The California Department of Fish and Wildlife
Aquaculture Program

A Report to the Legislature
in compliance with Fish & Game Code §15105,
as amended by AB 1886 (Chesbro, 2012).

which states in part:

"*(c)...the department shall maintain internal accountability necessary to ensure that all restrictions on the expenditure of these funds are met and shall provide an accounting of the aquaculture program account balance and expenditures upon request of the Aquaculture Development Committee or the Joint Committee on Fisheries and Aquaculture...*

(e) The department shall prepare and submit to the Legislature on or before February 1, 2017, a report regarding the aquaculture program undertaken using revenues derived pursuant to that program, the benefits derived, and its recommendations for revising the aquaculture program requirement, if any."

EXECUTIVE SUMMARY

Fish & Game Code §15105, as amended by Assembly Bill 1886 (Chesbro, 2012), directs the Department of Fish and Wildlife to prepare and submit to the Legislature a report regarding activities undertaken by the aquaculture program using revenues derived pursuant to that program, the benefits derived, and its recommendations for revising the aquaculture program, if any. This report provides a short overview of the aquaculture program, a discussion of program funding, a description of program activities undertaken during the period addressed in this legislation, and general recommendations to address challenges.

California's Aquaculture Industry – Overview

Commercial aquaculture in California is relatively modest in size, and can best be understood in terms of its *diversity*. Like the varied environments of the state itself, many different species, raised for many diverse purposes, are cultured using a similarly-varied range of techniques. None of the species can be considered commodity products - each of them fit into fairly small-volume, high-value niche markets. They are specialty crops in a state - and country – that is otherwise supplied by imported seafood (over 90%), in a world where over half the seafood supply now comes from aquaculture.

With origins dating back before statehood and the Gold Rush, California's aquatic environments have been employed to culture such diverse products as algae, oysters & other bivalve shellfish, trout, salmon, abalone, catfish, largemouth, striped, and hybrid basses, tilapia, carp, and sturgeon, to name just a few. Grown in marine, fresh, and brackish waters, and from hot deserts to cold alpine springs and indoor controlled environments, no single method nor locale dominates. Produced for markets demanding food, recreation, aesthetics, companionship, research, and pharmaceuticals, the promotion and regulation of the industry is necessarily challenging and fragmented. However, the potential for increased commercial aquaculture production (and the consequent public and private benefit) is immense.

With an annual economic impact valued by the industry itself at some $170 million, the aquaculture sector, like other food industries, is responding to the challenge of meeting a growing demand for commercially available food products while ensuring aquaculture practices adhere to environmental policies designed to protect marine and inland ecosystems.

State Aquaculture Policy and Program - Overview

The California Aquaculture Development Act of 1979 (Ch. 4, Public Resources Code, §826 et seq) found and declared the practice of aquaculture to be in the interest of the people of the state, and that it should be encouraged to augment food supplies, expand employment, promote economic activity, increase native fish stocks, enhance commercial and recreational fishing, and protect and better use the land and water resources of the state. It further established a policy and program toward improving the science and practice of aquaculture as a means of expanding aquaculture industry and related economic activity in the state.

State Aquaculture Coordinator and Aquaculture Development Committee

This statewide call for facilitating aquaculture was further supported in 1982 by the statutory creation of an Aquaculture Development Section within the Fish and Game Code (Division 12, §15100 et seq). It established an Aquaculture Coordinator within the Department of Fish and Wildlife, and an Aquaculture Development Committee (ADC), bringing representation from each of the six agencies having a role in its oversight together with legislative[1], academic and industry representatives. The ADC is convened by the Aquaculture Coordinator, is advisory to the Director of the Department of Fish and Wildlife, and has met six times since 2012 to discuss an ambitious slate of issues, including much of what is outlined in this report. The Coordinator and the ADC share responsibilities to identify opportunities for regulatory relief, and facilitate industry development. The Aquaculture Coordinator also guides and informs the various sectors of the industry, public agencies, and the general public to enhance their understanding of aquaculture, including all aspects of regulatory compliance.

