composition of the substrate upon which the areas principal resources are developed, and they document at selected points in time the processes that have brought the area to its present
state.

Historical sites are closely related to their geology.

Paleontological Collections

Paleontological collections, fossils, constitute our only record of 3.5 billion years of life on earth. They range in size from microscopic pollen and spores which are studied with scanning electron microscopes to dinosaurs 100 feet in length and weighing over a 100 tons when alive.

LIVING COLLECTIONS

The National Park Service does not exhibit live wild mammals and birds in captivity, unless very unusual interpretive circumstances justify an exception to this general practice.

While not manage as part of a park’s museum collection, living collections, like museum specimens, are integral to park inventory, monitoring, and research programs. Living collections may include interpretive gardens, arboreta, specimen trees, historic orchards and other plants or animals protected to conserve significant gene pools.
LESSON PLAN

Session Title: Major Resource Groupings

Session Length: Prepared by: J. Daugherty

Objective:

Handouts: Definitions of cultural resources

<table>
<thead>
<tr>
<th>Time</th>
<th>Method</th>
<th>I. Cultural Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Participative</td>
<td>1. Tangible and intangible aspects of cultural</td>
</tr>
<tr>
<td></td>
<td>Lecture</td>
<td>systems in past and present.</td>
</tr>
<tr>
<td></td>
<td>Slides</td>
<td>2. Valued by a culture.</td>
</tr>
<tr>
<td></td>
<td>illustrating</td>
<td>3. Finite and non-renewable.</td>
</tr>
<tr>
<td></td>
<td>resources</td>
<td>4. Can include primary written and verbal data.</td>
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<tr>
<td></td>
<td>ideals</td>
<td>Cultural resources can be broken into objects,</td>
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<tr>
<td></td>
<td></td>
<td>cultures, structures, sites and landscapes.</td>
</tr>
</tbody>
</table>

II. Landscapes

Geographic area, is including both natural and cultural resources, animal, wild and domestic - (1) that has been influenced by human activity and reflects that activity (2) or background for significant event or person significant in history.

FIVE TYPES OF CULTURAL LANDSCAPES

1. Historic scene - Limited environment where significant historical event occurred often associated with structures or physical remains.

   Why important? Provides context for understanding event or person.

   Examples: Grant - Kohrs Ranch
             Gettysburg -
             Carl Sanburg Home
2. **Historic site** - Site where event or activity has given a piece of ground significance.

**Why important?** Preservation of landscape contributes to understanding event or person.

**Examples:** See historic scene.

3. **Historic Designed Landscape** - Landscape where form, layout, and design conveys significance.

**Why important?** Form, design, layout reason for preservation.

**Examples:** F. L. Olmstead, Vanderbilt NHS, N.Y. Central Park

4. **Historic Vernacular Landscape** - Landscape possessing significant concentration, linkage, or continuity of man-made and natural components united by human use and past events. Layout related to function.

**Examples:**

5. **Ethnographic Landscape** - Landscape characterized by continued use, such as subsistence, hunting-gathering, or religious ceremonies. Unique because often involves consumptive use of resources.

**Examples:**

III. **Sites**

**Historic** - See landscapes

**Archaeological** - Specific ground or area associated with past human cultures - containing physical remains of past human activity; could be historic or prehistoric.

**Why important?** Likely to yield information in prehistory and history.

**Examples:** NPS find at Ft. Union, ND Bents Old Fort, Knife River Indian Villages, ND.
IV. Structures

A constructed work, historic or prehistoric, consciously created to serve some human activity - Buildings, bridges, fences, roads, canals, ditches, etc.

Why important? Associated with persons or events significant to past or architectural significance.

Examples: Independence Hall, C & O Canal, Mesa Verde, Old Faithful, Yellowstone

V. Cultures

System of behaviors, values, ideas, and social structures.

Why important? U.S.A. is a composite of many cultures.

Synonyms: Customs, folkways, lifeways, social practices.

Examples: Culture, Hispanic, Native American

Storytelling, music, art, dance, and song are important elements.

Source: NPS-28, Appendix A.
LESSON PLAN

Session Title: Processes and Principles for Management of Resources: III Part IB, Disciplines Employed in Management of Park Resources.

Session Length: Prepared by:

Objective: Student will be able to (1) List examples of scientific disciplines used in resource management; (2) Describe ways that disciplines must be integrated to effectively manage individual resources; (3) Give examples of how your Resource Management Specialist has had to rely on assistance from other people or other agencies with other disciplines/specialties in resolution of park resource problems.

Handouts: None

<table>
<thead>
<tr>
<th>Time</th>
<th>Method</th>
<th>Content</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Discussion</td>
<td>1. Ask class to identify and list (scientific) disciplines involved in management of park resources.</td>
</tr>
<tr>
<td></td>
<td>List on chalk board or flip chart as they are identified by the group.</td>
<td></td>
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<tr>
<td></td>
<td>Discussion</td>
<td>2. Ask class to categorize these disciplines by Natural or Cultural. Guide discussion to recognize that many disciplines are required for both cultural and natural.</td>
</tr>
<tr>
<td></td>
<td>Listing or small group activity.</td>
<td>E.G. Identify Resource Issue: e.g. heavy fuels (wildland) are abutting museum collections building at MEVE.</td>
</tr>
</tbody>
</table>
Which disciplines should be involved in planning for resolution of this problem.

E.G. Running wildland fire in MEVE. As Fire Boss, which disciplines/job titles would you consult to protect resources and resource values in fire management efforts.

Discussion 3. How many of these disciplines exist in your park? In which of these disciplines is your RMS proficient? What/how much should be expected of your RMS in the identification and resolution of resource management problems. How can you help.

MUST EMPHASIZE THAT ALL THESE DISCIPLINES USE THE PROCESSES IDENTIFIED LATER IN THIS SECTION.
LESSON PLAN

Session Title: Principles in Management of Nat./Cult. Resources

Session Length: 1 hr +

Prepared by: Jung, Peterburg

Objective: Student will be able to describe at least three principles important to the management of natural and cultural resources.

Handouts: Pre-test/matching questions. Instructors should review A Primer of Ecological Principles by R. J. Vogl

<table>
<thead>
<tr>
<th>Time</th>
<th>Method</th>
<th>Content</th>
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</thead>
<tbody>
<tr>
<td>Lecture</td>
<td>Intro:</td>
<td>Following is a discussion of principles applicable to both natural and cultural resource management. Session could be expanded considerably by also dealing with those principles applicable to only natural or cultural resources.</td>
</tr>
<tr>
<td>Small group discussion of MNA exercise.</td>
<td>Include these only if emphasis is to be on natural principles.</td>
<td>Pretest - MIX AND MATCH - to demonstrate that resolution of each situation may embody several principles. Give small groups 10 min. to formulate answers, then discuss and compare.</td>
</tr>
<tr>
<td>Film</td>
<td>&quot;Garden of Eden&quot;</td>
<td></td>
</tr>
<tr>
<td>Discussion</td>
<td>Put following principles on chalk board or flip chart. Elicit from participants examples that demonstrate principles! Discuss.</td>
<td>1. Resources are either renewable or non-renewable, and must be treated accordingly. 2. Preservation/conservation is not a luxury, or an optional practice,</td>
</tr>
</tbody>
</table>
but is one of the essentials for survival.

3. Alternatives should be considered before initiating action in any resource management decision.

4. Resource management practices and techniques that duplicate or approximate natural/cultural processes are the most likely to succeed.

5. Resource uses, regulations and management practices that do not consider the future are nothing.

6. Protection alone is seldom adequate and must be superseded by proper management.

7. The first step in preservation of a resource is to stop any further degradation.

8. Before a resource can be appraised, and management recommendations made, the resource with normal undisturbed conditions must be understood.

9. The introduction of alien species or substances is to be avoided, and if it must be done, it should be with extreme caution and when there are no alternatives.

10. There is generally a proportional relationship between the length of time of abuse, malfunction, and degradation and the time required for recovery or restoration.

11. Preservation implies perseverance; no resource is ever permanently preserved.
LESSON PLAN

Session Title: Introduction to Processes

Session Length: Prepared by: Schiller, Miller, Cella, et. al.

Objective: Student will be able to identify and describe the formal thought processes common to management of resources.

Handouts:

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<td>10 min.</td>
<td>Case Example</td>
<td>I. INTRODUCTION: Why are these processes necessary. Refer to previous sessions on philosophy and laws, regulations, and guidelines that affect the management of resources. What are the conditions/status of the resources? How do we know if change is occurring? How much change has occurred? Is this object or structure significant?</td>
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<td>10 min.</td>
<td>Discussion groups or brainstorming</td>
<td>1A. You have recently arrived at a park and are assigned to construct a trail from the visitor center to a popular overlook. The trail will pass through a natural area. During previous construction archeological artifacts have been discovered. What would you do in general terms? 1B. During construction an employee uncovers an object that is unlike the surrounding material. What should happen? Review group answers to illustrate processes. Possible discussion.</td>
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Inventory: Go out and look the country over. Examine the environment. Determine what construction equipment...
is available. Determine who is available to work on the project.

Assess/Evaluate: Based upon the inventories the location of the trail, the type of equipment to be used and personnel needs are determined.

Planning: Documentation of construction plans - blueprints. Formal review such as NEPA compliance and completion of XXX form. Review results may require an EIS or Section 106 process. Crew briefings to explain resource concerns. If logistics are a problem arrange for a resource management person to be on site during construction. Identify monitoring or mitigation needs.

Action: Construct trail according to specifications including mitigation actions if required.

18.

The object should not be moved.

WHY?

1. Uncertainty of value/significance. Could be the greatest discovery to date. Neanderthal in N. America.

2. Eliminates the ability for the archeologists to interpret the worth of the object in its natural surrounds. Work should stop in the area.

Resource person should be contacted.

The resource person will use these processes to determine what actions will be taken concerning the object.
WE ARE NOT HERE TO MEET DEADLINES BUT TO PROTECT RESOURCES.

II. IDENTIFICATION/DEFINITION OF PROCESSES

A. Inventory: What? How many?

A list or count of resources systematically collected using scientific methods that are repeatable. The results are documented for future use.

B. Assessment/Evaluation: The determination of significance, importance or condition of resources. Determination of significance, importance or condition is based upon a wide variety of criteria and standards. These range from guidelines to current scientific thought.

C. Planning: Process through which we reach decisions that guide management of resources.

D. Action:

1. Monitoring: A systematic and repeatable determination of resource condition/change over time.

2. Research: Studies or investigations performed to provide a body of knowledge regarding a specific resource.

3. Maintenance: The systematic upkeep and/or care of resources.

4. Mitigation: The process of making impacts less severe, moderating or elimination of impacts.

5. Manipulation: The management or control of resources for a specific goal.
III EXPLANATION THROUGH EXAMPLES

A. Inventory

1. Audubon Christmas Bird Count, fish shocking (census), aerial survey for large mammals.

2. Archaeological survey, site testing, site excavation, automated national catalog system.

B. Assessment/Evaluation

1. Review of inventory data (low ratio of male/female in wildlife population), increased particulate levels in air/water samples.

2. Use of National Register criteria, determine significance of cultural sites, determining "integrity".

C. Planning

1. General Management Plan, Resources Management Plan, Scope of Collection Statement

2. Fire Management Plan, Development Concept Plan, Historic Structures Report

D. Action

1. Monitoring

   a. Air quality particulate samplers, visibility, water flow gauging, trail conditions, changes in vegetation resulting from fire.

   b. Installation of glass rods to monitor shift in masonry walls, inspection for insect damage, monitoring environmental conditions in museums.
2. Research

a. Water quality, Acid Rain, anadromous fish studies, caribou population studies

b. Paint analysis of buildings, historic base and groundcover study, literature search

3. Maintenance

a. Mowing grass, trail maintenance, campground cleaning

b. Collection housekeeping, repointing masonry, historic landscape maint.

4. Mitigation

a. Restoration of wildlife species, flood gate structures, fish ladders

b. Stabilization, documentation, restoration

5. Manipulation

a. Culling of Bison herd, revegetation, problem animal disposal

b. Benign neglect, relocation of structures, reconstruction

**SUMMARY** Every action taken by an employee during their work involves one or more of the processes discussed above.
III.B.3 PLANNING

INTRODUCTION: The National Park Service, as part of its total planning and management process, identifies, inventories, documents, and evaluates cultural and natural resources; and, utilizing this information, along with other information and management considerations, plans and implements appropriate management, preservation, interpretation and use of these resources.

OBJECTIVE: Student will be able to list three types of plans/documents and describe how each type contributes/guides/directs park resource management program actions.

DISCUSSION: Instructor will randomly list on board/chart the plans/documents which are used to/guide resources management (refer to list below). After presentation of the list the instructor will lead a discussion on how these plans are used in resources management. The discussion will provide the students with information as to the various types of plans, and their development and purpose. The instructor should call on the students to present examples of those plans/documents used in their work (instructor may provide further examples as needed to provide a complete discussion).

OR

PARTICIPATION: Instructor will call upon students to develop a list (on board/chart) of plans/documents they believe can contribute/guide resources management activities in the parks. After a list is developed which represents most of the major types of plans/documents listed below, the instructor will lead a discussion on how these plans are used in resources management. The discussion will provide the students with information as to the various types of plans, and their development and purpose. The instructor should use examples from students or own experience/park(s).

*NOTE:* The documents/plans listed below are by no stretch of the imagination a complete listing of those used or in effect within the NPS.

A. GENERAL PLANNING PROCESS

Statement For Management

The Statement For Management (SFM) sets the stage for subsequent planning. It summarizes the state of the park, reviews existing information base and identifies additional information needed for planning and management. It is subject to annual review and revision.
General Management Plan

The General Management Plan (GMP) is the parkwide plan for meeting the management objectives of the park. It contains both the short-term and long-range strategies in accordance with NPS management policies, legislative, and executive requirements. The plan considers the park as an integrated system.

Outline of Planning Requirements

The Outline of Planning Requirements (OPR) defines the planning and study needs required to achieve the park's management objectives.

Resources Management Plan

The Resources Management Plan (RMP) generally consists of two major components: Cultural and Natural. The RMP provides an overview of our resources management practices in the park and includes a prioritized multi-year plan of action.

Scope of Collections Statement

The Scope of Collections Statement is the basic curatorial planning document that guides a park in the acquisition and preservation of those museum objects that contribute directly to the parks theme(s) and objects that the service is legally mandated to preserve.

Interpretive Prospectus

The Interpretive Prospectus (IP) is the plan for implementing the area's management objectives and planning decisions for interpretation.

Environmental Assessment/Impact Statement

National Environmental Policy Act of 1969 (NEPA) compliance is achieved through a planning process which provides for objective consideration of the environment in decision making. For NPS plans in preparation, an EIS is prepared on those components of the plan which, individually or collectively, entail significant or controversial impacts.
B. IMPLEMENTATION/ACTION PLANS/DOCUMENTS

Fire Management Plan

The Fire Management Plan is required of all park areas with natural resources capable of burning. Fire Management Plans are "operational" plans that are unique to individual areas. This plan is a subsection of the RMP.

Historic Furnishing Report

This is the exhibit plan for a furnished historic structure. It documents the historic furnishing associated with a structure and determines what furnishings to display and how to arrange them.

List of Classified Structures

The List of Classified Structures (LCS) is an evaluated inventory of prehistoric and historic structures. The LCS is evaluated or "classified," by National Register criteria, where the structure(s) are either individually or are contributing elements of sites or districts that do meet the criteria.

Cultural Resources Management Bibliography

The Cultural Resources Management Bibliography (CRBIB) includes research reports in the fields of history, historic architecture, ethnography, archeology, and curation along with NPS planning documents, journal articles, theses, and dissertations that address cultural resources of a park.

Cultural Sites Inventory

The Cultural Sites Inventory (CSI) describes and documents the location, significance, threats, and management requirements for known park ethnographic and archaeological resources, and identifies those that require funding for their proper management.

Exhibit Plan

The Exhibit Plan evolves from the Interpretive Prospectus and provides label copy, list of objects to be exhibited and detailed design and construction plans for an exhibit. These can include both museum and wayside exhibits.

Backcountry Management Plan

The Backcountry Management Plan is prepared to guide in the management of backcountry park resources; i.e. trails, camps, areas, etc. This plan is a subsection of the RMP.
Annual Statement for Interpretation and Visitor Services

The Annual Statement for Interpretation (SFI) is an annual document prepared to guide the area’s personal services and evaluate the overall program productivity and effectiveness. It supports other interpretive planning and provides documentation to explain the annual interpretive program and justify budget requests.

Cultural Landscape Report

The Cultural Landscape Report (CLR) identifies, evaluates, and determines appropriate management options for cultural landscapes.

Concessions Management Plan

Concessions planning is to guide and control commercial visitor services and facilities within park areas. Concessions operations must be viewed as a tool of management to meet park objectives. The objectives are bases upon considerations such as visitor needs, the ability to meet visitor needs, the resource and its carrying capacity.

Integrated Pest Management Plan

Integrated Pest Management (IPM) is a decision making process whose major component is monitoring. Monitoring is essential and helps define injury and action levels, problem areas, and treatments. It provides baseline data, seasonal comparisons, progress measuring and cost estimates, and reference points for all pest control decisions.

Development Concept Plan

The Development Concept Plan (DCP) amplifies development decisions made in the General Management Plan for a given developed area or unit of a park. The DCP addresses, among other things, the size, location of new facilities and utilities and relates them to existing facilities and resources.

Historic Structures Report

The Historic Structures Report (HSR) is prepared whenever there is to be a major intervention into historic structures or where activities are programmed that affect the qualities and characteristics that make the properties eligible for inclusion in the National Register. It analyzes and records all periods of construction, modifications, source materials, building techniques, other evidence of use, and setting.
Collection Management Plan

The Collection Management Plan is designed to assist in improving museum collection management programs. The plan may include a review of the Scope of Collection Statement; a description of the museum collection; and an evaluation of museum storage, museum exhibits, maintenance schedules, and museum program staffing and funding.

C. OTHER

Maintenance Management System

The Maintenance Management System (MMS) is intended to provide park management with information to plan, program, and schedule maintenance work activities in order to provide necessary preservation and maintenance to all park resources.

Historic Structures Preservation Guide

The Historic Structures Preservation Guide (HSPG) is tailored to the needs of historic and prehistoric structures. It provides necessary information for orderly, timely, and proper inspection and maintenance. The HSPG serves as a reference for programming, continued housekeeping, routine, and cyclic preservation maintenance.

Historic Resource Study

The Historic Resource Study (HRS) is prepared to identify and evaluate National Register eligible properties. The study produces (1) the title study, (2) the historical resources base map(s), and the National Register nomination forms.

Park Administrative History

The Park Administrative History is compilation of the history of a park entity. It is periodically updated.

Archaeological Overview and Assessment

The Archaeological Overview and Assessment describes and assesses the known and potential archaeological resources in an area. It is prepared for those areas with known or potential archaeological resources that are listed on, or eligible for listing on the National Register.

Interagency Agreements

The NPS has entered into a number of interagency agreements with other agencies which affect management of resources.
Special History Study

The Special History Study focuses on the associations, events, and personalities of a park rather than its cultural resources. Because of its political, social, intellectual, economic, military, or cultural subjects and the events associated with them, this study provides information for both management of resources and interpretation.

Traditional Use Study

The Traditional Use Study is an ethnographic study that examines the frequency and use of a park's natural and cultural resources by peoples who are traditionally associated with park resources, and have access to those resources by tradition or law.

Collection Storage Plan

The Collection Storage Plan results from an onsite assessment, reports on existing storage conditions, identifies NPS curatorial standards for storing objects, describes acceptable storage alternatives, and recommends one preferred alternative.

Historic American Buildings Survey

Historic American Buildings Survey (HABS) is a program that produces a thorough archival record of buildings which comprise the heritage of the built environment of the US. If the NPS substantially alters or demolishes a historic structure, HABS documentation standards must be met.

Historic American Engineering Record

Historic American Engineering Survey (HAER) is a program that produces a thorough archival record of engineering structures which comprise the heritage of the built environment of the US. If the NPS substantially alters or demolishes a historic structure, HAER documentation standards must be met.

REFERENCES:

NPS-2  NPS-6
NFS-18  NPS-28
NPS-48
CASE EXAMPLES: Interaction Between Cultural and Natural Resources Management

1. Tonto Nat’l Monument, AZ - cultural resources area with several multi-storied, prehistoric pueblo ruins. The ruins are located within large caves above the canyon floor.

**Problem:** Wild, extremely aggressive honeybees live above (in the cliff) the ruins. The honeybees become more aggressive as the temperature becomes hotter. During the summer many visitors are attacked and chased by the bees. There is approximately 100,000 honeybees living above the ruins. As many as 1,000 bees may attack at a given time. Local bee keepers do not want the bees as they are wild and cannot be domesticated. The Superintendent is allergic to bee stings and cannot venture to his main visitor attraction.
2. Ft. Bowie Nat’l Historic Site, AZ. - This calvary fort was the focal point during Apache wars. Buildings are in a ruinous state, but easily recognizable. The famous Apache warchief Geranimo surrendered to soldiers from Ft. Bowie.

Problem: Numerous mesquite trees are growing into the fort and are responsible for severe impact and accelerated destruction of several structures. Old photos show that mesquite trees are not in the historic landscape.

Why are the trees invading? (Answer:) Chief Ranger did not like rattlesnakes or understand their place in the ecosystem, so he killed all that made the mistake of crossing his path (for 11 years). Because predator (rattlesnakes) population was severely reduced, ground squirrel population dramatically increased. Ground squirrels collected mesquite seeds as food source and brought them back to fort proper. Mesquite trees become established into fort. As trees increase in number, squirrel food source also increases, then squirrel population continues to increase (ecosystem is now out of balance). Chief Ranger has been there so long that he does not notice the invasion of mesquite trees.
3. Virgin Islands National Park, VI - a natural area with hundreds of historic structures within the park boundary.

Problem: Historic stabilization project initiated to replace roof of a Danish Great House. Inside walls will be repainted to original colors. However, upon inspection it is noted that many locally endangered bats are living within the structure and are responsible for severely discoloring the wall surfaces. Stabilization personnel do not want to begin work because of the bats and, as bats are a locally endangered species, management is concerned about impacting their chosen habitat.
Grand Canyon National Park, AZ - natural area with many historic and prehistoric sites located within the boundary.

Problem: A well known cave (Cave of the Domes) has historic names written on the walls of a small "dome" within the cave. The "dome" is 3' above the floor of the cave. Names are from every historically significant persons who originally settled at the canyon (Hance, Kolb brothers, etc.). Present day hikers are climbing into, and up, the dome to add their names not knowing the historic significance of the dome. These present day hikers are unintentionally impacting of the original names (from their boots stepping and scraping on the names). Original names are written on wall with carbon material and easily smudged.
Zion National Park, Utah - a natural area featuring spectacular narrow canyons typical of the Colorado Plateau.

**Problem:** The Zion Narrows, a popular hike in Zion, is prone to flash flooding and is thus a potential visitor safety hazard. The traditional approach to closure of the "Narrows" is to visually search the skies for any signs of clouds or rain. If any such signs are present the "Narrows" are "closed" to hiking. Very often these closures occurs after many overnight hikes have begun.

Zion National Park also experiences a summer "monsoon" season beginning in mid-June and running through the end of August. In this monsoon season clouds appear almost daily, but only rarely is enough rain received in the watershed drained through the "Narrows" to cause a flash flood. The result is that the "Narrows" are closed almost daily in this monsoon season, which is also the main visitation season. Park management is being criticized for managing the "Narrows" "by-the-seat-of-their-pants" and for closing the "Narrows" when there "obviously" was no danger of a flash flood in the drainage.
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Action: RMS goes to Honeybee Research Center and learns about bees control methods to remove bees. RMS then borrows "bee suits" to prevent stings during removal project. Bees live approximately 100' above ground, so RMS hires "cavers" to rappel off the cliff (wearing protective suits), kill honeybees and remove nests, then mortar nest holes to prevent reinfestation (mortar is "color coded" to surrounding cliff color). Photodocumentation of project for future reference. Final treatment is to spray "bee repellent" onto cliff surface to also assist prevention of reinfestation. Begin long-term monitoring for efficiency of action. During project Interpreters (using binoculars) explain action and reasons for action to visitors.
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**Action:** Immediately stop Chief Ranger from killing predators. Drastically reduce squirrel population. Cut mesquite trees from fort proper and those trees surrounding structures. Photodocumentation of action taken. Begin long-term monitoring to prevent future invasions.
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Action: All but one bat entrance point is closed. This last entrance area is closed at night when bats are no longer in structure. Bats initially try to reenter structure, but to no avail and move to another location. Stabilization crew is now able to work on structure without concern.
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Action: After archeological testing, dig the floor down an additional 3' so that hikers can not get "hand hold" to climb into the dome. Names can be seen without additional names being written on dome wall.
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Action: Park Management contacts Weather Service and requests rainfall measurement records for the "Narrows" watershed for the past 10 years. Also contacts U.S. Geological Survey for river flow data for past 10 years. Both data bases are compared and correlations are made to determine rainfall levels required to trigger flash floods.

Park Management then develops new closure guidelines based on the results of this data search. Contracts with Weather Service for daily forecasts for the Narrows drainage from which to implement these guidelines during monsoon season. Park RMS monitors river flow and temperature on a daily basis. This data is combined with Weather Service and U.S. Geological Survey data to refine the closure decision making process.
Elk impacts on alpine meadows are increasing dramatically in Krumholz National Park. Trailing, wallows, and resultant erosion seem to be reducing the quality of those meadows. The Forest Service is harvesting timber up to the park boundary on all sides, thereby increasing the amount of winter range available for elk, and probably assuring a larger herd size in the future. The state Fish and Game Department in the state surrounding Krumholz has noticed a steady increase in revenue from its sales of hunting licences over the last several years, and the increases in revenue have towns close to the park excited also.

Research on the movements of the elk, and on herd size and composition have been underway for some time, but no research has been performed on vegetative loss or change.

Discussion:
1. Where is this situation in the hierarchy of resource management process?
2. Does Krumholz National Park have to let its alpine vegetation be lost?
3. As Park Superintendent what principles and processes would you employ to successfully defend Krumholz from increasing numbers of elk? Is that what you really want to do?
4. Describe how political considerations in this instance make definitive solutions not likely.
CASE STUDY

On the south side of Mt. Rainier a heather exists at the limits of its range. The pink flowered shrub exists here in greater abundance, further south, and at a higher elevation than anywhere else on the continent.

Over the past 15 years a highly respected alpine botanist from the University of Washington has documented the plant colony's steady decline, and with it, the erosion of soils in which it exists.

About thirty five years ago climbing Mt. Rainier began to grow dramatically, and the most popular route on the mountain passes through the heather colony. Foot traffic now totals about 8,000 overnight climbers, and about 100,000 dayhikers. The Park Service long ago built a rudimentary trail, but the climbers and hikers routinely do not use it because it is muddy, slippery, and well into summer is snowcovered anyway. A fair amount of research has shown that alpine plants are most susceptible to damage as they emerge from snowmelt, or as they first break through the cool, wet alpine soils a day or so after snowmelt.

Though the expense would be extraordinary, the Park Service decided the only reasonable way to contain visitor use on the desired trails, and allow the impacted vegetation to rebound, was to rebuild 4500 feet of the trail.

Extreme erosion had removed most of the trail's natural foundation. In places a gaping trough, cut deeply into the underlying layers of volcanic ashes, the trail had to be refilled to the original contour and stabilized.

The site is not within designated wilderness, but is highly visible from the park's major hotel and parking lot. Taking materials to the site was not realistically possible in any way other than by helicopter. The volume (1.5 million pounds of rock and gravel) was too great, and the terrain too steep.

Support for the accomplishment of the reconstruction was openly solicited from all local chapters of the environmental organizations, and with no exceptions it was gained. After much discussion an EA was prepared and filed for the helicopter operation (which required 80 or 90 hours of flight time). The project could have been categorically excluded from the NEPA process, but park management felt it wise to file an EA anyway.

