PROCEDURE *Department of Natural Resources*

DATE Month, 2013

PR - - CONDUCTING ADAPTIVE MANAGEMENT IN THE OLYMPIC EXPERIMENTAL STATE FOREST

APPLICATION State Lands within the Olympic Experimental State Forest

DISCUSSION

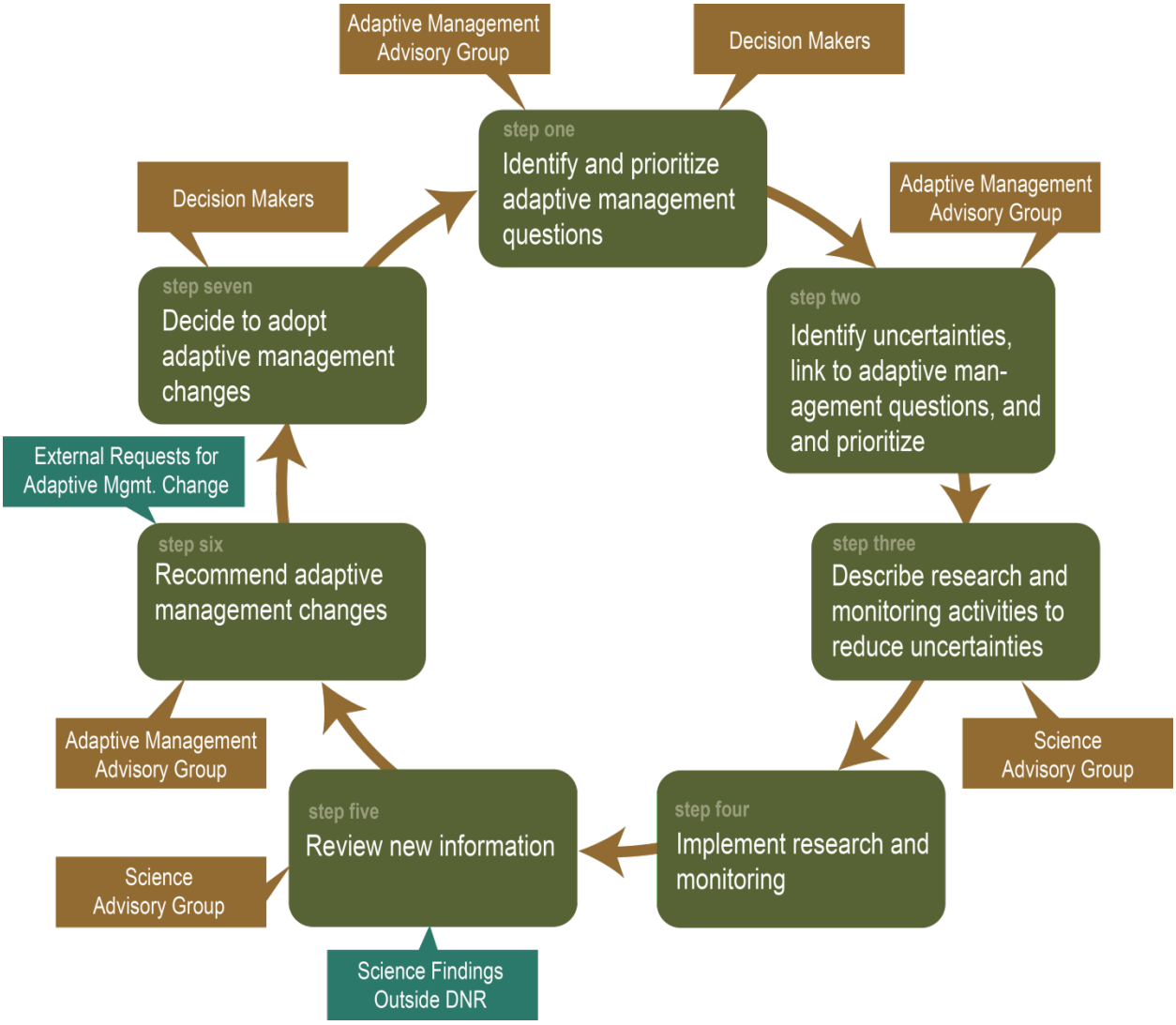
The 1997 *Habitat Conservation Plan* requires DNR to "demonstrate a process by which land management activities in the Experimental Forest can respond to new information" (DNR 1997 p. I.15). New information is expected to reduce uncertainties (incomplete knowledge) about ecological systems and to increase the effectiveness of integrating revenue production and habitat conservation in the Olympic Experimental State Forest (OESF). Research and monitoring activities are recognized as the main source of new information. Adaptive management is the process through which DNR identifies priority information needs, collects new information, and uses that information to make management adjustments. Key adaptive management questions and their associated uncertainties were identified during the development of the OESF Draft Forest Land Plan (refence).