Aquaculture Disease Committee – Additional coordination occurs in aquaculture health management, through the Aquaculture Disease Committee[2]. Members consist of fish health and general disease specialists from within the Department of Fish and Wildlife (CDFW), the Department of Food and Agriculture, and academia, in combination with industry producers from varied marine and freshwater orientations. The committee is convened when needed and as outlined in regulations[3], by the Aquaculture Coordinator on behalf of the Director of Fish and Wildlife. The Committee

[1] Aquaculture Development Committee state entities include:
- Department of Fish and Wildlife
- Department of Food & Agriculture
- Department of Public Health
- State Water Resources Control Board
- State Lands Commission
- Coastal Commission
- Joint Legislative Committee on Fisheries & Aquaculture

[2] Fish and Game Code §15502 et seq.

[3] California Code of Regulations, Title 14, §245.

makes both incident-level and policy recommendations to the Director in order to contain, and to minimize aquatic animal disease impacts to natural resources and aquaculture business economic viability. Committee members serve without compensation, but are reimbursed their necessary expenses.

Although embedded within the Department of Fish and Wildlife, the Aquaculture Coordinator has a unique, interagency coordinating responsibility interacting with public regulation of aquaculture at all levels of government.

The Department of Fish and Wildlife Aquaculture Program – Overview

The CDFW Aquaculture Program oversees California's diverse aquaculture industry. In conformance with statutory guidance from the Legislature, and through policies and regulations, CDFW and the Fish and Game Commission balance the protection of natural resources and the development of sustainable commercial aquaculture.

Program Cooperation & Funding – The terminology describing CDFW Aquaculture Program funding and accounting merits clarification. A slight majority of Aquaculture Program funding is derived directly from the registration, permit, lease, and privilege tax revenues paid by aquaculture constituents, as described in the DFG Fund Reference Manual[4], and pursuant to Fish and Game Code, Division 12 (Aquaculture), and corresponding regulations under Title 14 of the California Code of Regulations. These revenues are restricted in their use and are expended solely on the CDFW Aquaculture Program via the program's dedicated account. Additional funding is supplied by non-dedicated sources in the Fish & Game Preservation Fund (FGPF). This combination of dedicated and non-dedicated funds is used to pay for CDFW Aquaculture Program activities and expenditures, including the single permanent staff position (or personnel year) in the program, the State Aquaculture Coordinator[5].

However, from the perspective of actual oversight, management, and administrative support of aquaculture activities under CDFW responsibility, a much broader group of programs throughout the Department contributes resources and represents a significant financial burden on those programs. In addition to the Aquaculture Coordinator, the CDFW Aquaculture Program is functionally supported and draws on resources and expertise from:

[4] See Aquaculture Program, FGPF dedicated account 200.13 (p. 21) in the DFG Fund Reference Manual, https://www.wildlife.ca.gov/Budget .

[5] "Funds in the Aquaculture Account shall be expended solely on the Department's Aquaculture Program. Chapter 1065, Statutes of 1987, provided one additional personnel year to establish the position of Aquaculture Coordinator whose duties are specified in Section 15100." (DFG Fund Reference Manual, p.21)

- Marine Region
- Fisheries Branch (including Fish Health Lab)
- Communications, Education , and Outreach
- Information and Data Technology
- Legal, Law Enforcement, Legislative Affairs, License & Revenue, and other Regional Staffs

The support (eg: staff time) provided by these cooperating department programs is significant (see Table 1, Appendix), and is not directly funded by Aquaculture Program revenues. This assistance delivers crucial administration, technical management, and industry support and oversight. Without these contributions, the CDFW Aquaculture Program could not properly function.

Fish and Game Commissioners, State Aquaculture Coordinator, and CDFW Marine Region staff visit shellfish-growing leases in Tomales Bay.
image courtesy of Jonathan MacKay

Like much of CDFW, the Aquaculture Program also plays an important role in support of the Fish & Game Commission and its staff, especially with regard to the administration of aquaculture leases of state water bottoms and regulatory recommendations.