The materials were placed on site in late 1985, and installation was completed a year later.
Continuing botanical research on the heather colonies is underway. The rebuilt trail is now flagged in late spring to assure oversnow travel which will drop in on the trail tread when the snow melts, and an extra seasonal has been hired to contact hikers offtrail. New exhibits are planned to explain the reconstruction, and all climbers are reminded to stay on the trail as they register at the Ranger Station.

Discussion:
1. What principles have been followed?

2. Identify/describe segments of the story with processes that we have talked about.
LESSON PLAN

Session Title: "Your Involvement in Managing Park Resources" or "Team Resource"

Session Length: 4 hrs 30 mins  Prepared by: Team Resource Group #4

Objective:

By the end of this session, each participant will be able to:

- List several ways in which class members have already been involved in protecting park resources.

- Identify additional ways of sharing resource protection responsibilities with other divisions.

- List several factors that can influence management's decision making process.

Handouts:

- Pre-test on identifying effective resource protection
- Case Studies of interdivisional RM projects
- Case Studies of Political Realities
- Political Realities group exercise "Fort Woebegon"

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<td>5 min</td>
<td>Lecture</td>
<td>Theme Statement: Resource Protection is the goal of all divisions; everyone is responsible for park resources.</td>
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<td>20 min</td>
<td>Show video</td>
<td>&quot;Wanted:...&quot;</td>
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I. Park Disciplines

Everyone is a resource manager, although we'll be using the term "protecting park resources" during the balance of this course. We will identify ways that various disciplines participate in protecting park resources, how divisions can work together, and why some outside influences may affect management decisions.
(Expand upon ideas and examples shown in video, if used. Break up into smaller discussion groups focusing on a single discipline, then gather to exchange ideas, or carry out exercise as class.)

Administration

Concessionaires

Interpretation

Law Enforcement

Maintenance

Management

Resource Managers

= PROTECTION OF PARK RESOURCES

A. Administration
- Finds funding
- Procures materials
- Fills staffing
- Answer phone requests for info
- Public Affairs function
- Puts RM restrictions and protections into contracts, permits, etc.

B. Concessionaires:
- Provide public with RM messages while in hotels, restaurants, etc. through room cards, placemats, etc.
- Can put up displays on park’s resources rather than ’pretty pictures’, i.e. artifact or photo displays
- Include RM message in guided programs

C. Interpretation
- Trains NPS and concession employees how to communicate
- Trains NPS and concession employees in RM issues
- Puts out publications on RM topics
- Work with other divisions to help them get their message out through displays, publications, walks, etc.
- "Through Interpretation comes understanding; through understanding comes appreciation; through appreciation comes protection"

D. Law Enforcement
- While enforcing rules, informs visitors of RM reasons for rules, e.g. speeding cars and road kills.
- The majority of LE work is directly involved with protecting the resources (Sec.2 Title 36 CFR)
- LE focuses primarily on resources and watching for threats
- Constantly involved in visitor contact and interpreting resources

E. Maintenance
- Makes innumerable visitor contacts
- Perform historic restoration
- Perform vegetation control work
- Focus is on repair of resources
- Constructs trails, boardwalks, etc. "Purveyors of access to the public"
- Keep trails and roads open
- Keeps other divisions' "tools of the trade" up to par
- Masters of the crafts of restoration, and of disappearing skills

F. Management
- Keeps us honest
- Make tough priority decisions
- Deal with political realities
- Carry out community relations

G. Resource Managers

- Determine park resource protection problems and issues
- Inform staff about problems and issues
- Monitor park resources
- Mitigate threats to resources
- Prepare required planning documents and compliance reports
- Carry out research on resources
- Supervise rehabilitation projects

II. Recognizing Your Involvement

You know by now that you are already involved in protecting park resources in your everyday job. Let's examine some Case Studies from other parks in which this 'interdivisional' approach has had major beneficial results for both the resources and the visitors.

A. MOUNT RAINIER

- Social trail problem corrected by RM, Protection, Interp, YACC, & YCC at Sunrise.

- Popular campground removed for RM purposes; Maintenance rehabs, Interp explains project.

B. GOLDEN GATE

- Interpreter finds part of Civil War gun battery, Maintenance finds another part, archaeologist discovers whole structure, co-op association restores.
C. PRINCE WILLIAM FOREST PARK

- Interp develops trail checklist and a wildlife observation card for all divisions to use for RM and safety.

D. APOSTLE ISLANDS

- Chief of Maintenance develops work request form with "XXX" compliance block to ensure historian clears on all work projects.

E. USS ARIZONA MEMORIAL

- Rangers work with local University to monitor marine growth and corrosion rate on battleship ARIZONA during monthly SCUBA surveys.

F. FIRE ISLAND

- Rangers discover evidence of island migration during routine patrol and send documentation to Regional Coastal Scientist.

G. GUADALUPE MOUNTAINS

- Interdivisional solution developed to deal with high visitation to McKittrick Canyon area during fall color period.

20 min Discussion

(Ask group if they have any examples from their personal experiences)

III. Spreading the Word

The job of protecting park resources doesn’t stop with simply doing our job; we also have the duty to instill in the public a respect for resources and develop a base of support for our activities. The various divisions all can assist in spreading the RM philosophy.

5 min Lecture

25 min Discussion w/flip chart

A. Off-site Activities

- School programs, including colleges. Possibly bring along a 'subject matter' specialist like a
resource manager or a maintenance worker.

- Clubs and civic groups. Slide shows, guest speakers, etc.

- College/high school career days. Chance to give formal presentations or staff recruiting booth, and give RM information and stress ethic.

- County, state, local fairs. Again, chances to provide RM info and build NPS image.

- March in your local community’s 4th of July or Memorial Day parade.

B. Publications

- Develop publications that inform visitors of RM issues and provide warnings to protect resources. Site bulletins, tear-off sheets, newsletters, brochures.

- Use existing park informational sources to include RM themes. Travelers’ Information Stations (TIS), articles appearing in magazines, newspapers, etc.

- Print RM message and limitations on all permits as part of the conditions of use. Back-country, camping, picnicking, special use.

C. Daily Contact

- Visual. How do we look? Provide a professional image, and one that shows both pride in work and a respect for the resource. Tarp excavations, camouflage work sites after completion, replace worn or hand-lettered signs, maintain a graffiti-free environment.

- Face-to-Face. All employees should be conversant in RM issues and policies. Place a protection message in all personal contacts.

- Written/printed. See examples
D. Public Relations & Media Resources

- New releases. Inform media of park's RM issues, concerns, and programs. Let them know what you are doing for the resources, and through them reach the local community.

- Cultivate your media contacts. Keep the local press informed and involved in RM activities.

E. Community Relations

- Public Hearings. Required by law.
- Zoning meetings.
- Chamber of Commerce meetings.
- Informational meetings. Not required by law, but a good tool. Invite public in to inform them of concerns and policies, especially ones that are new and possibly controversial.

IV. Why did "They" do that!?

Political Realities. Parks do not operate in a vacuum; they are subject to a variety of outside influences. The decisions of Management sometimes seem hard to comprehend - unless we understand some of these realities.

A. Influencing Factors

- Research. As research continues, priorities are readjusted based upon additional knowledge or park resources and threats.

- Funding. WASO and Regional funding has direct impact on priorities. Money may come from outside the service, but targeted for specific projects; i.e. grants.

- Local/Regional politics.
- Staff levels. Also includes having a full staff but lacking a specific RM specialist for a project.

- Laws & Management policies.

B. Case Study.

Yellowstone

-Park Management decides to remove historic structures from Old Faithful area despite local and staff opposition.

-(Other examples Instructor may have from person experience or otherwise.)

C. An Example of Funding Influences.

Setting priorities for Fort Woebegon.

(Class breaks into small workgroups or stays together while setting priorities for ‘Fort Woebegon National Historic Park.’ First-hand experience in making management decisions based upon different divisional and political needs. A list of 10-238 package titles is included as attachment)

CONCLUSION

We have seen how all of us are actually "Resource Managers" every day; in fact, you can’t not be involved in RM. Even the decision to do nothing about a threat to a resources is a way of managing the park, except with a negative impact.

We have also seen how various divisions operate together to protect park resources, and how you can further involve yourself in RM.

Let’s take another look at the test we all filled out at the start of this session and see if our perceptions have changed.

(Review pre-test)
This overall concept of integrating the protection of resources into all our jobs is what we call 'Team Resource.' Everyone is involved - not just those people with "Resource Manager" as a title.
"Which of the following are examples of protecting resources in a park?"

1. An Interpreter walking by a historic house notices dry rot in the wall and decides that the historic architect will find it during his annual inspection.

2. A heavy equipment operator uncovers an area of broken shells, pottery fragments and burned wood, and immediately reports it to his supervisor.

3. A Maintenance employee reports suspicious materials uncovered in an excavation to his supervisor, who immediately reports it to park archaeologist.

4. A Maintenance employee reports suspicious materials uncovered in an excavation to supervisor, who decides to proceed with the excavation work since the crew is on a tight schedule.

5. A visitor walks into a park concession and shows an employee a arrow head. The employee says "Don't let the Park Rangers see you with that!"

6. An Interpreter on a walk passes by a piece of air quality monitoring equipment and a visitor asks the Ranger what it is. The Interpreter says, "I don't know, my specialty is history."

7. The Procurement officer buys treated pine instead of untreated oak for use in the restoration of a historic building; the procurement officer found a better price for pine.

8. Concessioner tells visitor: "That section of beach is closed. The Park Service won't let visitors walk on it anymore."

9. Secretary at Park Headquarters receives a phone call asking about a fire burning in the park. The Secretary tells the visitor that particular fire is part of a prescribed burn being use to regenerate the forest.

10. A Law Enforcement Ranger stops a car for excessive speed.

11. The Archaeologist who received the report of the suspicious objects in the excavation doesn't call Maintenance supervisor back until three days later.

12. The Resource Management Specialist orders the mowing of historic field in order to increase deer browse.

13. The guides on a Concessionaire-run tour include resource management policy messages during a tour of the park.
14. Visitor Center staff design a temporary exhibit on bear management in the park.

15. The park Superintendent decides that the historic Civil War earthworks are being severely impacted by visitation, and closes the area to public use. The site has long been a popular picnic area. The Public Affairs Officer issues a news release explaining the reason for prohibition on picnicking. The Resource Management Specialist identifies a non-historic area appropriate for a new picnic area. A Maintenance worker informs a family picnicking on the earthworks of where they can go to have a picnic. Law Enforcement Ranger on his rounds tells visitors the historic story about the earthworks. Interpreter on roving interpretation replaces fallen signs and barricades at the earthworks. An Administrative Technician finds a funding source for purchasing surplus fencing materials to enclose the impacted area. The Cooperating Association funds re-vegetation of the earthworks. Park's wildlife biologist makes a citizen's arrest of the park superintendent who is found picnicking on earthworks after hours.
Due to high visitation (over 1,500 visitors per weekend day) and documented resource damage (social trails being cut as well as aquatic damage) during fall color viewing periods in McKittrick Canyon, management at Guadalupe Mountains began the processes to change this unacceptable situation in the spring of 1987.

Working with all divisions, an operational program was developed which would do the following: inform visitors of changes at McKittrick Canyon during fall colors, provide alternatives for visitors to visit other known fall color areas, provide protection of a delicate resource as well as eliminate known visitor traffic hazards and limit daily visitor use in McKittrick Canyon.

Using the Incident Command System, operational roles were developed. Much of this fell on the division heads. Early on, news releases were developed, finalized and issued to the area media. Chief of I&VS appeared on local talk television shows to carry the word further.

During fall color weekends, members from all divisions worked in all areas of the operation - interpreters with maintenance, protection with interpreters etc. Early morning briefings were held to finalize the daily operations plan. Roles were switched giving major responsibility to as many employees as possible.

A team effort was very much reached as well as total visitor acceptance and protection of a rare resource.
INTERDIVISIONAL PROTECTION OF RESOURCES
A CASE STUDY: FIRE ISLAND NATIONAL SEASHORE

Park Rangers on Fire Island found exposed tree stumps in peat material on the ocean side of the barrier island after a recent storm eroded the beach. The Rangers then photographed the area, took samples of the wood and peat, and located the area on a map. During the next few days the area was again covered by sand.

The samples, photographs and maps were sent to the Regional Coastal Scientists in Boston. This discovery was the first documented example of the island migrating northward toward the mainland.

This discovery will assist in the management of Fire Island by pointing out the natural process of the island to the public and private landowners. With this information, people will understand the natural process of the beach eroding and the futility of building on the ocean side of the island.
In 1980 a Ranger Interpreter at Fort Mason noticed a section of broken brick wall in an area being cleared of brush. This was in an area once occupied by a gun battery hastily erected during the Civil War, and the Ranger thought the wall might be part of the vanished structure. He made preliminary field notes and called the park's archaeologist who also inspected the site and made a memorandum for record.

Two years later, an NPS Maintenance crew was using a backhoe to dig a trench about 200 feet away from the earlier discovery site, and uncovered another section of buried brick wall. The Maintenance supervisor, who was familiar with the military history of the area, immediately notified the park archaeologist.

The archaeologist dug several test holes and determined that almost the entire gun battery remained intact, buried under a foot of earth. The park's Cooperative Association became interested in the site and funded a complete excavation and restoration of the fortification. The area has since been completely restored to its 1864 appearance, and is the only remaining "emergency" Civil War gun battery in the West.
Social trails were developing at Sunrise, caused by visitors leaving the lodge and going directly up the basin to a high point to view the mountains. These social trails were not only eroding badly, they were also obliterating native vegetation and creating a blot on the landscape. The project began in 1971 and was mainly completed in 1977.

RM's decision was to obliterate trails and establish a single trail system that would skirt the basin and cause less damage to the resource. Trail scarification, jutting and revegetation work was accomplished by RM with YCC and YACC crews. The crews were trained in the work by RM, and were trained in contacting the public by the Protection staff (not Interpreters). They were instructed to answer visitor questions and explain the whys and hows of social trails, as well as the process of getting rid of them.

Interpreters developed both temporary exhibits for the project and new interpretive programs for the campfire talks.

The old social trail is still visible, and visitors still try to use it. Law enforcement rangers and interpreters now use a bull horn to try to keep people off of the meadow. One person does resource maintenance work on it, but plans are in the works to completely reimplement the project.

Case Study

Mount Rainier

Campgrounds built at Paradise and Sunrise in 1961 were seen to be mistakes. In 1971 desultory attempts were made to obliterate them. Finally, in 1987, a concerted effort was made by resource management and maintenance to do it all at once at Paradise.

Maintenance did all of the heavy equipment work of filling in foundations, recontouring the area, and hauling in fill and top soil. RM and YCC crews did all of the raking and revegetation, using plants that had been removed before the work began.

Interpreters explained to visitors the heavy equipment work and white matting that was evident within sight of the visitor center.
The interpretation division at Prince William Forest Park developed a trail report checklist form to report trail conditions, safety hazards, maintenance needs, etc. The form is carried by employees in all divisions (interpretation, law enforcement, resource management, administration) whenever they are out in the park.

The trail report form is easy to fill out. It contains space for basic information such as date, time, and location and then lists many possible conditions and hazards (e.g. fallen trees, erosion, hazardous trees) that the employee can simply check off when he or she notices a particular problem or concern.

The employee then turns the form in to the resource management division, and actions are taken where appropriate. Afterwards, the employee is informed of the actions taken, thereby providing him or her with feedback and indicating that his or her efforts were not wasted.

Another report form that is carried by employees of all divisions is the wildlife observation card. When an employee sees an animal in the park, he or she fills out a card, indicating date, time, location, type and number of animal, etc. These cards are then turned in to the interpretation division which records the information and then passes the information on to the resource management division for monitoring purposes.
The Lakeshore staff was experiencing problems with work requests and subsequent work being accomplished on historic structures without going through the proper compliance procedures. The Chief of Maintenance created a new "Maintenance Request" Form that included check off boxes that required the Park Historian to review proposed work for compliance requirements. If a "Triple X" form was required prior to initiating any work on a historic site or structure the Park Historian conferred with the form's originator and discussed the proposed work and completed the form as necessary.

The new Maintenance Request Form not only insured that work done on historic structures was accomplished within the guidelines of historic preservation, it also helped the Lakeshore staff become aware of our legal requirements to do the job within the spirit of the law. After the second year of use, the users of the form recognized the need to complete the forms as early as possible to allow for the necessary clearance time - particularly if the regional office also needed to review the proposed action.
In 1986 the Resource Management Specialist for the Lakeshore began to see the need for an interdisciplinary approach to identifying and correcting resource management problems. Under the existing system of dealing with identified problems, the Resource Manager had to write up the report along with the proposed action and send it to the chief of the division. The division chief would then talk to the other division chiefs and try to arrange for corrective action. This often led to frustration and delay because of the number of people who were unfamiliar with the problem and who had then to be convinced that a problem existed.

In an attempt to speed up the process and get critical individuals involved in the decision making process the Resource Manager proposed the formulation of a park Resource Management Committee. Membership was made up of the two district rangers, the district maintenance foremen and other staff specialists as required. When a problem was identified the committee would convene on-site to review the situation and offer up solutions. Once a course of action and alternatives were identified the Resource Manager would type the formal proposal along with cost estimates (10-577, 10-238, etc) and submit to the chief of the division.

Problems requiring immediate attention are then discussed between the division chiefs, and sources of funding and staff power are identified. Longer range problems are saved for the following year budget process and receive consideration through the budgetary process. The principal benefit to this system is the number of people it involves in solving the problem. If more people in the organization become aware of resource related problems and identify a mutually agreed upon approach to its solution the greater the likelihood of resolving the problem.
The sunken battleship USS ARIZONA in Pearl Harbor, Hawaii, has recently come under the jurisdiction of the NPS. Park management had no drawings of the ship or base data on existing condition of the wreck. A series of survey dives were carried out in 1983-1984 by the Submerged Cultural Resource Team and park staff to prepare plans of the wreck. At this time it was also decided to begin monitoring both the corrosion of the historic fabric of the ship and the rate of marine growth covering the wreck.

Since the park has no resource management specialist, the Superintendent worked out a cooperative agreement with the University of Hawaii to carry out a long-term study of the underwater conditions. Rangers make monthly dives on the battleship to monitor the ARIZONA, going to prepared monitoring positions and taking measurements of active and stable corrosion, photographing coral and shellfish encrustation, and probing the interior of the hull to take oxygen level readings.

The research they are carrying out will provide invaluable assistance to naturalists, since two exact points of reference are now available for the monitoring of the marine growth and corrosion of the wreck: the initial sinking of the ship in December 1941 and the subsequent cleaning of test units to bare metal in October 1984.
The Old Faithful area at Yellowstone has internationally significant geothermal features. It is also important as an animal habitat, particularly for elk and bison. Visitor facilities have been constructed around the edges of the geysers and encroach on the existing habitat. The historic structures include the Old Faithful Inn, which was recently recognized as a National Landmark, over 300 log guest cabins, and other log buildings. The Old Faithful Inn Historic District is listed on the National Register of Historic Places. Old Faithful is the most popular point in the park and subject to tremendous visitation during the summer months.

Recognizing the threat to the geothermal features and habitat, the park in conjunction with the regional office and the Denver Service Center, began a Development Concept Plan about 1980. The DCP recommended that all overnight visitor accommodations be removed from the area. Because of the importance of the Old Faithful Inn, it was decided that this structure would remain. However, the removal of the historic log structures was viewed by many, including some park employees, as unacceptable.

The issue focused on a conflict of resource preservation: Cabins or Geothermal Features. Since the latter are considered to have international significance, the decision was made to remove the historic structures. Prior to demolition, the historic structures were recorded to the requirements of the Historic American Building Standards and this photographic documentation will be retained in the Library of Congress as a research instrument; representative samples of the cabins are being maintained in other area of the park (Roosevelt); and the park is developing an interpretative exhibit in the lobby of the Old Faithful Inn focusing on the development of facilities in this area.
"Why did they do that!?”

Management Decision Exercise

Class breaks into work groups and makes a priority list of twenty park needs. Present their top priority and justify their rationale. (Note: Emphasize that this process is also done at the Regional and Washington Office levels).

Fort Woebegone National Historical Park

Background: Fort Woebegone was constructed in the early 19th century as part of the national fortification system. The park has since developed into a prime recreational area for local residents of a major city with a population of 5.5 million. There is an active local representative on the Congressional subcommittee on parks and recreation interested in the marina proposed in the park’s general management plan. Park employees regularly assist the U.S. Coast Guard in search and rescue activities. The park has severe "after hours" problems with crime against persons and property. The Daughters of the War of 1812 provide substantial donations toward the rehabilitation of the fort structure. WASO special initiatives include monitoring of air quality and upgrading of curatorial storage and protection.
Proposed 10-238’s

1. Repair water treatment plant - $65,000
2. Revegetate fort’s grounds - $10,000
3. Construct marina facilities - $1.4 million
4. Rehabilitate Commandant’s home - $500,000
5. Rehabilitate 2 miles of trail leading to overlook of the fort - $23,000
6. Purchase new picnic tables - $2,500
7. Purchase new computer for data management - $5,000
8. Design and construct wayside exhibit - $45,000
9. Develop air/quality, acid rain interpretation program to meet new initiative - $3,200
10. Conduct parkwide archeological study - $102,000
11. Purchase 7 lightbars for patrol vehicles - $2,500
12. Conduct emergency medical services training - $3,000
13. Rehabilitate concession stand at new marina - $8,300
14. Restore steam schooner - $7.2 million
15. Install storm windows in park housing - $2,000
16. Chip, seal and restripe marina road - $57,500
17. Control termites at historic lighthouse - $25,500
18. Construct campfire circle at marina campground - $6,500
19. Purchase environmental monitoring equipment for curatorial storage - $700
20. Purchase museum cabinets for curatorial storage - $7,000
**LESSON PLAN**

**Session Title:** Introduction to Resources Management

**Session Length:** 30 minutes

**Objective:** At the end of this session, the trainee will be able to write one way they perform a resources management function as a part of their present job.

**Handouts:** "Tools of the Trade" Handout and exercise.

<table>
<thead>
<tr>
<th>Time</th>
<th>Method</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 min.</td>
<td>Lecture</td>
<td>Introduce instructors&lt;br&gt;Have students introduce themselves by name only, &quot;DO NOT GIVE THE DIVISION OR DISCIPLINE YOU REPRESENT&quot;.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Give ground rules regarding:&lt;br&gt;breaks&lt;br&gt;smoking/chewing (where, when)&lt;br&gt;snacks/lunch&lt;br&gt;bathroom location&lt;br&gt;Explain: This is a servicewide course, designed to give all NPS employees an introduction to resource management.</td>
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<td>Reason for course: Servicewide recognition that employees of all disciplines and specialties need to have an increased awareness of the management -- worldwide, nationwide and park specifically.</td>
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10 min. Handout, exercise, discussion

Distribute "Tools of the Trade" handout:

Ask students to "make the BEST match of park disciplines to tools."

Allow only 2 or 3 minutes for learners to complete exercise.

Place transparency of "Tools" handout on overhead projector. As you go down the list, attempt to have group give you one answer per item (ideal). Once that is complete, stimulate discussion by making less obvious connections (i.e. maintenance uses binoculars to check flashing on roof of a building; etc.)

8 min Discussion

Lead a discussion which describes a number of "what if..." situations—aim at developing the idea that if the prime resources of a park are lost, the reason for the park’s being is lost, and ultimately the jobs of the people who work at that park will be lost.

WHAT IF:

You are a carpenter at the Longfellow house and the Longfellow house burns down...

You are a supply clerk at Mammoth Cave and raw sewage and hazardous waste from surrounding development pollutes the cave to such a degree that it must be permanently sealed...

You are the dispatcher at Redwood NP and an exotic fungus kills all of the big trees within a few months...

Ask for one or two learners to describe the prime resources of their parks and what might possibly happen to cause the permanent loss of those resources.

Summarize by emphasizing that:

despite all the other things you may feel control and shape your job, the bottom line for NPS employees is no resource, no job.
Explain that this course will look at a number of the parts which dictate how we as an organization conserve our park resources.

Over the next ____ (or few) hours we will look at:

- The philosophy, objectives and history of resources management in the NPS.
- The laws, regulations, policies and guidelines which control our work.
- A number of specific resources management processes.
- How resources management is a part of each and every job in the NPS.
- An overview of a number of current resources management issues.
Tools of the Trade

Below are several common job disciplines which are found in the National Park Service. Make the best match of tools with the job discipline.

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration</td>
<td>Lawn mower</td>
</tr>
<tr>
<td>Concessions</td>
<td>Binoculars</td>
</tr>
<tr>
<td>Cultural Resource Management</td>
<td>Stethoscope</td>
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<tr>
<td>Interpretation</td>
<td>Artifacts</td>
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<tr>
<td>Law Enforcement</td>
<td>Test tubes</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Computers</td>
</tr>
<tr>
<td>Management</td>
<td>Briefcase</td>
</tr>
<tr>
<td>Natural Resource Management</td>
<td>Knife</td>
</tr>
</tbody>
</table>
LESSON PLAN

Session Title: CONCLUSION: YOU BE THE MANAGER

Session Length: 1 hour

Prepared by: Connie Rudd

Objective: The trainee will be able to solve a given resource management problem (scenario) by providing the following:
1) statement of resources problems
2) laws, regulations, and guidelines which can be invoked to fit the scenario
3) Make a decision and defend it based on sound resource management principles.

Handouts: Resource Management Scenerio
A V Program: "We Are One"

Time Method
1 hour Small Group Activity
In this session, which concludes the training, the trainees will be given the opportunity to put their knowledge to work and solve a complex resource management problem.

Trainees will work in small groups of three or four.

Give a brief oral orientation to the final exercise, challenging the groups to creatively solve the problem.

Distribute the hand-out attached here. Give the groups approximately 20 minutes to make a decision.

Call the groups back, and share solutions to the problem. Approximately 20 minutes.

Summarize briefly the new role the class may now play in resource management at their home parks.

Show the A V Program "We Are One".
YOU BE THE MANAGER

A PROBLEM SOLVING EXERCISE

In your small groups, consider the following resource problem. You and your group have ultimate decision making authority.

1) List the variety of negative impacts to both natural and cultural resources in this scenario.

2) List the laws, policies, regulations and guidelines which you will use to make your decision.

3) Decide how you will "manage" this situation, based on sound resource management philosophy, and be prepared to defend it to the rest of the class.

SCENERIO

Hilly Ridge National Park was established in 1915, primarily for its scenic beauty, and to preserve wildlife. In the 1930's significant archeological sites were discovered, giving information never before known about the pre-history of the region.

In 1949 a private group installed a 56 acre ski-slope, with the park's blessing. Everyone thought it would attract more visitors.

By the 1970's the ski area was attracting thousands of skiers. A new ski lodge was built, and new tow-rope lifts were installed on a higher ridge. Thousands of trees were cut. Water was siphoned out of Willow Creek for snow making machines.

In 1979 it was discovered that a rare and endangered fish lived in Willow creek just below the ski slopes, and a once active beaver colony along the creek was now abandoned.

In 1980 skier use was declining, and the small company sold the area to the local town recreation department to operate.

In 1985 the town of Hilly Ridge requested the Park Service permission to establish three chair lifts, to attract skiers again and save the economy of the ski area and the town.

As the park was engaged in an Environmental Assessment following this request, they determined the following:

1) the rare fish population was threatened due to lack of water in Willow Creek

2) the beaver colony had not returned to active status, even though there were beaver in the area
3) at the ski base, where the lift house would go, is a large archeological site, previously unknown, and significant in scope and potential information.

4) the proposed chair lifts would be visible from three of the parks most scenic overlooks.

The park has always shared common goals with the town of Hilly Ridge, especially related to the economy of the region. The town folks are strongly supporting the expansion of the ski area, and Big Bucks Investors are pressuring to allow them to develop it.

