State of Alaska
FY2018 Governor's Operating Budget

Department of Fish and Game
Commercial Fisheries
Results Delivery Unit Budget Summary

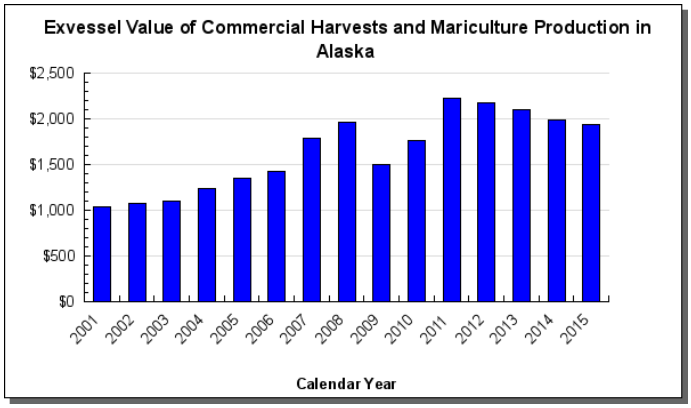
Commercial Fisheries Results Delivery Unit

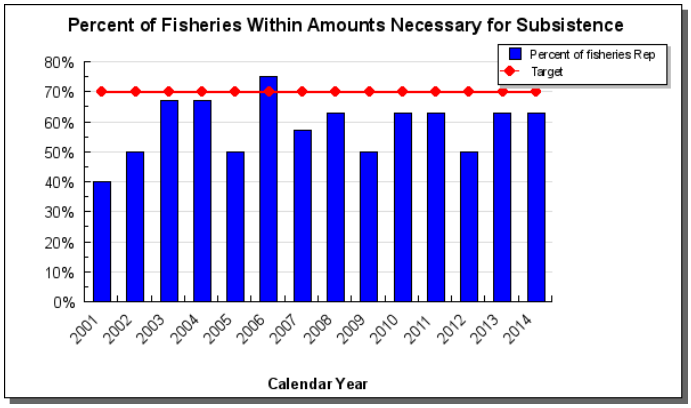
Contribution to Department's Mission

The mission of the Division of Commercial Fisheries is to manage subsistence, commercial, and personal use fisheries in the interest of the economy and general well being of the citizens of the state, consistent with the sustained yield principle, and subject to allocations through public regulatory processes.

Results

(Additional performance information is available on the web at https://omb.alaska.gov/results.)





Core Services

- Ensure the conservation of natural stocks of fish, shellfish and aquatic plants based on scientifically sound assessments.

Measures by Core Service

(Additional performance information is available on the web at https://omb.alaska.gov/results.)

1. Ensure the conservation of natural stocks of fish, shellfish and aquatic plants based on scientifically sound assessments.

Major RDU Accomplishments in 2016

Salmon Harvest and Value

The 2016 commercial salmon fishery all species harvest was 112.6 million fish with an estimated preliminary exvessel value of $406.4 million. Of this total, sockeye salmon accounted for 62% of the value at $251.4 million and 47% of the

harvest at 52.9 million fish. Pink salmon accounted for 9% of the value at $37.8 million, and 35% of the harvest at 39.4 million fish. Chum salmon accounted for 16% of the value at $65.2 million and 14% of the harvest at 16.2 million fish. Coho salmon accounted for 8% of the value at $33.2 million and 3% of the harvest at 3.8 million fish. The Chinook salmon harvest was 401 thousand fish with an estimated preliminary value of $18.8 million. The estimates of value are based on preliminary ex-vessel prices and do not include any post season bonuses paid to fishermen. Bristol Bay enjoyed a great sockeye salmon season with $37.3 million sockeye salmon valued at $153.2 million. However, pink salmon catches in Southeast, Prince William Sound, and Kodiak were well below expectations. The 2016 season marked the first time since statehood that there were no large scale commercial salmon buyer/processors in the Kuskokwim Area.