One of the primary revenue sources for the CDFW Aquaculture Program comes through annual aquaculture registrations. Registration fees are split into a two-tiered structure, with an additional surcharge paid by businesses having previous-year annual gross sales over $25,000[6]. The total number of aquaculture registrations for the past five years has trended downward (158 to 139), as have those passing the surcharge threshold (Figure 1).

Assembly Bill 1886 (Chesbro, 2012), which was supported by the industry to add program capacity, increased aquaculture registration fees starting in calendar year 2013. The increase has had only a modest impact in raising program revenues, partly due to the small size of the industry (i.e: small number of registrants in the second-tier category), and partly due to the trend of fewer industry registrants. These fee increases have resulted in an average addition over the last four years of $21,680 per year to the Aquaculture Program (Table 2, Appendix).

[6] Fish and Game Code §15103

It may be noted that the number of registrants is only one measure of industry size; it does not necessarily reflect trends in industry value or growth, which are beyond the scope of data currently collected by the State.

Dedicated fund revenues and expenditures of the strictly-defined Aquaculture Program[7] during the period addressed by AB1886 legislation are shown in Table 3 (Appendix). A short-term increase in expenditures that tapped accumulated fund balances over the last three years allowed the completion of certain program tasks[8]. However, those expenditure levels are not sustainable at current trends in revenues; consequently, downward adjustments to expenditures are being made and may affect program capacity in the future.

The **Aquaculture Program fund condition statement** (200.13) for the current year is also posted at the CDFW website[9].

Figure 1. CDFW Aquaculture Registrations (calendar years 2012 – 2016)

(source: CDFW License & Revenue Branch)

Year:	2012	2013	2014	2015	2016
Renewed Aquaculture Registrations	148	146	143	135	130
New Aquaculture Registrations	10	11	8	5	9
Surcharges (2nd tier)	66	66	68	63	60
Total Registered Aquaculturists	**158**	**157**	**151**	**140**	**139**

[7] DFG Fund Reference Manual, p.21

[8] see: Aquaculture Program Activities section below, including Permit Guide, Aquaculture Permit Counter, and Sea Grant Fellowship mentoring

[9] https://www.wildlife.ca.gov/Budget/FGPF

Aquaculture Program Activities – Interagency Coordination

After a five-year period of intermittent occupancy and vacancy, the current Aquaculture Coordinator was appointed at about the same time as implementation of AB 1886. The activities reported here thus reflect activities of the Aquaculture Program undertaken since August 2012.

Following statutory directives, improved education and guidance, and suggestions for improving the complex regulatory environment facing aquaculturists are important tasks of the Aquaculture Coordinator, and the Aquaculture Program. A number of tasks and initiatives undertaken toward that end are summarized below.

The Permit Guide to Aquaculture in California[10] was last published in print form in 1994, and has now been updated in web-based, online format. The guide links users to information from each of the state, federal, and local agencies with regulatory oversight of commercial aquaculture.

Aquaculture Matters[11] is a web-based education and outreach effort that began in 2014, and went online in early 2015. Its mission is to enhance the understanding of aquaculture in California on matters of policy, development, and current events. The site was created and is maintained by the Aquaculture Coordinator with support from the CDFW webmaster and Data Technology Division, as well as the Department's Office of Communication, Education, and Outreach and creative Sea Grant Fellows who've worked in the program. The site's charter incorporates each of the agencies of the Aquaculture Development Committee and encourages the perspectives of each through contributed content. The site is undergoing a re-design to improve its allure and navigability.