You are the manager. What is your decision?
LESSON PLAN

Session Title: Natural Processes that Impact Cultural Resources

Session Length: 1.5 hours                Prepared By: Diane Jung
                                                   Keith Yarborough

Objectives: At the end of this session, each participant will be able to:

--List at least three natural processes that have an impact on cultural resources.

--Give examples of ways in which those natural processes affect cultural resources, either positively or negatively.

--Describe a situation in his/her park area or another area with which he/she is familiar where natural processes had or are having a negative impact on cultural resources and discuss potential or actual ways to mitigate that impact.

Handouts: Case study (Not included with this lesson plan; use an example from park(s) pertinent to each region.

Method: Lecture; lecture with discussion during slides; case study.

I. Introduction - 10 minutes

A. Resources management specialists usually have expertise in either natural or cultural resources management; few have the knowledge, skills, and abilities to be specialists in managing both types of resources.

B. Laws, regulations, policies, and guidelines require our agency to manage both cultural and natural resources in NPS areas.

C. In trying to reach decisions about how to fulfill agency responsibilities for resource management on a daily basis in the field, managers must often make decisions that are not "spelled out" in any law, policy, etc. Synthesis of the facts and the particular situation is necessary on a case-by-case basis.

D. Decisions regarding natural resources management actions often affect the management of cultural resources, and vice versa.
E. Resource management specialists, managers, and others must ensure that any decisions about actions affecting one type of resource will have minimal adverse impact on the other resource(s) affected.

F. In recognizing items A. through E. above, it is important that employees be aware of the types of impacts natural processes have on cultural resources.

(Allow at least 5 minutes for questions & clarification)

II. Slide Lecture/Discussion Illustrating Natural Processes That Affect Cultural Resources in your Region. Time: 45 minutes

A. Examples:

1. Grazing impacts of trespass cattle, domestic sheep and goats, and feral burros on ruins in the Southwest. Mammals destroy integrity of prehistoric walls and cultural deposits. Examples found in Bandelier, Wupatki, Chaco Culture, Canyon De Chelly, and others. Note: For discussion purposes, you may want to point out that while grazing is a natural process, animals mentioned above were introduced by humans. Does anyone in class know of impact of deer, elk, or other animals that occur naturally on ruins?

2. Destruction or damage caused by flooding. Alvino house, an adobe structure and part of Castolon Historic District at Big Bend, was built in what is now known to be a flood plain. Should NPS be spending money to stabilize or restore it?

The historic bathhouses at Hot Springs National Park are in the 500-year flood plain, yet they are National Historic Landmarks (highest cultural resource status except for internationally recognized World Heritage Sites.) NPS has just leased five bathhouses to the private sector and is converting one to an NPS visitor center at a cost of millions of dollars. Why does class think the decision was made to continue to use these buildings? What about risk of loss of lessee's and Park Service's (i.e. taxpayers') investments in these properties?

Important prehistoric and historic archeological sites at Hubbell Trading Post NHS in Arizona are situated near Ganado Wash and some have already been lost to flooding. Similar losses have occurred at Chaco Culture National Historical Park. How can we mitigate the loss of these sites and the information they contain? (Note that some of these sites have been recorded by archeologists.)
A major thrust at Buffalo National River is the preservation of cultural landscapes, including pastures, fences, stone walls, barns, outbuildings, and homes. Many of these are in fertile bottom lands that are subject to flooding. Should the NPS make an effort to protect these resources by manipulating the natural flow of the river? How can we best protect the cultural resources without altering natural processes?

3. Water infiltration. In masonry walls in any climate where freezing takes place, this problem occurs. Water between masonry joints in historic or prehistoric structures causes deterioration because of movement resulting from expansion and contraction when the freeze-thaw cycle occurs. This often occurs when original mortar joints are replaced with new joints that are impervious to water penetration. When water enters through the soft stone or brick that was used in original construction, it can't necessarily escape through the joints that are sealed with a mortar that is much more dense than the original mortar. In this case, water is trapped in the stone or brick and affects that material when the freeze-thaw cycle occurs. But what about dry-laid masonry (when mortar wasn't used historically) or the thousands of prehistoric ruins that haven't been stabilized? (SWRO examples of this will be shown from Aztec Ruins, Chaco Culture, San Antonio Missions, and Wupatki.)

In other instances, at areas like Fort Union National Monument near Watrous, New Mexico and Fort Davis National Historic Site in west Texas, existing adobe walls are being eroded by intense storm/rainfall events.

4. Vegetation in historic structures. When vegetation such as vines or plants find their way into a historic structure, you're in trouble. How did the roots find their way in to begin with? Once they take hold and as they grow, roots damage masonry and provide openings for water and rodents to enter the building. Be careful as to how you eliminate these vegetative impacts. Make sure that IPM practices are followed, but don't just pull them to avoid having to get approval to use an herbicide. Pulling vegetation from a wall where it is well-established may do more damage to a historic structure than other methods. (This problem is found throughout the Service - in coastal forts at Gateway and Golden Gate, in prehistoric ruins, historic monuments, etc. NCR produced a good study on this topic under contract a few years ago; maybe someone on the NCR team could track it down for us.)

5. Acid deposition. Both wet and dry acid deposition has a negative impact on masonry buildings. We don't know the extent of alkaline soil buffering. Effects in urban areas may be greater than in other areas. Softer stone or stone
cut incorrectly in quarries suffers worse than hard stone or stone cut properly.

6. Soil piping. In soil piping, water travels down through the hole where a dead plant has been and removes the erodible soil. Also, water movement causes deterioration through moisture that travels up the walls of a prehistoric structure through capillary action and causes dissolution of chemical bonding compounds in the rocks (e.g. sandstone) from which the structure was built. This moisture also causes damage when the freeze-thaw cycle occurs.

7. Seismic: includes natural and human-produced. Natural tremors and movement caused by such things as ground or air traffic creates movement in historic and prehistoric buildings. Roads constructed too close to resources are a cause. Overflights at White Sands Missile Range adjacent to White Sands National Monument may be causing changes in the historic WPA buildings there. However, there are also voids under some of the buildings because of unique natural geology/soil of the area. How can we determine what's having the most adverse effect on the buildings? What about movement caused by subway and bus traffic in urban areas; does it create adverse impacts on cultural resources? Are these impacts more severe than natural seismic impacts?

8. Fire. Fire is one of the few natural impacts that may be beneficial to certain cultural resources. Although fires can destroy historic structures and museum objects, they can be particularly useful in clearing vegetation that reveals archeological information about historic or prehistoric resources. Also, controlled burns are becoming more common in the management of historic vegetation, particularly in western parks, such as Fort Union and Fort Davis.

9. Insects. Primarily destroyers of museum objects, insects also affect historic buildings. (Could NCR or ARO curators give us examples, Pam and Jeanie?) We could use examples of detrimental effects of insects on paper, ethnographic objects, etc. Examples using structures include damage from termites, wood borers, powderpost beetles and others specific to geographic areas.

10. Wind erosion. This is particularly prevalent in buildings located in coastal areas and in historic or prehistoric structures on open plains of the U.S. In coastal environments, the added impact of sand produces an effect like sandblasting on brick or other masonry structures and the pitting that occurs causes further deterioration because the building "envelope" is no longer weatherproof.
The physical impacts of wind-induced vibrations can also damage structures. Monitoring of walls at the Abo Unit of Salinas National Monument have demonstrated the detrimental effects of wind vibrations on historic structures.

11. Rodents, reptiles and birds. Whether they are nesting or burrowing in prehistoric ruins, gnawing their way through your natural or cultural collections, or defecating on that beautiful Corinthian column or decorative cornice, these pests can cause irreparable damage to NPS cultural resources. The spaces they create and deposits they leave behind are not desirable. In the Southwest, we have rattlesnakes, bats, and rabbits; in NCR they have bats, real rats, and rats with wings (for your information, Dr. Keith Yarborough, those are pigeons.)

III. Case Study. Time: 30 minutes

1. Select a case study from your Region that illustrates the impact of natural processes on cultural resources. One that is associated with a "controversial" management decision or outcome is desirable. It could be one that is as yet undecided.

2. Distribute example to class (without the outcome if it's a real one that's already been decided.) Point out that there may be no "right" or "wrong" solutions, although some may be better than others.

3. Divide class into groups; preferable no more than 6 people per group.

4. Give groups 15 minutes to decide what they will do in case study situation. Have each group select a chairperson.

5. Reconvene class and have each group spokesperson report to class what his/her group decided to do.

6. Pull it all together by telling what actually happened (if it's a real situation) or pointing out what made groups decide on the same solution --if they did--or what made them choose different management actions. Note: If your class is larger than 18 people, this will take longer than the half-hour allotted. Revise schedule accordingly or cut the time on your slide program.
SESSION PLAN

Session Title: Visitor Use Impacts ("Footprints on Time")

Session Length:

Prepared By: MAR

Objective:

At the end of this session, the student will:

1. Recognize ways in which visitor use can result in impacts.
2. Define impacts in terms of management objectives.
3. List ways in which visitor use impacts can be detected.
4. Describe ways to prevent/resolve impacts.

Handouts:

<table>
<thead>
<tr>
<th>Time</th>
<th>Method</th>
<th>Content</th>
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<tbody>
<tr>
<td>00:00</td>
<td>Participative</td>
<td>What type of visitor use in your park results in impact?</td>
</tr>
<tr>
<td></td>
<td>discussion</td>
<td>Point - All use results in some degree of impact</td>
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<tr>
<td></td>
<td></td>
<td>What is an impact?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Definition: Impacts depend on management objectives</td>
</tr>
<tr>
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<td></td>
<td>Organic Act: Conserve resources and provide for enjoyment in a way that does not impair.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1. What is enjoyment?</td>
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<tr>
<td></td>
<td></td>
<td>Points -</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a. Enjoyment does not equal use</td>
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<td></td>
<td></td>
<td>b. Enjoyment for one may reduce enjoyment for others</td>
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<td></td>
<td></td>
<td>c. Provide for enjoyment by future generations</td>
</tr>
<tr>
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<td></td>
<td>2. What is impairment?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(How do you determine what has been impaired?)</td>
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</tbody>
</table>
Carrying capacity

What are some situations where we deal with carrying capacity in our daily lives?

Physical carrying capacity
Examples:
  Elevators
  Theaters
  Parking lots

Social carrying capacity
Examples:
  Too many vs. too few (where person feels alone)
Point - Whether number of people is too many or causes conflict depends on type of use
Examples:
  Snowmobilers and cross-country skiers
  Fishermen and motor-boaters
  Hikers and horseback-riders

Ecological carrying capacity -
Number of people the resource can withstand
Note problems with this:
  What are the people doing?
  What time of year?
  What is spatial distribution of the people?
"Resource" is always changing
Examples:
  Campground sites
  What experience do you want to provide for visitors?

CARRYING CAPACITY is a simplistic term, and will usually result in misleading conclusions.

Limits of Acceptable Change (LAC)
Focuses on resource condition instead of numbers of people
Based on management objectives - Manager must identify the threshold where changes in the resource become unacceptable
Case study

Detecting Impacts

Present case study

What impacts do you expect would result from this activity?

What would you do to detect these impacts?

Systematic MONITORING for changes over time

Note that resources vary.

How could you determine whether a change was the result of the human activity?

Note - Some activities have unacceptable impacts at the lowest levels. These activities should be entirely prohibited.

Name some examples.

Consider CUMULATIVE IMPACTS

Difficult to measure tradeoff of one type of resource impact for another

Each impact whittles away at the resource

With every compromise, the resource loses ground

On the other hand, note the need for constituencies to support resource protection

Managing Impacts

Present case study

Identify the impacts that would be likely

Discuss ways to prevent the impact from occurring.
Possible alternatives:

- Eliminate use - Consistent with Organic Act?
- Limit use levels (simplistic)
- Modify use to allow it to continue but reduce its impact
- Types of use (e.g. hiking instead of horseback-riding)
- Spatial distribution
- Distribution over time (e.g. specifying time of year or time of day that has less impact)
- "Harden" resource so it can better withstand the use (e.g. build boardwalk, set up tent pads)

MONITOR to get feedback on whether the action is being effective in achieving objectives.

**Conclusion**

"In the present environmental crisis, man has a simple choice: Voluntary or involuntary austerity. If he doesn't curb his appetite, nature most certainly will."

--- Freeman Tilden
LESSON PLAN

Session Title: INTRODUCTION TO ARCHEOLOGY

Session Length: 50 - 90 minutes. Prepeared by: J. Daugherty

Objectives: At the end of this session participants will be able to:

(1) Define archeology,
(2) List 6 types of physical remains found at archeological sites;
(3) Describe the characteristics of archeological sites;
(4) Explain the NPS conservation ethic toward archeological resources;
(5) Explain the importance of leaving archeological sites undisturbed.

Handouts: Historical preservation legislation
Stratigraphy
Site plan
Bibliography

Time Method Content
10 min. Participative lecture -- Introduction
-- question participants.

A. What images does the word archeology bring to mind?
   -- contrast romantic notions of archeology with reality of the discipline that employs scientific methods,
   -- work is painstakingly slow, and often drudge work.

B. What is archeology?
   -- The study of the human past through surviving physical evidence of human activities.

C. Archeological sites - places which contain physical evidence of human activity. Archeologists focus on sites-study artifacts as they relate to time and space. They are unique and non-renewable.
I. National Park System

A. Parks and monuments set aside specifically to protect archeological resources:
   --Bering Land Bridge National Pres.
   --Mesa Verde N.P.
   --Mound City Group N.M.

B. Parks whose significant resources are archeological.
   --Fort Union NHS in North Dakota.
   --Bent's Old Fort NHS in Colorado.

C. Most units of park system contain archeological sites.

II. Kinds of physical evidence/artifacts.

A. Stone lithics
   --Projectile points (arrowheads)
   --Tools --awls, fleshers, grinders.

B. Ruins - remains of structures.

C. Pottery

D. Historic sites
   --ceramics
   --metals
   --glass

E. Organic materials
   --bone
   --pollen (fossils)
   --hides
   --baskets

F. Charcoal

G. Stratigraphy --
   Chronological processes responsible for layered deposits of soil. Older remains are deeper in soil.

III. Methodology - how do archeologists apply their skills to sites?

A. Surveys
   --Pedestrian - archeologists walk over specific area
   --Technology - ground penetrating radar, soil resistance, magnetometer.
Draw spectrum

B. Excavation -- test pits, trenches, intensive excavation.

C. Conservation ethic
   --Excavate threatened sites,
   --Protect as many as possible.

The great irony of archeology is that to gain knowledge, sites must be excavated - which destroys sites.

IV. Sites, artifacts, and excavation - what can we learn?

A. Dating sites
   --Projectile points, bottles which can be dated; this is called typology or seriation.
   --Charcoal; radiocarbon dating (C-14) can establish dates.
   --Obsidian hydration - measure water absorption of quarried obsidian.
   --Stratigraphy -- soil deposit layers establish chronology of specific sites.

B. Movement -- some stone lithics can be traced to quarry - giving clues to travel and trade patterns.

C. Organic matter.
   --Pollen, bone can enable archeologists to reconstruct environment.
   --Indicate subsistence of prehistoric peoples.

V. Threats to sites.
   (both natural and human generated)

A. Natural
   --erosion,
   --animal burrowing,
   --inundation

B. Human
   --cultivation,
   --collecting,
   --grading, filling, leveling
   --inundation.

Handout VI. Protection of Sites
A. Laws, regulations.

B. Why not collect from an ethical standpoint? (Read passage from book with page torn out)!

Archeological sites are like books, collecting, vandalism, or disturbing sites is like tearing pages out of book.

SUMMARY

-- Archeological resources are a major component of the National Park System.

-- Archeological sites -- place artifacts in context with time and space. They are unique and non-renewable.

-- Conservation ethic, protect as many as possible, excavate threatened sites.

-- Collecting artifacts is like tearing pages out of a book.
Stratigraphy

Stratigraphy is a chronological ordering of the events and processes responsible for the observed stratification or layering of deposited material. Although the law of superposition plays a central role in stratigraphic analysis, it accounts for cases of deposition only; other principles apply where removal of materials has occurred. In fact, a host of principles and a familiarity with local artifacts and formation processes are needed to practice stratigraphy. Stratigraphic analysis begins with profile drawings on which depositional units and the traces of other processes, such as erosion, are marked. Each unit is described as to sediment color and texture and the nature of clasts, if applicable. These are the basic data for chronological interpretation, the process of which is best shown by example, as follows: numbers indicate order of excavation.

The alluvial sediments in Unit 23, were laid down first by a moderately rapid flow of water. Next, Unit 22 was formed by a downcutting (eroding) stream or river. When stream flow became sluggish, silts and clays began to be deposited; these eventually filled in the channel, creating Unit 21. Units 18-20 were laid down next by the process of aeolian wind-blown deposition. Vegetation took hold on the top of Unit 18 and persisted long enough for soil development to take place. Unit 18 is the A-horizon. Unit 19, the B. On stratigraphic evidence alone, one cannot determine which came next, the storage pit (Unit 14), the pueblo walls (Unit 4), or the fire pit in the room (Unit 12). If one can infer that all were associated in one occupational episode, then the order is likely to have
Bibliography

Archaeology

Books and Articles

James Deetz, *In Small Things Forgotten*, Invitation to Archaeology
Ivor Noel Hume, *Historical Archaeology*, Artifacts of Colonial America, All the Best Rubbish
Phillip Barker, *The Techniques of Archaeological Excavation*
Jane McIntosh, *The Practical Archaeologist*
D. Orr & D. Crozier (eds.), *The Scope of Historical Archaeology: Essays in Honor of John Cotter*
David Macaulay, *Motel of the Mysteries*
Leland Ferguson (ed.), *The Importance of Material Things*
*CRM Bulletin* Special Issue on Archaeology and Anthropology, Vol. 6: No. 4 December, 1983.
*CRM Bulletin* Special Issue on Decorative and Fine Arts, Vol. 8: Nos. 3 & 4, June/August 1985.

Exhibits
Franklin Court, INDE, Archaeological Exhibit and "Ghost" house.
St. Mary's City, Maryland, Reconstructed structures and archaeological sites and dramatic programs
Jorvik, A Viking City Reborn, York, England
The Dig, Exhibit at the National Museum of Man, Ottawa, Canada.
Any ongoing dig at any park; properly interpreted

Films
The Loon's Necklace Encyclopedia Brittanica Film, 1950's.
Culloden BBC/TV.
The Inventory Maryland Center for Public Broadcasting.
*Historical Archeology* James Deetz et al., NOVA.
*Shoah* Claude Lanzman.
HISTORIC PRESERVATION LEGISLATION

Introduction

Brief summaries of major historic preservation legislation are presented in the following sections. In general, the most important aspects of these mandates are discussed. While some of the legislation is more critical than others from a cultural resource management perspective in the National Park Service, together they provide a fairly comprehensive and effective body of law. NPS policies and implementing procedures are not included in the summaries and only one set of federal regulations is discussed. In addition, several pieces of federal legislation which have significance for historic preservation are not included here, such as the Housing and Community Development Act of 1974 and the Coastal Zone Management Act of 1972. In other words, the following discussion is somewhat selective.

Antiquities Act of 1906

The Antiquities Act of 1906 was the first federal statute to mandate protection for cultural and paleontological resources located on federal lands. The backdrop to its passage was a period of growing concern over the deterioration of archeological resources, particularly in the American Southwest. The Act consists of three major components: 1) It was declared illegal to "appropriate, excavate, injure, or destroy any historic or prehistoric ruin or monument, or object of antiquity, situated on lands owned or controlled by the Government of the United States." Upon conviction, a fine of up to $500.00 and/or imprisonment up to 90 days was mandated. 2) The Act provided for the establishment of national monuments by presidential proclamation. The most recent exercise of this authority was the setting aside of Alaskan lands by President Carter in 1978 and 1979. 3) A permit system was established for the investigation of cultural resources on federal
lands for scientific or educational purposes. Gathered data was to receive permanent preservation in public repositories. Implementing rules and regulations for the Antiquities Act were also issued in 1906.

National Park Service Organic Act of 1916

The National Park Service Organic Act is historically important from a cultural resource management perspective because of the NPS mandate "to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

Historic Sites Act of 1935

The Historic Sites Act declared a national policy "to preserve for public use historic sites, buildings and objects of national significance for the inspiration and benefit of the people of the United States." The National Park Service was charged by the Act with a leadership role in federal historic preservation. The Act specified a number of duties and powers for the Secretary of the Interior through the National Park Service, among which are the collection and preservation of data on cultural resources of national significance, the conduct of research relating to cultural resources, the acquisition of property, etc. An Advisory Board on National Parks, Historic Sites, Buildings, and Monuments was established by the Act which was to include representatives competent in the fields of history, archeology, architecture and human geography. The Board's duties included advising and recommending policies to the Secretary of the Interior on matters relating to national parks and the administration of the Historic Sites Act.

Reservoir Salvage Act of 1960

The Reservoir Salvage Act of 1960 mandated the preservation of historical and archeological data that would otherwise be lost by
federal or federally-licensed dam construction and other alterations of the terrain associated with dam construction, such as building of access roads or erection of workmen's communities. The constructing agency was required to provide written notice of a proposed project to the Secretary of the Interior. If the proposed reservoir was to be relatively small (less than 5,000 acre-feet of detention capacity or 40 surface acres), written notice to the Secretary was required only if the constructing agency was to find or be presented with evidence of cultural resources (or possible cultural resources) in the proposed reservoir area. Archeological surveys were the responsibility of the Secretary of the Interior, who was empowered to contract for survey work. If cultural resources were identified during a survey, the Secretary was authorized to collect and preserve site data. Authorized funding sources for this "salvage archeology" included either private sources holding a license to conduct dam construction or the Department of the Interior itself. The Act was amended in 1974 by the Archeological and Historic Preservation Act.

National Historic Preservation Act of 1966

The National Historic Preservation Act is a significant piece of legislation for a number of reasons. It laid the foundations for a system of resource protection revolving around the National Register of Historic Places and provided a mechanism for the development of state historic preservation programs. Specifically, the Act authorized the Secretary of the Interior to expand and maintain "a national register of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, and culture, . . . referred to as the National Register." The Act provided for grants to States for preparation of comprehensive statewide historic preservation plans and for the implementation of historic surveys. The position of State Historic Preservation Officer (SHPO) was established in fulfillment of the Act. Matching grants to States for preservation of historic properties and matching grants to the National Trust for Historic
Preservation were also provided for. The Advisory Council on Historic Preservation was established by the Act. Among its duties are to advise the President and Congress on matters relating to historic preservation and to function in a review/recommendation capacity as mandated by Section 106 of the Act.

The purpose of Section 106 is to provide protection for properties listed on or eligible for the National Register through comment by the Council on federal actions affecting such properties. For any federal, federally-licensed or federally-assisted undertaking, the responsible agency must take into account the effect of the undertaking on any property included on the National Register (P.L. 94-422 extended coverage to properties eligible for inclusion). The Advisory Council must be afforded an opportunity to comment on the effects of the proposed undertaking. It is important to note, however, that following compliance with this section, the agency may adopt any course of action with regard to the undertaking that it may feel appropriate. The agency is not required by law to follow the Council's recommendations.

National Environmental Policy Act of 1969

The National Environmental Policy Act (NEPA) declared a national policy to "encourage productive and enjoyable harmony between man and his environment . . ." The continuing responsibility of the federal government to "preserve important historic, cultural, and natural aspects of our national heritage" was also recognized.

The Act requires all federal agencies to take potential environmental impacts into consideration during the planning process. "Consideration" is normally fulfilled through the generation of environmental impact statements. The Council on Environmental Quality (CEQ) was also established by NEPA which reports to the President on environmental matters and is responsible for EIS review.
Executive Order 11593 of 1971 "Protection and Enhancement of The Cultural Environment"

Executive Order 11593 begins with the usual type of policy statement: "The Federal Government shall provide leadership in preserving, restoring, and maintaining the historic and cultural environment of the Nation . . ." The most important sections of the Executive Order require all federal agencies to locate, inventory and nominate all properties under their jurisdiction that appear to qualify for listing on the National Register of Historic Places. They are to exercise caution until the inventories and evaluations are completed to assure that any federally-owned properties of National Register quality are not inadvertently transferred, sold, demolished or altered. In the event that a National Register property is to be altered or destroyed, appropriate data collection must be initiated.

36CFR800 "Procedures for the Protection of Historic and Cultural Properties"

These regulations were formulated by the Advisory Council on Historic Preservation to implement Section 106 of the National Historic Preservation Act of 1966, Executive Order 11593 of 1971 and the President's Memorandum on Environmental Quality and Water Resources Management of 1978. They also include a discussion of articulation with agency responsibilities under NEPA. As such, they provide integration for much of the federal historic preservation program. Final amendments to the regulations were published in the Federal Register in 1979.

In brief outline, 36CFR800 provides a set of review procedures for federal projects which may have an effect on National Register or National Register eligible properties. Agencies are first required to identify such properties in a proposed project area. The agency must consult with the appropriate State Historic Preservation Officer and provide the Council with information necessary to evaluate the potential impacts of an undertaking. The criteria of effect and, if necessary, adverse effect are
applied to the project (these criteria are included in 36CFR800). If it is determined that an effect or adverse effect will occur, a Memorandum of Agreement is prepared that outlines measures agreed upon by all parties to avoid, mitigate, or as a last resort, accept the effects or adverse effects of the project.

A Programmatic Memorandum of Agreement (PMA) between the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers was recently finalized. The PMA shifts the bulk of Council review and comment under Section 106 from the project stage to the planning stage. Following Council review of a planning document, actions taken pursuant to that plan and certified by regional preservation professionals may proceed without additional consultation.

Archeological and Historic Preservation Act of 1974 (also known as Moss-Bennett)

This Act provided for the following major amendments to the Reservoir Salvage Act of 1960: Coverage under the Act was extended to include any federal, federally-licensed or federally-assisted land modification project, not just dam construction. Either the Secretary of the Interior or the constructing agency can be responsible for the recovery, protection and preservation of cultural resource data to be impacted by the proposed project. For a project with an anticipated cost greater than $50,000, up to 1% of the total project funds can be allocated for cultural resource identification and data recovery. The Act also provided for compensation for delayed construction or the temporary loss of the use of nonfederally-owned land as a result of cultural resource investigations pursuant to the Act.

Archeological Resources Protection Act of 1979

For a number of reasons, it became clear over a period of years that the Antiquities Act of 1906 was no longer adequate to serve its intended purposes. Last year, the Archeological
Resources Protection Act was passed by Congress as a supplement to the Antiquities Act.

The Archeological Resources Protection Act begins with a background and purpose statement. A contemporary conservation ethic is espoused in describing the "accessible and irreplaceable" and "increasingly endangered" nature of archeological resources. One significant purpose of the Act is to foster improved cooperation and exchange of information between governmental authorities, the professional archeological community and private collectors.

One of the primary problems with the Antiquities Act was the failure to provide definitions for key phrases and terms. Explicit definitions are provided in the Archeological Resources Protection Act. However, the definition of an "archeological resource" under the Act as being at least 100 years old is somewhat unfortunate. This definition does not articulate with the 50-year specification for National Register eligibility. In addition, paleontological materials are not covered under the new Act as they were under the Antiquities Act.

A permit system for the investigation of archeological remains on public and Indian lands is provided for, as well as stiffer criminal and civil penalties for two categories of illegal activities with regard to archeological resources. As in the Antiquities Act, it is illegal to excavate, remove, damage or deface any archeological resource located on public or Indian lands. Significantly, it is also illegal to traffic in archeological resources removed from federal lands or removed in violation of State or local laws. A fine of up to $10,000 and/or imprisonment for up to one year is provided for. If the commercial or archeological value of the resource involved and the cost or restoration and repair exceeds $5,000, the penalty increases to up to $20,000 and/or up to two years imprisonment. For second and subsequent violations, it is $100,000 and/or five years. It is important to note that the removal of arrowheads from the surface of the ground is exempted.
A reward of up to $500 will be awarded for information leading to a civil finding or criminal conviction. Any archeological resources removed and any vehicles and equipment used in connection with a violation are subject to forfeiture. A provision for confidentiality about the nature and location of archeological resources is also included in the Act. As a "saving provision" to the Act, the "collection for private purposes of any rock, coin, bullet, or mineral which is not an archeological resource" is exempted from coverage by the Act.

