

RECOVERY MEETING

Northern riffleshell, Epioblasma torulosa rangiana
Clubshell, Pleurobema clava

APRIL 6-7, 1993

OHIO DEPARTMENT OF NATURAL RESOURCES, HEADQUARTERS
COLUMBUS, OHIO

AGENDA

Tuesday, April 6, 1993

<u>Time</u>	<u>Topic</u>
1:00 PM	Goals and Introductions
1:15 PM	Recovery planning process
1:30 PM	Short presentations by knowledgeable persons as to the recent status, threats, and protection ideas to these mussels in their area of expertise or jurisdiction (20 minutes each if necessary)
2:30 PM	Break
2:45 PM	Continue presentations
3:45 PM	Break
4:00 PM	Recovery Plan Development I. INTRODUCTION - Description, distribution, habitat, life history, etc.
5:00 PM	Dinner
6:30 PM	Continue Recovery Plan Development II. RECOVERY - Objectives and tasks (this is the meat of the recovery effort) We should stay as late as is necessary to get a good start on this effort.

Wednesday, April 7, 1993

8:00 PM	Continue Recovery Plan Development and begin developing III. IMPLEMENTATION
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SCHEDULE - Priorities, duration, task,
costs, etc.

If we complete the above tasks and get
Dr. Watters off to a good start, we may
visit the zoology museum and do something
fun. However, the work needs to come
first.

12:00 PM

Adjourn

APPENDIX I

RECOVERY PLAN FORMAT

05/25/90

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RECOVERY PLAN FORMAT

Title/Approval Page

Should be in the following general format:
(Technical, Technical/Agency, or Agency Draft - as appropriate)

SPECIES X

(Revised, Second Revision, etc.)*

RECOVERY PLAN

(Original Approved: October 1, 1976)*
(First Revision Approved, etc.)*

Prepared by the Species X Recovery Team

John Doe, Leader
U.S. Fish and Wildlife Service
Region 1
Portland, Oregon

Jim Johnson**
Oregon Wildlife Commission
Forest Grove, Oregon

Mary Smith
Cornell University
Ithaca, New York

for
Region 1
U.S. Fish and Wildlife Service
Portland, Oregon

Approved: _____
Regional Director, U.S. Fish and Wildlife Service

Date: _____

(Include date, but not signature line on drafts)

*Include this line if the approval page is for a revision.

** If more names than space exists, list all members on a page following.

DISCLAIMER PAGE*

Recovery plans delineate reasonable actions which are believed to be required to recover and/or protect listed species. Plans are published by the U.S. Fish and Wildlife Service, sometimes prepared with the assistance of recovery teams, contractors, State agencies, and others. Objectives will be attained and any necessary funds made available subject to budgetary and other constraints affecting the parties involved, as well as the need to address other priorities. Recovery plans do not necessarily represent the views nor the official positions or approval of any individuals or agencies involved in the plan formulation, other than the U.S. Fish and Wildlife Service. They represent the official position of the U.S. Fish and Wildlife Service only after they have been signed by the Regional Director or Director as approved. Approved recovery plans are subject to modification as dictated by new findings, changes in species status, and the completion of recovery tasks.

* Can indicate uncertainty of costs of cost estimates identified for task implementation and/or time estimates for achievement of recovery, if applicable, in the Disclaimer.

LITERATURE CITATIONS

Literature Citations should read as follows:

U.S. Fish and Wildlife Service. 19__ . _____ Recovery Plan. City,
State. __ pp.

Additional copies may be purchased from:

Fish and Wildlife Reference Service:

5430 Grosvenor Lane, Suite 110
Bethesda, Maryland 20814
301/492-6403
or
1-800-582-3421

The fee for the Plan varies depending on the number of pages of the Plan.

ACKNOWLEDGEMENTS PAGE

Acknowledgments Page (Optional)

The inclusion of an Acknowledgments page is at the discretion of the Region responsible for preparing the plan. If included, it should recognize individuals that contributed significant information/assistance during plan preparation.