The purpose of this procedure is to define a structured decision-making process for adapting land management in the OESF to new information.

The adaptive management process is illustrated in Figure 1 as a cycle of seven sequential steps. The cycle starts with identifying and prioritizing adaptive management questions using the prioritization criteria in Chapter 4 of the draft OESF Forest Land Plan (reference). At the second step of the process, key uncertainties are identified and prioritized using the initial list and prioritization criteria in Chapter 4 of the draft OESF Forest Land Plan (reference). High priority uncertainties are reduced through research and monitoring activities (Step 3). New scientific information, developed by DNR or externally, is reviewed at Step 5 of the cycle and is considered for management adjustments. Requests from external parties for adaptive management changes in the OESF are considered at Step 6 of the cycle and may trigger scientific review.

The parties responsible for the adaptive management process in the OESF, and their roles are described later in this procedure.

Figure 1. Adaptive Management Process and Responsible Parties



Information that Can Lead to Adaptive Management Changes

- DNR research and monitoring results
- DNR operational data
- Results from cooperative research and monitoring projects
- Science findings outside DNR
- Expert judgment, if supported by reliable information

Changes Resulting From the Adaptive Management Process

- Update or amendment to a policy or planning document (for example, 1997 *Habitat Conservation Plan*, OESF Forest Land Plan)
- New or updated procedures (for example, Forestry Handbook procedures)
- Change in operational guidelines
- New or updated training in natural resource management
- Organizational change

Roles and Responsibilities

Decision makers

Decision makers vary depending on the type and impact of the change:

- The Board of Natural Resources is responsible for policy changes, such as updates to the Policy for Sustainable Forests and major 1997 *Habitat Conservation Plan* amendments.
- Executive Management is responsible for budget allocations, approvals, and changes to the OESF Draft Forest Land Plan, and minor amendments to the 1997 *Habitat Conservation Plan.*
- The Forest Resources and Conservation Division Manager is responsible for changes to Forestry Handbook procedures.
- The Olympic Region Manager is responsible for operational changes, maintenance of regional records, and training of region staff.
- Program managers are responsible for program implementation and training.

Decision makers have two main roles:

1) Take action upon receiving a recommendation for an adaptive management change. The action could be one of the following:

    - Direct a specific adaptive management change which may result in SEPA action.
    - Make an informed decision not to change current management practices.
    - Request more information.

    When a change is made, the Forest Resources and Conservation Division Manager notifies staff (division and region) and modifies the procedure in the Forestry Handbook.

2) After considering the recommendations of the Adaptive Management Advisory Group, determine the priority management questions, and the priority uncertainties to be addressed by research and monitoring. These determinations should consider both the budget allotment and the decision space within which to act upon the anticipated new

information. The list of priority uncertainties and associated research and monitoring questions helps define the scope of research and monitoring projects. The decision makers may do one of the following:

- Direct the OESF Research and Monitoring Manager to coordinate suggested research and monitoring activities and notify the OESF Research and Monitoring Manager how DNR will fund these projects.
- Make an informed decision to not address the uncertainties at this time and document the rationale for such decision.
- Request more information.

Adaptive Management Advisory Group

Members of the Adaptive Management Advisory Group include:

- Forest Resources Division assistant managers of HCP and Scientific consultation, Informatics and Planning, and Silviculture and Monitoring sections, who ensure that research and monitoring questions correspond to key management needs and that the recommended adaptive management changes are economically feasible and in agreement with the agency's multiple obligations.
- The Olympic Region State Lands Assistant and Coast District Manager, who ensure that the research and monitoring questions reflect key operational needs and that the recommended change is operationally feasible.
- The OESF Research and Monitoring Manager, who convenes and chairs the group and facilitates the discussions.
- A scientist involved in the study that prompted the adaptive management change or, if this scientist is not available, a DNR scientist with expertise on the subject. The scientist ensures the study results are interpreted correctly.

The Adaptive Management Advisory Group has the following responsibilities:

(1) Recommend adaptive management changes to the decision makers.

- Review new information presented by the OESF Research and Monitoring Manager.
- Review external requests for adaptive management changes and seek scientific review on those requests, if necessary.
- Provide opinions on whether an adaptive management change is warranted.
- Recommend the type of adaptive management change.

The decision whether to recommend an adaptive management change is made by a majority; no consensus is needed. If any member of the group disagrees with the recommendation, his or her opinion will be recorded and provided to the decision

makers.

2) Recommend priority adaptive management questions to the decision makers. Identify high priority uncertainties and potential research and monitoring activities to reduce them. The prioritization criteria and process are described in Chapter 4 of the draft OESF Forest Land Plan (reference). Request the necessary funding from the decision makers.

Science Advisory Group

Membership in this group will not be permanent; participating experts will be carefully selected for each project based on their professional credentials in a particular subject area.

