

APPENDIX C

COSTS INVOLVED IN MANAGING COASTAL PELAGIC SPECIES

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1.0 INTRODUCTION

This section provides estimated costs for implementing the fishery management plan (FMP), grouping those costs into the categories of administrative, scientific, and enforcement, with a separate estimate for the administrative costs of issuing permits. The costs of employee benefits are added to all direct labor costs (23.8% for the Southwest Region; 21.0% for the Southwest Fisheries Science Center). Overhead costs incurred by the National Oceanic and Atmospheric Administration are also added to direct labor costs (64.1% for the Southwest Region; 51.6 % for the Southwest Fisheries Science Center). Employee benefits and overhead cost figures change periodically.

Scientific costs are the largest component under any option one might choose to manage coastal pelagic species. Administrative costs can be multiplied by any reasonable factor to account for underestimating those costs, and they would remain small compared to the costs of scientific research.

1.1 Administrative Support

Estimates of administrative costs are made by estimating the time to perform certain tasks, such as reviewing and editing documents. Generally, these kinds of processing costs are underestimated, because there is no way to determine how difficult some issues may be; the ability to account for reflection and debate is limited. Nevertheless, estimates are useful for determining what the actual costs may be and for comparing different options that may be proposed.

Estimates are based on staff processing time. Costs above the staff level are included in the overhead costs; therefore, the figures are an estimate of costs rather than time. This section does not address the question of whether there are enough personnel or enough personnel time available to complete tasks.

1.1.1 Annual Meeting of the Coastal Pelagics Species Plan Development Team

An annual meeting is held with the Coastal Pelagic Species Advisory Subpanel (CPSAS) in Long Beach to review the annual biomass estimates. Pacific (chub) mackerel and jack mackerel would be managed using a February to January fishing season with review by industry and technical experts during January. Northern anchovy and Pacific sardine would be managed using an August to July annual cycle, which is currently used for northern anchovy. Biomass estimates would be reviewed during June. Therefore, the plan requires two meetings, which would be held in Long Beach, California. This estimate allows for attendance by the three NMFS members of the Coastal Pelagic Species Plan Development Team (CPSPDT), two from LaJolla, California, and one from Monterey, California, and two regional personnel. All CPSPDT members may not attend the meeting; therefore, over the long term the annual costs are likely to average less than those described here.

Travel of two people from La Jolla:

$$$.31/\text{mile} \times 226 \text{ miles (round trip)} \times 2 \text{ trips} = \$140.12$$

Travel of one person from Monterey:

$$\$108.00(\text{Air fare}) + \$30.00(\text{rental car}) + 38.00 (\text{per diem}) \times 2 = \$352.00$$

CPSPDT labor costs:

$$\$23.91/\text{hr} \times 8 \text{ hrs} \times 2 \text{ meetings} \times 3 \text{ people} = \$1,147.68$$

Regional labor costs:

$$\$23.91/\text{hr} \times 4 \text{ hrs/meeting} \times 2 \text{ people/meeting} \times 2 \text{ meetings} = \$382.56$$

1.1.2 Coastal Pelagic Species Advisory Subpanel Travel

Estimate of the annual cost of sending CPSAS members to meetings is approximately \$1,500. Most members are in southern California, and not all members are likely to attend.

1.1.3 Publication of Annual Biomass Estimates and Harvest Guidelines

Labor costs are for drafting and reviewing required documents such as decision memoranda and *Federal Register* announcements. Calculations are assumed to include all individuals that might be involved. Quotas are determined by a formula in the FMP and are based on the annual biomass. There is no flexibility in setting a quota once the biomass estimate is known unless errors are detected in the determination of calculating the biomass. The determination of the biomass and the resulting quotas are reviewed by the Pacific Fishery Management Council (Council) at a public meeting before publication in the *Federal Register*. As a result, the quotas are published once as an interim final action with a thirty-day comment period.