EXECUTIVE SUMMARY

The Executive Summary should not exceed 1 single-spaced page. Arrange to print extra copies of the Executive Summary for distribution to interested parties. It should include:

Current Species Status: Status, population level/distribution (if known), and vulnerability to threats. (Let the reader know up front the condition of the species.)

Habitat Requirements and Limiting Factors: List any specialized habitat requirements and major threats to be addressed under Actions Needed.

Recovery Objective: Choose among delisting, downlisting, or protection of existing populations for a specific time period or for the foreseeable future. Be ambitious, but do not set an unobtainable objective (obtained from Part II of the recovery plan).

Recovery Criteria: Indicate the number and arrangement of viable populations, protection and management procedures needed, and what threats should be resolved. Only by being specific in terms of numbers, distribution, amount of habitat, level of protection/enforcement, etc., will the Service and the public be able to assess progress toward the recovery objective.

Actions Needed: Present a numbered list of the major steps needed to satisfy recovery criteria or at least make a significant improvement in species status.

Total Estimated Cost of Recovery: A cost table may be provided as follows. The bottom right-hand figure should reflect the total estimated cost of recovery (e.g. consultations, permits, law enforcement activities, land management activities, personnel requirements, etc). Costs may be summarized if more applicable.

<u>Year</u>	<u>Need 1</u>	<u>Need 2</u>	<u>Need 3</u>	<u>Total</u>
1990	\$	\$	\$	\$
1991	\$	\$	\$	\$
1992	\$	\$	\$	\$
Total	\$	\$	\$	\$

Date of Recovery: Indicate the anticipated year objectives will be completed. This may or may not be the last year listed in the above cost table.

(See attached example(s), pages 6 and 7.)

EXECUTIVE SUMMARY OF THE RECOVERY PLAN FOR THE OZARK CAVEFISH

Current Status: This species is listed as threatened. Fourteen populations are known from the three states of Missouri (7), Oklahoma (3) and Arkansas (4). Historically, the species occurred in 24 caves of the same region.

Habitat Requirements and Limiting Factors: The Ozark cavefish inhabits cave streams of the Springfield Plateau in southwest Missouri, northeast Oklahoma and northern Arkansas. Habitat loss and decreasing water quality, due to urbanization, are the principal threats. Declining bat populations, which provide an energy source to the caves, and normal low reproductive rates of the cavefish also threaten the species' survival.

Recovery Objective: Delisting.

Recovery Criteria: To establish and/or maintain viable populations of the Ozark at twelve locations.

Actions Needed:

1. Monitor existing and experimental populations.
2. Establish five new populations and augment selected existing populations.
3. Determine recharge zones for caves of existing and experimental populations.
4. Develop and implement protection of recharge zones for each site of existing and experimental populations.
5. Eliminate threats/habitat degradation through a combination of consultation/permitting/cooperative programs.

Costs (\$000's):

<u>Year</u>	<u>Need 1</u>	<u>Need 2</u>	<u>Need 3</u>	<u>Need 4</u>	<u>Total</u>
1990	3.0	.0	15.0	5.0	23.0
1991	3.0	60.0	10.0	5.0	78.0
1992	3.0	20.0	.0	5.0	28.0
1993	3.0	20.0	.0	5.0	28.0
1994	3.0	20.0	.0	5.0	28.0
1995	3.0	20.0	.0	.0	23.0
1996	3.0	20.0	.0	.0	23.0
1997	3.0	20.0	.0	.0	23.0
1998	3.0	20.0	.0	.0	23.0
1999	3.0	.0	.0	.0	3.0
2000	3.0	.0	.0	.0	3.0

<u>Total Cost of Recovery</u>	33.0	220.0	25.0	25.0	283.0
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Date of Recovery: Delisting should be initiated in 2000, if recovery criteria are met.