Finalized rules and implementing regulations for the Act are being prepared by an inter-agency committee, and will be available for public review shortly.

American Indian Religious Freedom Act of 1978

The American Indian Religious Freedom Act declared it to be:

... the policy of the United States to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites.

Federal agencies have been directed by the Act to evaluate their policies and procedures in consultation with native traditional religious leaders to determine appropriate changes to implement the provisions of the Act.

State Historic Preservation

Most states have begun to develop state historic preservation programs, primarily as a result of federal legislation (National Historic Preservation Act of 1966) and implementing regulations. In simplistic outline, the State Historic Preservation Officer (SHPO) is the pivotal figure in the system. He oversees a professional staff and is responsible for developing a comprehensive statewide historic preservation plan, conducting historic surveys,
acquiring and preserving historic properties with matching federal grants, and providing an interface between federal and state programs. Most states have a State Archeologist who directs the archeological aspects of the state program. Many states have antiquities and other laws that are often modeled after federal legislation.

Organization, funding, etc. (both major and minor components of the program) vary from state to state, as do the degree of development and effectiveness of individual programs. Information on a particular state program can usually be obtained by writing to the State Historic Preservation Office or the Office of the State Archeologist.

Selected Readings


### LESSON PLAN

**Session Title:** Historic Preservation  
**Session Length:** Prepared by: Ellen K. Foppes

**Objective:**  
1. To define Historic Preservation  
2. List the components of Significance  
3. Identify appropriate preservation treatments

**Handouts:**  
1. Significance  
2. Cultural Resources Compliance Responsibilities  
3. Standards for Managing Historic and Prehistoric Structures  
4. Secretary of the Interior's Standards  
5. Standards Glossary  
6. Other guidelines, policies, etc.

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<tr>
<td>1. Introduction</td>
<td>(lecture) (film)</td>
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<tr>
<td>History of Historic Preservation Movement</td>
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<tr>
<td>Film - Williamsburg Restored (MTC-0109)</td>
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<tr>
<td>Definition in National Historic Preservation Act of 1966</td>
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<tr>
<td>NPS and Cultural Resources</td>
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| 2. Historic Structures | (lecture) |  |
| List of Classified Structures | |  |
| National Register of Historic Places | |  |
| Significance | (handout) |  |

| 3. Before you begin work! | |  |
| Basic to all: Identifying, Retaining, Preserving | Historic Characteristics |  |
| Secretary of the Interior's Standards | (handout) |  |
| Go over each Standard | |  |
| Section 106 (handout-Cultural Resources Compliance Responsibilities) | |  |
| Background | |  |
| XXX Form and Revie | |  |
| Additional standards and guidelines | |  |
| NFS 28 | |  |
| Additional documentation /research | |  |
4. Preservation Treatments (lecture) (video) (handouts)
   Rehabilitation
   Restoration
   Reconstruction

   Video - Restoration of Historic Fabric (MTC-0400)
   or
   Restoration of Fabric (MTC-0402)

5. Threats to Historic Structures
   Uniformed/insensitive management
   Lack of positions and money
   Lack of training
   Politics
   Mother Nature

6. Summary/Conclusion
1. Introduction
History of Preservation Movement
1850s to 1935 Historic Sites Act
Focus on "Associative Monuments"
Places associated with people, events and lifeways of
the past.
Educational, inspirational and patriotic.
1935 to Present
Recognize those areas that add beauty and sense of place
Environmental and aesthetic
National Historic Preservation Act of 1966
Defines historic preservation as:
"The protection, rehabilitation, restoration and
reconstruction of districts, sites, buildings,
structures, and objects significant in American
history, architecture, archeology, or culture."

More than half of NPS areas are historical or archeological
Approximately 55 other areas established primarily for their
natural or recreational significance possess cultural
resources.

Cultural Resources
"Those tangible and intangible aspects of cultural
systems, both living and dead, that are valued by or
representative of a given culture or that contain
information about a culture. Cultural resources are
finite and nonrenewable, and include but are not limited
to sites, structures, districts, objects, and historic
documents associated with or representative of peoples
cultures, and human activities and events, either in the
present or in the past."

2. This session will cover historic structures:
"A constructed work, either historic or prehistoric that
has been consciously created to serve some form of human
activity. It is usually immovable by nature or design.
Examples are buildings of various kinds, monuments, dams,
roads, railroad tracks, canals, millraces, bridges,
tunnels, locomotives, nautical vessels, stockades, forts,
and associated earthworks, Indian mounds, cemeteries,
ruins, fences, gardens, and monumental statuary."

List of Classified Structures (LCS)
Currently records approximately 16,000 diverse historic
and prehistoric structures
National Register of Historic Places
List of cultural resources of state, local as well as national significance
All properties are considered to be eligible to the National Register until determined otherwise.

Significance
"The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects of national, state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling and association, and

a. that are associated with events that have made a significant contribution to the broad patterns of our history; or

b. that are associated with the lives of persons significant in our past; or

c. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

d. that have yielded, or may be likely to yield, information important in prehistory or history."

Location
Design
Setting
Materials
Workmanship
Feeling
Association

Significance = Integrity + Research

"Integrity is authenticity of a property’s historic identity, evidenced by the survival of physical characteristics that existed during the property’s historic or prehistoric period. If a property retains the physical characteristics it possessed in the past than it has the capacity to convey association with the historical patterns or persons, architectural or engineer design and technology, or information about a culture or a people."

Integrity = "A sound, unimpaired, or perfect condition"
3. Before you begin work!
   Basic to the treatment of all historic structures is:
   Identifying
   Retaining
   Preserving
   the form and detailing of those architectural materials and
   features that are important in defining the historic
   character.

   After identifying those materials and features that are
   important and must be retained then:
   Protect and maintain
   Repair
   Replace in kind
   Only when the level of deterioration or damage to
   materials preclude repair.

Secretary of the Interior's Standards and Guidelines for
Archeology and Historic Preservation.

New draft of "Management Policies" says that all Service
programs affecting cultural resources are subject to these
Standards and Guidelines, and the regulations implementing
Section 110 of the National Historic Preservation Act use
the Secretary's Standards and Guidelines as performance
standards.

Section 106 of the National Historic Preservation Act
Background - 1950s-1960s
   America's built environment being demolished to make way
   for urban renewal
   Any federal or federally assisted undertaking shall, prior
   to undertaking, take into account the effect of the
   undertaking on any district, site, building, structure,
   or object that is included in or eligible for inclusion
   in the National Register.
   XXX Form and its review

Standards and guidelines exist for:
   Preservation and planning
   Identification
   Evaluation
   Registration
   Historical Documentation
   Architectural and Engineering Documentation
   Archeological Documentation
   Historic Preservation Projects
4. Preservation Treatments
   Preservation Maintenance
   Stabilization
   Housekeeping
   Routine
   Cyclic
   Rehabilitation
   Restoration
   Reconstruction
   
   Basic to all: Identifying Retaining Preserving = Preventative Maintenance
   
   Additional Documentation/research found in:
   Historic Structure Reports
   Historic Structure Preservation Guides
   Cultural Landscape Reports

5. Threats to Historic Structures
   Uninformed/Insensitive management
   Lack of positions and money
   Lack of training
   Politics
   Mother Nature

6. Summary/Conclusion
SIGNIFICANCE = __________ + __________
CULTURAL RESOURCES COMPLIANCE RESPONSIBILITIES

NOTE: As this release is being issued, new regulations of the Advisory Council on Historic Preservation are forthcoming that will necessitate revision of this chapter and the programmatic memorandums of agreement between the National Park Service and the Advisory Council. The revised chapter and PMOAs will be circulated as soon as they are prepared.

INTRODUCTION

Compliance is the network of activities designed to ensure that Service actions conform to law and the requirements that derive from law. For cultural resources, it pertains to those actions authorized under the National Historic Preservation Act of 1966 (amended 1980) (NHPA), the National Park Service "Management Policies," the National Environmental Policy Act of 1969 (NEPA) and, when endangered or threatened species are present, with the Endangered Species Act of 1973 as amended in 1978. NPS cultural resources compliance responsibilities should be integrated where appropriate with the instructions in NPS-12 relative to compliance with the procedural provisions of the National Environmental Policy Act. Cultural resource management actions in floodplain and coastal areas must also conform with the Floodplain Management Act and the states' coastal zone management plans. Because the National Historic Preservation Act Amendments of 1980 (PL 96-515) subsumed many actions required by Executive Order 11593, former executive order citations have been replaced with references to applicable sections in the amended National Historic Preservation Act.

The following details the steps necessary to conform to compliance requirements. All laws referred to in this section are described in Appendix B.

SECTION 106 COMPLIANCE IN ACCORDANCE WITH 36 CFR 800

Section 106 of the National Historic Preservation Act of 1966, as amended, states:

The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation established under title II of this Act a reasonable opportunity to comment with regard to such undertaking.
To assist Federal agencies in complying with Section 106 and also Executive Order 11593 (now Section 110), the Advisory Council on Historic Preservation published its regulations for the "Protection of Historic and Cultural Properties" in 36 CFR 800. The following serves as a guide to these regulations:

Responsibility of the Regional Director: For the purpose of the Advisory Council regulations, the Regional Director is the responsible "agency official." He insures adherence to policies and legal procedures in Service activities under his jurisdiction. Although staff work and consultations may be carried out by the regional cultural resource specialists, park superintendents, and the centers, they act only as agents of the Regional Director. Only the Regional Director may sign memorandums of agreement with the State Historic Preservation Officer and the Advisory Council. The Regional Director's responsibilities under Sections 106 and 110 may not normally be redelegated.

Applicability of Sections 106 and 110: These requirements prevail in every planning context, from the preparation of a General Management Plan to the smallest construction project. At the earliest possible stages of project planning, it must be determined (1) whether the project area has been surveyed in accordance with Section 110, (2) whether any properties listed or eligible for listing in the National Register are present in the general area of the proposed undertaking and, (3) if so, whether their National Register status will be affected by the undertaking. An impact area without listed or eligible properties requires no further procedural steps. The survey shall be documented in official files.

Identification of Properties Listed, Determined Eligible, or Potentially Eligible for the National Register: A cumulative publication of the National Register appeared in February 1979. Supplemental listings have appeared the first Tuesday of each month, with an annual compilation in February or March. Also listed are properties determined eligible for the Register. At the earliest stages of project planning, these publications should be consulted to determine whether any listed or eligible properties exist within the impact area.

It is also necessary to identify potentially eligible National Register properties within the area. Initially, the appropriate SHPO and the statewide inventory should be consulted. A prior survey or archeological field inventory may have identified such properties. In the absence of comprehensive prior surveys, direct examination of the area by cultural resource specialists may be required. The nature and scope of the examination is determined in consultation with the appropriate SHPO, and should be proportionate to the degree that such potential resources could be affected.

In all cases where the potential National Register eligibility of a property may be questioned, the appropriate SHPO must be consulted before taking action. If the SHPO agrees that the property does not meet the National Register criteria and a responsible third party raises no questions, the proposed action...
may proceed. Otherwise, a determination of eligibility shall be sought in accordance with 36 CFR 63. If the property is found eligible, the regulations of the Advisory Council on Historic Preservation (36 CFR 800) must be followed prior to any commitment to the proposed action.

**Determination of Effect:** The Advisory Council's criteria of effect (36 CFR 800.3) must be applied for a National Register or a National Register-eligible property within the impact area. The impact area, not the park boundary, is key in considering project effects since the goal is determining the activity's specific effect on cultural resources.

The Advisory Council's criteria of effect require the Service to take a broad view of effect and the associated range of causal actions. Effect follows not only from actions having a direct physical impact on cultural resources and taken to preserve, modify, or use them, but also from an undertaking near a cultural resource, inside or outside a park or National Register boundary, that may introduce "visual, audible, or atmospheric elements that are out of character with the property or alter its setting." It may also stem from an action wholly unrelated to cultural resource management, such as the construction of a new maintenance facility or sewer line. Even failure to act, whether deliberate or inadvertent, will produce an effect when it leads to "neglect of a property resulting in its deterioration or destruction." Indirect effects such as increased visitor use, vandalism, and wear also must be considered.

The National Register form should always be consulted to insure that all cultural resource values defined therein are considered in the determination of effect. The values described on the form are those used by the Advisory Council to determine what merits protection under its regulations. Application of the criteria will yield one of the following findings for a project: no effect, no adverse effect, or adverse effect.

**Finding of No Effect:** When cultural resource specialist(s) apply the criteria of effect to a National Register-qualified property, and find "no effect," the Regional Director must consult with and seek the concurrence of the SHPO (36 CFR 800.4(b)(1)). Prior to such concurrence (whether no effect, no adverse effect, or adverse effect), the XXX Form shall be prepared and executed as specified under the "Programmatic Memorandums of Agreement" in this guideline. A copy of the completed form along with copies of correspondence documenting compliance with Council procedures shall be forwarded to the Associate Director, Cultural Resources. If the SHPO concurs or fails to object within 30 days, a "no effect" undertaking may proceed. If the SHPO objects to a finding of "no effect," the Council must comment to the Regional Director within 15 days. If the Council finds an effect, the Regional Director shall determine if the effect is adverse. Documentation of "no effect" and evidence of consultation with the SHPO must be retained in the regional office files. For Denver Service Center planning efforts, this documentation shall also be retained in the "Record of Statutory Compliance" file.
Finding of No Adverse Effect: When Service cultural resource specialists find, on applying the criteria of effect to the qualities that qualify the property for the National Register, that an undertaking will affect a historic property but that the effect will not be adverse, the Regional Director must consult with the SHPO (36 CFR 800.4[c]). If the SHPO agrees, or if he or she disagrees but the Regional Director still believes that there will be "no adverse effect," the Regional Director must document the "no adverse effect" determination with evidence of the SHPO's views (or failure to comment in 30 days) to the Executive Director of the Advisory Council. Unless the Executive Director objects to the "no adverse effect" determination within 30 days, the undertaking may proceed without further consultation (36 CFR 800.4[c] and 800.6[a]).

Finding of Adverse Effect: An undertaking may be in the public's best interest and still affect the cultural resources adversely. Therefore, a determination of adverse effect is required under the Advisory Council regulations. The Service must cite mitigation efforts to minimize or reduce the adverse effects, usually as part of the undertaking. State-of-the-art attempts to recover data from archeological resources prior to a ground-disturbing project is an example of mitigation. Benefits to be derived from the undertaking are not mitigation. Actions which may minimize but not eliminate adverse effects do not justify a "no adverse effect" determination.

Quite often an undertaking will have an effect on a resource that is positive rather than negative. In these instances, a determination of "no adverse effect" is made, and the project may proceed following review and concurrence by the appropriate State Historic Preservation Officer and the Advisory Council. When cultural resource specialists find an adverse effect, the Regional Director must consult the SHPO and the Advisory Council in accordance with 36 CFR 800.4(d) and 800.6.

Whenever possible, an undertaking should be modified to avoid adverse effects. But "adverse effect" determinations are not to be avoided at all costs. When a desirable undertaking has an unavoidably adverse effect, the Service must identify and describe it to the Advisory Council. Under Section 106 responsibilities, the Advisory Council determines whether: (1) cultural resource values have been fully considered during project planning, (2) all feasible measures to eliminate or mitigate adverse effects have been incorporated in a proposed undertaking, and (3) where adverse effects are unavoidable, the overall public interest will be served by the undertaking and appropriate mitigation will be done. If the Service has satisfactorily addressed these points, an "adverse effect" determination will not forestall the undertaking.

When To Initiate Consultation: Informal consultations under Section 106 should be initiated as soon as the general scope of a proposal or alternative proposals are identified. Consultation must not be delayed until the proposal is unalterable, thus foreclosing the Council's opportunity to provide meaningful comment. It should never be delayed so long that a project may have to be deferred or cancelled on procedural grounds.
Grouping Compliance Actions: Related actions requiring compliance with Section 106 should be grouped to the extent possible. Regional directors can request the comments of the Advisory Council and the SHPOs on regional stabilization programs, historic structures maintenance programs, and the like over a period of years rather than seeking individual consultations on numerous similar projects. Individual parks are advised to obtain the most inclusive compliance possible with Section 106 during general management planning (see Programmatic Memorandums of Agreement in this guideline).

Assessment of Effect on Cultural Resources (XXX Form): The XXX Form assesses a project's effect on the cultural resources. It is the initial document required for any undertaking potentially affecting cultural resources.

The form may be prepared at the park, regional office, or center where the undertaking originates. It provides information on the affected historic property, the proposed undertaking, its effects on the historic property, and measures planned to avoid or mitigate adverse effects. It also provides information on approved planning documents and previous associated compliance actions. The cultural resource specialists in the appropriate regional office receive it first. With it, they determine necessary actions to assure compliance with Section 106 of the National Historic Preservation Act. A copy of the form is in Appendix D.

Review and Certification: The regional cultural resource specialists conduct independent reviews of the proposed undertaking, based on documentation from the originating official. In so doing, they exercise professional judgment as to whether:

- the documentation of effect is adequate;
- the proposed action is planned and will be conducted in accordance with all relevant management policies and standards;
- the proposal incorporates all feasible measures to minimize adverse effects to cultural resources; and
- the proposed action is within the scope of a programmatic memorandum of agreement (PMOA).

If the regional cultural resource specialists certify affirmatively to all four conditions, the proposed action satisfies 36 CFR 800 and the Regional Director authorizes it to proceed. If the concerned regional specialists certify affirmatively to the first three conditions but not to the fourth, the procedures for determination of effect and consultation in 36 CFR 800 must be completed before the action may proceed. In such a case, the XXX Form, a narrative summary, or case report must be attached to the letter(s) recording and transmitting the professional determination of effect. If the concerned regional specialists cannot certify affirmatively to each of the first three conditions, they shall consult with the originating official to modify the proposal and/or documentation.
STANDARDS FOR MANAGING HISTORIC AND PREHISTORIC STRUCTURES (INCLUDING RUINS)

We should always keep in mind the Service's philosophy "Better preserve than repair, better repair than restore, better restore than reconstruct." ("Management Policies," Ch. V, p. 15)

General Treatment and Use

*Every reasonable effort shall be made to provide an adaptive and compatible use for a historic structure that requires minimal alteration of the structure and its environment, or to use a historic structure for one or more of its historically intended purposes. Adaptive use of prehistoric structures is prohibited.*

*The use of each structure shall be regulated to minimize both immediate and long range damage to the structure, its environment, and its historic contents.*

*The distinguishing qualities or character of a structure and its environment shall not be destroyed. The removal or alteration of any significant material or distinctive architectural features should be avoided when possible.*

*All structures shall be recognized as products of their own time. Alterations that have no historical basis are prohibited.*

*Changes which have taken place in the course of time are evidence of the history and development of a structure and its environment. These changes may have acquired significance in their own right, and this significance should be recognized and respected.*

*Distinctive architectural features or examples of skilled craftsmanship which characterize a structure shall be treated with sensitivity.*

*Deteriorated architectural features shall be repaired rather than replaced, wherever possible. In the event replacement is necessary, the new material should match the material being replaced in composition, design, color, texture, and other visual qualities. Repair or replacement of missing architectural features shall be based on accurate duplications of features substantiated by archeological, historic, physical, or pictorial evidence rather than on conjectural designs or the availability of different architectural elements from other structures.*

*New or replacement fabric shall be identified, documented or permanently marked in an unobtrusive manner to distinguish it from original fabric. The manner of identification and location of marks shall be recorded in park files and the Historic Structure Preservation Guide (HSPG).*

*The surface cleaning of structures shall be undertaken with the gentlest means possible. Cleaning methods that will damage the structure materials or accelerate deterioration are prohibited.*
All treatment work that may affect surface or subsurface archeological resources shall be evaluated by an archeologist. Conversely, all proposed ground-disturbing activity, including archeological work near a structure, shall be evaluated by a historical architect to assess possible impacts on the structure.

When it is desirable to save examples of architectural elements removed from a structure, these elements shall be accessioned and cataloged into the National Catalog system, providing that they fall within the park's Scope of Collection Statement ("Management Policies," Ch. V, p. 11).

Planning, Programming, and Implementation

Appropriate structures shall be included in the List of Classified Structures (LCS) ("Management Policies," Ch. V, pp. 5-6).


An Historic Structure Report (HSR) shall be prepared whenever there is to be major intervention into a structure or where activities are programmed that affect the qualities and characteristics that make the structure significant for listing on the LCS containing information consistent with the level of the planned action.

Architectural and archeological investigations supporting an HSR shall have the least possible impact on the property studied. They shall be described in a task directive, which includes an impact analysis and justification. Such investigations of a property listed on or eligible for listing on the National Register are subject to compliance with Section 106 of the National Historic Preservation Act (amended 1980) prior to initiation.

Pending ultimate treatment, the structure, its environment, and all related physical evidence shall be maintained and protected.

A proposed treatment project on a structure shall be initiated by the appropriate programming document and must include scope of work and cost estimates from either the HSPG or the HSR. Such projects include preservation maintenance as well as ultimate treatment. No treatment shall be undertaken without an approved HSPG or HSR documenting the work or, in the case of emergency stabilization and preservation maintenance, approval by the Regional Director on recommendation of the regional cultural resource specialists.

All proposed projects shall be submitted for review using the Form XXX by the regional cultural resource specialists and other professionals (such as structural, civil, mechanical, and electrical engineers, soil scientists, and geotechnical specialists) before implementation.

All fabric-related projects shall be directed by a historical architect and performed by qualified technicians.
Preservation Maintenance

Structures shall be maintained by qualified technicians in accordance with an approved HSPG. If such guides are nonexistent or incomplete, an historical architect will provide technical supervision. As needed, the historical architect will consult with other appropriate specialists, such as archeologists, curators, and conservators. A preservation guide shall be prepared.

All elements of structures shall be inspected annually or, if appropriate, on a less frequent but on a predetermined schedule and reports of their condition prepared for necessary action.

All modification or replacement of fabric shall be preceded by recording and studying sufficient to protect inherent research and interpretive values, and ensure the accuracy of the new work.

All work must retain the maximum feasible amount of original fabric. When fabric has deteriorated beyond repair, replacement work must match related fabric, and must be identified or permanently marked in an inobtrusive manner to distinguish it from the original fabric.

Stabilization

Stabilization shall reestablish the structural stability of a structure through the reinforcement of loadbearing members or by arresting deterioration leading to structural failure. Stabilization shall also reestablish weather resistant conditions for a structure.

Stabilization shall be accomplished in such a manner that it detracts as little as possible from the structure's appearance and significance. When reinforcement is required to reestablish structural stability, such work shall be concealed wherever possible so as not to intrude upon or detract from the aesthetic and historical or archeological quality of the property, except where concealment would result in the alteration or destruction of historically or archeologically significant material or spaces. Accurate documentation of stabilization procedures shall be kept and made available for future needs.

Stabilization work that will result in ground disturbance shall be preceded by sufficient archeological investigation to determine whether significant subsurface features or artifacts will be affected. Recovery, curation, and documentation of archeological features and specimens shall be undertaken in accordance with appropriate professional methods and techniques.

Preservation

Preservation shall maintain the existing form, integrity, and materials of a structure. Substantial reconstruction, restoration of lost features, or removal of accretions are not included in a preservation undertaking.
Preservation includes techniques of arresting or retarding deterioration through a program of ongoing maintenance.

Use of destructive techniques such as archeological excavation shall be limited to providing sufficient information for preservation.

Rehabilitation

Rehabilitation is a treatment that improves the utility or function of a structure and often involves life safety and other code improvements. Rehabilitation does not apply to prehistoric structures, ruins, monuments, statuary, or buildings that serve as historic house museums. Its use should be limited to structures that are being adaptively used and that do not play a primary role in a park's interpretive program. In instances where preservation tax credits may be claimed, the Secretary of the Interior's "Standards for Rehabilitation" will be the minimum requirement.

Contemporary design for alterations and additions to historic structures shall not be discouraged when such alterations and additions do not destroy significant historic, architectural, or cultural material and such design is compatible with the size, scale, color, material, and character of the structure, neighborhood, or environment.

Whenever possible, new additions or alterations to historic structures shall be done in such a manner that if such additions or alterations were removed in the future, the essential form and integrity of the structure would be unimpaired.

Restoration

Restoration is a major intervention and may include the destruction of later period accretions having some cultural value in themselves. The criteria for "need of restoring for understanding" and "informat: to restore without conjecture" must be rigorously applied. There shall be no restorations of prehistoric ruins ("Management Policies," Ch. V, p. 16).

Restoration may take place only when essential for public understanding and appreciation of the park's historical or cultural associations, and when adequate interpretation cannot be imparted through other means.

Archeological, historical, and architectural data must be sufficient to permit accurate restoration with minimum conjecture.

Every restoration shall be preceded by a detailed HSR containing study and documentation of the structure. Changes made during restoration shall be carefully documented.

Fabric shall safeguarded during and after restoration.

Important structural and architectural features, samples of paint, mortar, plaster, and other elements of the structure removed during research and restoration and important to a technical understanding of the structure shall be properly accessioned and preserved.
Reinforcement required for structural stability or the installation of protective or code required mechanical systems (HVAC, electrical, security, fire protection, etc.) shall be concealed whenever possible so as not to intrude or detract from the property's aesthetic and cultural qualities, except where concealment would result in the alteration or destruction of culturally significant materials or spaces.

Restoration work such as the demolition of non-contributing additions that will result in ground or structural disturbance shall be preceded by sufficient archeological investigations to determine whether significant subsurface or structural features or artifacts will be affected. Recovery, curation, and documentation of archeological features and specimens shall be undertaken in accordance with appropriate professional methods and techniques.

Reconstruction

The Service does not endorse, support, or encourage the reconstruction of historic structures, and does not permit reconstruction or replication of prehistoric structures. In those limited circumstances when reconstruction will be considered, the following standards shall apply:

- All proposed reconstruction projects shall receive formal approval from the Director.
- Partial or full reconstruction of an historic structure shall be considered only when surface or subsurface remains will not be destroyed; the reconstructed structure must be full scale and on the original site.
- Reconstructions shall be undertaken only if such work is essential for public understanding and only if the subject structure is associated with a site's primary theme. In addition, all prudent and feasible alternatives to reconstruction must be considered; reconstruction also must be demonstrated to be the only alternative permitting appreciation of the historical or cultural association for which the park was established.

- Archeological, historical, and architectural data must be sufficient to permit accurate reproduction of both the mass and detail with a minimum of conjecture; archeological work must include sufficient field investigation followed by detailed analysis and report preparation.

- The reproduction of missing elements accomplished with new materials shall duplicate the composition, design, color, texture, and other visual qualities of the missing element. Reconstruction of missing architectural features shall be based upon accurate duplication of original features substantiated by physical or documentary evidence rather than upon conjectural designs or the availability of different architectural features from other structures.

- Reconstruction to simulate ruined structures is not permitted; neither is reconstruction of prehistoric structures.
Notes:

Underlined text is from the Secretary of the Interior's Standards for Historic Preservation Projects 48FR44737-44740

Text marked with an asterisk (*) is a paraphrase from Chapter V of the "Management Policies."
Secretary of the Interior's Standards and Guidelines for Historic Preservation Projects

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Standards for Managing Historic and Prehistoric Structures (Including Ruins) (NPS-28)

Historic and Prehistoric Structure, Landscape Technical Bibliography (NPS-28)

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CULTURAL RESOURCES MANAGEMENT GUIDELINE (NPS-28), AND TECHNICAL SUPPLEMENT, RELEASE NO. 3 HISTORIC STRUCTURE STATEMENTS

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Alternatives for Historic Structures; MG, Chapter 3, pages 25-26

Energy Conservation in Historic Structures and Structures Housing Collections; MG, Chapter 3, pages 27-28

Protection (Safety and Security) in Historic or Prehistoric Sites and Structures; MG, Chapter 3, pages 28-29

Designing for Accessibility for Disabled Persons in Historic Structures and Sites; MG, Chapter 3, pages 29-30

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Examples of Selective or Quality Ranking Factors for Cultural Resource Specialists; TS, Chapter 2, pages 4-6

Contracting for Historic Structure Treatment; TS, Chapter 5, pages 25-28

Preservation of Outdoor Sculpture: Statues, Monuments, Memorials, and Plaques; TS, Chapter 5, pages 29-31
From the "Cultural Resources Management Guideline, NPS-28," Release No. 3

STANDARDS GLOSSARY

Adaptive Use: the act or process of adapting a structure to a use other than original design, such as using a historic dwelling for offices.