Labor cost of preparing announcement and supporting documentation:

$$2 \text{ hrs} \times \$23.91/\text{hr} \times 2 \text{ rules} = \$95.64$$

Labor cost of reviewing package (supervisor level):

$$1 \text{ hr} \times \$30.93/\text{hr} \times 2 \text{ rules} = \$61.86$$

Secretarial costs (final documents plus copies):

$$1/3 \text{ hrs} \times \$11.77/\text{hr} \times 2 \text{ rules} = \$7.85$$

Publication costs:

$$1 \text{ page} \times \$405.00/\text{page} \times 2 \text{ rules} = \$810.00$$

Labor cost of review by the Central Office:

$$3 \text{ hrs} \times \$23.91/\text{hr} \times 2 \text{ rules} = \$142.46$$

1.1.4 Closing Fisheries

This estimate is based on the assumption that a notice of closure will have to be issued each year for three species: anchovy, sardine, and Pacific (chub) mackerel. This has not been true for anchovy in recent years; however, this exercise assumes that there is a significant fishery for these three species. When Pacific (chub) mackerel abundance is high, closing the fishery has not been necessary, because the market has been limited. A large biomass of Pacific sardine may also eliminate the need for a closure if expansion of the resource out paces market opportunities. Nevertheless, the assumption here is that the harvest of each species will be terminated at some point each year.

Labor cost of preparing closure notice:

$$2 \text{ hrs} \times \$23.91/\text{hr} \times 3 \text{ rules} = \$143.46$$

Labor cost of reviewing closure notice (supervisor level):

$$1/3 \text{ hrs} \times \$30.93/\text{hr} \times 3 \text{ rules} = \$30.93$$

Secretarial costs:

$$1/3 \text{ hrs} \times \$11.77/\text{hr} \times 3 \text{ rules} = \$11.77$$

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Labor cost of Central Office review of closure notice:

$$2 \text{ hrs} \times \$23.91/\text{hr} \times 3 \text{ rules} = \$143.46$$

Publication costs:

$$2 \text{ columns} \times \$135.00/\text{column} \times 3 \text{ rules} = \$810.00$$

1.1.5 Changing Incidental Harvest Amounts

In each announced harvest guideline, a quantity is reserved to allow for an incidental harvest. If a quota for one species is reached, an incidental harvest will be allowed so that the harvest of other species can continue. A specific incidental harvest goes into effect after a quota is reached, but adjustments of the incidental harvest may be necessary. The assumption here is that three adjustments will be needed, although no adjustments may be required. Changes in incidental catch rates are announced as notices.

Labor costs include the drafting and reviewing time of required documents such as decision memoranda and *Federal Register* announcements. Calculations are assumed to include all individuals that might be involved.

Labor cost of preparing change in incidental catch rates:

$$1 \text{ hr/notice} \times \$23.91/\text{hr} \times 3 \text{ notices} = \$71.73$$

Labor cost of reviewing changes in catch rate (supervisor level):

$$1/3 \text{ hr/notice} \times \$30.93/\text{hr} \times 3 \text{ notices} = \$30.93$$

Secretarial costs (final documents plus copies):

$$1/3 \text{ hrs} \times 11.77/\text{hr} \times 3 \text{ notices} = \$11.77$$

Publication costs:

$$2 \text{ columns} \times \$135.00/\text{column} \times 3 \text{ notices} = \$810.00$$

Labor cost of Central Office review of changes in incidental catch rates:

$$1 \text{ hr/notice} \times \$23.91/\text{hr} \times 3 \text{ notices} = \$71.73$$

1.1.6 Travel of Two National Marine Fisheries Service Coastal Pelagic Species Plan Development Team Members and One National Marine Fisheries Service Employee to Two Council Meetings

$$\$238.00 \text{ (air fare)} + \$127.00 \text{ (per diem, Portland)} \times 2 = \$730.00 + \$30.00 \text{ (car rental)} = \$760.00$$

Labor cost of meetings:

$$16 \text{ hr (2 days)} \times \$23.91/\text{hr} \times 2 = \$765.12$$

1.1.7 Coordination

There is a need to include a figure for day-to-day operations of supporting a CPS FMP.

$$2 \text{ hr/week} \times 52 \text{ weeks} \times \$23.91/\text{hr} = \$2,486.64$$

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Telephone = \$500.00

Supplies = \$500.00

1.1.8 Council Review

An estimate is needed for the time spent by Council members, Council staff, and Council technical committees to review matters concerning the management of CPS.

