

Chapter 9. Implementation (Activities, Timelines, and Cost)

9.1 Activities

Various activities are involved in implementing recovery and management: assessment, research, plan development, regulatory process, and enforcement. These activities will be modified as species recover or as long-term management is implemented.

9.1.1 Assessment

- Collect management-related essential fisheries information (EFI) through creel surveys, abalone permit report card assessment, and diver surveys
- Collect recovery-related data through exploratory and recovery assessment survey
- Conduct cooperative assessments with universities, national parks, NOAA Fisheries, sport fishermen, and former commercial fishermen to increase the scope and efficiency of data collected

Status reports based on assessment data will provide a basis for regulation changes and amendments to the ARMP. The reports will include methodologies and a review process to ensure improvement as new methods are developed. Assessment activities are described in greater detail in Chapter 6, Abalone Recovery, and Chapter 7, Abalone Management.

9.1.2 Research

- Conduct genetics studies on red, pink, and green abalones
- Perform a WS-resistance study for black abalone
- Carry out feasibility studies on red, pink, green, black, and white abalones to determine whether recovery activities will be successful
- Work under federal lead as part of the White Abalone Recovery Team
- Conduct abalone disease and parasite studies
- Conduct cooperative research to enlarge partnerships and funding for recovery- and management-directed activities
- Coordinate funding from sources such as Sea Grant, National Fish and Wildlife Foundation, and others with Department scientists and research partners in order to expand capabilities and expertise

Published, peer-reviewed results from this work will provide the basis for future support of recovery and long-term management activities. Research directed towards developing new assessment methods, disease management, and recovery tools are detailed in Chapter 6, Abalone Recovery, and Chapter 7, Abalone Management.

9.1.3 Plan Development and Regulatory Process

- Review reports on recovery and management activities with constituents including formal advisory groups and the public
- Develop changes to regulations based on research, data, and review
- Develop components of the long-term management plan (zone boundaries, zone-based TAC, and tag system)
- Participate in Commission sport regulation change meetings and present the results from these activities
- Receive comments and suggested modifications for plan amendments
- Engage an advisory panel which includes scientists, environmentalists, sport fishermen, and former commercial fishermen
- Continue working with the RAAC while preparing for regulation and management changes

9.1.4 Enforcement

- Protect areas closed to fishing and ensure compliance with regulations through enforcement and educational activities
- Collaborate with scientific staff in conducting research from enforcement vessels
- Participate in reviews of the effectiveness of proposed recovery and management regulation and plan amendment

9.2 Timelines

A seven-year timeline (from 2005 through 2011) has been developed for implementing interim recovery and management activities (Table 9-1, Table 9-2). Enforcement activities for both recovery and management are continuous and are therefore not listed in the timeline. A future timeline will be suggested to the Commission as part of plan amendments. Timelines beyond 2011 have not been developed, as it is difficult to predict if and when recovery may occur, which recovery methods will be effective, or if long-term management will be implemented. Developing a seven-year timeline also allows flexibility in adapting to changes in recovery and management, and is more realistic given the uncertainties inherent in estimating future costs and staffing needs.

The assessment activities will alternately focus on recovering populations and managed populations in order to minimize cost by allowing sharing of funding, resources, and staff. Assessment activities for recovery will be focused more in odd-numbered years beginning in 2005; assessment activities for management will be focused more in even-numbered years beginning in 2006. Staggering of staff and funding will be applied to other activities as well.

9.2.1 Interim Recovery (2005 to 2011)

Interim recovery activities include assessment, research, plan development, and participating in the regulatory process (Table 9-1).

Assessment will involve exploratory surveys and subsequent recovery assessment. Exploratory surveys for all seven species will be conducted in 2005 and

2007, and will provide the basis for determining future recovery activity needs and where they will be directed. From these data, a status report for southern California abalone will be developed with recommendations for subsequent actions. Recovery assessment will be initiated in 2011.