Cultural Resource Specialist: a person trained in any one of the cultural resources fields, including anthropologists (cultural anthropologists, archeologists, and ethnohistorians) architectural historians, architectural conservators, archivists, curators, historians, historical architects, and object conservators.

Historical Architect: specialist in the science and art of architecture with specialized advanced training in the principles, theories, concepts, methods, and techniques of preserving prehistoric and historic structures. An historical architect has an understanding and skill to use pertinent aspects of original construction methods and materials combined with contemporary technology, engineering, and material science to preserve the structure's cultural and esthetic values and physical fabric.

Historic Fabric: material remains of a historic structure or object; whether original materials or materials incorporated in a subsequent historically significant period as opposed to materials utilized to maintain or restore the structure or object during a nonhistoric period.

Historic Structure: a constructed work, either historic or prehistoric, consciously created to serve some human activity. It is usually immovable by nature or design. Examples are buildings of various kinds, monuments, dams, roads, railroad tracks, canals, millraces, bridges, tunnels, locomotives, nautical vessels, stockades, forts and associated earthworks, Indian mounds, cemeteries, ruins, fences, gardens, and monumental statuary.

Integrity: the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic or prehistoric period.

Preservation: the act or process of applying measures to sustain the existing form, integrity and material of a structure, and the existing form and vegetative cover of a site. It may include initial stabilization work, where necessary, as well as ongoing maintenance. For application to museum objects see definition of object conservation.

Preservation Maintenance: the act or process of applying preservation treatment to a cultural resource. It includes housekeeping and routine and cyclic work scheduled to mitigate wear and deterioration without altering the appearance of the resource; repair or replacement-in-kind of broken or worn-out elements, parts, or surfaces so as to keep the existing appearance and function of a structure; work to moderate, prevent, or arrest erosion of archeological sites; emergency stabilization work necessary to protect damaged historic fabric from additional damage; and actions taken to prevent damage and to minimize deterioration of a museum object by preventive conservation or by performing a suitable treatment on an object itself.

Housekeeping: that portion of maintenance that removes undesirable or harmful deposits of soil in a manner that does the least amount of harm to the surface treated. Housekeeping is repeated at short time intervals so that soil removal can be done with the gentlest and least radical methods.

Routine Maintenance: that portion of maintenance that usually consists of service activities such as tightening, adjusting, oiling, etc.
cyclic maintenance: that portion of maintenance that is performed less frequently than annually and usually involves replacement, or at least mending of the fabric of a structure or object.

Stabilization: the act or process of applying measures designed to reestablish a weather resistant enclosure and the structural stability of an unsafe or deteriorated structure while maintaining the essential form as it exists at present.

Protection: the act or process of applying measures designed to affect the physical condition of a property by defending or guarding it from deterioration, loss or attack, or to cover or shield the property from danger or injury. In the case of structures, such treatment is generally of a temporary nature and anticipates future historic preservation treatment; in the case of archeological sites, the protective measure may be temporary or permanent. Protection in its broadest sense also includes long term efforts to defer or prevent vandalism, theft, arson, and other criminal acts against cultural resources.

Reconstruction: the act or process of reproducing by new construction the exact form and detail of a vanished structure, or any part thereof, as it appeared at a specific period of time.

Rehabilitation: the act or process of returning a structure to a state of utility through repair or alteration which makes possible an efficient contemporary use while preserving those portions or features of the structure which are significant to its historical, architectural, and cultural values.

Restoration: the act or process of accurately recovering the form and details of a structure and its setting as it appeared at a particular period of time by means of the removal of later work or by the replacement of missing earlier work.
LESSON PLAN

Session Title: INTERPRETING RESOURCES MANAGEMENT: THEN AND NOW

Session Length: 1-3 HOURS

Prepared by: Connie Rudd

Objective: At the end of this session, the trainees will be to:

1) compare and contrast at least three resources management issues in their park, from the time of park establishment to present.

2) be able to incorporate at least three resources management issues in current interpretive programs or...

3) create a new interpretive program based on changing resource issues, including policies and management practices.

Handouts: INTERPRETATION AND RESOURCES MANAGEMENT ISSUES

Content
This session would be appropriate for groups with large numbers of interpreters or as a special session presented at seasonal interpretive skills training or orientation.

This session should challenge interpreters to take a fresh look at resources management in home parks, with an eye toward changing attitudes and policies since the park was established.

Briefly introduce the small group exercise, and break the class into small groups, using the attached handout.

Allow as much time as you have scheduled (range of 1-3 hours, depending on the emphasis placed on this segment of training).

After the groups have huddled, call them back for a sharing session - of perhaps 45 minutes to one hour.
INTERPRETING RESOURCES MANAGEMENT ISSUES

GROUP EXERCISES

GROUP 1

1. Review the enabling legislation for your park. What were the primary resources listed as worthy of preservation at the time the park was established?

2. Have any additional major resources been identified since then? List.

3. Were Resources Management Specialists on the staff at the time of park establishment? If not, who was primarily responsible for resources decisions? Based on what principles?

4. What were the major resource issues at the time of establishment? What are they now? List at least 3. Why have they changed?

GROUP 2

1. Summarize what the ecological condition of your park was at the time it was established.

2. How has the ecology changed today? What have caused the changes?

3. What was the cultural landscape at the time of park establishment?

4. How has the cultural scene changed? Why?

GROUP 3

1. What were the major external threats to the park’s resources when it was established?

2. What are they today and why have they changed?

3. What were the major internal threats to the park’s resources when it was established?

4. What are they today and why have they changed?
GROUP 4

1. What was the visitation to your park when it was established? What is the annual visitation today?

2. What impact did visitors have on the resources then? Now?

3. What developed facilities were in place then? Now? Why have these changes in development occurred? What changes in management policy have influenced them?

4. What management plans were in place or developed early in your park's history to manage people? (i.e. backcountry river, recreational uses, etc.) What plans are in place now? What is responsible for these additional management practices?

GROUP 5

1. How has your park's policy changed since establishment regarding fire management? Why has it (or has NOT) changed?

2. Have the number of species (plant and animal) changed in number or location since establishment? Why?

3. Has plant or animal poaching changed? Why? Has theft at cultural sites changed? Why? How has interpretation addressed these issues - then and now?

4. Has the air quality and water quality changed since your park was established? In what ways?

TOTAL GROUP - EVERYONE ANSWER THESE

1. How many of your current interpretive programs tend toward "gee-whiz" information about park resources?

2. How many ways can you list to incorporate resource ISSUES in present interpretive programs?

3. Could you create a NEW interpretive program addressing contemporary resource issues in your park?
SESSION TITLE: Integrated Pest Management

GOALS:
To create an awareness of IPM issues among the park staff.

OBJECTIVES:
1. The learner will be able to list two areas where IPM could be used within his/her park.
2. The learner will be able to cite two resources available to them in the subject area of IPM.

Definition: Integrated Pest Management (IPM) is a decision making process.

CONTENT:  

The process of IPM has elements of all disciplines, divisions and includes laws, policy etc.

Examples of common pest problems and some problems which appear to a pesticide application problem.

Situations which demonstrate a need for improvement of IPM principles and pesticides in the use of pesticides.

Ecological Principles

IMP Process (10-21A etc.)

How to get involved.

ADDITIONAL RESOURCES:

COMMON

IPM handbook

County Extension agent/publication

ADDITIONAL RESOURCES:

COMMON

IPM handbook

County Extension agent/publication

METHOD:

Examples of laws, policy, and park documents.

Slides of common pest problems.

Group discussion of situations they have observed and use pesticides etc., chlorдан, turf management and rodent control etc.

Lecture

Lecture/group discussion

Group discussion

Computer demo of the Pest Module

Bring examples
Regional IPM coordinator

Integrated Pest Management for Park Management

IPM Practitioner

List of contacts

Bring example

Bring example
OUTLINE

DISCUSSION:
Ecological principles and a discussion of how IPM is often used to mitigate resource problems.

1. Even tiny amounts of chemicals can have devastating effects on other living things.

2. Some pest developing resistance - or even complete immunity to a pesticide.

3. The natural enemies of a pest are killed and the pest problem actually increases.

4. Human error in application can lead to excessive quantities of poison in the wrong places.

The process includes a logical approach to making decisions about managing the pest in the context of the total environment and emphasizing natural controls.

The key steps include the following:

1. Monitoring - collecting information on the target pest, its habitat, its impacts and the ecology of its natural enemies. This process is essential and provides a measure of success. The basic levels of monitoring include the following:
   - a. hearsay or information from other sources
   - b. casual looking
   - c. casual looking/written observation
   - d. written observation/quantitative description
   - e. statistically valid samples

2. Set injury level - identify the size of the pest population beyond which unacceptable impact will occur to resources or people. How much can be tolerated from an aesthetic/economic standpoint?
3. Treatment strategies - determine where and when the pest treatment is needed. Identify a strategy that 1. complements natural controls; 2. has the least impact on natural and human environment; 3. is relatively inexpensive and easy to apply; 4. and will most likely reduce the target pest population.

Examples of possible treatment options:

a. Design or redesign to design the pest out of the system.

**PROBLEM**
A Stable fly problem in a horse stable. Site examination disclosed that stable design included construction with individual boards with spaces between. The gaps permit manure to fall through and accumulate in areas inaccessible to cleaning.

**SOLUTION**
Switch to solid wall construction in stalls.

b. Habitat modification to change the environment which supports a large pest population.

**PROBLEM**
Mosquito problems adjacent to Interpretive program area.

**SOLUTION**
Find water sources and drain them.

c. Human behavior changes through modifying activities and/or education.

**PROBLEM**
A citizens group is pressuring the park to reduce herbicide use on turf weed problems.

**SOLUTION**
Intensify turf management practices and reduce moving height.

d. Controls using physical methods to destroy or exclude pests.

**PROBLEM**
Tent caterpillars to causing defoliation of trees adjacent to the Visitors Center.

**SOLUTION**
Remove caterpillars with a pole pruner or hand clippers.
c. Biological controls to maximize the impact of the pests natural enemies.

**PROBLEM**
Brown-banded cockroaches have invaded the museum area and are present in low numbers.

**SOLUTION**
Release large numbers of their parasitoids.

f. Chemical control has a place in IPM in carefully controlled conditions using the least toxic, most biodegradable materials first.

4. Program evaluation - effectiveness of all resource management programs must always be measured/monitored, and adjustments made when necessary.

5. Education and communication - the public, and park staff should be made aware of highly visible or controversial pest management activities. More important, they should be educated toward tolerance of non-harmful pests.

**HOW TO GET INVOLVED**

What situations should you look for? Each park has some pest control program in place. Will IPM work?

- Is pest a threat to human safety or a significant resource?
- Current control requires extensive long expenditures.
- The pest is not being effectively controlled.
- A new tactic appears promising.
- The envisioned program is politically/socially feasible.

You are the eyes and ears in Resources Management.
LESSON PLAN

Session Title: Cultural Landscapes

Session Length: 1 hour

Prepared By: Diane A. Jung

Objectives: At the end of this session, each participant will be able to:

--define, using his or her own words, the term "cultural landscape;"

--list at least three of the five types of cultural landscapes that are described in NPS-28;

--describe two issues that face managers of cultural landscapes.

Handouts: "Cultural Landscapes in the National Park Service"

Method: Participative Lecture followed by slides.

I. Definitions

A. cultural landscape - a geographic area, including both cultural and natural resources, including the wildlife or domestic animals therein, that has been influenced by or reflects human activity or was the background for an event or person significant in human history. There are five general kinds of cultural landscapes, not mutually exclusive:

1) historic scene - a micro-environment where a significant historic event occurred, frequently with associated structures or other tangible remains. In historic areas, such remains often are the most significant physical resource of the park. The cultural scene provides the context for understanding and interpreting the events, ideas, or persons associated with the park. The historic scene is always present in historic parks, although its integrity may be severely diminished because of intrusions such as nearby developments, inappropriate plantings, or lack of maintenance.

2) historic site - a site where an event or activity has imbued a particular piece of ground with significance warranting preservation of the historic appearance of the landscape, i.e., battlefields, landing sites, and historic routes.
3) **historic designed landscape** - a landscape where form, layout, and/or designer, rather than significant events or persons, are primary reasons for its preservation, although both may be relevant. With historic designed landscapes, as with historic structures, attention to detail is important, i.e., formal gardens and parks such as at Vanderbilt Mansion National Historic Site or Olmsted National Historic Site.

4) **historic vernacular landscape** - a landscape possessing a significant concentration, linkage, or continuity of natural and man-made components which are united by human use and past events or aesthetically by plan or physical development.

5) **ethnographic landscape** - a landscape characterized by use by contemporary peoples, including subsistence hunting and gathering, religious or sacred ceremonies, and traditional meetings. A difficult resource to manage because its significance derives from human interaction with or consumptive use of the natural environment. To effectively manage the area, the park manager must assure perpetuation of the resources, should afford contemporary groups or individuals the opportunity to continue their traditional uses, and must provide for the general park visitor.

(Note: Definitions above are taken directly from NPS-28, Cultural Resources Management Guideline (August, 1985) Glossary - Appendix A, page 3.)

B. List and define the terms described above for the class. Then, in order to clarify each term, ask the class a series of questions. Suggested questions are provided below.

1. Which of the five types of cultural landscapes are most apt to be managed to be "frozen in time?"

2. Although all cultural landscapes are characterized by human manipulation, aren't some manipulated in a much more self-conscious manner than others?

3. Cultural resource managers often emphasize the preservation of a "cultural continuum" when they discuss the appropriate management of cultural landscapes. In which type(s) of cultural landscapes is the preservation of cultural continuum most important?

4. Which type of cultural landscape is most likely to be documented by drawings, photographs, etc. in the historical record?
5. List some of the components that make up cultural landscapes.

6. What are some of the issues or problems that face managers of cultural landscapes in your park or region?

C. Review

After discussing the questions above or others that you have chosen, review the five types of cultural landscapes with the class and allow 5-10 minutes for questions. Point out that while historic site, historic scene, and (to some extent) designed landscapes have been consciously managed for some time, vernacular and ethnographic landscapes are relatively new to the NPS. Management of cultural landscapes requires interdisciplinary effort and often includes such specialists as landscape architects, ethnographers, and historical archeologists as well as historians, historical architects, and curators.

II. Slides

Select about 20 slides that illustrate the types of cultural landscapes in your region. As you show slides, discuss the components that comprise these landscapes and some of the management issues associated with them.
AFTERWORD

There are numerous articles and planning documents that treat the subject of cultural landscapes. An extensive bibliography is attached.

The following are highly recommended for instructors who want some exposure to the concept of cultural landscapes before they present a one-hour session on the subject.


Land Use Plan, Cultural Landscape Report: Boxley Valley, Buffalo National River, Arkansas. NPS report available through Denver Service Center or the Southwest Regional Office.

COURSE TITLE: Orientation to the Management of Park Resources

Session title: Air Quality/Acid Deposition and Water Resources

Session length (approx): 2 units, 1 hour each  Prepared by: Keith Yarborough

Objectives - (NOTE: These two sessions are combined by the common concept of the water cycle. See the attached schematic diagrams.) At the end of this season, participants will be able to:

1. Sketch the Water Cycle and name its ten main features.

2. List the two main sources of air pollutants and list three examples of each type.

3. Name the basic law(s) which require(s) NPS to protect:
   a. air resources/quality in parks;
   b. water resources/quality.

4. Define "Air Quality Related Values" (AQRV's) and give four examples found among the individual's park's resources.

5. Give the name(s) and phone number(s) of the:
   a. Regional air quality coordinator;
   b. Regional water resources contact person.

6. List the three main branches of the Air Quality Division.

7. List the three main categories of NPS activities for protecting park water resources and give at least one example of each found among the individual's park's resources.

8. What does NADP mean?

9. List the four main branches of the Water Quality Division.

Training aids: Selected slides or view graphs depicting air quality and water resources activities in any given region. Use slides from the Air Quality Division's "Care Set" (Dee Morse, FTS 327-2071 or 303-946-2071). Posters from the Air Quality and Water Resources Divisions (Mark Flora or Dan Kimball, 303-221-5341 or 303-946-2813)

Handouts: Schematic diagram of the water cycle. Copies of this lesson plan.
COURSE TITLE: Orientation to the Management of Park Resources

Session title: Air Quality/Acid Deposition and Water Resources

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<thead>
<tr>
<th>TIME</th>
<th>METHOD</th>
<th>CONTENT</th>
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<tr>
<td>5 minutes</td>
<td>Slides or view graphs</td>
<td>I. THE HYDROLOGIC (WATER) CYCLE</td>
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<td>This represents the Law of Conservation of Matter (here, water) on all scales, from very large (global), to continental and regional, to small (local). This cycle deals with both the atmosphere, which is the vehicle (i.e. &quot;working fluid&quot; or medium), and with the hydrosphere, which is the matter being transported in each of its possible (non-ionized) states:</td>
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<td>1. solid - sleet, snow, ice</td>
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<td>2. liquid - rain, fog, dew</td>
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<td>3. gaseous - water vapor</td>
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<td>The sun provides the source of primary energy input which &quot;drives&quot; the overall, global atmospheric circulations in the various climatic zones; thereby transporting the water in its various states. Of course, the circulating atmosphere can also carry other materials for very large distances: &quot;long-range transport.&quot;</td>
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<td>These other materials include:</td>
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<td>5 minutes</td>
<td>View graphs, slides, or flip charts</td>
<td>1. Air Pollutants/Acid Deposition:</td>
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<td></td>
<td></td>
<td>a. From natural sources of emissions:</td>
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<tr>
<td></td>
<td></td>
<td>* volcanos</td>
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<td>* blowing dust (especially in the Western and Southwestern U.S.)</td>
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<td>* terpenes from conifers</td>
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<td>* sea spray blowing inland (carrying sea salts which are condensation nuclei)</td>
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<td>* clouds</td>
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The hydrologic cycle.
The hydrologic cycle. Read diagram counterclockwise.
FIGURE 1: GENERAL CONTROL VOLUME FOR HYDROLOGIC CYCLE

CONTINUITY EQUATION:

\[ \sum_{\delta t} \frac{dV}{dt} = -\int_{C.V.} \overline{v} \cdot \mathbf{n} \, ds \]

Net volume changes in:
- a) Surface water
- b) Ground water
- c) Interception and Surface Detention water
- d) Evapo-transpirative water
- e) Precipitation water

(all within C.V. in time, \( \delta t \))

Net flow rates as:
- a) Surface water
- b) Ground water
- c) Interception and Surface Detention water
- d) Evapo-transpirative water
- e) Precipitation water

(\( \mathbf{n} \) through C.S. during time \( \delta t \))

Where, for each water form:
1) "Net volume change" = \( \frac{1}{\delta t} \) \([\text{Water volume in}] - [\text{Water volume in}]_{C.V. at t=0} \)
2) "Net flow rate" = Outflow rate + Inflow rate
3) All inflows are negative since \( \mathbf{n} \) is positive outward.
NOTE: All non-arrowed linking lines are two directional.

FIGURE 2: INTERRELATION BETWEEN MAN AND THE HYDROLOGIC CYCLE
b. From Human (anthropogenic) sources of emissions:
   * point sources—coherent plumes and layered hazes from power plants, smelters, cement plants, refineries, steel mills.
   * distributed sources—regional hazes, urban/industrial areas, autos, residences.

5 minutes Viewgraphs, slides, or flip charts
(c and d)

   c. Emission types from both natural and human resources:
      * gases - $\text{SO}_2$, $\text{NO}_2$
      * liquids - $\text{H}_2\text{SO}_4$, $\text{HNO}_3$ (acid) mists
      * solids - particulates

   d. Long-range transport and acid deposition:
      * dry = particulates containing ions, $\text{Na}^+$, $\text{Ca}^{++}$, $\text{Mg}^{++}$, $\text{Cl}^-$, $\text{NO}_3^-$, $\text{SO}_4^{2-}$, $\text{NH}_4^+$
      * wet = $\text{HNO}_3$, $\text{H}_2\text{SO}_4$, $\text{H}_2\text{CO}_3$ (acid fogs and mists)
      * gaseous = $\text{O}_3$, $\text{SO}_2$ ($\text{SO}_x$), $\text{NO}_x$ ($\text{NO}_2$), $\text{CO}$, $\text{CO}_2$

Examples: 1. The air pollutants from urbanized southern California, and New Mexico/Arizona smelters degrade visibility at the Grand Canyon. 2. The air pollutants from the Texas Gulf Coast and northeastern Mexico degrade visibility in Big Bend, Carlsbad Caverns, Guadalupe Mountains, and as far north as Grand Canyon, Zion, Bryce, and Canyonlands. 3. The tall stacks of the old (1950's era) power plants in the Ohio Valley, burning high sulfur coal, cause acid deposition in the northeastern U.S. and in Canada.

10 minutes Viewgraphs, slides, or flip charts

2. Adverse Impacts on Receptors of Deposition:

   a. Air Quality Related Values (AQRV's) - all park resources which can be affected adversely by any air pollutant, including visibility.

   b. Sensitive Receptors - those park resources which are most easily damaged by air pollutants and atmospheric deposition:
plants - milkweed and lichens in the eastern U.S.; still being identified in the western U.S.; aquatic vegetation
animals - salamanders, fishes, frogs
water resources - surface water quality, percolation into ground water
geology - porous limestones, both natural and in buildings.

Sensitive receptors can be used to identify and measure adverse impacts caused by deposition. These can serve as "early warning" alerts.

c. Visibility - is degraded by atmospheric pollutants, especially sulfates and especially all small particles in the size range of 0.1 to 2.5 micrometers in diameter. This degradation is global in extent. It is more severe in the eastern and midwestern U.S. However, the "cleaner" air of the western and southwestern U.S. is more susceptible to visibility degradation than the "dirtier" air of the east. The addition of a very small concentration of pollutant (two micrograms of sulfates per cubic meter of air) will drastically reduce visibility (a visual range decrease from 200 miles to 110 miles will result). Therefore, visibility is the earliest warning resource and its degradation is the harbinger of other, slower acting, but more severe impacts on AQRV's. Research shows that, in general, visibility is more degraded during the summer than during the winter, in all parts of the U.S.

d. Water Resources - surface waters receive both wet and dry acid deposition via precipitation and direct fallout, respectively. This deposition alters the quality of surface waters by lowering pH and by increasing certain tonic and organic constituents. This in turn alters the aquatic biota of lakes and streams (witness the extirpation of life in lakes and in streams in northeastern U.S. and Canada). Also, ground water resources can be degraded in quality by infiltrating surface waters bearing acid deposition constituents.
II. AIR QUALITY/ACID DEPOSITION

1. What are the responsibilities of NPS, as mandated by Congress in the 1916 Organic Act, and in the subsequent amendments of 1970 and 1978 and in the Air Quality Act, especially as amended in 1977? (reference: see attachment #4 from Molly Ross).

° Class I National Parks and wilderness areas - the Federal Land Manager has an "affirmative responsibility" to protect AQRV's, including visibility, in these areas. Class I is the most protective status, permitting only the smallest increases in SO2 and particulates above baseline levels for each. Other "criteria pollutants" (NOX, O3, CO) to be added by EPA.

° Class II parks, monuments and all other NPS areas are given a protective status permitting somewhat greater increases in SO2 and particulates above baseline levels for each. The rest of the U.S. is class II, as well. The Organic Act, especially the "Redwoods" amendment providing for no derogation of park values, applies to Class II areas.

° Class III areas, none of which have as yet been created in the U.S., are the most permissive in terms of air quality degradation.

2. What NPS must do to protect air resources in parks?

° Class I - protect AQRV's and attain the National Visibility Goal to redress existing and to prevent any future degradation of visibility.

° Class II - protect all resources (AQRV's) which may be degraded by all air pollutants. Certain NPS areas over 10,000 acres in size cannot be redesignated by the states, which have this authority and responsibility, to other than Class I status. NPS should seek redesignation of its parks to Class I at every opportunity.

° The visibility protection for Class I areas, the references in the enabling legislation of some parks to "scenic vistas," "scenery," panoramic vistas,"
etc., the reference to conserving "scenery" in the Organic Act and the "Redwoods" amendment of 1978 all have given rise to the "integral vistas" issue. These are vistas of scenes lying outside a park, but which are important to the visitors' experience when viewed from inside the park. Secretary Hodel has decided that NFS need not enunciate a general policy on integral vistas nor transmit this information to EPA and the respective states within which Class I parks are located. However, he has affirmed that such vistas must be protected on a park-by-park basis. Also, NPS has reported to the states all cases of visibility impairment in Class I areas.

Class III - the least protective category. No such area has been redesignated by any state, as yet. Keep close watch for any such attempt.

Develop a research and long-term monitoring program to protect park AQRV's:
(i) Visibility protection - by a network of monitoring stations (especially in the Intermountain West and Southwest), and by computerized modeling of long-range transport of air pollutants to identify their source locations. The network approach gives the greatest coverage with the lowest number of stations, for maximum cost-effectiveness use of funding available.

(ii) Evaluate deposition (wet and dry) impacts on park resources, especially sensitive AQRV's:
--measure deposition kinds (i.e., chemistry), amounts, and concentrations; particulates in precipitation and dry fallout (by National Atmospheric Deposition Program (NAPD) sites; National Trend Network (NTN) sites; and NPS stations).
--measure precipitation pH (i.e., acidity).
--measure adverse changes in sensitive plants/animals, which react to the least amounts of pollutants. Document these "bio-effects" as "early warnings" of future devastation.
(iii) Develop/operate an "early warning" system of information transfer from parks, to regions, to WASO about external pollutant sources presently in operation or newly proposed.

(iv) Interact with EPA and State Air Quality Bureaus for the Prevention of Significant Deterioration (PSD) of air quality through the States' Implementation Plans (SIP's). Provide recommendations for relocating proposed facilities, for emission controls on them having the Best Available Control Technology (BACT), for retrofitting existing sources with the Best Available Retrofit Technology (BART), for dealing with pollutants other than just SO₂ and particulates, including NOₓ/NO₂, toxic emissions, volatile organic carbons (VOC's), ozone (O₃). Work with states to redesignate Class II areas to Class I status.

3. What NPS is doing to protect air resources' quality in the parks?

a. The Air Quality Division (AQD), with a technical team in Denver (AIR/DEN, call FTS 327-2070 or 303-946-2070) and a small budget/policy group in WASO. (Call FTS 343-4911 or 202-343-4911 for Dr. Molly Ross. Reference: see attachment #5 from Dr. Ross.) There are five main parts:

1. Research Branch (contact Dr. Mark Scruggs, Chief)

   - Visibility network for monitoring: Project VIEW (Visibility Investigative Experiment in the West), SCENES, IMPROVE sites, trend sites.
   - Bio-effects: impact studies of sensitive park receptor resources.
   - Modeling: source identification = point sources producing plumes and plume blight or regional haze emanating from widespread (urban, etc.) sources.

2. Policy, Planning and Implementation Branch (contact Dr. Chris Shaver, Chief)

   - Legislation - further amending the Clean Air Act.
   - Federal regulation development.
State and National Air Quality Standards, National Ambient Air Quality Standards (NAAQS's), PSD increments for Class I, II and III areas, criteria pollutants (SO\textsubscript{2}/SO\textsubscript{X} particulates, NO\textsubscript{X}/NO\textsubscript{2}, O\textsubscript{3}, and photochemical oxidants, CO, hydrocarbons and VOC's).