EXECUTIVE SUMMARY OF THE RECOVERY PLAN FOR FASSETT'S LOCOWEED

Current Status: This species is listed as threatened. During a 1988 survey, Fassett's locoweed has been relocated at four of eight historical stations. Three of the sites are currently on the market or were recently sold to new private owners. Only eight plants were found at the fourth station, which is a highly developed lake shoreline.

Habitat Requirements and Limiting Factors: None of the four known sites of Fassett's locoweed are in protected ownership. Shoreline development is the largest threat to the species. Plants are located on sandy shorelines of land-locked seepage lakes where water levels fluctuate regularly in response to rainfall patterns. The species may depend upon a persistent seed bank to survive during periods of high water, then germinating soon after a shoreline is exposed during low levels.

Recovery Objective: Delisting

Recovery Criteria: Protect and maintain ten separate and self-sustaining populations of Fassett's locoweed. These should include all known extant colonies as well as introduced populations. Introduced colonies will not be considered successfully established until after a lapse of fifteen years.

Actions Needed:

1. Survey suitable habitat for additional populations, and acquire known populations.
2. Monitor existing populations.
3. Conduct research on the biology of the species.
4. Establish new populations of Fassett's locoweed.
5. Investigate and conduct necessary management activities at all key sites.

Costs (000's):

Year	Need 1	Need 2	Need 3	Need 4	Need 5	Total
1990	0.0	2.5	2.0	5.0	1.5	11.0
1991	20.0	2.5	0.0	5.0	1.5	29.0
1992	20.0	2.5	2.0	5.0	11.5	41.0
1993	20.0	2.5	0.0	.0	11.5	34.0
1994	20.0	2.5	2.0	.0	1.5	26.0
1995	50.0	2.5	0.0	.0	1.5	54.0
1996	0.0	2.5	2.0	.0	1.5	6.0
1997	0.0	2.5	0.0	.0	1.5	4.0
1998	0.0	2.5	2.0	.0	1.5	6.0
1999	0.0	2.5	0.0	.0	1.5	4.0
2000	0.0	2.5	0.0	.0	1.5	4.0
Recovery Cost	130.0	27.5	10.0	15.0	36.5	219.0

Date of Recovery: Delisting should be initiated in 2007, if recovery criteria have been met.

RECOVERY PLAN DEVELOPMENT

OUTLINE

A Table of Contents should follow the Executive Summary and include:

- I. Introduction
(List major headings)
- II. Recovery
 - A. Objective
 - B. Narrative Outline for Recovery Actions Addressing Threats
 - C. Literature Cited
- III. Implementation Schedule
- IV. Appendix
(Individual appendix numbers may be listed for lengthy or complicated plans).

If the plan contains separate outlines for different populations or management units then required to serve as the basis of jeopardy/adverse modification determinations, then these major divisions should be included in the Table of Contents, Sections II and III above.

In all narrative sections of the plan, avoid using "boiler-plate" language or copying parts of other plans. Tailor each plan to the needs of the individual species. When writing the plan, keep in mind those subsections that will likely require changes in future revisions so that they can be handled most efficiently (e.g. by whole page replacement).

I. INTRODUCTION

This section of the recovery plan serves several important purposes. First, it acquaints the reader with the species, its status, and the threats it faces. Second, because it is a source document for land managers, economic interests, and other interested individuals, it should touch on all relevant information. This does not mean that the Introduction should be a dissertation on the species; rather it should be more of a review or summary document. No topic should be covered in tremendous depth, but all major aspects of the species' biology should be mentioned, with appropriate citations for further information. When dealing with less known species, particularly invertebrates and plants, a few-word description of its class/family affinities would provide a reference point for the non-taxonomist. All major publications on the species should be referenced in the LITERATURE CITED or REFERENCE section. Third, the introduction will serve as an information source for the interested, but busy, decisionmaker. It should therefore be arranged so that the information it contains is quickly and easily accessible.