Members of the Science Advisory Group include:

- Three scientific experts on the subject being reviewed. The areas of expertise include, but are not limited to forest ecology, silviculture, wildlife biology, fish biology, geology, hydrology, biometry and experimental design, and statistics.
- The OESF Research and Monitoring Manager, who convenes and chairs the Science Advisory Group and facilitates the scientific review process.

The Science Advisory Group has the following responsibilities:

- Advise DNR on approaches to reducing priority uncertainties.
- Review and, in some cases, develop study plans.
- Review the progress of DNR research and monitoring projects.
- Review DNR research and monitoring results.
- Review external scientific information and provide an opinion on its merit for a potential adaptive management change.

OESF Research and Monitoring Manager

The OESF Research and Monitoring Manager has the following responsibilities:

- Convene and chair the Adaptive Management Advisory Group.
- Facilitate the discussions of the Adaptive Management Advisory Group.
- Submit the Adaptive Management Advisory Group's recommendations for adaptive management changes to decision makers.
- Convene and chair the Science Advisory Group.
- Facilitate the discussions of the Science Advisory Group.

- Identify priority adaptive management questions, associated uncertainties, and suggested research and monitoring activities, and submit them to the Adaptive Management Advisory Group.
- Bring new information (DNR and external) to the attention of the Adaptive Management Advisory Group.
- Submit the Adaptive Management Advisory Group's recommendations for research and monitoring activities to decision makers.
- Seek external funding and collaboration to obtain new information.

ACTION

1. The Forest Resources Division Manager fills the OESF Research and Monitoring Manager position and approves the appointments and charter for the Adaptive Management Advisory Group. The Forest Resources Division Manager seeks funding from Executive Management for the OESF research and monitoring program.

2. The Adaptive Management Advisory Group is convened by the OESF Research and Monitoring Manager at least once a year. This group reviews current and emerging management issues and associated uncertainties and identifies potential research and monitoring activities to reduce those uncertainties. This group reviews the progress of ongoing OESF research and monitoring projects and develops adaptive management recommendations based on the projects' findings and on science findings outside DNR. This group considers requests for adaptive management changes submitted by external organizations and may seek scientific review on those requests. The group prepares a report for decision makers with recommendations for adaptive management changes. The report briefly describes the data upon which a recommendation is based, explains the rationale for the recommended change, and suggests implementation options, if any.

3. Other organizations may request DNR to make adaptive management changes in the OESF based on new scientific information. Such requests must include data and analyses substantiating the request. The request should be directed to the Adaptive Management Advisory Group.

4. The Science Advisory Group is convened by the OESF Research and Monitoring Manager at least once a year. The group reviews the priority research and monitoring uncertainties approved by decision makers and the approaches suggested for reducing the uncertainties. The group reviews proposed, ongoing, and completed research and monitoring projects conducted in, or related to, the OESF. The group develops a brief report (or meeting notes) of its findings and recommendations to the Adaptive Management Advisory Group.

5. Decision makers for State Lands consider the findings and recommendations of the Adaptive Management Advisory Group. Decision makers produce a brief report (or meeting notes) of their decisions regarding proposed adaptive management changes and research and monitoring priorities and their funding.

6. After a decision is made for adaptive management changes, the Forest Resources Division Manager notifies affected DNR staff and modifies Forestry Handbook procedures (if necessary).

Timelines for Each Step of the Adaptive Management Process

1. For adaptive management changes:

    - When new information is brought to the attention of the OESF Research and Monitoring Manager, he or she informs the Adaptive Management Advisory Group within two months by submitting a written report.
    - The Adaptive Management Advisory Group reviews new information within three months of receiving the OESF Research and Monitoring Manager's report.
    - The OESF Research and Monitoring Manager prepares and submits a recommendation report to decision makers within one month of the Adaptive Management Advisory Group recommendations.
    - Decision makers provide a decision within six months of receiving recommendations for smaller management adjustments (for example, changes requiring the attention of the Forest Resources Division Manager or the Olympic Region Manager). and within nine months of receiving recommendations for larger changes (for example, changes requiring the attention of the Deputy Supervisor for Uplands or the Board of Natural Resources).

2. For prioritization of adaptive management questions, uncertainties and approval of research and monitoring projects:

    - The OESF Research and Monitoring Manager brings key adaptive management questions and associated uncertainties to the attention of the Adaptive Management Advisory Group as they are identified, or at least once a year.
    - The Adaptive Management Advisory Group reviews and prioritizes uncertainties or suggests new ones within two months.
    - The OESF Research and Monitoring Manager submits a recommendation report to decision makers within one month of the Adaptive Management Advisory Group opinion.

- Decision makers make a decision on recommended priority adaptive management questions, uncertainties, and the research and monitoring activities to reduce them within three months for projects requiring small budget allocations and within six months for projects requiring budget allocations beyond those planned for the biennium.