Research will involve studies on recovery feasibility, disease, and genetics. Recovery feasibility studies for red, pink, green, black, and white abalones will take place between 2006 and 2011; results of these studies will be reported in 2010 and 2011. Disease research on black abalone resistance to WS will take place from 2006 to 2008. Results of the disease research will be compiled in 2009. Genetic research for red abalone will be conducted in 2006 and 2007; similar studies for pink and green abalones will be conducted in 2008 and 2009. Reports from the genetic studies will be generated in 2007 and 2009.

Reports and recommendations on potential plan amendments and new regulations will be presented to the Commission in 2007. These reports will include an evaluation of a proposed network of MPAs needed for abalone recovery (if warranted), and an evaluation of whether black, green or pink abalones should be listed as endangered.

9.2.2 Interim Management (2005 to 2011)

Interim management activities include assessment (collecting and reporting on EFI) and plan development/regulatory change (Table 9-2). An internal, triennial status of the stock report will be initiated in 2006 to evaluate EFI from the previous three years. These reports will determine if site or fishery closure is necessary and if the catch level needs adjustment because the total allowable catch (TAC) has been exceeded. Beginning in 2006, every second triennial report will also evaluate whether a change in TAC is warranted based on stock conditions. Based on these triennial reports, recommendations will be made to the Commission for potential regulatory changes. Beginning in 2008, if resources are available, assessment of EFI will be augmented with stratified, random multi-species dive surveys in preparation for long-term plan implementation. During the interim management period, a planning process for further development of long-term management in northern California will be conducted. The first product will be a report defining the proposed zonal boundaries, their respective TACs, and the projected costs associated with implementation of a tag system. A report that evaluates implementation of long-term management in northern California will be presented to the Commission in 2011.

9.2.3 Interim Enforcement (2005 to 2011)

Interim enforcement activities include routine patrol and intercept. An annual abalone enforcement report is provided to supervisory staff summarizing citations issued and personnel hours and funds used, including overtime and expenditures from the abalone stamp fund. Tidal area patrols during low tides, boat patrols, and undercover wardens are used throughout the abalone season. Directed enforcement details include abalone checkpoints to check compliance with regulations and to educate the public.

In addition to these enforcement activities, enforcement staff participate in fishery-independent surveys by providing vessel support and scuba divers.

Enforcement staff also provide management plan review and assist in drafting regulatory language from an enforcement perspective.

9.3 Costs

Since research, data collection, and regulatory actions are interrelated, these costs are grouped together under the heading of recovery and management, and averaged for activities spanning 2005 to 2011.

Enforcement costs were predicted using levels projected for the fiscal year beginning July 1, 2001.

9.3.1 Interim Costs (2005 to 2011)

Implementation of the interim plan will require a yearly expenditure of \$1,443,000, of which \$580,000 will be directed to enforcement (Table 9-3). Funds will be acquired from the Department's Preservation Fund, which consists of non-dedicated and dedicated accounts (Section 9.3.3 Funding Sources). Dedicated monies, reserved for expenditure on abalone, are generated from the abalone permit report card fee, previously collected commercial landing taxes, and violation fines. These monies are projected to provide \$484,000 for interim expenditures. It is estimated that for the remaining funds required (\$959,000), \$701,000 can continue to be taken from non-dedicated sources, while new expenditures (\$352,000) can be redirected from existing accounts or from sources yet to be identified.

9.3.1.1 Recovery and Management Costs

Staffing Summary for Recovery and Management

- 1.0 Personnel Year (PY) Senior Marine Biologist (southern California)
- 0.5 Personnel Year (PY) Senior Marine Biologist (northern California)
- 2 PYs Associate Marine Biologist (northern and southern California)
- 3 PYs Scientific Aid/Fishery Technician divers
- Dedicated funds = \$205,341 Preservation Fund = \$134,500

Staffing Summary for Disease Lab

- 0.5 PY Senior Fish Pathologist
- 1.0 PY Senior Lab Assistant
- 0.5 PY Lab Technician II/Animal Pathology
- Dedicated funds = \$38,634 Non-dedicated funds = \$101,800