The following subsections for the Introduction may be adapted to suit the biology of the species; however, keep in mind that the busy decisionmaker will be thankful if the answers to obvious questions can be found by glancing at the Table of Contents and flipping to an appropriate page.

- A. Description - Give the date listed and Federal Register citation for the final rule. The description should not be extremely technical. Note when the species was described and refer to the best available technical descriptions. You may wish to mention "look-alike" species and note how to differentiate, but the detail should be more on the level of a field guide than a taxonomic treatise. For reference, provide the recovery priority for this species/group/ecosystem assemblage.
- B. Distribution - Give historical and currently occupied range. Include a map of appropriate scale to delineate these generally without disclosing site-specific information. Be sure the map has adequate margins to allow for binding and will reproduce clearly. If appropriate, state the number of known populations (or centers of distribution) and counties of occurrence. This subsection is one that will likely require periodic updating.

- C. Habitat/Ecosystem - This may be a separate subheading or, if little information is available, may be combined with subsection D. Include relevant information, such as soil type (particularly for plants), plant or community associations (do not include an exhaustive species list), elevation, requirements for water quality, flow regimes, etc. Describe critical elements of the species ecosystem that should be considered by persons proposing activities that may affect the species or its recovery. Such elements may include sensitive life stages, symbiotic relationships, cover, food, the effects of actions favoring competitors, predators, etc. This section should be in a format that lends itself to use in information sheets developed for Section 7 consultations, Habitat Conservation Plan(s) developments, or other management programs of major public interest. If known, describe the tolerance of the species to take of individuals or changes in essential elements of its habitat for use in determining incidental take. [The proposal has been made that discrete recovery populations or units of critical habitat be the basis for determinations of effect during Section 7 consultations. If that suggestion is adopted, these guidelines will be further refined to reflect additional data needs].
- D. Life History/Ecology - Include what is known about phenology, pollinators, dispersal, etc. (for plants), breeding habits, litter or clutch size, diet, behavior, etc. (for animals). As in all previous sections, try to focus on brevity without sacrificing thoroughness and be sure to cite relevant literature.
- E. Reasons for Listing - This will include an overview of the species' decline (if appropriate) and the threats it faces. A description of the current land management practices that are affecting or may affect the species should be included, as they may have a direct bearing on decisions regarding the recovery and management of listed species. The description would also give a historical perspective to future management issues or conflicts. Do not repeat information presented in other sections. The intent here is to provide a framework for the reader to understand the tasks specified in Section II. The "Factors Affecting the Species" section of the listing rule is a good starting point for this subsection.
- F. Conservation Measures - For some species, conservation/recovery efforts have been ongoing or will be initiated prior to approval of the recovery plan. Any such activities should be mentioned here. This subsection is the one that will most likely require updating in future revisions.
- G. Strategy of Recovery - This is to provide the reader with a chronological overview of the species ecosystem restoration and maintenance recovery actions. A sentence or two should be

included about all Priority 1 tasks identified in Section II, and major Priority 2 tasks may be mentioned. This section may be omitted from very simple plans, where the overview can be gleaned from the Executive Summary or directly from the Narrative Outline.

II. RECOVERY

A. Objective and Criteria

State the primary objective of the plan. State the recovery criteria in quantitative terms (e.g., number of individuals or populations) whenever possible. If the recovery objective includes removal of the species from endangered status, make it clear whether this means reclassification to threatened status or complete delisting. If the prospect of reclassification is uncertain, a measurable interim objective may be used. The 1988 amendments to the Act require an estimate of the recovery time, which should also be stated in this section and should be based on the assumption that recovery tasks will be implemented as scheduled and that a determination has been made of the probable effect of anticipated human activities on that schedule. The recovery objective and criteria may read as follows:

"Species Y" will be considered for reclassification from endangered to threatened when X geographically distinct, self-sustaining populations are protected in X county(ies) of State Y (or in any other counties where native populations might be discovered in the future) and they have been maintained for Z consecutive years. Delisting the species will be considered when X+ geographically distinct, self-sustaining populations are protected in X counties for another Z consecutive years following reclassification. The estimated date for recovery completion is 2010.