Scientific review of biomass estimates (anchovy, Pacific [chub] mackerel, and sardine; Jack mackerel is a fixed quota.):

1 hr/review X 3 reviews X 14 individuals x \$23.91/hr = \$1,004.22

Review time of the Council members, Council staff, and others, which is assumed to be 1/10 of a Council meeting per year.

1/10 X \$111,468.00 (includes costs of meeting + pre and post meeting costs) = \$11,146.80

1.1.9 Summary of Administrative Support

Direct Labor Costs	\$9,810
Travel Costs	\$2,752
Publication Costs	\$2,430
Supplies	\$500
Telephone	\$500
Employer's Surcharge (23.8%)	\$2,266
NOAA Support (64.1%)	\$6,104
Total	\$24,362

1.2 Scientific Support

1.2.1 Coastal Fisheries Resources Division

The La Jolla Laboratory's Coastal Fisheries Resources Division (Division) studies economically and ecologically important small, schooling fish of the California current. Biologists evaluate factors that affect their distribution, abundance, and survival; and the Division studies factors that affect the economics of the fisheries harvesting these coastal resources as well. The staff works with Mexico, the California Department of Fish and Game (CDFG), and Scripps Institution of Oceanography (SIO) on cooperative assessments of these CPS stocks. The information is obtained from trawl and ichthyoplankton surveys carried out on research cruises, environmental data monitoring, and laboratory and field studies of early life history, physiology, and reproduction.

An important activity of the Division is participation in the state-federal California Cooperative Fisheries Investigations (CalCOFI) program, a consortium of state and federal research agencies whose scientists conduct integrated research on the ecology of the California Current. The CalCOFI program was originally established in 1949 to investigate factors related to the collapse of the sardine fishery off California, but over the years its research has broadened to include other species as well. As a result of the CalCOFI effort, the biology and oceanography of a 250,000 square mile area of the Pacific Ocean off California and Baja California is perhaps the best ecologically understood of any comparable body of water in the world. The SIO chiefly processes and analyzes oceanographic observations and studies the taxonomy and zoogeography of planktonic organisms other than fish, while NMFS scientists are responsible for ichthyoplankton collections, studying species abundance and distribution, systematics, and application of Amendment 8 (CPS) DECEMBER 1998

fish early life history information to stock assessments.

The Division devotes 50% of its resources to West Coast groundfish and 50% to coastal pelagic fish. To assess coastal pelagic resources, relative abundance is monitored through CalCOFI and aerial spotter surveys with a fishery independent survey to measure absolute abundance every three to five years. Fishery data, and size at age information is provided by CDFG (see below).

Personnel Costs	\$981,050
Travel, Supplies, Etc.	\$133,000
Fish Spotter Surveys	\$27,000
Ship Time (23 days)*	\$253,000
Special Surveys (22.5 days)**	\$247,000

*The same CalCOFI surveys collect data on groundfish and CPS. For the purpose of determining costs, 23 of the 46 survey days now carried out have been allocated to CPS.

**Twenty-two and one-half days of the 45 survey days now carried out have been allocated to CPS. This is an average over the last ten years.

1.2.2 Coastal Pelagics Sampling

Currently, CDFG conducts a sampling program for CPS under a grant from the Interjurisdictional Fisheries Act. The total cost of the project is given below. This project provides basic biological data such as length, weight, age, sex, and maturity of CPS, as well as providing landings data and species composition. These Federal costs are included in the totals, but they are not subject to the overhead that is attributed to other costs.

Personnel Costs	\$76,576
Fringe Benefits	\$17,381
Travel	\$2,175
Supplies	\$3,975
Telephone	\$825
Data Processing	\$900
Rent	\$6,081
Training	\$525
Indirect Costs	\$20,647
Total	\$129,085

All of the above costs summarize the effort now directed to CPS; they are existing costs and therefore unrelated to implementation of the FMP. These costs will not change with or without the plan. This total is \$1,770,135.

1.2.3 Additional Scientific Costs

The following figures can be viewed in two ways, as new costs required by the FMP, or as reallocating more of the budget of the Division from groundfish species to CPS. The shift in resources would be from a 50% allocation of the Division's efforts to 75%, reducing the effort spent on groundfish to 25% rather than 50%. The following summarizes the additional costs required.