State interactions on their SIP's.

Interpretation: free materials and training programs (contact Dee Morse, AIR/DEN phones as above).

3. Permit Review and Technical Support Branch (contact Miquel Flores, Chief).

- New source permit reviews for PSD compliance.
- Monitoring criteria pollutants; gases, particulates and meteorological data.
- Technical assistance for source analyses, modeling, and BACT/BART.

4. Regional Air Quality Coordinators (AQC's):

- Liaison with parks and AQD.
- Distribution of funding from AQD for research/monitoring work.
- Participation in research/monitoring work of AIR/Denver.
- Work on special task forces with AQD.

5. The Parks (the backbone of the entire program):

- Conduct long-term monitoring, day-to-day.
- Participate in research efforts.
- Notify appropriate Regional AQC of observed external threats to air resources, or contact AIR/Denver, directly, about these.

b. Focus on six basic questions (see pp. 2-3 of Dr. Ross' lesson plan):

Steps for Air Resources/Quality Management:

- Which resources, if any, are known to be, or potentially may be affected by air pollution?
- What are the current and/or projected levels of the pollutant in the ambient air?
Are the measured or projected pollutant levels high enough to cause adverse effects on AQRV's?
How will the pollutant affect the significant protected resources, the ecosystem, or visitor enjoyment?
What is/are the source(s) of the pollutant?
What can be done to control/mitigate the pollutants' emissions and effects?

- Operate monitoring sites in the NADP/NTN programs for acid deposition quantification.
- Include air quality/acid deposition considerations for resources protection in park planning documents, especially Resources Management Plans (RMP's).

4. What all park personnel must do:

a. Know the name, phone number and mailing address of your Regional Air Quality Coordinator.

b. Establish an "early warning" network to alert Regional AQC's and AIR/Denver staff of proposed new major sources, or of alternations/additions to existing sources around each park, and of possible existing or potential damage to AQRV's in your park.

c. Interpreters - contact Dee Morse, AIR/Denver for free slides, photos, roadside exhibits, and other materials.

d. Contact AIR/Denver via Regional AQC's to obtain assistance on PSD permitting, air quality/AQRV monitoring and interpretation.
I. LEGISLATIVE BACKGROUND

   - SECTION 101: GOALS ("FISHABLE/SWIMMABLE") for all US streams
   - SECTION 201: MUNICIPAL SEWAGE TREATMENT PLANT FUNDING
   - SECTION 208: AREAWIDE WATER QUALITY MANAGEMENT PLANNING
   - SECTION 301 & 306: EFFLUENT LIMITATIONS
   - SECTION 303: WATER QUALITY STANDARDS
   - SECTION 304: EPA WATER QUALITY CRITERIA GUIDANCE
   - SECTION 402: NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
   - SECTION 404: DREDGE & FILL PERMITS

B. SAFE DRINKING WATER ACT (1974: PL 93-523)
   - SECTION 1412: NATIONAL DRINKING WATER REGULATIONS
   - PART C: PROTECTION OF UNDERGROUND SOURCES OF DRINKING WATER
   - SECTION 1424: UNDERGROUND INJECTION CONTROL PROGRAM

C. RESOURCE CONSERVATION & RECOVERY ACT (RCRA)
   - 1984 AMENDMENTS, PL 98-616: LEAKING UNDERGROUND STORAGE TANK PROGRAM (TITLE VI)
D. OTHER ACTS

- WILD & SCENIC RIVERS ACT
- COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT (CERCLA OR "SUPERFUND")
  - NATURAL RESOURCE CLAIMS
- TOXIC SUBSTANCES CONTROL ACT
- FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT
- SURFACE MINING CONTROL & RECLAMATION ACT
- NUCLEAR WASTE POLICY ACT
- COASTAL ZONE MANAGEMENT ACT
- OUTER CONTINENTAL SHELF LANDS ACT
- NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

D. OTHER PROGRAMS

- EPA GROUND-WATER PROTECTION STRATEGY (PARK SCIENCE, SPRING 1985)
  - NO SPECIFIC FEDERAL GROUND-WATER PROTECTION AUTHORITY - EXCEPT UNDER CWA
  - BOUNDARY WATERS TREATIES (CANADA/MEXICO)

E. UPCOMING LEGISLATION (REAUTHORIZATIONS)

- CLEAN WATER ACT
- SAFE DRINKING WATER ACT
II*. IMPLEMENTATION

A. CLEAN WATER ACT

1. AREAWIDE WATER QUALITY MANAGEMENT PLANNING
   - 208 PLANS

2. WATER QUALITY CRITERIA & STANDARD SETTING
   - STATE-BY-STATE BASIS UNDER EPA GUIDELINES
   - CRITERIA FOR TOXIC POLLUTANTS
   - MANDATORY REVIEW AT LEAST EVERY 3 YEARS OF STATE STANDARDS
   - EPA RULES 40 CFR 35, 120, 131

3. STREAM CLASSIFICATION (USE DESIGNATION)
   - STATE LEAD
   - UPGRADE/DOWNGRADING
     - USE ATTAINABILITY ASSESSMENT
     - PROTECTION OF DOWNSTREAM STANDARDS
   - OUTSTANDING NATIONAL RESOURCE WATERS
     - PROTECTION OF HIGHEST QUALITY WATERS AND WATERS OF "ECOLOGICAL SIGNIFICANCE"
     - PETITION PROCESS
   - ANTIDEGRADATION POLICY
   - MANDATORY REVIEW AT LEAST EVERY 3 YEARS OF DESIGNATED USES
4. NPDES PERMITTING (STATE/EPA - POINT SOURCE FOCUS IN IMPLEMENTATION OF CWA)

- STATE V. EPA PRIMACY (37 STATES HAVE NPDES PERMITTING AUTHORITY)

- EFFLUENT LIMITATION GUIDELINES FOR SPECIFIC POINT-SOURCE CATEGORY (IF NOT AVAILABLE, "BEST PROFESSIONAL JUDGEMENT", E.G., PLACER MINING)

- TECHNOLOGY-BASED (BPT/BAT) V. WATER QUALITY-BASED PERMITS

- SPECIFIC V. GENERAL PERMITS (E.G., OCS OPERATIONS)

- 180-DAY APPLICATION PERIOD

- PERMIT: 5-YEAR TERM/MONITORING/REPORTING

- TOXICS?

5. DREDGE & FILL PERMITTING

- CORPS OF ENGINEERS/EPA

B. SDWA

- FEDERAL DRINKING WATER STANDARDS (TOXICS?)

- UNDERGROUND INJECTION CONTROL PROGRAM (STATE PRIMACY)

C. RCRA - LEAKING UNDERGROUND STORAGE TANK PROGRAM

- INVENTORY BY NPS MAINTENANCE

D. EPA GROUND-WATER PROTECTION STRATEGY

- ESTABLISHMENT OF EPA OFFICE OF GROUND-WATER PROTECTION

- GRANTS TO STATES TO IMPLEMENT STRATEGY (E.G., DEVELOP GROUND-WATER CLASSIFICATION & DATA MANAGEMENT SYSTEMS AND CONTROL PROGRAMS)

- EPA GROUND-WATER CLASSIFICATION GUIDELINES (I,II,III)
10 minutes Hand out attached 4 sheets, use viewgraphs

WATER RESOURCES

1. What are NPS's responsibilities, as mandated by Congress in the 1916 Organic Act, as amended, and other acts specific to water resources (see handout by Dr. Ray Herrmann)?

20 minutes Viewgraphs, flip charts

2. What must NPS do to protect water resources in parks?

a. Water quality parameters (see handout from Dr. Ray Herrmann on EPA's Water Quality Criteria and on "Collecting Water Samples") to monitor:

1. Surface waters - physical, chemical, biological (macro, micro).

2. Ground waters - physical, chemical, biological (macro, micro).

3. Aesthetics and impacts on park biota: plants and animals. Instream flows - minimum stream flows necessary to maintain aquatic biota communities, especially rare, threatened and endangered species of plants and animals.

4. Water pollution sources which can contaminate both surface and ground water resources:
   - Point sources - discrete emissions (e.g., sewage outfall pipes);
   - Non-point sources - from widely distributed pollutants on the land surface (e.g., acid deposition, agricultural fertilizers and biocide applications).

b. Water quantities (flows/discharges) to measure:

1. Surface waters: fresh water lakes and streams, oceans; watersheds established by topographic divides on land's surface.

2. Ground waters: perched water lenses above the general water table; the main zone of saturation in the water table; both "fresh" water and highly mineralized "brackish" water; phreatic divides below

10
earth's surface, determined by geologic strata, establish directions of ground water flows/movements.

3. Spatial and temporal variability and uncertainties of precipitation; local, regional, national: droughts, floods, as influenced by global climate zones, zonal atmospheric circulations and jet streams. These general weather patterns in the hydrologic (water) cycle shape all inputs of water onto the lands and surface waters.

4. Land-shaping (geomorphological) processes: water and wind erosion, frost heaving, seismic impacts, sediment transport by wind and water.

5. Water uses from both surface and ground sources.

- Water supplies for human consumption (municipal and industrial demands).
- Sustenance of the terrestrial biota - plant and animal communities, instream flows for aquatic biota.
- Irrigation.
- Hydro-electric power generation.
- Flood control.
- Recreation (i.e., boating, swimming, fishing).

c. Water rights to quantify and to secure:

1. Riparian Doctrine - applicable primarily in the eastern U.S. Each state varies, so parks must know the specific laws. Surface and ground water provisions may vary.

2. Western Doctrine - based upon concept of "first in time, first in right" for water use. This is an heirarchy of prior appropriation dates of water diversion from a given source, for an heirarchy of beneficial uses. Surface and ground water are handled differently in each state. Parks must know their State's specific laws. This doctrine is in a transition due to recent court decisions concerning
instream flows and wilderness area needs for waters of adequate quality and quantity. Many western states do not recognize such needs as "beneficial" uses of water. Instead, irrigated agriculture, hydro-electric power generation, human and industrial water supply uses are deemed to be most important. Some states do not recognize recreational uses of water as beneficial, either. Consult the Water Rights Branch of WRD in Ft. Collins for specific, detailed information and assistance on a park-by-park basis.

3. What NPS is doing to protect water resources in parks:

a. Water Resources Division (WRD), with technical experts in Denver and Ft. Collins, Colorado, and policy/planning/funding liaison in WASO (contact Dan Kimball in Denver at FTS 327-2813 or 303-946-2813; or 303-221-5341, Ft. Collins).

(1) Water Rights Branch (Dr. Stan Ponce, Chief, 303-221-5341): dealing with specific park issues and Servicewide issues in both surface and groundwater.

(2) Applied Research Branch (Dr. Ray Herrmann, 303-491-7573): long-term acid deposition impact research, toxic/hazardous materials impacts on biota, water quality monitoring, modeling/simulation, data processing.

(3) Water Services Branch (Mr. Wm. Werrell, 303-221-5341): development of park Water Resources Management Plans (WRMP's), water supply developments, water flow quantification, surface and ground water research, technical assistance and advise, data depository, data processing.

(4) Regulations, Policy and Planning Branch (Mr. Dan Kimball, FTS 327-2813 or 303-946-2813): analyzes external threats to park water resources and interacts with other agencies through hearings, litigation, etc, provides interpretive materials.
(5) Regional Water Resources contacts: provide liaison for parks with WRD branches for project needs, funding, technical assistance and advice, WRMP preparation, etc.

b. Park WRMP's to delineate all aspects of water resource status and needs.

c. Acid deposition monitoring through NADP/NTN sites in selected parks. Research of impacts on cultural materials (building stone, etc.).

4. What all park personnel must do:

a. Know the name, phone number, and mailing address of the Regional contact person.

b. Look for possible contamination sources of park surface and ground waters—both of internal and of external origin. Establish an "early warning" system through the regional contact person, to report threats and impacts.

c. Relay needs and problems to protect park water resources to WRD via Regional contact to obtain assistance for water supply, water rights, water quality, interpretation needs.

d. Include water resources (quality, quantity, rights) needs/issues for resources protection in park planning documents; especially RMP's.
Session Title: INTRODUCTION TO ARCHEOLOGY

Session Length: 50 - 90 minutes. Prepared by: J. Daugherty

Objectives: At the end of this session participants will be able to:

1. Define archeology,
2. List 6 types of physical remains found at archeological sites;
3. Describe the characteristics of archeological sites;
4. Explain the NPS conservation ethic toward archeological resources;
5. Explain the importance of leaving archeological sites undisturbed.

Handouts: Historic preservation legislation
Stratigraphy
Site plan
Bibliography

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<tr>
<th>Time</th>
<th>Method</th>
<th>Content</th>
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<td>10 min.</td>
<td>Participative lecture -- question participants.</td>
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A. What images does the word archeology bring to mind?
-- contrast romantic notions of archeology with reality of the discipline that employs scientific methods,
-- work is painstakingly slow, and often drudge work.

B. What is archeology?
-- The study of the human past through surviving physical evidence of human activities.

C. Archeological sites - places which contain physical evidence of human activity. These include both historic (dating to a period of recorded history) and prehistoric (dating to a period before recorded history) sites. Archeologists focus on sites-study artifacts as they relate to time and
space. They are unique and non-renewable.

5-10 min. Ask class for examples

I. National Park System
   A. Parks and monuments set aside specifically to protect archeological resources;
      --Bering Land Bridge National Pres.
      --Mesa Verde N.P.
      --Mound City Group N.M.
   
   B. Parks whose significant resources are archeological.
      --Fort Union NHS in North Dakota
      --Bent's Old Fort NHS in Colorado
   
   C. Most units of park system contain archeological sites.

10 min. List on chart or blackboard

II. Kinds of physical evidence/artifacts.
   
   A. Stone (also known as lithic material)
      --projectile points (arrowheads)
      --tools--awls, fleshers, grinding stones
   
   B. Pottery (also known as ceramic material)
      --vessels/containers
      --pipe stems
      --bricks
      --tiles
   
   C. Metal and glass objects (generally found on historic sites)
      --bottles
      --nails
      --jewelry
   
   D. Organic material
      --animal bone
      --human bone
      --botanical remains (burned seeds, nuts, and other plant fragments)
      --pollen
      --animal skins (hides)
      --basketry
   
   E. Charcoal--burned wood
   
   F. Architecture--remains of structures
      --walls (stone, adobe, fired brick)
      --privies
      --wells, irrigation ditches
G. Features
--stone hearths
--burials
--trash pits

III. Methodology - how do archeologists apply their skills to sites?

A. Surveys
--Pedestrian - archeologists walk over specific area
--Remote Sensing Technology
  -ground penetrating radar, aerial and satellite photography: used to identify material on the surface of the ground from the air
  -soil resistivity and magnetometer: used to identify material below the surface of the ground without excavating

B. Excavation -- test pits, trenches, intensive excavation

C. Conservation ethic
--excavate threatened sites
--protect as many as possible

The great irony of archeology is that to gain knowledge, sites must be excavated - which destroys sites.

IV. Sites, artifacts, and excavation - what can we learn?

A. Dates of sites
--cross-dating--uses artifact types whose dates are known from other sites or contexts.
--radiocarbon dating (C-14)--dates organic material, like wood charcoal and bone.
--obsidian hydration--dates obsidian artifacts by measuring the absorption of water on the surface of the object.
--stratigraphy--uses the stratigraphic context of archeological material to determine its age. For example, stone tools that are located in lower deposits are presumed to be older than those in upper deposits.

B. Trade and exchange patterns
Lithic material can be traced to its source, e.g., a specific quarry, by analyzing its chemical or mineralogical composition. This provides clues to travel and trade patterns.

C. Ancient environments and subsistence patterns

Pollen, botanical remains, and bone enable archeologists to reconstruct ancient environments. This material can indicate what people ate.

V. Threats to sites.
(both natural and human-generated)

A. Natural
   --erosion
   --animal burrowing
   --inundation

B. Human
   --cultivation
   --collecting
   --grading, filling, leveling
   --inundation

VI. Protection of Sites

A. Laws, regulations
B. Why not collect from an ethical standpoint?
   (Read passage from book with page torn out!)

Archeological sites are like books: collecting, vandalism, or disturbing sites is like tearing pages out of a book.

SUMMARY

--Archeological resources are a major component of the National Park System.

--Archeological sites -- place artifacts in context with time and space. They are unique and non-renewable.

--Conservation ethic, protect as many as possible, excavate threatened sites.
--Collecting artifacts is like tearing pages out of a book.

Revised text to add to ARPA paragraph in handout on legislation:

The Act was amended by Congress in 1988. The most important of the amendments makes it easier to charge a violator with a criminal penalty. It allows a criminal penalty to be imposed if the commercial or archeological value of the resource involved and the cost or restoration and repair is $500, rather than $5,000 as it was previously.
LESSON PLAN

Session Title: Museum Collections

Session Length: (Variable)

Prepared By: Edward McManus

Objective: Students will be able to list the three collection types discussed in the NPS Museum Handbook.

Chapter 1 - Introduction to Service Museums

Time: Variable

Method: Lecture
Before and After Quiz
Flip Chart
Slide Illustration
Specimen Examples

Content:

CULTURAL COLLECTIONS

These collections document human habitation, activity, invention and creativity from prehistoric times to the present. They include both man-made materials and natural materials used in specific ways during human activity. Cultural collections encompass archaeological, ethnographic, and history materials.

In addition to their significance, NPS cultural collections need to be assessed in terms of the values of the object.

Aesthetic value - Decorative and Fine Arts
Associative value - Object Linked to Significant Person or Event
Educational value - Information Objects Provide about People, Places, Events, Cultures, and Technology. (Including Interpretive Value)
Research value - Usefulness for Inquiry and Analysis
Symbolic value - Religious/Cultural
Monetary value - (Least Important)
Archaeological Collections

Archaeological collections constitute approximately 70% of the Service's total museum collection. An archaeological collection consists of two general categories of materials: The objects (e.g., artifacts and environmental specimens), and the records that document the collection and the study of the collection (e.g., field and laboratory notes, photographs, maps, drawings, computer documents, reports and manuscripts). An archaeological collection is only as good as the records that document it. While these collections frequently bring to mind prehistoric Native American artifacts, archaeology is a method of study and does not indicate a specific time period or ethnic identification.

Ethnographic Collections

In contrast to archaeological collections, ethnographic collections constitute .1% of the total National Park Service museum collections. However they are an important part of these holdings. Cultural anthropologists conduct ethnographic studies and collect materials worldwide among rural and urban peoples, literate and nonliterate, western and nonwestern. Contemporary people are a major focus of ethnographic study, but historic (although not archeological) communities also are important. Curators may classify the materials produced by peoples with written traditions under "history," and the materials produced by other historic and contemporary peoples under "ethnography" or "ethnology," but cultural anthropologists might not make that distinction.

As a matter of policy skeletal materials are never displayed and sacred objects are displayed only after consultation with appropriate groups. See NPS Native American Relationships Management Policy.

Historical Collections

History collections constitute about 6% of the Service's total museum collection and encompass the entire spectrum of materials made and used by literate cultures to the present. These collections may document people and events or represent inventions and occupations; they often provide insight into peoples' lifestyles and sometimes into their deaths. Taken together these diverse assemblages provide an important component for fully understanding and appreciating our past.

History Collections Include
  Historic Furnishings
  Architectural Elements
  Military Accoutrements
Technological Collections
Personal Artifacts

History Collections Include (Cont)
Archival and Photographic Collections

Historical collections often consist of everyday items from the past, and it must be realized that their significance is their ordinariness and how they illustrate the life of Americans at some point in time.

NATURAL HISTORY COLLECTIONS

Whether a park is established for primarily natural or cultural values natural history collections may be one of the park resources. Natural history collections serve a number of purposes, and are of value to both scientists and the general public. They are generated as a part of approved research projects conducted by Service employees and/or outside investigators. All collecting is carried out in accordance with approved scientific collection permits and all applicable federal laws and regulations.

They can assist the park staff in learning more about the plants, animals, fossils, and geology of the area.

Natural history collections must be evaluated not only for scientific meaning, but also for historical value.

Biological Collections

Biological collections are generally created by obtaining living animals and plants and then preparing them for research and storage in a number of ways.

Types of Biological Collections
Mammal Collections
Bird Collections
Amphibia, Reptiles and Fish Collections
Insect Collections
Mollusc Collections
Plant Collections

Geological Collections

Geological collections provide information on the physical evolution of the earth. Geological specimens illustrate the composition of the substrate upon which the areas principal resources are developed, and they document at selected points in
time the processes that have brought the area to its present state.

Historical sites are closely related to their geology.

Paleontological Collections

Paleontological collections, fossils, constitute our only record of 3.5 billion years of life on earth. They range in size from microscopic pollen and spores which are studied with scanning electron microscopes to dinosaurs 100 feet in length and weighing over a 100 tons when alive.

LIVING COLLECTIONS

The National Park Service does not exhibit live wild mammals and birds in captivity, unless very unusual interpretive circumstances justify an exception to this general practice.

While not manage as part of a park's museum collection, living collections, like museum specimens, are integral to park inventory, monitoring, and research programs. Living collections may include interpretive gardens, arboreta, specimen trees, historic orchards and other plants or animals protected to conserve significant gene pools.
LESSON PLAN

Session Title: IDENTIFYING AND MANAGING RESOURCES

Session Length: 3-4 hours  Revision by Janet Edwards
PNR

This lesson plan can be shortened and/or modified at the
discretion of the individual instructor.

OBJECTIVES FOR LESSON

At the completion of this session the student will be able to:

1) Identify NPS resource components, natural and cultural

2) Identify natural and cultural processes,

3) Identify threats to resources and their processes

4) Describe methods for managing natural and cultural resources

INSTRUCTORS' NOTE: Call ahead to find out what resources are
found in or near the park or office where the class will be
taught.

Handouts: Types of processes (Section II)
Managing resources (Section IV)

Audio-visual:

Slides: Intro slide of a cultural and natural
setting of the park where you are teaching
(Section I)

Park specific case studies of resources
before and after impacts (Section II)

Videos: "Garden of Eden," OR "Diversity
Endangered," (Section III)

Equipment Needed: 2 flip charts, overhead
projector, video cassette player and TV monitor,
chalk board
I. IDENTIFYING RESOURCES, NATURAL AND CULTURAL

TIME: 20-30 minutes

METHOD: Field trip with discussion on natural and cultural resources which are visible on the site. The definitions given in this section are for instructor's use only. No attempt should be made to teach the class all of the terminology. Use what is applicable to the group of students.

OR

Show slides which represent each category of natural and cultural resources. Afterwards use flip chart to write down categories and specific resources that the students list aloud.

OR

Acquire one slide ahead of time with obvious natural and cultural resources and let the class identify all possible resources. Ask the students to first write them on a piece of paper.

Content

A. Identify all types of resources in the area (student brainstorm)

B. Refine list to natural and cultural

C. Refine to categories under:

1. Natural Resources

All elements of the natural environment and the processes which create and maintain them including but not limited to air, water, soils, geologic features, plants, animals, caves, minerals, shoreline development, glacial activity, stream movement, fire and plant succession.

   a) Air

   The mixture of odorless, tasteless gases that surround the earth. Visibility (clarity) and quality (chemistry) are generally measured.

   b) Plants

   Any living organism of the Plantae kingdom. It can be a tree, shrub, grass, or forb (broadleaf). Individual plants can also be microscopic like phytoplankton which is found in water. Fungus (such as a mushroom or mildew) is also considered a plant.
Plants have no capacity for movement on their own and are generally anchored by roots, although some plants such as fungus, air ferns (ie Spanish moss) or phytoplankton have none. Plants can be individuals or groups of species comprising a plant community.

They are all susceptible to environmental changes and while anchored in place can be removed by events such as fire, flood, geologic events, or human impacts.

c) Animals

Any living organism of the Animalia kingdom capable of movement. It can be large easily identified wildlife such as ungulates (hoofed mammals), carnivores (animals that each meat) and herbivores (animals that graze on plants). The carnivores (ie., wolves, coyotes, owls) are predators which feed on other animals. Herbivores often are prey (ie deer, moose) and serve as food for predators.

Although the larger animals are the ones most often noticed in the parks, smaller animals including reptiles, birds, amphibians, and insects are abundant.

In parks with aquatic resources life forms such as marine mammals (whales, seals) or organisms which are small yet visible to the unaided eye, such as macroinvertebrates exist. Microscopic organisms like zooplankton are also animals.

d) Water

A liquid that descends from the clouds as precipitation (rain, ice, snow) and forms streams, lakes, seas, glaciers, and underground aquifers. It is also a major constituent of all living matter. Water quality is often monitored and sometimes water clarity as in the case with Crater Lake which is so blue in color. Water rights or ownership is also a primary concern.

e) Geologic Features

Any rock formation, isolated or a composite of larger beds such as ridges or glacial features (moraines). Can be landscapes of mountains and valleys or underground features such as speleothem in caves. Also includes soils which are derived from weathered rocks.
2. **Cultural Resources**

A system of behaviors, values, ideologies and social arrangements by which a group of people subsist and interact with each other. It includes their economic, religious and social practices—how they feed, clothe, and shelter themselves; the language by which they communicate; how they chose a partner and raise children; the rules by which they live in families or larger groups and societies; and their morality and religious beliefs.

a) **Objects**

Tangible or material things which have some cultural value; functional, aesthetic, religious etc. Moveable and have been manipulated by human actions. Examples: coins, guns, ceramic pots, automobiles, fragments or larger structures, natural history specimens, written documents, photographs. Acquired in a variety of ways: through donations, archeological excavations, ethnographic studies, or direct acquisition.

Artifacts and Ecofacts are objects from human activity that have been found in or recovered from an archeological site. Ecofacts tell us about the environment that existed before the site was created and include inorganic materials such a mineral and soil samples and organic material such as animal and plants parts and human remains.

b) **Structures**

Work constructed by humans to serve some purpose, usually immovable (examples: building, monuments, dams, roads, canals, earthworks, fences, gardens, forts, etc. Districts are groups of buildings related by a common history, theme or design.

c) **Sites**

Location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined or vanished, where the locations itself possesses historic, cultural or archeological value regardless of the value of any existing structure. (Examples: Fort Vancouver, Whitman Mission, White Bird Battlefield)

e) **Landscapes**

Geographic areas encompassing both cultural and natural resources, including the wildlife and domestic animals and plants therein, that have been influenced by or reflect human activity or provided background for an event or the human activities significant in history.
TYPES (see instructor's course notebook for definitions)

1. historic scene
2. historic site
3. historic designed landscape
4. historic vernacular landscape
5. ethnographic landscape

f) Culture

A system of behaviors (including economic, religious, and social), values, ideologies and social arrangements. For example, the culture of some people includes periodically moving in pursuit of subsistence (e.g. Eskimo) or wages (e.g. middle class managers) and placing value on nuclear families (parents and children), wide-ranging social networks of friends, colleagues in various geographic areas, and temporary housing. These features, in addition to tools and expressive elements such as graphic arts, help humans interpret their universe as well as deal with features of their environments, natural and social. Culture is learned, transmitted in a social context, and modifiable. Synonyms for culture include "lifeways," "customs," "traditions," "social practices," and "folkways." The terms "folk culture" and "folklife" might be used to describe aspects of the system that are unwritten, learned without formal instruction, and deal with expressive elements such as dance, song, music, and graphic arts as well as storytelling.