Crab Total Allowable Catch
The department established the 2016-2017 season total allowable catches for the state-federal co-managed crab fisheries in the Bering Sea and Aleutian Islands that met the conservation and economic benefit objectives and requirements of state and federal regulations: 8.47 million pounds for the Bristol Bay red king crab fishery, 21.57 million pounds for the Bering Sea snow crab fishery, 0.52 million pounds for the Norton Sound red king crab fishery, 3.31 million pounds for the Eastern Aleutian Islands golden king crab fishery, and 2.24 million pounds for the Western Aleutian Islands golden king crab fishery. Four Bering Sea crab fisheries (Pribilof District red and blue king crab, Saint Matthew blue king crab, and Bering Sea Tanner crab) were closed to commercial fishing in the 2016-2017 season for stock conservation. The department worked within the federal process to assure that the expertise within the department is directly utilized in setting the annual catch limits that federal regulations require to be established for the Bering Sea and Aleutian Islands king and Tanner crab fisheries in order to minimize risk of overfishing.

eLandings
Data Resource Management continued to manage, develop, and expand the Interagency Electronic Reporting System; eLandings. eLandings is designed to provide a single reporting system to electronically report all commercial harvest. All groundfish and Western Alaska crab are reported within eLandings, and expansion to salmon continues statewide. eLandings continues to be a major success story for the division and its partners; National Marine Fisheries Services and the International Halibut commission. In this period, the division has completed implementation of the mandatory use of tLandings, a component of eLandings for tenders, by entities meeting a defined threshold. At the completion of the 2016 salmon season, approximately 83 percent of all landings were submitted electronically. In an effort to expand electronically reporting, the division is working towards migration of our tLandings application to tablet platforms, facilitating beach-based and small vessel electronic reporting. A major goal is to start field trials during the 2017 salmon season. Beyond expansion of electronic reporting for salmon, the division plans to begin to address modification of the eLandings System to allow electronic reporting of shellfish. The eLandings system also continued improvements of the electronic Commercial Operator's Annual Report (COAR). This included improved COAR reporting capabilities, accuracy, code lookups, audit capabilities, and overall system stability.

Application Development
Data Resource Management delivered two major applications into production. These applications include a new Fish Ticket application and a new Commercial Operators Annual Report and Intent to Operate (ITO) application called EnCOAR. Both were legacy applications written in an end of life product that had a high risk of failure had they not been replaced in a timely manner.

Business Intelligence and Data Warehouse (OceanAK)
Data Resource Management continues to migrate to a single reporting and analysis system for fisheries management. This system eliminates multiple reporting technologies and enables end users to produce complex analyses for fisheries management and various reporting needs without a programmer. Statewide IT personnel create subject areas to support this reporting and analysis. Over 20 new subject areas were created in this period, providing a total of over 100 subject areas that enable over 350 users to produce analyses to support fisheries management. This project supports the elimination of multiple technologies for reporting, provides a single authoritative source for data, and supports the major goal of historical data rescue and preservation of one of the most valuable and comprehensive datasets of commercial fisheries history.

Information Services
Data Resource Management Information Services (IS) produces current and historical fishery information and makes this information available to the public. All data reports are prepared according to state and departmental confidentiality policies, statutes, and regulations. The Bristol Bay processing capacity survey estimates processing capacity for the entire Bristol Bay area and was conducted by IS personnel in this period. IS also completed 122 data requests.