EFI Collection

- Creel, abalone permit report card, and index surveys
- Dedicated funds = \$50,000 Non-dedicated funds = \$18,000

Recovery Assessments

- Non-dedicated funds = \$66,000

Table 9-1. Timeline of recovery activities for 2005 to 2011

Year	Southern and central California assessment and research		Plan development and regulatory process	
	Activities	Reports	Reports	Recommendations to the Commission
2005	Exploratory/recovery & detailed assessment surveys, Part 1 of 2 (Tasks 1, 2 & 3)			Adopt ARMP
2006	Initiate genetics study on red abalone (Task 9) Begin feasibility study on recovery activities for pink and green abalones (Tasks 4, 5 & 6) Initiate WS-resistance study for black abalone (Task 10)			
2007	Genetics study completion for red abalone (Task 9) Exploratory/recovery & detailed assessment surveys, Part 2 of 2 (Tasks 1, 2 & 3) Begin feasibility study on recovery activities for red and black abalone (Tasks 4, 5 & 6)	Status of stock recovery and recommendations Report No. 1 Genetic differences and concerns for recovering red abalone populations in southern California	Evaluate listing black, pink, or green abalones as endangered Evaluate proposed network of MPAs	Amend ARMP with state listings as endangered species if warranted Recommendations for abalone MPAs if warranted
2008	Initiate genetics study on pink and green abalones* (Task 9) End WS-resistance study for black abalone (Task 10)			
2009	Genetic study completion for pink and green abalones (Task 9)	Results of WS resistance study Genetic differences and concerns for pink and green abalone populations in southern California		
2010	Approximate end of feasibility study on pink and green abalones (Tasks 4, 5 & 6)	First feasibility report for recovery activities		
2011	Recovery assessment, Part 1 of 2 (Task 3) Approximate end to feasibility study on red and black abalones (Tasks 4, 5 & 6)	Second feasibility report for recovery activities	Proposal of future timeline	Amend ARMP with proposed timeline

*Recovery activities are contingent on additional funds and methods for some species

Table 9-2. Timeline of interim management activities for 2005 to 2011

Year	EFI for northern California		Plan development and regulatory process	
	Activities	Reports	Reports	Recommendations to the Commission
2005	Report card assessment Creel assessment Dive survey, index sites			ARMP adoption
2006	Report card assessment Diver survey, control sites	Status of managed stock triennial Report No. 1		Catch, total allowable catch (TAC) adjustments, and potential site closures **
2007	Report card assessment Creel assessment Dive survey, index site(s)			
2008	Report card assessment Dive survey, index sites Dive survey at stratified random locations added to four index sites*		Evaluation of northern California long-term management Report No. 1	
2009	Report card assessment Creel assessment Dive survey, control sites Dive survey at stratified random locations*	Status of managed stock triennial Report No. 2		Catch adjustments and potential site closures**
2010	Report card assessment Dive survey, index sites Dive survey at stratified random locations*			
2011	Report card assessment Creel assessment Dive survey, index sites Dive survey, stratified random locations*		Evaluation of northern California long-term management Report No. 2 Proposal of future timeline	Amend ARMP; implement long-term management Amend ARMP with proposed timeline

*Initiated only if funding or cooperative multi-species program for an expanded sampling is implemented

**TAC changes can only be made every 6 years, while catch adjustments to meet the TAC can occur triennially

Table 9-3. Summary of costs and funding sources for implementation averaged over 2005 to 2011					
		Dedicated	Non-dedicated	Total	New
Management and Recovery					
<u>Staffing:</u>	General	\$205,341	\$134,524	\$339,865	\$0
	Disease lab	\$38,634	\$101,800	\$140,434	\$0
<u>Assessments:</u>	Management	\$50,000	\$18,000	\$68,000	\$68,000
	Recovery	\$0	\$66,000	\$66,000	\$66,000
<u>Research:</u>	Recovery	\$30,000	\$168,000	\$198,000	\$198,000
<u>Outreach:</u>	General	\$10,000	\$20,000	\$30,000	\$20,000
Sub-totals		\$333,975	\$508,324	\$842,299	\$352,000
Enforcement					
<u>Staffing:</u>	Enforcement Patrol	\$50,000	\$275,000	\$325,000	\$50,000
	SOU*	\$86,000	\$190,000	\$276,000	\$0
Subtotals		\$136,000	\$465,000	\$601,000	\$50,000
Totals		\$469,975	\$973,324	\$1,443,299	\$402,000