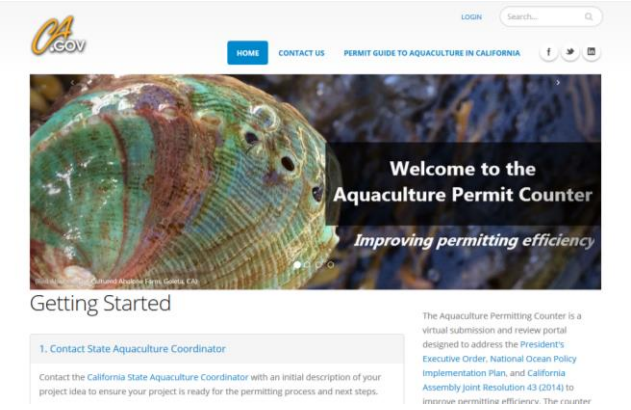
[10] https://permits.aquaculturematters.ca.gov/Permit-Guide
[11] https://aquaculturematters.ca.gov/

The California Shellfish Initiative (CSI) was launched in Fall 2013, and is a collaborative effort of growers, regulators, nongovernmental organizations and scientists to expand shellfish culture resources and improve the climate for environmental review and permitting of both commercial shellfish culture and native oyster restoration in California. Fostering enhanced marine habitats and environmental quality, a successful CSI will encourage interagency coordination and communication and result in increased jobs and stronger coastal economies. In finding the balance between environmental stewardship and economic development, the CSI goals are to:

image courtesy of Hog Island Oysters

- Provide an open process to engage in science-based coastal planning for shellfish aquaculture and restoration.
- Develop a comprehensive, efficient and predictable environmental review and permit process to increase coordination, conform to environmental laws and standards, and demonstrate environmental stewardship.
- Support healthy coastal ecosystems that benefit multiple uses including sustainable shellfish aquaculture and restoration.

The CSI has progressed through a series of organizing efforts and interagency workshops that have defined principles of agreement and a charter for work ahead by the CSI working group. Its effort to improve interagency coordination and the efficiency of environmental review and permitting was reinforced by unanimous support in both legislative houses for **Joint Assembly Resolution 43** (Chesbro 2014).



The Aquaculture Permit Counter is a new tool for interagency coordination, with the goal of improving permit review efficiency. An online portal for sharing preliminary project application materials that was created by talented California Sea Grant Fellows and the Aquaculture Coordinator, the site is hosted by CDFW and is used by all agencies (whether state, federal, or local) involved in

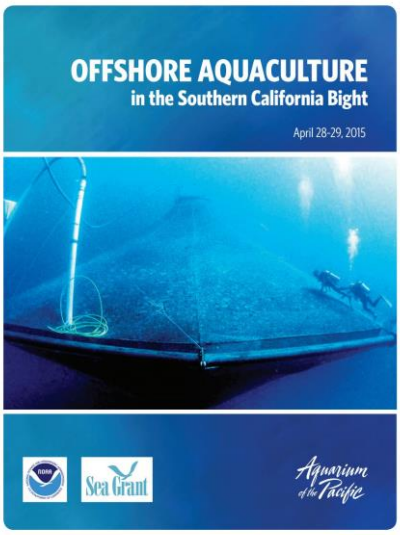
regulatory oversight of aquaculture. Project coordination teams are matched with project applicants by the Coordinator, and are encouraged to help provide early guidance that helps proponents refine their plans and project descriptions in advance of the preparation of environmental documents for CEQA and NEPA. The tool is not intended to replace the individual agencies' application review processes, but to coordinate them in a way that reduces redundancy and surprises for both applicants and regulators[12].

National Marine Sanctuaries - Federal regulations proposed, first in 2007 and again in 2013 by NOAA's Office of National Marine Sanctuaries (ONMS) had the potential to greatly impact existing and potential future California shellfish aquaculture projects in the state waters of Tomales Bay and the Monterey Bay region that are within the boundaries of national marine sanctuaries. In response, discussions were coordinated by the Ocean Protection Council Executive Director, CDFW Director, and the Aquaculture Coordinator, that brought together top staff representatives from ONMS and agencies within the California Natural Resources Agency, including Ocean Protection Council, CDFW, Fish and Game Commission, Coastal Commission, and State Lands Commission. Common ground was identified regarding concerns related to preventing the spread of aquatic invasive species while allowing for the continuation of an historic cultivation practice that includes non-invasive, non-native shellfish. The initial proposed regulations were revised and a process was defined in a Memorandum of Agreement (MOA)[13] that describes how the issuance of leases and permits by state agencies for new, amended, and renewal projects would add collaboration with ONMS for projects located within the sanctuary borders of Greater Farallones, and Monterey Bay National Marine Sanctuaries. The MOA was executed in October 2016, and is archived online by the office of the State Aquaculture Coordinator.