Personnel Costs	\$490,525
Travel, Supplies, Etc.	\$66,500
Special Surveys	\$123,750

The FMP can be implemented without new funding if (1) the Division has the same number of vessel days allocated to it, (2) CDFG continues to support CPS research at its present level, and (3) a reallocation of resources within the Division can be achieved.

1.2.4 Summary of Science Costs

Existing Costs that will not change	\$1,770,135
Additional Science Costs	
Direct Labor Costs	\$490,525
Travel, Supplies, Etc.	\$66,500
Special Surveys	\$123,750
Employee's Surcharge (21.0%)	\$103,010
NOAA Support (51.6%)	\$253,111
Total Additional Costs	\$1,036,896
Total	\$2,807,031

1.3 Enforcement Support

Enforcement costs are projected costs based on existing landings of CPS. If landings increase, the costs of enforcement will increase. The Southwest Regional Enforcement Office has a contract with CDFG to monitor federal fisheries in California, (e.g., groundfish).

Contractual costs = 260 landings X 6 hrs X \$38.00/hr = \$59,200
 Special agent support = \$ 80,775

Summary of Enforcement Costs

Contractual Costs	\$59,200
Special Agent Support	\$80,775
Employee's Surcharge (23.8%)	\$19,225
NOAA Support (51.6%)	\$51,777
Total	\$210,997

1.4 Permit Costs

The Council's preferred option is to implement a limited entry program that requires the owner of each qualifying vessel to obtain a permit. Such a limited entry scheme would effect and estimated 70 vessels. The administrative costs of issuing permits would be recovered from the applicants, in which case the costs would be passed on to the fishermen. Based on the following information, the cost of a permit would be \$35.00. This is based on taking the total permit costs and spreading the cost over 70 vessels. A permit would have to be renewed every two years; therefore, the cost would be \$35.00. ($\$4,868 / 70 \text{ vessels} = \$70/2 = \$35.00$).

The cost of setting up the permit files on a data base is estimated at \$956.40 (40hrs X \$23.91/hr = \$956.40).

This cost is annualized by dividing it by ten. The number of vessels included in the permit system is small and the information collected is minimal. A revision of the recordkeeping system is not expected to occur in less than ten years, even considering the rapid change in software development. As a result, the annualized cost is: \$95.64

Maintain data base system: $1\text{hr/month} \times \$23.91/\text{hr} \times 12\text{ months} = \286.92

Review applications for completeness: $0.17\text{hr/permit} \times 70\text{ permits} \times \$23.91/\text{hr} = \$284.53$

Return incomplete applications (6% return rate): $.17\text{hr/permit} \times 4\text{ permits} \times \$23.91/\text{hr} = \$16.26$

Phone calls to verify information: $.5\text{ hr/permit} \times 7\text{ permits} (70 \times 10\%) \times \$23.91/\text{hr} = \$83.69$

Check landings data to determine qualification: $.25\text{hr/permit} \times 70\text{ permits} \times \$23.91/\text{hr} = \$418.43$

Enter permit information in data base: $.17\text{hr/permit} \times 70\text{ permits} \times \$23.91/\text{hr} = \$284.53$

Print and mail permit: $.17\text{hr/permit} \times 70\text{ permits} \times \$23.91/\text{hr} = \$284.53$

Appeals: $11\text{ vessels} (15\% \times 70) \times 6\text{hr} \times 23.91/\text{hr} = \$1,578.06$

$11\text{ vessels} \times .5\text{hr} \times \$30.93/\text{hr} (\text{supervisory time}) = \170.12

Vessel transfers: $7\text{ vessels} (10\% \times 70) \times .5\text{hr/permit} \times \$23.91/\text{hr} = \$83.69$

PERMIT COSTS	
Set up and maintain database	\$383
Reviewing applications	\$384
Determining qualification	\$418
Entering permit information	\$285
Print and mailing permits	\$285
Appeals	\$1,748
Transfers	\$84
Telephone	\$360
Supplies	\$500
Employer's Surcharge (23.8%)	\$854
NOAA Support (64.1%)	\$2,299
TOTAL	\$7,600