*An uncertain amount listed as non-dedicated funds are actually Special Operations Unit (SOU)-directed fine funds (FGC §12006.6)

Recovery-based Activities

- Research genetics, disease, adult aggregation
- Out-planting
- Dedicated funds = \$30,000 Non-dedicated funds = \$168,000

Outreach, Publications, and Constituent Involvement

- Dedicated funds = \$10,000 Non-dedicated funds = \$20,000

9.3.1.2 Enforcement Costs

Enforcement Patrol (Marine and Inland) Staffing Summary

- 3.5 PYs divided among 27 field wardens
- Dedicated funds = \$50,000 Non-dedicated funds = \$275,000

Special Operations Unit Staffing Summary

- 1.0 PY lieutenant (Dedicated funds = \$86,000)
- Additional staff (Non-dedicated funds* = \$190,000)

* SOU funding is augmented by a special, dedicated account funded by fines from major violations in addition to dedicated monies taken from sport stamp funds (Section 9.3.3 Funding Sources).

9.3.2 Long-term Costs

Long-term costs for recovery, enforcement, and management are expected to increase, but cannot be realistically predicted. New recovery methods will determine future direction and associated costs. Costs for long-term management will be estimated by 2011, taking into account cost savings associated with multi-species cooperative assessments initiated in 2008. Cooperative assessments are currently being developed with state universities, federal partners, and other constituencies under the Nearshore Fishery Management Plan for finfish. This effort will be enlarged to include invertebrates of management importance such as abalone, sea urchins, sea cucumbers, and algae. Enforcement costs may escalate as MPAs are established and as fisheries re-open in central and southern California. Cost estimates will be part of future management plan amendments beginning in 2011.

9.3.3 Funding Sources

The Department's abalone recovery and management efforts will be supported by either non-dedicated or dedicated funds deposited in the Fish and Game Preservation Fund. Dedicated funds are collected from the recreational fishery's abalone permit report card fees, fines for abalone violations, and previously collected commercial landing taxes. These funds are specifically designated by statute to be spent on the abalone resource. Non-dedicated funds are obtained from general tax revenues, sport and commercial license fees, and federal funds.

The dedicated funds from the abalone permit report card fee, violation fines, and the previously collected commercial landing taxes provide nearly \$484,000 per year for the abalone resource. The greatest single source of dedicated abalone funds comes from the recreational fishery in northern California. A recreational fisherman's abalone permit report card fee of \$16.00 is collected annually (FGC §7149.8). Sales of these cards currently provide over \$500,000 per year. Fees are deposited in an Abalone Restoration and Preservation Account (ARPA) within the Fish and Game Preservation Fund. ARPA expenditures are dedicated to a "Recreational Abalone Management Program" (FGC § 7149.9) to be directed towards research, enforcement, publications, and ARMP development and implementation. At least 15% of these funds are to be used on program activities south of San Francisco. The RAAC was established to make recommendations to the Department's Director on projects and budgets for expenditure of these fees, and on abalone resource management (FGC §7400). In addition to the abalone permit report card fee, fines collected for the illegal take of abalone are a source of funds for management of the abalone fishery. Violation fines are deposited in either the ARPA for general management, recovery, and enforcement use (FGC §12009), or in a separate account for use by the Special Operations Unit (FGC §12006.6). An estimated \$10,000 per year from fines are directed to the ARPA. Because the commercial fishery has been closed since 1997, only about \$250,000 of unspent landing taxes collected under FGC §8051.3 remain as of 2002. This source could provide about \$37,000 per year during the 2005 to 2011 period (FGC §8051.4).