The first **California Aquaculture Law Symposium,** organized by fellows in the CA Sea Grant program, was held in March 2015 at the UCLA Law School campus, with planning contributions from the State Aquaculture Coordinator and the federal Aquaculture Coordinator from NOAA's Office of Aquaculture. A variety of industry and academic representatives, nongovernmental organizations, and legal experts participated in the symposium and introduced a first discussion of the legal and policy opportunities and impediments regarding further aquaculture development in California.

Aquaculture Law Symposium organizers, Annalisa (Batanides) Tuel and Lauren Bernadette
image courtesy of Jonathan MacKay

[12] https://permits.aquaculturematters.ca.gov/
[13] http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=132989



Offshore Aquaculture in the Southern California Bight, a double-workshop series centered around the refinement of environmental impact-predictive modelling using tools such as AquaModel®, the building of regulatory confidence in such tools, and the factors involving permitting of offshore aquaculture. The Aquaculture Coordinator served as a co-principal investigator and steering committee member for this two-year effort, leading to the formation of a new **Offshore Aquaculture Working Group**, and also lending important updated information and scientific references to the work being done on the programmatic CEQA document for marine aquaculture (PEIR).

Legislatively directed by Fish & Game Code §15008, the **Marine Aquaculture Programmatic Environmental Impact Report** (Marine Aquaculture PEIR) is a general, or program-level analysis of likely environmental impacts resulting from marine aquaculture projects under a new, to-be-proposed regulatory framework. The analysis considers existing baseline activities, and is predicated on a body of projects that might be typical in the immediately-foreseeable future (since no commercial marine finfish aquaculture yet exists in California), and a new regulatory framework associated with the oversight of such activity. Once certified by the lead agency (Fish & Game Commission, in this case), such a programmatic document can provide the foundation for individual future projects that build on its analysis, reducing the workload of those future environmental analyses. Work on the document, organized by the Aquaculture Coordinator, will continue in 2017 with the addition of consultants and members of the Aquaculture Development Committee to CDFW staff, who will work toward the completion of a revised draft in late 2017.

Participation and/or co-leadership by the Aquaculture Coordinator in various collaborations, groups, and events have included:
California Sea Grant Advisory Board, and advisor to the board of the **California Aquaculture Association**. Presentations and high-level discussions have been conducted with the **Pacific Coast Shellfish Growers Association**, the **Pac Rim Shellfish Sanitation** meeting, the **Humboldt**, **Ventura**, and **San Diego Port & Harbor Districts**, **California State University's Center for Aquaculture**, and the **Joint Legislative Committee on Fisheries and Aquaculture**.

Other CDFW Aquaculture Program Activities

Field collection of Sacramento Perch for genetic testing.
image courtesy of Jonathan MacKay

Applied Genetics for Management of Sacramento Perch is a collaborative project between the Aquaculture Program and Fisheries Branch Lakes and Reservoir Management that is federally funded by a State Wildlife Grant. It will provide the genetic foundation for future captive breeding (in a further collaboration with private hatcheries), as well as habitat restoration and natural resource management. Sacramento Perch show great promise as an aquaculture species (for both commercial producers and hobbyists) and as a valued recreational angling species. This project may provide a blueprint for public-private-academic fisheries partnerships into the future.

Site visits and tours have been coordinated for legislators and agency leadership and their staffs, along with other stakeholders to various commercial aquaculture facilities throughout the state. These experiences attempt to build a first-hand understanding of the activity for decision-makers.

image courtesy of Jonathan MacKay

In addition to site visits, the program regularly responds to questions and other inquiries originating from the public, and legislative and agency leaders and their staffs seeking information on aquaculture. From basic questions about the practice, to information on getting started and improving sustainability, to the clarification of and guidance through regulatory matters, the Aquaculture Program helps connect them to the answers they seek.