The brevity and apparent simplicity of the recovery objective section is quite deceptive. Quantifying recovery criteria calls for creative thought, and developing the criteria may require educated guesswork. This may be difficult for scientists accustomed to basing their statements on hard data rather than conjecture. However, plan authors should keep in mind that concise and measurable recovery criteria are necessary; they represent the central pillar of the recovery plan. Only explicit, measurable goals will bring the overall recovery effort into focus and promote the necessary funding. If the objective section includes such terms as protected, stable or increasing populations, these should be operationally defined, in light of such factors as generation time and other relevant factors.

Population viability analysis concepts may prove useful in developing recovery objectives and criteria. Studies to determine probable population viability, and the optimum number and spatial arrangement of populations, may be specified as tasks in the plan.

Although determining the appropriate spatial arrangement and number of populations might require further research, some preliminary targets should be identified. Populations should be defined and located so that a single event, however catastrophic, would be unlikely to eliminate more than one population. Delisting would generally require more viable populations than would be required for downlisting. It might not be necessary for recovery criteria to match any historical population level, if a lower level will ensure the long-term survival of the species as a natural component of its ecosystem. There may be cases where not enough habitat remains to support a population that meets viability criteria. In these cases, full recovery is clearly not achievable, and the plan should clearly state why delisting is not a practical objective. In some cases, evaluating the ability of the ecosystem to support viable populations can be a recovery task.

All plans should state that the reclassification criteria are preliminary, and that they may be revised on the basis of new information (including research specified as recovery tasks).

B. Narrative Outline for Recovery Actions Addressing Threats

This section should be concise and action-oriented. Actions not known to be required for recovery, even though possibly beneficial, may be included. Though most of the tasks included in the outline should be those that are expected to be carried out in the near future, all tasks necessary to achieve full recovery of the species should be identified. Limiting the Narrative Outline to tasks that are expected to be carried out in the near future will sacrifice long-term planning for short-term goals and will not give an accurate assessment of what is necessary to achieve the stated recovery objective. If all tasks known are outlined, time frames can be set as "to be determined" if they are dependent on the outcome of earlier planned tasks.

A stepdown outline is not required; however, plan preparers should be familiar with the stepdown process because it may be a useful tool in task definition. Regional Directors may include stepdown outlines in plans at their discretion.

The narrative outline should step down recovery needs as far as is necessary to reach the task level. Tasks are items that can be funded or permitted independently. For example, under "Gather life history information on Species X," do not list "Study diet" and "Study social

interactions" as separate tasks unless you anticipate that separately funded studies should be conducted. Use judgment in deciding how finely to slice the tasks. In some instances, one aspect of life history may be of higher priority than other aspects and should be designated as a separate task. Any task receiving a Priority I designation in the Implementation Schedule must be justified in the Narrative Outline as necessary to prevent extinction.

In the narrative, discuss the uncertainty surrounding cost estimates that might prove inaccurate or imprecise. Indicate the degree of confidence in the estimates, including costs associated with developing and implementing conditions of Section 7 consultation biological opinions and Section 10 Habitat Conservation Plans. Estimates should be in current dollars; do not attempt to adjust for inflation. Estimates from other agencies need to be similarly documented. (Note that Congress may fund other Federal agencies based, in part, on these estimates. It will greatly benefit other agencies' budget requests if they can say "... as indicated in the Recovery Plan for the species.")

Specifically identify in this section any recommendation for the protection of habitat that is essential to the species. Describe its extent and location (provided this specificity would not increase the risk of take). Available options for land protection (e.g., fee purchase, easement, etc.) should be considered as options. Essential habitat need not be limited to currently occupied habitat or currently suitable habitat if it is deemed important for eventual recovery of the species. (Note that any habitat to be acquired by a Federal agency for endangered species must be identified, at least in general area description, in the recovery plan before the Administration will submit the request to Congress. As a very minimum, land acquisition must be identified as a requirement for recovery.)