Key RDU Challenges

Alaska Chinook Salmon Fishery Disaster
In 2014, impacts of low Chinook salmon productivity and abundance continued for many Alaskans in the Yukon, Kuskokwim, and Cook Inlet regions. Fishery closures and restrictions necessary for conservation resulted in a great burden on Alaskans who rely heavily on Chinook salmon for food and income. The State of Alaska recognizes the hardships that management restrictions have caused subsistence, sport, and commercial fishermen, as well as guides, local fish processors, and other local and regional businesses. With funding supported by the administration and the Alaska State Legislature, Alaska Department of Fish and Game (ADF&G) scientists began implementation of its Chinook Salmon Research Initiative (CSRI) in 2014, focused on 12 indicator systems throughout the state and designed to better assess Chinook run sizes and understand the causes behind this unexpected widespread decline. Fifteen major projects were initiated in FY2014, including a comprehensive effort to assess in-river Chinook abundance and run timing on the Kuskokwim River, nearshore Bering Sea marine studies designed in part to improve forecasting capabilities for Yukon River Chinook stocks, and several projects to document local traditional knowledge and improve subsistence harvest survey data. However with substantial funding reductions to this initiative in FY2016, project priorities were re-evaluated and some efforts reduced or eliminated due to insufficient resources. The field seasons for most projects were completed in the summer of 2016 and final results will be reported to the public and the Board of Fisheries during the winter and spring of 2017.

In some cases, Chinook salmon that require conservative management are co-mingled with chum or sockeye salmon runs with large harvestable surpluses. This creates a challenge for management and research staff to accurately assess run sizes and make correct management decisions during the season. The department needs improved capability to 1) assess run size early so that management decisions accurately reflect run size with a higher degree of precision than previously available, 2) provide information to and solicit input from users along the river, and 3) in some cases, develop information and analyses that will allow the state to prevent intrusion of the federal subsistence program into management of state fisheries.

Consistent with the state's constitutional and statutory mandates to manage renewable resources to provide sustained yield, ADF&G will continue to work closely with the Board of Fisheries (BOF) to ensure that Chinook salmon are conserved, while providing for opportunities on the more abundant species of salmon where possible. ADF&G has collaborated with constituents to evaluate novel gear and management strategies that will conserve Chinook salmon through selective harvest. For example, information on swimming depth of Chinook salmon near the Kenai River was instrumental in designing management strategies that helped exploit abundant sockeye stocks by set-netters while decreasing capture of Chinook salmon. Use of dip nets on the Yukon River to harvest abundant summer chum salmon allows the release of Chinook salmon un-harmed. We continue to explore possible expansion of these and other methods in the Kuskokwim and Yukon rivers.

Hatchery-Wild Salmon Interactions Research Project
The Alaska salmon fishery enhancement program produces large numbers of salmon for harvest, especially in Prince William Sound (PWS) and Southeast Alaska (SE), and to a lesser degree in Kodiak and Cook Inlet. The scale of the program has raised concerns that hatchery produced fish may detrimentally affect the productivity and sustainability of wild stocks of Alaska salmon. While the hatchery program has numerous safe-guards built into it to protect wild stocks, the department and Alaska hatchery operators have partnered together to undertake research to address several priority questions:

1. What is the genetic stock structure of pink and chum salmon in each region?
2. What is the extent and annual variability in straying of hatchery pink salmon in PWS and chum salmon in PWS and SE?
3. What is the impact, if any, on fitness (productivity) of wild pink and chum salmon stocks due to straying of hatchery pinks and chum salmon?

Funding for this research has come from the legislature, salmon hatchery operators, and Alaska salmon processors. The ADF&G's gene conservation lab has undertaken analyses of genetic structure of pink and chum salmon. In 2013 ADF&G awarded a contract to Prince William Sound Science Center (PWSSC) to conduct activities needed to collect the data to answer questions two and three. The mass-marking of hatchery produced salmon with otolith thermal marks provides the opportunity to estimate the actual number of wild-origin and hatchery-origin spawners in populations of pink and chum salmon in PWS and chum salmon in SE. The combination of thermal marks on all hatchery origin pink and chum salmon coupled with application of available genetic techniques provides a means to set up a robust experiment to evaluate fitness of natural origin versus hatchery origin stray salmon spawning in the wild in streams of Prince William Sound and SE Alaska. The contract with PWSSC ended in March of 2016, and a new contract was entered into to continue the work through June of 2017. Funds were expected to be exhausted by 2017, however, PNP hatchery operators committed to annual funding increments along with salmon processors, in order to continue through 2023 and complete the study. Results of this work will be valuable to both fishery and hatchery managers as well as others interested in Alaska salmon production. This project addresses challenges to priority programs 1, 2, and 3.