Administrative and mentorship matters – in addition to external needs, the Aquaculture Coordinator works internally, with counterparts throughout CDFW, the Fish and Game Commission, and other agencies to continually document and improve procedures and practices affecting statewide aquaculture administration.

Contributions from the California Sea Grant Fellowship program have provided mutual benefits, both to the program and to the learning experiences of the fellows, who seek policy and governmental experience after completing their scientific graduate studies. Their talents and energy have brought vital creativity to the challenges and problem-solving needs of the CDFW Aquaculture Program and the other hosting agencies.

Sea Grant Fellows, class of 2015.
image courtesy of Jonathan MacKay

Recommendations and possibilities

From the perspective of state resources devoted to the oversight and development of aquaculture in California, a sound foundational concept was established by the Aquaculture Development Act of 1979, and further refined in 1982. These two statutory changes recognized the horizon of potential amid the complex regulatory, natural resource, and land-use challenges inherent to aquaculture development over thirty years ago. The creation of a state program that included a state coordinator and various supporting committees tasked with finding workable solutions showed creative foresight, and was a significant first step.

California aquaculture development continues to face many challenges and opportunities, influenced by factors including rapid scientific and technical advances, global and local market forces, competing stakeholder and land-use priorities, and the expense and complexity of environmental and regulatory review and administration. The administrative and management capacity demands that have forced the CDFW Aquaculture Program to rely on many other underfunded Department programs demonstrates the degree to which state expectations and responsiveness to stakeholder concerns and development aspirations have not been aligned with funding and staffing priorities.

One possible solution to the high cost and specialized expertise now needed to successfully navigate environmental review and permitting has been proposed through a number of creative, collective solutions. Various special districts (eg: Port and Harbor

districts in San Diego, Ventura, and Humboldt) have undertaken efforts to secure entitlements for aquaculture activity within their jurisdictions, by pre-permitting and business incubation initiatives. If successful, such efforts would enable aquaculture partners and sub-lessees to get started producing sooner, with a lower cost of entry, and with repayment to the districts over time. The cost savings of quicker startup and predictable permitting can provide the needed catalyst to build local aquaculture industries, benefiting surrounding economies (from local to state and federal levels), through added jobs and business activity, tax and license revenues, and the decrease of both carbon-footprint and trade deficit provided by locally-produced seafood.

Although the abovementioned districts have found unique grants and other funding opportunities in the short-term, a longer-term solution to assist with the cost of permitting, CEQA, and other environmental review, could lower the barrier to entry for many small enterprises (including new farmers and fishermen seeking alternative harvestable products). Catalyst and incubational funding might be sought from a combination of public, private investment, and philanthropic sources who may all recognize the direct and societal benefits of more robust, economically sustainable, and local aquaculture production. Such assistance could help jumpstart a new generation of aquaculture producers as they contribute to California's economy and respond to the calls to action voiced a generation ago by the California Aquaculture Development Act.

In summation, the current CDFW Aquaculture Program does not fully meet the needs of this growing and high profile industry because funding is insufficient to support even the minimal operation today. The effort is possible only with support from other programs that are not funded through program revenues. The legislature could consider identifying a supplemental or replacement fund source or raising fees to partially close the funding gap.

Appendix

Table 1. Estimated additional annual CDFW support for Aquaculture Program (2016)

Additional CDFW Support for Aquaculture Program	Estimates of in-kind administration and technical management support of aquaculture by programs not funded by Aquaculture Program revenues
Fisheries Branch	$ 156,500
Marine Region	$ 191,000
Other CDFW Programs, Regions, Branches	$ 46,800
TOTAL ESTIMATED CONTRIBUTIONS:	$ 394,300

Table 2. Aquaculture Registrations (2012 – 2016)
revenue comparison with and without AB1886 fee increase

Table 2. CDFW Aquaculture Registrations (2012 - 2016)