D. State that there is no such thing as an entirely natural or cultural area. Each park has both resources.
II. PROCESSES

TIME: 30-45 minutes

METHOD: Lecture and exercise

CONTENT

A. Types of Processes and resources affected

1. Natural process maintain balance in an ecosystem

   a. If one component changes, all else changes
      (ie If the weather becomes hot and dry,
      vegetation, animals, soils and water reserves
      are affected.)

   b. Small changes may not be easily noticed
      (ie meandering stream changes the dimensions
      of the channel)

   c. Big changes cause long term readjustments
      in the ecosystem. May even result in
      irreversible loss (ie. permanently altered
      geologic landscape).

   d. Most changes result in regaining a
      balance later, over the long term.
      (ie regrowth after a flood)

2. Maintaining natural processes is as important as
   protecting the resources themselves

   a. Our activities should not alter the
      processes

   b. If processes has been altered in the past
      the should be restored (ie natural fire)

3. Specific management actions are sometimes needed
   to preserve a component of the natural environment to
   assure that it is preserved.

   a. endangered and threatened species need
      special protection to assure that they do not
      become extinct.
4. Maintaining biological diversity is critical to maintaining a healthy and evolving ecosystem.

B. Cultural Resource Principles

1. Tangible resources are finite and non-renewable:
   a. Each object, each structure, each archeological site is unique, once it is destroyed it is gone forever.

2. Intangible resources of contemporary cultures are dynamic and renewable, perpetuated from generation to generation and from person to person by oral and written actions.
   a. Records of intangible resources of cultures, such as written records or recordings of songs, dances, myths, etc., should be treated as tangible resources; once these records are lost, they too cannot be recreated.

3. The preservation of authentic resources should be emphasized rather than try to recreate them.
   a. Fragments of an old structure are preferable to a reconstructed new version of that structure.

4. Cultural resources must be preserved through adequate protection measures and on-going maintenance.
   a. It is better to preserve a structure through a program of routine maintenance than to try to salvage it after years of neglect or abuse. This on-going process of maintenance is called "preservation maintenance."

5. The appropriate maintenance actions for any specific cultural resources must be identified and evaluated.
METHOD: Use Handout: TYPES OF PROCESSES. List at least one resource affected by a process. Ask participants if they need clarification on any of the processes or run through each one individually first. Discuss their answers. Note that there can be several resources affected by a process.

Ask students to write in one resource from the bottom of the page that is affected by the process listed on the left side. They can work in pairs.

**ANSWER KEY** (These are the most common. Other answer may be correct as well.)

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<td>Sedimentation</td>
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<td>paleontologic resources</td>
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<tr>
<td>Topic</td>
<td>Related Elements</td>
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<tr>
<td>Pest infestation</td>
<td>historic structures, vegetation, forests, animals, archeological ruins</td>
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<tr>
<td>Global Warming</td>
<td>vegetation, cultural landscapes, animals</td>
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<tr>
<td>Evolution of a culture</td>
<td>Native American Indians, American pioneer cultures, Black history, historic structures</td>
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<tr>
<td>Archeological stratigraphy</td>
<td>archeological sites, soils</td>
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<tr>
<td>Developing a settlement</td>
<td>cultural landscapes, historic buildings, soils, vegetation, monuments, animals</td>
</tr>
<tr>
<td>Building structures</td>
<td>historic buildings, cultural landscapes, soils</td>
</tr>
<tr>
<td>Development of machines</td>
<td>Steam trains, Electric Lights, Iron works</td>
</tr>
<tr>
<td>Manipulation of landscape for farming and grazing</td>
<td>cultural landscapes, vegetation, animals, forests, soils</td>
</tr>
</tbody>
</table>
Handout: Identifying and Managing Resources

TYPES OF PROCESSES (NATURAL AND CULTURAL) AND THE RESOURCES AFFECTED

Directions: In the blank provided write at least one cultural or natural resource affected by/ or which is a result of the process listed on the right.

Weathering and erosion

Glacial activity

Fire

Beach/dune building

Volcanic eruptions

Sedimentation

Pest infestation

Global warming

Evolution of a culture

Archeological layering (stratigraphy)

Developing a settlement

Building structures

Development of machines

Manipulation of landscape for farming and grazing

<table>
<thead>
<tr>
<th>cultural landscapes</th>
<th>archeological sites</th>
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<tr>
<td>archeological ruins</td>
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<td>Native American Indians</td>
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<td>historic structures</td>
<td>monuments</td>
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<td>Black history</td>
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<td>steam trains</td>
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<td>Native American Indian art</td>
<td>air quality</td>
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<td>animals</td>
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</table>
III. ACTIVITIES WHICH THREATEN RESOURCES

TIME: 20-40 minutes

METHOD: List activities on second flip chart then show relationships between resources (from first flip chart) and threats. Ask students to think of threats they've read about in the newspaper or have observed first-hand.

VIDEOS: "Garden of Eden" 20 min. or "Diversity Endangered" 9 min.

CONTENT

A. Identify various types of activities that may affect resources or processes.

1. Air pollution
   
   a) Acid rain
   b) Dry acid deposition
   c) Vehicle emissions
   d) Coal fired power plants

2. Water pollution
   
   a) Toxic waste dumps
   b) Sewage disposal
   c) Solid waste disposal
   d) Agricultural runoff

3. Global warming

4. Urban development

5. Visitor activities
   
   a) Off-road vehicle use
   b) River rafting
   c) Camping/hiking
   d) Equestrian use
   e) Fishing

6. Mining operation
   
   a) open pit
   b) sub-surface

7. Poaching
8. Pests
   a) insects
   b) mammals
   c) trees, shrubs, grasses/forbes
   d) fungus

9. Erosion

10. Decay

11. Vandalism
B. Resource Impacts

TIME: 30 minutes

METHOD: Use slides of before and after resource damage from parks within the Region.

1. Discussion of individual park problems
   a. Describe impacts.
   b. How did they occur?
   c. What could have prevented impacts?
   d. What should be done?

IV. METHODS FOR MANAGING RESOURCES

A. Disciplines Involved

TIME: 15 minutes

METHOD: Slides of specialists at work ...OR....

Brainstorm a list of specialist needed for a park which has a designated wilderness, a wild and scenic river, historic cabins with unique design features, rare plants, endangered fish species, and Indian rock art.

List these elements on a chalk board or flip-chart for students to ponder. Then list their responses.

Examples:

anthropologists, archeologists, ethnographers
curators, conservators
historians
architects
landscape architects
preservation craftspeople

soil scientists, geologists
botanists, foresters
biologist, wildlife biologists, entomologists
ecologists, geographers
limnologists, chemists
cartographers
A. **Inventory:** A list or count of resources using scientific methods that can be replicated. What? How many?

Results are documented for future comparison.

1. Examples:

   a. Craters of the Moon, Univ. of Idaho inventories of birds, mammals, and plants. CPSU taught staff how to continue the process in the future years. Issued a manual on how to inventory using specified methods.

   b. historic resource studies, building inventories, museum catalogs, archeological base maps
B. Assessment: Determining the significance and condition of resources based on a wide variety of criteria and standards.

Development of a set of future actions designed to implement management objectives.

Process through which decisions are reached that guide management of resources.

1. EXAMPLES:

a. Review of inventory data (low ratio of male/female in wildlife population), increased particulate levels in air/water samples.

b. Use of National Register criteria, determine significance of cultural sites, determine "integrity".

c. The use of data bases to assist in analyzing the information we have collected. COMMON, the WASO computer system tabulates information collected across the U.S.

2. MAJOR PLANNING DOCUMENTS

General Management Plan,
Statement for Management
Resources Management Plan
Scope of Collection Statement

3. AUXILIARY PLANS (follow major documents)

Water Resources Plan
Backcountry or Wilderness Management Plan
Fire Management Plan
Development Concept Plan
Historic Structures Report

C. Research: Studies or investigations performed to provide a body of knowledge regarding a specific resource.

1. Examples: Some studies designed to collect base line data

a. Water quality, acid rain, anadromous fish studies, caribou population studies, reptile or invertebrate studies.
b. Paint analysis of buildings, historic base and ground cover study, literature search

2. Others address specific questions such as:
   a. Are elk damaging vegetation?
   b. Is acid rain affecting a bronze statue?

D. Monitoring: A systematic and repeatable method of collecting data about a resource and how it changes over time.
   1. Examples:
      a. Air quality particulate samplers, visibility cameras, water flow gauging, trail conditions, changes in vegetation resulting from fire.
      b. Installation of glass rods to monitor shift in masonry walls, inspection for insect damage, monitoring temperature and humidity inside museums.

E. Maintenance: The systematic upkeep and/or care of resources.
   1. Examples:
      a. Mowing grass, trail maintenance, campground cleaning
      b. Collection cataloguing and proper storage, historic landscape maintenance

F. Mitigation: The process of reducing severe impacts or rehabilitating a site which has been impacted.
   1. Examples:
      a. Restoration of wildlife species that has been extirpated, flood gate structures, fish ladders to allow fish to pass over a newly constructed dam.
      b. Stabilization or restoration of a historic structure. Documentation of any prior damage.
c. Removal of paleontological resources subject to weathering.

G. **Manipulation:** The management or control of resources for a specific goal.

1. Examples:
   a. Revegetation of a site formerly invaded by non-native plant species.
   b. Removal of bear from campground heavily used by visitors.
   c. Relocation of structures. Reconstruction of a historic building

H. **Enforcement:** A variety of methods of communicating regulations to park users. This can be accomplished through informal discussions, announcements, warnings, citations, or arrests. Enforcement personnel to notify the offender of the resource damage that is will occur as a result of their actions.

1. Examples:
   a. Visitors walking off trail in a fragile meadow are stopped and a discussion ensues about the ecology of the mountain meadows and the impact of trampling. Information is provided on the rehabilitation work.
   b. A visitor with a pottery fragment is asked to return it to the ruin site where it was found.
   c. A hunter caught poaching is cited and appears in court.

**METHOD:** Present the class with a case study in which the students need to consider all the above methods of preserving resources before their decision can be made. Divide the class into small groups and have each group select a recorder/spokesperson who will report back to the group the methods they used and the decisions they made about the case study.
CASE STUDY: MANAGING RESOURCES

Describe the steps you would take to provide for visitor use and enjoyment at a new national park. Decide what is necessary to ensure that resources are not impacted.

This national park is in a remote area and is relatively undisturbed. There are forest and shrubland plant communities. There is a variety of animal life. No surveys have been conducted.

A Visitor Center is needed. Most agree that the best site would be adjacent to the forest in an area that was disturbed. In this spot the trees were cleared for a homestead site 50 years ago. One old building remains.

The public is interested in hiking and camping in the park.
LESSON PLAN

COURSE TITLE  Natural Resources Management

Session Title  NPS Paleontological Resources

Session Length (approx.): One hour  Prepared by: Ted Fremd (JODA)

Objectives - At the end of this session, each participant should be able to:
- Name five NPS areas established for paleontological values;
- Describe what is meant by "the past is the key to the present";
- Write down and/or perform three options available to NPS land managers when a scientifically significant fossil is discovered.

Training Aids: Slides, group drawings

Handouts: Reprint: Natural Areas Journal, excerpt from Management Policies, simplified "collect/leave flowchart"; others as determined by instructor.

CONTENT

1. INTRODUCTION. What is paleontology? Using questioning techniques and the use of participants drawings, elicit some idea of what the group thinks is encompassed in the discipline. Explain the nature of the resource after examining participants' ideas. Emphasize that the Scope of the Resource and the methods for managing it are enormous. Probably more disciplines are involved in the study of fossil material than any other natural history speciality.

NARRATIVE

Paleontology is the study of past life on the planet, and there are millions of different species that have existed belonging to a bewildering variety of higher taxonomic groups. Fossil material is analyzed by botanical, zoological, ecological, geological, evolutionary, and other disciplines. Depending on the sketches that the participants have provided, the instructor should describe the different kinds of fossils that exist: mega fossils and micro fossils, trace fossils, evidence of behavior, evidence of past living soil horizons, mammal bones, teeth, leaves, footprints, oil, coal, diatomaceous earth, cro-magnon hominids, fish scales, seashells, corals, ad infinitum: without a doubt the most diverse assemblage of natural resources in the NPS. A review of the paleontological section of the NPS Hierarchical Classification Outline utilized by collection managers is a case in point.

METHODS: Participants draw on provided sheet whatever picture the word "paleontology" brings to mind. Question participants on where in the NPS system they might expect to find fossil material. Hit with large stick those who can't think of any.

TIME: 10 minutes.
2. What and Where are the resources managed by the National Park Service? Demonstrate the numerous areas with examples from GUMO, GRCA, JODA, YELL, FOBU, PEFO, DINO, FLOR, AGFO, BADL, DEVA, GLCA, BIBE, etcetera. Use slides to elaborate on the diversity theme, illustrating the types and numbers of fossils found throughout the System.

NARRATIVE: (Read attached material from the Natural Resources Journal). There are over 30 areas managed by the Service with significant fossil resources. Most of these are somewhat of a hodge-podge; that is, there is no orderly representation of different epochs or evolutionary chapters despite a plan to do so written in 1959. In many instances, fossil resources are included in a park established for different primary purposes, be they natural (such as GRTE and YELL, which have outstanding assemblages), historic (THRO, etc.), or recreational (LAME and others).

Many park staffs remain unaware of the presence of specimens vouching for the history of the area buried in sediments within the park. In some parks, however, such as YELL (fossil elk) and HALE (fossil T&E birds), material is being examined to determine population densities of varied ecological vicars to determine their capacities during "primitive America". Parks established principally as a result of their paleo resources, such as DINO, JODA, FOBU, FLFO, BADL, PEFO, AGFO, and HAGE have a mandate to preserve and interpret these materials. Probably one of the best ways to accomplish both is through an active paleontological research program.

METHODS: Use provided slides and draft script.

TIME: 20 - 25 minutes.

3. Management techniques: Collection, stabilization, excavations, prospecting. Contrast with archeology. Point out that each locality is very different and few generalizations can be made. Mention that the assistance of a paleontologist with experience in the particular formation or taxa is essential.

NARRATIVE: (See NPS-77 material for the suggested program). Fossil resources are - considering their age - mostly very fragile things. The mandate of the Service to preserve these materials and the information associated with them is not an easy one, but it certainly is not accomplished by allowing significant specimens to merely erode away. In most localities, the paleontologist with the responsibility for the paleontological resources management in the unit evaluates each item or bed of items. See attached flowchart (this is an appendix from the JODA Research Plan).

Perhaps more than any other discipline, paleontology relies on well-curated and heavily documented collections for testing hypotheses. There is tremendous reliance on type specimens and paleoecological specimens for the reconstruction of ancient ecosystems. One of the best services the NPS can do for paleontology, and vice versa, is to provide proper curatorial facilities and associated field records and documentation. One of the best services the NPS can provide the visiting public to a
paleo area is an explanation of these activities, using examples of prospecting, collecting, exposure to a preparation laboratory, and other techniques to interpret not only the significance of a site but the methods by which we learn about it.

METHODS: Lecture, provide handouts from management policies, etc.
TIME: 20 minutes.

CONTENT
4. "Take home" points:
   - all the organisms we see around us today exist because of the processes and events of the past, many of which are preserved in the fossil record.
   - over thirty NPS sites preserve outstanding paleontological resources, no two of which are alike in significance or management challenges.
   - the study of modern organisms and natural resources is dynamic in space, but static in time; paleontology can provide the temporal resolution necessary for long-term analyses of ecosystem variability and stability.
   - Fossils are non-renewable resources that must be treated with care; the significance of a specimen or collection of specimens is incurred with detailed curatorial procedures.
RESEARCH PLAN : APPENDIX 11

COLLECT/LEAVE SIMPLIFIED FLOWCHART

SPECIMEN IS DISCOVERED

NEEDED FOR EXHIBIT NOW?

YES

COLLECT AS LISTED BELOW

NO, not needed for exhibition now

IS MATERIAL SCIENTIFICALLY SIGNIFICANT?

-identifiable
-voucher
-rare
-in situ/assoc.
-other

YES

MONEY MATERIALS METHODS AVAILABLE?

NO

STABILIZE FOR LATER COLLECTION CHECK INTO CPSU, CONTRACT, ETC.

YES

CAN MATERIAL BE EXCAVATED WITH MINIMAL DISTURBANCE?

NO

STABILIZE IN SITU OBTAIN APPROPRIATE CLEARANCES AND COLLECT

YES

IS MATERIAL THREATENED?

-fragility
-Visitor/vandal
-erosive forces

NO

LEAVE/STABILIZE
-PREPARE INTERP DISPLAY

YES

DO SPECIMENS CONFORM WITH THE PARK'S SCOPE OF COLLECT STATEMENT?

NO

CAREFULLY REVIEW THE PARK'S SCOPE OF COLLECTIONS

YES

COLLECT MATERIAL WITH FULL DOCUMENTATION
LESSON PLAN

Session Title: Marketing Resources Management

Session Length: 1 Hour    Prepared By: Grovert

Objectives:

Student: At the end of this session, the participant will be able to list the components of a marketing plan, and explain how a marketing concept can be utilized in their park.

Instructors Note: This session is designed to create a marketing plan that can be presented to the local Superintendent at the end of the course. The Superintendent should be contacted ahead of time with the concept, and you need to obtain one or two issues that the Superintendent is interested in setting up a plan.

Handouts: Marketing Plan Outline
          Resource Issue From Local Area

Materials: Flip Chart, Pens

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<tr>
<th>Time</th>
<th>Method</th>
<th>Content</th>
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<tbody>
<tr>
<td>15 min.</td>
<td>Class Participation</td>
<td>(Definition) Ask class to define marketing.</td>
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<tr>
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<td>A set of activities which are aimed aimed at effecting an exchange with clients.&quot;</td>
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<td>or &quot;Marketing involves the development of services which are consistent with client needs, then pricing, promoting, and distributing those services effectively.&quot;</td>
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<td>or &quot;Marketing is merely a set of tools to accomplish a task.&quot;</td>
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MYTHS OF MARKETING

1. Marketing and selling are the same thing.
   Marketing is a broad concept encompassing a large number of activities.
2. Marketing is an expensive luxury. It can help to save your resource, and to save you money.

3. Marketing is manipulative and self-serving. In public sector marketing, the main concern is understanding the desires of the client and serving those desires with relevant, cost-effective services.

10 min. Lecture

Setting up a Marketing Plan

1. Determine what your issue/problem is.
2. Determine what your goal is.
3. Develop your plan accordingly.

or

Analysis
Strategy Development
Implementation
Evaluation

Give out handout
And go through it

Analysis
1. Internal Audit (Where are we?)
2. External Audit (Where are they?)
3. User potential/user analysis (What do they want?)

Strategy Development
1. Goal Setting
2. Targeting (Who are we going after?)
3. Developing a product
4. Pricing (How much will we charge?)
5. Promotion
6. Publicity
7. Advertising
8. Personal Contact
9. Special promotions
10. Distribution (Who gets what and how much?)
IMPLEMENTATION
1. Gain consensus
2. Assign responsibilities
3. Leadership

EVALUATION
1. Analyze how effective the program is.

20 min. Small Group project

(Give out issue obtained from the Superintendent, and let groups develop a marketing plan through the implementation section.

15 min. Group presentations

Summarize briefly the role that marketing can play in your Park
DEVELOPING A MARKETING PLAN

ANALYSIS

1. Internal Audit
2. External Audit
3. User potential/user analysis

STRATEGY DEVELOPMENT

1. Goal Setting
2. Targeting
3. Developing a product
4. Pricing
5. Promotion
6. Publicity
7. Advertising
8. Personal Contact
9. Special promotion
10. Distribution

IMPLEMENTATION

1. Gain consensus
2. Assign responsibilities
3. Leadership

EVALUATION

1. Analyze how effective the program is
LESSON PLAN

Session Title: Training Opportunities for Managing Resources

Session Length: 1 hour 30 min.

Goal: To heighten awareness of existing and potential training opportunities, and methods of obtaining training relative to Resource Management.

Objectives: At the end of this session the participant will be able to:

1) Identify a variety of avenues to obtain resource management related training opportunities.

2) Write justifications for resource management training as it relates to daily job responsibilities.

3) Define the importance of training, to better understand the management of all resources.

Handouts: Current Resource Management training opportunities in a variety of agencies and departments (i.e., NPS, Forest Service, BLM, Fish & Wildlife, State agencies, local colleges, and correspondence courses.).

Time       Method         Content

30 min.    Lecture        Present an overview on the importance of adequate training for proper managing of all resources. Site examples of consequences of resource management issues without training by all disciplines.

30 min.    Lecture/       Introduce guest speaker who is directly
discussion    related to the development of training courses, criteria for funding such courses, and the importance of writing good justifications. (i.e., Regional Training Officer.)

20 min.    Lecture/       List possible new training opportunities
discussion    which should be developed within the NPS, discuss reasons why. Explain opportunities of presenting various resource management training courses within a park by in-park personnel relating to park resource issues. Discuss various funding sources for training. Brainstorm and list possible alternative/creative funding sources.
Site various examples of how resource management training can relate to any division at any given circumstance. (i.e., Rangers attending a course on the importance of historic preservation of buildings, Maintenance employees attending a course on wildlife management procedures, Administration involved in understanding the principles of revegetation and rehabilitation practices.)
Orientation to Management of NPS Resources

Session Title: Biodiversity

Session Length: 2 - 3 hours

Goal: To familiarize employees with the Servicewide initiative on interpreting Biodiversity.

Objectives: When the lesson is complete the student will be able to:
--define Biodiversity and state three reasons we need to preserve it.
--state several ways NPS conserves Biodiversity.
--state several worldwide initiatives to conserve Biodiversity.
--list several ways of getting the "message" to visitors.

Teaching aids: NPS Manual for Interpreting Biological Diversity (obtain locally)

AV aids: "Garden of Eden" and "Diversity Endangered"

Handouts: List of Biodiversity-related mandates
Fact Sheet - Biological Diversity - "We're Banking On It" (from manual)

Equipment Needs: Flipchart and pens, overhead projector, video cassette player and TV monitor.

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<tr>
<th>Time</th>
<th>Method</th>
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| 5 min  | Lecture               | 1. Introduction
Present session objectives and introduce definition of Biodiversity (the variety of life forms, the ecological roles they perform and the genetic diversity they contain.) Discuss that Biodiversity is the NPS theme for 1989. |
| 9 min  | Video on "Diversity Endangered" |                                                                       |
| 15 min | Lecture/Discussion Use Flip Chart | 2. List on flip chart the practical reasons for conserving our biological diversity. Discuss examples. |
|        | 2a. Economic          | --food - wild corn
--medicine - madagascar's rosy periwinkle - anti-cancer drug
--industry - rubber trees |
2b. Keeping Earth Habitable
--regulation of climate/atmosphere
--protection against soil erosion
--cleaning up human waste

3a. Laws
Discuss existing legislation and proposed legislation on biological Diversity (HR 4335)

3b. Go through each law and discuss how we use it in the NPS and in our daily job.

4a. Write on flipchart - "Loss of Species and Genepool" Ask for reasons - Pinpoint main reason which is Habitat Loss.

4b. List areas of the world which are experiencing dramatic Habitat Loss
--tropical rainforests
--coastal zones
--islands

4c. Why are we so concerned about Rainforests?
--contain 7% of land surface but have more than one-half of world's species
--being destroyed very rapidly, will be almost gone within next century.

5. What's being done to preserve Biodiversity? Brainstorm ways NPS plays a role in this:
--large undeveloped areas
--reintroducing extinct species
--eliminating alien species
--restoration of ecosystems

6. List other Federal agencies and their role in conserving Biodiversity.
--Federal
--State
--Private (Nature Conservancy, Audubon, etc.)
10 min Lecture/Discussion 7. United States and Worldwide programs to preserve Biodiversity —Biosphere Reserves (cooperation between public and private owners to maintain a natural area) —Natural Cooridors (preservation of cooridors for migration by linking habitat areas). —(U.S.) Natural Heritage Program (Cooperation between Nature Conservancy and state programs to inventory endangered species) —Cooperation between countries to protect migratory species

20 min Video "Garden of Eden"

10 min Group Exercise 8. What can we do? —Divide into groups and have them list methods of getting the message out to visitors. Then list on flip-chart — talks, walks, videos, traveling exhibit, etc.

2 min Discussion 9. Conclusion —Go over objectives and ask for any questions.
Biological Diversity: We're Banking On It.

Directly and indirectly, the world's economy and well-being is dependent upon the health of our planet.

By Kim A. Palmer — The Ohio State University

The economic benefits from preserving biological diversity are staggering. Stop for a moment and think of how almost everything around you is related to the natural world. Your cereal or toast in the morning is made of one of the three species of grasses that is the principal food base of the world. The tires on your car or bicycle may be rubber from the sap of the tropical tree *Hevea* or the shrub *Guayule*. Other plant products in our lives include tanning agents, a variety of dyes, fibers such as cotton, flax and hemp, insecticides such as pyrethrum and rotenone, perfumes, lotions such as witch hazel and aloe, waxes, gums, cosmetics, meat tenderizers, preservatives, turpentine, fertilizers, baskets, and gutta-percha which is used for insulation and waterproofing.

Of course, everything we eat comes from some type of organism. Without wild strains of corn, rice and wheat to add genetic variety, the foundations of our food industry would be extremely vulnerable to disease or pest. The same holds true for our animal food products. Genetic diversity is the key to maintaining the cattle, pigs, turkeys, chickens, ducks, geese, sheep, and goats that have been domesticated for our use. Wild animal species can be directly used as sources of food or indirectly as breeding stock for genetic improvement of closely related domesticated species. World trade from timber product, most from wild trees, is currently worth almost $40 billion annually (more than $16 billion a year for the U.S.). Fish and shellfish provide the most significant direct contribution of wild species as a food source. Almost $12 billion each year worldwide is made from the sale of wild fish and shellfish, with more than $4 billion worth for the U.S. alone. (Prescott-Allen and Prescott-Allen, 1986). These figures make the distance between Wall Street and wetlands a lot shorter!

Where would we be without the insects and birds and bats that pollinate crops? These pollinators were responsible for $4 billion worth of crops in 1967 (Oldfield, 1984). Wild insects are also valuable as biological control agents. A good example is the ladybird beetle that...
feeds on aphids and scale insect. In the late 1800's the California citrus industry would have become extinct through infestation of trees by scale insects, but the ladybird beetle (*Vedalia cardinalis*) brought the scale insects under control and gave the industry a second chance.

Sea bird colonies provide guano (bird excretions) for fertilizer. Off the southwestern coast of Africa, gannet populations produced guano that was sold for $7.10 for a 200 pound bag. When one seabird colony can produce 200,00 pounds of guano annually, this can add up to an important part of some nations' economy. Such is the case in Peru and South Africa.

Plants and animals also contribute substantially to the $40 billion dollar medical industry worldwide. From a recreation standpoint, wildlife means bigbucks. Millions of dollars are spent each year in this country alone on hunting and fishing licenses. Birdwatching is estimated at bringing in millions of dollars each year to Point Pelee National Park in Ontario. Similar economic estimates have been made for other areas of interest to wildlife watchers.

Nature influences our technology as well. The amazing velcro that is used as buckles for shoes and jackets, was modeled after the hooks and barbs of bird feathers; the gigantic hewletts, metal arms used to load and unload ships, are modeled after grasshopper legs; and the US Air Force is studying the flight of the great horned owl to understand the mechanics of flight better.

The natural world not only supplies us with our bread and butter, but it is our bread and butter. Directly and indirectly, the world's economy is dependent upon the health of our planet.

Sources:


Biological Diversity Related Legislation

There is currently no legislation directly related to biological diversity, however, new legislation (HR 4335), has been proposed that will relate directly to biological diversity. The Office of Technology Assessment’s book, Technologies to Maintain Biological Diversity, discusses the existing legislation, and international treaties that have some impact on biological diversity in detail. Related legislation is summarized below.

Federal Mandates

Federal laws primarily govern the protection of species and habitat, in situ. Federal laws for ex situ maintenance of biological diversity, with the exception of the endangered species act, center primarily on plant species that demonstrate potential economic value. These laws are summarized in table 1.

— The Endangered Species Act prohibits the import and export of species listed as endangered and most species listed as threatened.

— The Lacey Act prohibits the import of species that have been taken, possessed, transported, or sold in violation of foreign law. Many countries now completely ban or strictly limit wildlife trade.