Bering Sea Crab Research Funding
The division is working to assess reproductive potential and to estimate other important productivity parameters of the Bering Sea snow crab and Tanner crab stocks, stocks that have provided for the large commercial harvests, although harvests are presently lower than historical levels. The department also performs surveys to improve stock assessment of king crab stocks that are not surveyed, or not adequately surveyed, by the National Marine Fisheries Service (NMFS) trawl survey. Improved estimation of productivity parameters and stock assessment will allow the department to maximize harvests and avoid overfishing, which is especially important to industry during periods of low stock productivity. The division maintains and distributes the data collected by at-sea observers and dockside samplers, as is essential for fishery management.

Federal funding to ADF&G for Bering Sea Crab Research (BSCR) has been reduced annually since FY2011 and to the extent that federal funds received by ADF&G for BSCR in FY2016 are 64% of what was received in FY2011. Federal funds in FY2015 were not sufficient to provide funding for the July 2014 triennial Norton Sound red king crab trawl survey and federal funds in FY2015 and FY2016 were not sufficient to fully fund the "base" research program. Further reductions in federal BSCR funds in FY2018 would further reduce the department's ability to perform at-sea research and stock assessment surveys on Bering Sea/Aleutian Islands crab stocks and would require a reduction in the seasonal staffing that is needed for the Bering Sea/Aleutian Islands crab research and stock assessment programs and for the entry, maintenance, and distribution of data collected by the state's at-sea crab-fishery observer and dockside sampling programs. Secure, long-term funding is needed to maintain the research and data collection and distribution programs that are necessary for sustainable management of the highly-valuable Bering Sea and Aleutian Islands crab fisheries.

Aleutian Islands Golden King Crab (GKC) Research
Currently, there is no federal or state survey for GKC for the Aleutian Islands, which hinders the ability of state and federal management to react to changes in abundance of this resource. In collaboration with the commercial fleet, ADF&G is designing a new survey, examining variation in life history parameters (e.g., size at maturity), and investigating population genetics to better inform the stock assessment and subsequent management of this fishery. In addition to improving the stock assessment, this project aims to actively engage the commercial fishing industry in all aspects of the research from design through implementation. The biggest challenge of this research is spatial scale of the Aleutian Island GKC fishery. This translates into additional staff time for facilitating the collaboration, collecting data at sea, and analyzing this new data stream.

Transition to Industry Client/Third-Party Sustainability Certification
In the fall of 2008, the department informed the Marine Stewardship Council (MSC) that the ADF&G would no longer continue as a client for certification of the Alaska salmon management program. The client role was taken over by the Alaska Fisheries Development Foundation (AFDF) in February 2010. In January, 2012, eight Alaskan salmon processors announced they no longer desired certification of Alaskan salmon fisheries through MSC. In response, AFDF announced its withdrawal as MSC client, and its intent to proceed only with actions necessary to maintain MSC certification of Alaska salmon through October 29, 2012. AFDF continues as the client of record for MSC certification of Pacific Cod in the Bering Sea/Aleutian Islands and the Gulf of Alaska.

Shortly thereafter, responding to desires of one Alaskan salmon processor to maintain MSC certification for Alaskan salmon fisheries, Purse Seine Vessels Owners Association (PSVOA) became the new client for MSC certification. ADF&G's Chief Fisheries Scientist for salmon met with the client's assessment team in December 2014 to provide updates on certification conditions outlined in 2013. Since then, based on desires of Alaskan salmon processors to re-enter the MSC certification process, Pacific Seafood Processors Association (PSPA) has reached agreement with PSVOA to become the new client for MSC. Over the past several years, the Alaska Seafood Marketing Institute has been working with Global Trust to develop a third-party sustainability certification under the Responsible Fisheries Management program for all Alaskan fisheries. Alaska's salmon, halibut, black cod, Pollock, Bristol Bay red king crab, St. Matthew blue king crab, and cod fisheries have been certified by Global Trust with flatfish fisheries certification underway. ADF&G met with the Global Trust assessment team to provide information relevant to the third assessment audit for certification of Alaska's salmon fisheries. ADF&G has been working with both Global Trust and MSC clients to provide information necessary for fisheries certification. While both processes are less onerous than original efforts through MSC, we are now faced with satisfying the needs of two separate certification bodies.