	2012		Revenue	2013		Revenue	2014		Revenue	2015		Revenue	2016		Revenue
	Qty	Fee	Subtotals	Qty	fee	Subtotals	Qty	fee	Subtotals	Qty	fee	Subtotals	Qty	fee	Subtotals
New	10	**$ 728.50**	**$7285**	11	**$ 800.00**	**$8,800**	8	**$ 809.25**	**$6,474**	5	**$ 820.00**	**$4,100**	9	**$ 820.00**	**$7,380**
without increases:					$ 747.50	$8,223		$ 756.25	$6,050		$ 766.25	$3,831		$ 766.25	$6,896
Renewals	148	**$ 364.75**	**$53,983**	146	**$ 500.00**	**$73,000**	143	**$ 505.75**	**$72,322**	135	**$ 512.50**	**$69,188**	130	**$ 514.00**	**$66,820**
without increases:					$ 374.25	$54,641		$ 378.50	$54,126		$ 383.50	$51,772		$ 383.50	$49,855
Surcharge (>$25K sales)	66	**$ 546.75**	**$36,086**	66	**$ 600.00**	**$39,600**	68	**$ 607.00**	**$41,276**	63	**$ 615.00**	**$38,745**	60	**$ 615.00**	**$36,900**
without increases:					$ 561.00	$37,026		$ 567.50	$38,590		$ 575.00	$36,225		$ 575.00	$34,500
Late fees	13	**$ 65.50**	**$852**	20	**$ 150.00**	**$3,000**	8	**$ 151.75**	**$1,214**	10	**$ 153.75**	**$1,538**	8	**$ 153.75**	**$1,230**
without increases:					$ 67.25	$1,345		$ 68.00	$544		$ 69.00	$690		$ 69.00	$552
Totals (actual):	**158**		**$98,205**	**157**		**$124,400**	**151**		**$121,286**	**140**		**$113,570**	**139**		**$112,330**
without increases:						$ 101,234			$ 99,310			$ 92,518			$ 91,803
Net difference:						$ 23,166			$ 21,977			$ 21,052			$ 20,527
Avg: $21,680															

Table 3: Five-year Aquaculture Program Fund Condition Statement (Revenues and Expenses)

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
0200.13 AQUACULTURE PROGRAM
FUND CONDITION STATEMENT
As of January 10, 2017

	Prior Year - 4 2012/13	Prior Year - 3 2013/14	Prior Year - 2 2014/15	Prior Year - 1 2015/16	Current Year 2016/17	Budget Year 2017/18 (estimated)
BEGINNING BALANCE	$ 408,000	$ 543,000	$ 652,000	$ 703,659	$ 753,585	$ 709,933
Prior Year Adjustment	2,000	5,000	9,905	(1,843)	-	-
Adjusted Beginning Balance	$ 410,000	$ 548,000	$ 661,905	$ 701,816	$ 753,585	$ 709,933
REVENUES, TRANSFERS, AND OTHER ADJUSTMENTS						
Revenues:						
4123200 Fish and Game - Taxes	5,000	8,000	6,177	-	-	-
4123000 Fish and Game - Licenses, Tags, and Permits	201,000	192,000	162,957	190,417	126,348	126,348
4162000 Investment Income - Pooled Money Investments	1,000	1,000	1,094	2,117	-	-
Total Revenues, Transfers, and Other Adjustments	**$ 207,000**	**$ 201,000**	**$ 170,228**	**$ 192,534**	**$ 126,348**	**$ 126,348**
Total Resources	617,000	749,000	832,133	894,350	$ 879,933	$ 836,281
EXPENDITURES AND EXPENDITURE ADJUSTMENTS						
Expenditures:						
3600 CA Department of Fish and Wildlife:						
State Operations, Aquaculture Prgm (Fund 0200.13)	74,000	97,000	128,475	140,765	170,000	170,000
Total Expenditures and Expenditure Adjustments	**$ 74,000**	**$ 97,000**	**$ 128,475**	**$ 140,765**	**$ 170,000**	**$ 170,000**
FUND BALANCE						
Reserve for Economic Uncertainties	$ 543,000	$ 652,000	$ 703,658	$ 753,585	$ 709,933	$ 666,281
	543,000	652,000	703,658	753,585	709,933	666,281