The Narrative Outline should include a set of "Strategies" that will, when applied to the known threats, result in achievement of the recovery objective. It is important to consider all strategies that may alleviate known threats, such as research on disease, habitat protection, protection from taking, captive propagation, reintroduction, control of competing species, etc.

C. Literature Cited/References

All citations from Part I and II should be listed here. The AIBS style manual presents the proper format for citations. This section should reference all source documents for the Plan, but it need not be a complete bibliography.

III. IMPLEMENTATION SCHEDULE

This is a very important section of the recovery plan. It will be used to secure and obligate funds, establish associated regulatory and other management priorities, and will provide the basis for tracking plan implementation. The Implementation Schedule should be preceded by a page defining task priorities and acronyms used in the schedule. Several regions have found an introduction to the Implementation Schedule, like the one below, useful to the readers of Recovery Plans:

"The Implementation Schedule that follows outlines actions and estimated costs for the recovery program. It is a guide for meeting the objective discussed in Part II of this Plan. This schedule indicates task priorities, task numbers, task descriptions, duration of tasks, the responsible agencies, and lastly, estimated costs. These actions, when accomplished, should bring about the recovery of the species and protect its habitat. It should be noted that the estimated monetary needs for all parties involved in recovery are identified and, therefore, Part III reflects the total estimated financial requirements for the recovery of this species."

A hypothetical example follows this discussion. Each column of the schedule is discussed below:

A. Task Priority - In contrast to the Narrative Outline, tasks in the Implementation Schedule will be arranged in priority order; thus, all Priority 1 tasks will be listed first, consolidating them and increasing their visibility. Assign task priorities as follows:

Priority 1 - An action that must be taken to prevent extinction or to prevent the species from declining irreversibly in the foreseeable future.

Priority 2 - An action that must be taken to prevent a significant decline in species population/habitat quality, or some other significant negative impact short of extinction.

Priority 3 - All other actions necessary to meet the recovery objectives.

B. Task Number - This should be taken directly from the Narrative Outline. Include only the lowest "stepped down" tasks. As an example, in the following segment:

- 2.0 Protect existing populations of X plant
 - 2.1 Build enclosures to prevent deer browsing at three population sites
 - 2.2 Remove competing vegetation once annually

The step 2.0 would not appear in the Implementation Schedule, but 2.1 and 2.2 would.

C. Task Description - This may be taken verbatim from the Narrative Outline, or slightly modified for the sake of brevity.

D. Duration - Indicate whether the task is "ongoing," whether it needs to be "continuous," and the estimated number of years that will be required for its completion.

E. Responsible Party - Indicate each FWS Region and program that will be actively involved and/or commit funds to the task. If more than one Region or organization is involved, use an asterisk to identify the lead entity. The Service need not be included if it has no financial involvement in a particular task. All other organizations involved and/or committing funds to the task should also be listed, based on coordinated decisions regarding recovery implementation task responsibilities.

F. Cost Estimates - Though ideal to designate each Fiscal Year specifically, beginning with the FY subsequent to that in which the plan is approved, setting up hypothetical "FY 1, 2, 3" format is often necessary. Avoiding the hypothetical format, if at all possible, emphasizes the importance of funding and implementing tasks in a given year. Service costs should be identified separately from those of others and should include all major Service costs associated with management of the species. Although this breakdown requires additional effort and coordination with other agencies, it increases the value of the implementation schedule for Service budgeting, as well as providing an estimate, of the overall cost of the species' recovery. Costs should align with the respective entity in the Responsible Party columns. Dollars should be shown in thousands. Other agencies will also benefit by being able to show in their own budget submittals that their funds are identified in an approved recovery plan and are therefore part of the overall coordinated recovery effort for that species.