— CITES a comprehensive wildlife treaty signed by close to 100 countries, including the U.S., that regulates and in many cases prohibits commercial imports and exports of wild animal and plant species that are threatened or endangered by trade.

— The Marine Mammal Protection Act prohibits the import of marine mammals and their parts and products. These species include whales, walruses, narwhals, seals, sea lions, sea otters, and polar bears.

Biological Diversity Bill (HR 4335)

The National Biological Diversity Conservation and Environmental Research Act, proposes four major elements; a national policy for the conservation of biological diversity, a national research center, an amendment to the National Environmental Policy Act (NEPA) to make biological diversity an explicit part of environmental impact statements, and a coordinated federal strategy for maintaining and restoring biological diversity.
LESSON PLAN

TITLE: VEGETATION MANAGEMENT
TIME: 16 HOURS OF COURSE MATERIAL
LOCATION:
PREPARED BY: JOHN DONAHUE

TIME/METHOD       SUBJECT

10MIN/LECTURE     OVERVIEW
                  1) POLICIES ON VEGETATION MANAGEMENT
                  2) TYPES OF VEGETATION/CATEGORIES
                     EG. CULTURAL, NATURAL ETC.

PARTICIPATIVE/
SLIDE/LECTURE 40MIN  MONITORING
                  1) BASE LINE INVENTORY
                  2) ESTABLISHING PERMANENT PLOTS

30MIN/HANDS ON
30MIN/LECTURE                  3) MONITORING VEGETATION CHANGE
                                4) INDICATOR SPECIES

30MIN/SLIDE LECTURE
OR FILM                      REVEGETATION/REHABILITATION
                                1) CASE STUDIES
                                EG. REDWOOD N.P. OR CAPE COD

60MIN/LECTURE     1) THREATENED/ENDANGERED SPECIES
                  2) NATURAL HERITAGE PROGRAM

60MIN/FILM/LECTURE 1) WILDLIFE AND VEGETATION MANAGEMENT

CULTURAL/HISTORICAL LANDSCAPES

30MIN          1) CULTURAL/HISTORICAL LANDSCAPE ECOLOGY
30MIN          2) CULTURAL/NATURAL INTERFACE
30MIN          3) VISTA ESTABLISHMENT/MAINTENANCE
60MIN 1) FIRE A MANAGEMENT TOOL

60MIN-4HOURS 1) FIELD TRIP
EXAMINE THE LOCAL RESOURCES EG.
CULTURAL LANDSCAPE, REVEGETATION ETC.

60MIN 1) WHAT DO WE NEED IN VEGETATION PROGRAMS
NOW AND IN THE FUTURE

TOTAL: NINE HOURS SUBJECT MATTER, NINETY MINUTES BREAKS, ONE-FOUR HOUR FIELD TRIP = TWO DAYS IN CLASS. SUBJECT MATTER CAN BE TAILORED TO NEEDS OF COURSE.

HANDOUTS: ARTICLES ON EACH OF THE SUBJECTS DISCUSSED, COPIES OF MANAGEMENT POLICIES.
LESSON PLAN

COURSE TITLE: Orientation to the Management of Park Resources

Session title: Regulating Mineral Activities in Parks

Session length (approx): 1 hour (maybe cut back to 20-30 minutes) Prepared by: *Frank Bouno and Barbara West
Summarized by: K. Yarborough

Objectives: Participant will be able to:

1. List the three types of mineral rights within the National Park Service (NPS) units, and briefly describe each and tell how NPS regulates activities of each.

2. List the five mineral activities in NPS units that are not now regulated.

3. Describe the 1978 "Redwoods Amendment" to the Organic Act, and tell its importance to the regulation of mineral activities in protecting the resources of NPS units.

4. List four other important pieces of legislation which directly address minerals management and development in NPS units.

Training aids: 1. Selected slides from individual parks in Region, where mineral activities occur. 2. Flip chart and pens.

COURSE TITLE: Orientation to the Management of Park Resources

Session title: Air Quality/Acid Deposition and Water Resources

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<td>Regulating Mineral Activities in Parks</td>
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Session Purposes: 1. To explain the basis for the general prohibition of mineral activities within NPS units; 2. To describe the three types of minerals situations NPS personnel may encounter in NPS units; 3. To discuss how the NPS regulates mineral activities in each situation.

Introduction:

5 min. Lecture/discussion

Mining activity is inconsistent with the basic tenents of the 1916 NPS Organic Act:

"... to conserve the scenery and the natural and historic objects and the wildlife therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

This congressional mandate precludes activities which remove or destroy natural resources within NPS units—such as mining. Nevertheless, mining and mineral activities do occur in NPS units under 2, and only 2 circumstances:

°where the Congress has authorized mineral activity in an NPS unit by law; or

°where the United States does not own the mineral rights within an NPS unit, and the NPS has decided, through its planning process, not to acquire them.

15 min. Lecture/discussion

Mining Activity is Generally Prohibited in NPS Units

This general prohibition of mineral activities in NPS units is based upon:

1. 1916 Organic Act;

The 1916 Organic Act provides an unambiguous statement of purpose for all units of the system administered by the National Park Service. This Act directs that conservation and preservation of natural and cultural resources are fundamental to the existence of NPS units.

By 1970 NPS had divided its units into three main categories (natural, historical and recreational) to deal with the great expansion in the National Park System. The Congress amended the Organic Act to make it very clear that, though the various units were distinct, diverse, and had different titles, they were all part of the National Park System administered by NPS. Therefore, each unit is subject to the mandates of the Organic Act as well as the unit's specific enabling legislation. This emphasized the uniqueness of each area, while reaffirming the importance of each as a part of the all-encompassing National Park System. Thus, there is no park which is of greater or lesser value than any other.

In 1978 the Congress enacted the "Redwoods Amendment" to the Organic Act which further emphasized the unity and importance of all areas in the National Park System:

"Congress further reaffirms, declares, and directs that the promotion and regulation of the various areas of the National Park System ... shall be construed and the protection, management, and administration, shall be conducted in light of the high public value and integrity of the National Park System and shall not be exercised in derogation of the values and purposes for which these various areas have been set aside, except as may have been or shall be directly and specifically provided by Congress."

Mineral development is an activity which can adversely affect park resources. Therefore, mineral exploration and extraction is prohibited in all NPS units, unless the Congress has specified differently in the enabling or in other special legislation.
Other Specific Legislation on Minerals Management/Development

- Mining in the Parks Act of 1976 (see below), which closed the last NPS areas to mining claims and provided for regulation of existing claims;

- Minerals Leasing Act of 1920, prohibits leasing of all Federal minerals parks and monuments (which means all NPS units);

- Minerals Leasing Act for Acquired Lands, of 1947, as amended, prohibits leasing of Federal minerals in parks and monuments;

- Materials Act of 1947 prohibits disposal of mineral materials (e.g., sand, gravel, and building stone) from within national parks and monuments;

- Geothermal Steam Act of 1970 prohibits leasing of Federal geothermal resources in units of the National Park System;

- Federal Coal Leasing Amendments Act of 1976 prohibits leasing Federal coal in units of the National Park System; and

- Surface Mining Control and Reclamation Act of 1978 prohibits surface coal mining within units of the National Park System, subject to valid existing rights, and prohibits surface coal mining operations that would adversely affect any "publicly owned park" unless approval is given by the agency with jurisdiction over the park.

All of these statutes reinforce the concept that NPS units are closed to the development of Federally-owned minerals unless explicitly authorized by the Congress.

15 min. Lecture/discussion

Three Types of Mineral Rights Within NPS Units

Each of these types constitute a legally recognized and protected property interest. The NPS now regulates only some of these mineral activities.

1. Mining Claims: The mining law of 1872, though enacted in the burro and pick-axe era of prospecting, still allows U.S. citizens to enter vacant and open public lands and stake a
claim of about 20 acres in size therein to valuable minerals. It also permits mining claimants to establish a millsite of five acres in size to process minerals extracted from the claim. There is no limit to the number of claims one person can file. They can be contiguous in a "claim group." Claims are for two general types: lode claims associated with a vein or ore body deposit; and placer claims for mineral deposits in the beds of streams. Certain lode claims for minerals such as gold, silver, tin, lead, zinc, uranium, etc., are generically termed "hardrock" or "locatable" minerals, because of the matrix in which these are usually found.

The 1872 Mining Act has certain other provisions of importance to NPS personnel:

° If a claim is properly located and valid, it gives the claimant a property right to the minerals therein, and the right to use as much of the surface and its resources as necessary to extract these minerals;

° An implied right of access to the claim;

° The U.S. retains ownership of both the minerals and the surface, until the minerals are extracted; then title passes to the claimant (this is called an "unpatented" claim).

° A process by which a claimant may patent a claim and obtain actual ownership (title) to the minerals, and in most cases the surface and its resources, as well, from the U.S.

In almost all cases, when the Congress or the President creates an NPS unit, it is closed to entry under the mining laws, so that no new claims can be located on these lands, and any which are filed become null and void. However, there are exceptions, such that there are some 3000 mining chains within NPS units today:

° Congress has permitted the location of mining claims in a few parks: Death Valley, Organ Pipe Cactus, Crater Lake, and Denali, and primarily other Alaskan areas which came under NPS management in 1978 and 1980.
When certain NPS units were expanded (e.g., Denali and Wrangell-St. Elias), the newly incorporated lands included existing mining claims and extraction operations.

2. Federal Mineral Leases: In 1920 the Congress created the Mineral Leasing Act and, in 1947, the MLA for Acquired Lands as other methods of disposing of certain Federally owned minerals on public domain lands that would return much greater revenue to the Federal treasury. Under this scheme the U.S. retains ownership of both the lands and the minerals, while the party leasing them obtains title only to the minerals actually extracted, in exchange for paying a royalty percentage of their value to the Federal government. These minerals, generically called "leasables," are oil and gas, tar sands, oil shale, coal, potassium, phosphate, and sodium. Tar sands are of special interest to NPS because some lie partially within Glen Canyon NRA and adjacent to Canyonlands. Five NRA's have specific congressional authorization for Federal mineral leases in their enabling legislation—Lake Mead, Whiskeytown, Glen Canyon, Ross Lake, and Lake Chelan. A total of about 15 NPS units contain such Federal mineral leases (e.g., Chaco Culture, Fossil Butte). All such leases, as with a valid mining claim, are a protected property interest having legal standing.

3. Nonfederally Owned Minerals: For many NPS areas created since 1961, especially in the eastern U.S., certain non-federal lands on which are located mineral rights devoted to non-park purposes by their non-federal owners. Congress provided for the exercise of these non-federally owned mineral rights in the enabling legislation which established these areas, such as Padre Island National Seashore, Big Cypress and Big Thicket National Preserves, and Jean Lafitte, so that the continued development of nonfederally owned oil and gas is permitted. Otherwise, acquisition of these deposits would have made these areas prohibitively expensive. The owners of these nonfederal mineral rights may occupy, develop and use their property—just as any other land owner—but subject to legitimate governmental controls designed to protect the general public interest.
Regulating Minerals in NPS Units:

1. Mining Claims: The Mining in the Parks Act of 1976 closed the last six NPS units to the location of any new mining claims and provided for the regulation of all mineral activities in existence at the time of enactment. This control is done primarily by plans of operation for all exploration and development extraction for both patented and unpatented mineral claims within NPS units. Bonds must be posted by the operators to ensure that mining activities conform to the plans and that required reclamation is completed. Thus, the claimants can exercise their rights while adverse impacts to park resources are minimized.

2. Federal Mineral Leases: The regulation controlling these leases are the same as those which apply to all Federal leases on any federal lands. They are intended to preclude significant adverse effects in park resources or administration in the five units where oil/gas or tar sand development is permitted. The NPS makes this determination of no significant impact before consenting, and NPS retains the approval of all site-specific activities. Thus, NPS has the authority to attach special requirements for operating conditions to leases and permits which maximizes the extent of preservation and protection of park resources, balanced with compliance with Congressional direction for mineral leasing and development.

3. Non-Federally Owned Minerals: The NPS has ample authority under the Organic Act and park-specific enabling legislation to develop and apply regulations for controlling the development of these minerals, except in Alaskan units. This control is focused by the plans of operation, and the associated operating reclamation bonds pertinent to oil/gas activities in Big Thicket, Big Cypress, Padre Island and Jean Lafitte.

Unregulated Mineral Activities in NPS Units:

This lack of regulation in certain NPS areas at present has arisen because:
°NPS finds that there is a lack of clear Congressional direction to control these activities;

°No significant adverse impacts have occurred to date;

°Controversial interpretations of existing statutes have been rendered;

°Mineral activities on mining claims under the 1872 mining law compared to the 1976 Mining in the Parks Act have not been resolved.

The types of mineral activities within NPS units presently not regulated:

°Nonfederal oil and gas developments where access is not on, through or across Federal lands;

°Nonfederal minerals other than oil and gas (e.g., sand and gravel used in construction which are by far the most valuable extracted mineral materials, though the Materials Act of 1947 prohibits their extraction in all NPS units).

°Nonfederal coal, because the need may have been eliminated by the Surface Mining Control and Reclamation Act of 1977, but this issue is now less clear;

°Patented claims in Alaska where access is not across park lands;

°Nonfederal oil and gas in Alaska.

The Mining in the Parks Act of 1976 is absolutely clear though limited, in its direction of NPS to minimize or prevent damage to park resources from mineral development activities. The conduct of mineral operations, per se, is an activity which can significantly damage park resources, purposes and activities. However, without further statutes from Congress to address other mineral development activities, NPS must proceed with great care using the broad authorities of the 1916 Organic Act, the 1970 Act for Administration, and the 1978 Redwood Act Amendments in order to fulfill the clear direction of Congress that all units of the National Park System be preserved and protected in perpetuity.
LESSON PLAN

Session Title: Global Warming

Session Length: 1 to 2 hours Prepared by: Richard Pawling

Objectives: At the end of the session, the participants will be able to:

1. define the phenomena called the "Greenhouse Effect."
2. identify that global warming is an interrelated complex issue caused by the human impact upon the environment.
3. describe the effects that global warming will have upon climatological modification and the National Park Service.
4. clarify that global warming is not totally agreed upon by scientists worldwide.

"Global Climatic Change" Scientific American (April, 1989), pp.36-44.
"Hot Times for the Old Orb" Time Magazine (Oct. 31, 1983), p. 84.

I. Define "Greenhouse Effect"

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<tbody>
<tr>
<td>5-15 min.</td>
<td>Lecture</td>
<td>Introduce the concept of the &quot;Greenhouse Effect&quot; by using select information from the handouts.</td>
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<td>Define the &quot;Greenhouse Effect.&quot;</td>
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<td>Use a transparency from the diagram (&quot;Hot Times for the Old Orb&quot; Time October 31, 1983).</td>
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<td>Explain its' global impact.</td>
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II. Causes of Global Warming

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<tbody>
<tr>
<td>10-20 min.</td>
<td>Discussion</td>
<td>Identify causes of the &quot;greenhouse effect&quot; using the participant's prior knowledge on the subject.</td>
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<td>Interject that the cause is both natural and man-made, but man-made increased levels of CO₂ and CFC’s are concentrating the impact.</td>
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<td>List the causes on a flip chart.</td>
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<td>Identify that increased CO₂ and CFC’s are primarily the cause of the &quot;greenhouse effect.&quot;</td>
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<td>(another cause is the clearing of tropical forests which reduces the photosynthetic removal of CO from the atmosphere).</td>
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### III. An Interrelated/Complex Issue

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<tr>
<td>20-25 min.</td>
<td>Lecture and Discussion</td>
<td>Stress the fact that the &quot;greenhouse effect&quot; is a result of human lifestyle.</td>
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<td>Show and identify the interrelated nature of global warming by discussing the statement &quot;a complex interrelationship exists concerning the problems of increasing population, decreasing resources, and increasing pollution.&quot; -- G. Tyler Miller</td>
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<td>While discussing this concept, define the terms: ecosystem, biosphere, food chain, energy flow in the ecosystem, food web, and carbon-oxygen cycle.</td>
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<td>Discuss the global warming trend and emphasize that this problem affects all members of planet earth and crosses political boundaries creating an international concern.</td>
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### IV. Controversy?

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<tr>
<td>10-15 min.</td>
<td>Lecture and Discussion</td>
<td>Identify that like so many of the world's problems, there is division among world scientists. Specific divisions arise concerning how much global warming has occurred, how much more is on the way, and what the climatic consequences will be.</td>
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<td>Using the handout &quot;What's Warming the Globe?&quot; list the divisions of opinion on a flipchart.</td>
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### V. Impacts - World and the National Park Service

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<tr>
<td>15-30 min.</td>
<td>Lecture and Discussion</td>
<td>Highlight the potential impacts of global warming: 1. climatologically 2. meteorologically 3. economically 4. politically 5. socially 6. environmentally</td>
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<td>Divide into six groups to brainstorm individually and then discuss answers with the class as a group.</td>
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VI. Solutions - What Can Be Done?

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<tbody>
<tr>
<td>15-20 min.</td>
<td>Lecture and Discussion</td>
<td>Use information from the handouts &quot;Feeling the Heat&quot; and Living in the Environment to compile a list of potential solutions.</td>
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<td>Analyze each solution as to its economic, political, social, and environmental acceptance (worldwide).</td>
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<td>Discuss what role you and the National Park Service should play in this dilemma.</td>
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LESSON OUTLINE

INSTRUCTOR: Molly N. Ross
DATE: November 17, 1986
COURSE: Natural Resource Law Course
TOPIC: National Park Service Duties and Mandates

OUTLINE

1. Introduction
A. Description of Session: This session will provide the trainees with an approach to interpreting the duty of natural resource protection in units of the National Park System. We shall focus on the laws authorizing and governing the administration of the National Park System and the individual park units. We shall examine what Congress, the courts, and the agency have said about these laws. We shall consider the range and limits of discretion afforded the agency in deciding natural resource protection issues. We shall examine certain natural resource protection tools, such as regulation, and establish the context for many other tools provided by federal, state, and local law that will be discussed during this week-long course.

B. Objectives of session
1. To consider laws relevant to protection of park resources
2. To learn approach to legal thinking
3. To alleviate fears about the law and litigation
4. To analyze laws as imposing responsibilities and creating opportunities for resource protection

C. Plan for session
1. Definition of terms
2. Interpretation of statutes
3. NPS Laws/Duties
   b. Enabling acts and proclamations: the units
   c. Regulations
4. Overview of other law relevant to natural resource protection
OUTLINE

a. Related Federal law
   ° Overlay statutes
   ° Other agencies' statutes
   ° Compliance laws ("shields")
   ° Opportunity laws ("swords")

b. State law/local law/private sector approaches

II. Definition of Terms: Sources of Law and Policy

A. Constitution: the supreme law

1. Enumerates powers of three branches and articulates the rights of individuals

2. Establishes Federal government as a "government of enumerated powers," reserving any power not so enumerated to the States

   However, enumerated powers have been broadly construed

   Park example: United States v. Gettysburg Electric Ry Co. (U.S. Supreme Ct., 1886)

   Property Clause: "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"

b. Statutes: acts of the legislature

1. Must be constitutional

2. Park example: "Organic Act"

C. Common Law: judge-made law

1. Authorized by usage, custom, prior judgment

2. Must be constitutional

3. Can be "pre-empted" or "saved" by statutes

4. Examples: nuisance, public trust, riparian water rights
D. Executive orders/Presidential proclamations

1. Order or regulation issued typically by President for purposes of interpreting, implementing, giving effect to a provision of the Constitution or a law or treaty

2. Must be authorized by Congressional delegation of power

3. Examples: executive orders on ORV's; Presidential proclamations establishing national monuments

E. Regulations: the interpretation and implementation of the law by administrative agencies

1. Must be constitutional and authorized by statute

2. Example: 36 C.F.R. §§1, et seq.

F. Policies/Guidelines: general principles for guiding agency actions

III. Interpretation of Statutes - Steps in Order of Importance:

A. Plain language of statutes (applying principles of statutory construction)

B. (If any ambiguity...) legislative history -

1. Committee reports/conference reports

2. Proposed versions of law not passed

3. Sponsors' remarks

4. Colloquies, floor remarks

5. After the fact extensions of remarks, comments at oversight hearings

6. Administrative interpretation (by agency charged with administration of statute) - factors:

E.g. ORG. ACT → SEC. OF INTER.
OUTLINE

1. Contemporaneous interpretation
   ADMIN AGENCIES INTERPRET AFTER PASSAGE

2. Longstanding interpretation

3. Degree of agency technical expertise required

4. Relevant Congressional actions (e.g., reenactment)

D. Case law - Federal courts in order of importance:

1. U.S. Supreme Court

2. U.S. Courts of Appeals (circuit courts)

3. U.S. District Courts

E. Commentary - e.g., treatises, law review articles

IV. NPS Laws/Duties

A. Plain language of 16 U.S.C. §§1, la-1, lc, 3

   1. Where is ambiguity?
   2. What does legislative history show about congressional intent?
   3. How has the agency interpreted the statute?
   4. What have the court decisions held?
   5. What do the legal commentators say?


   Presumption should have bearing on future cases

   1. Question of law presented, not question of fact. Because court is expert in interpreting law, court generally applies more critical standard of review to questions of law.

   2. Court upholds agency interpretation of NPS law to require preservation of resources except where Congress has expressly provided for consumption of resources.
C. Clark v. Community for Creative Nonviolence, 468 U.S. 288 (1984) — Question: Does NFS / 0nim T creer *>^t>v- <"ih regulation prohibiting camping in Lafayette Park and the hall violate the First Amendment when applied to prevent Mitch Snyder's "Reaganville" demonstrators from sleeping in these areas in connection with a demonstration intended to call attention to the plight of the homeless?

1. Constitutional question presented. Regulations assumed to be otherwise valid (e.g., statutorily authorized).

2. Court decides constitutional question, but also shows striking deference to Service's judgment on "how much protection of park lands is wise and how that level of conservation is to be attained."

1. Conservation Law Foundation of New England v. Clark, 590 F. Supp. 1467 (D. Mass. 1984) — Question: (1) Is Secretary's ORV management plan for Cape Cod National Seashore compatible, as a factual matter, with the preservation of the Seashore's ecological and physiographic condition as required by law (i.e., the Seashore's standing act, the NPS Organic Act, and the Executive Orders on ORV's)? (2) Is ORV use of the Seashore an "appropriate public
use" under the Seashore's enabling act and the Executive Orders on ORV's?

1. On factual question of the impact of ORV's, the court finds rational basis in the record that the ORV management plan is protecting the ecology of the Seashore.

2. Court remands case to agency for a determination of whether ORV use, both generally and as regulated under plan, is an "appropriate public use" of the Seashore.

F. General Observations

1. If Secretary acts to protect park resources, court is likely to uphold action (unless Congress has specifically directed otherwise).

2. NPS Organic Act can clearly be interpreted to require protection of park resources.

3. Factual record to support need for action toward the end of park protection may be critical.

4. Courts usually show deference to agency's judgment on both laws and facts. Amount of deference may be least on question of pure legal interpretation, and greatest on questions of technical factual matters.

5. Sometimes helpful to distinguish questions about adverse impact on resources (the preservation mandate) from questions about user conflicts (the visitor enjoyment directive).

6. Question: Can Secretary/NPS be compelled to act to protect resources? What is the extent of the Secretary's/NPS' "duty"?

1. Gettysburg tower cases: early 70's

Arguably adverse impact on park values and purposes from observation tower to be constructed on private property adjacent to park.
OUTLINE

1. Solicitor's Office advised that
   NPS lacked legal authority to block
   construction of tower on private land

2. NPS land exchange/right of way
   agreement found to sanction construction
   of tower

3. Consider legal tools available today-

   2. Kedwoods trilogy of cases: mid-70's

      Clearly adverse impact on Redwood
      National Park's values and purposes

      Questions: What is basis and extent
                 of Secretary's duty? Given the
                 Secretary's duty to protect, what
                 actions must Secretary take?

3. 1978 Kedwoods Act language amending 16
   U.S.C. §1a-1

      Plain statutory language

      (Some ambiguity, so...) legislative history


      Holding: Secretary's decision not
                 to voluntarily join water rights
                 litigation in Arizona and Utah has a
                 rational basis since (1) Secretary's
                 water rights will not be prejudiced;
                 (2) proposed energy developments do
                 not pose immediate threats; (3)
                 Secretary is proceeding with the
                 identification and quantification of
                 these water rights.

      Dicta: Secretary's statutory duty
                 to protect park resources is strong.
                 In the event of a real and immediate
                 threat, the Secretary must take
                 appropriate action. The Secretary
                 has broad, but not unlimited,
                 discretion to determine what actions
                 are best calculated to protect park
                 resources, including denying land
                 exchanges and rights of way which
may constitute or aid a threat to park resources, bringing trespass or nuisance actions, etc.

Commentary

h. Individual parks' enabling authorities

1. 16 U.S.C. §1c

2. Examples of enabling authorities (GRCA, DEVA)


   Statutory interpretation using case study of Alaska national monuments

   Present concern: Dinosaur National Monument water rights litigation

l. Regulations

1. 16 U.S.C. §3

2. Three possible applications:

   NPS lands - clear authority

   Inholdings - case law has made authority apparently clear

   Extraterritorial activities - unclear

3. Property Clause cases

   Camfield, Alford, Kleppe v. New Mexico,
   U.S. v. Brown, Minnesota v. Block

   Oliver Wendell Holmes: "The danger depends on the nearness of the fire, not upon the ownership of the land."

J. Trespass and nuisance actions

1. Limitations

2. In certain circumstances statutory law may have pre-empted these common law actions
3. Examples

- United States v. Atlantic-Richfield Co., fluoride emissions,
  478 F. Supp. 1215 (D. Mont. 1979)

- Associate Solicitor's (C&W) Memorandum,
  September 20, 1985 (and Congressional Research Service's Comments thereon)

- United States v. Moore, Civ. Action

1. Interim Summary

A. Law does not provide "answers."

B. Statutes can usually be interpreted in more than one way.

C. In the case of NPS laws, one interpretation may be more resource protective than another.

D. For policy reasons, the Solicitor's Office Secretary may not adopt the most resource protective interpretation. Presumably, the interpretation must nevertheless be "defensible."

E. What can NPS personnel concerned about natural resource protection do?

1. Develop data and records
2. Do good science, including baseline, trends, necessary research
3. Disseminate findings
4. Build constituencies
5. Use park management documents
6. Take advantage of opportunities

VI. Related Federal Law

A. Introduction

1. Pre-1950's, 1960's: nuisance, local
ordinances, State law

2. 1970's: burst of Federal environmental law

3. 1980's: Federal legislative retrenchment?

→ Increase in State/local environmental activity?

B. Overlay statutes - examples:


C. Other Federal agencies' statutes - examples:


3. Other agencies' planning projects and project plans
   
   ° Why get involved?

   ° RMP/GMP equivalents

   ° How and when to get involved?

D. Compliance statutes ("shields")

1. Know these laws so that your resource protection objectives are not frustrated by mistakes

2. Examples:


   ° National Historic Preservation Act (NHPA),
E. Opportunity statutes ("swords")

1. Take advantage of opportunities presented by these laws to protect resources

2. Examples:
   - Constitutional law - e.g., Property Clause
   - Common law - e.g., nuisance, trespass, public trust, riparian water rights
   - Statutes - examples:
     - NEPA, ESA, NHPA
     - Clean Air Act, 42 U.S.C. §§7401, et seq.
     - Surface Mining Control and Reclamation Act (SMCRA), 30 U.S.C. §§1201, et seq.
     - etc., etc., etc.,

VII. State Law - Examples:

A. Land use planning

B. Protection of critical environmental areas - e.g., floodplain programs, coastal wetlands programs, inland wetlands programs

C. State programs under Coastal Zone Management Act

D. State environmental policy acts (SEPA's)

E. State historic preservation programs

F. State acquisition powers

VIII. Local Law - Examples:
A. Zoning, and other land use planning tools

B. Tax law

IX. Private Sector Opportunities

X. Conclusion