G. Comments and Notes - Other relevant information may be included here, such as required person-hours, whether this task is specified in state-level recovery plans, or other documents. This column may be left blank so that users or reviewers may make appropriate notes next to various tasks.

RECOVERY PLAN IMPLEMENTATION SCHEDULE (cont inued)

PRIOR- ITY #	TASK #	TASK DESCRIPTION	TASK DURA- TION (YRS)	RESPONSIBLE PARTY			COST ESTIMATES (\$000)		COMMENTS
				Reg.	FWS Program	Other	FY1990	FY1991 FY1992	
2	2.4	Develop multi- state agreement	2	1	FWE		10	20	
2	5.1	Operate hatchery successfully	ongoing	1	FH		200	200	
3	1.5	Study disease in other populations	2	8	NRPL			50	
3	1.6	Intraspecific competition studies	2	8	NERC			25	
3	2.5	Monitor tribal harvest	ongoing			BIA	10	10	
3	3.2	Improve upstream migrant survival	ongoing	1	FWE*		25	25	
						BPA COE	10	15	
							10	15	
3	4.2	Acquire critical habitat easement	2	1	RF			125	
3	4.3	Rehabilitate spawning habitat	5	1	FWE			10	
						BLM FS*		50	
								50	
3	5.2	Improve hatchery disease status	1	1				35	
3	5.3	Compare survival stocked fry vs. fingerlings	2	1	FH			15	

RECOVERY PLAN IMPLEMENTATION SCHEDULE (continued)

PRIOR- ITY #	TASK #	TASK DESCRIPTION	TASK DURA- TION (YRS)	RESPONSIBLE PARTY		COST ESTIMATES (\$000)			COMMENTS
				FWS Reg.	Program Other	FY1990	FY1991	FY1992	
3	6.1	Produce pamphlets	1/2	1	PA			3	
3	6.2	Meet with groups of sportsmen	ongoing	1	FWE		5	5	
3	6.3	Inform state/fed elected reps	ongoing	1	PA*		5	5	
				9	LS		1	1	
3	6.4	Set up volunteer program	2	1	PA*		15	5	
					FWE				
							625	768	1,171

* Denotes lead responsibility for a given task.

SAMPLE DEFINITIONS AND ACRONYMS PAGE

Priorities in column one of the following implementation schedule are assigned as follows:

1. **Priority 1** - An action that must be taken to prevent extinction or to prevent the species from declining irreversibly in the foreseeable future.
2. **Priority 2** - An action that must be taken to prevent a significant decline in species population/habitat quality or some other significant negative impact short of extinction.
3. **Priority 3** - All other actions necessary to meet the recovery objective.

Key to Acronyms used in Implementation Schedule

BIA - Bureau of Indian Affairs
BLM - Bureau of Land Management
BR - Bureau of Reclamation
CAF&G - California Fish and Game
COE - Corps of Engineers
EPA - Environmental Protection Agency
FS - Forest Service
FWS - Fish and Wildlife Service

EC - Environmental Contaminants
DEN - Engineering
MA - Fish and Wildlife Management Assistance
FH - Fish Hatcheries
FWE - Fish and Wildlife Enhancement
IA - International Affairs
LE - Law Enforcement
LS - Legislative Services
NERC - National Ecology Research Center
NFRL - National Fisheries Research Laboratory
NFRS - National Fisheries Research Seattle
PA - Public Affairs
RF - Refuge

NMFS - National Marine Fisheries Service

IV. APPENDIX

Completed plans should contain a list of reviewers. All letters of comment should be kept on file as part of the administrative record. Substantive letters or comments may be included in the Plan at the discretion of the Regional Director. Other pertinent material such as referenced policy statements or agency documents should be included. If the appendix is particularly lengthy, it should be preceded by a title page and a definitive, paginated list of the contents.

All significant comments that are not printed in the appendix should be made available to other Federal agencies that will use the recovery plan.