Genetic Stock Identification

The public and the department have identified genetic tools as a key capability to manage fisheries to maximize benefit to citizens of the state. Genetic stock identification provided by the Gene Conservation Laboratory (GCL) is used to inform the Board of Fisheries in making fishery allocation decisions, meet U.S.-Canada treaty obligations in SE Alaska and on the Yukon River, assess the effect of management actions, improve forecasts, and improve estimation of stock productivity and set escapement goals. These analyses reduce uncertainty thereby enabling managers to provide fishing opportunities when available consistent with maximum sustained yield principle. The GCL also provides genetic review of aquaculture permits to provide economic opportunities while protecting wild stocks. To fulfill these services, the Gene Conservation Laboratory has historically analyzed in excess of 100,000 samples per year.

Recent division budget cuts have significantly decreased capacity and reduced or eliminated projects that inform fisheries management. To address these challenges, the GCL has identified and implemented new, lower-cost methods for field collections and has sought increased external funding. However, uncertainty of external funding poses challenges for acquiring and retaining expertise for the long term, and limits the department's ability to preserve capacity to address critical management issues. The division recently expanded its scope into marine species to answer questions related to mariculture, federal fisheries management, and Endangered Species Act (ESA) listings. Increasing potential for development of large-scale mariculture highlights the need for increased capabilities to address the genetic analysis of diverse species such as sea cucumbers, geoducks and seaweeds. To meet the ever increasing need for genetic information, the GCL is seeking to expand its expertise to provide the department with more cost-effective methods to estimate wildlife population sizes that are central for science-based management. The GCL aims to continue to provide genetic information to sustainably manage Alaska's wild resources to maximize benefit to citizens of the state.

Federal Groundfish Fisheries

The North Pacific Fishery Management Council (NPFMC) has a number of initiatives underway that affect state-managed fisheries and distribution of benefits from the harvest of federally-managed fishery resources off Alaska. These include development of a program to allow recreational entities to acquire halibut quota; bycatch reduction measures for halibut in groundfish fisheries off Alaska; ongoing modifications to the federal groundfish observer program to improve quality and utility of observer data; modifying fishery management plans to update essential fish habitat designations; and applying lessons learned from over a decade of experience with catch share programs off Alaska to better meet state policy objectives in the Gulf of Alaska trawl fisheries. State managers and researchers must work through the NPFMC process to develop programs that provide stability for fisheries participants and communities, while meeting NPFMC objectives.

State-Federal Co-Management of Bering Sea – Aleutian Islands Crab Fisheries

The federal Fishery Management Plan (FMP) for the Bering Sea and Aleutian Islands king and Tanner crabs establishes a state-federal cooperative management regime that defers crab management to the State of Alaska with federal oversight. Changes to the Magnuson-Stevens Fishery Conservation Act (MSA) in recent years and resulting federal regulations stipulating management measures that must be applied to federal FMP fisheries (e.g., federal overfishing definitions, federal stock status determinations, federal annual catch limits), have increased demands on Westward and Headquarters staff for data gathering, analysis and reporting.

Employee Recruitment and Retention Efforts
The division continues to work with the department to address recruitment and retention challenges. As part of these efforts, the division is collaborating on a department wide level and is partnering with other state agencies and outside entities such as the Association of Fish and Wildlife Agencies, Management Assistance Team, other state fish and wildlife agencies, and the National Conservation Leadership Institute. The division has also contributed to the development of the University of Alaska's Fisheries, Seafood, and Maritime Workforce Development Plan.

A couple of examples where the division tries to address recruitment and retention is through broader recruitment efforts and workforce development for new and existing employees such as our graduate studies program. Department staff also participates in the Alaska Young Fishermen's Summit conducted annually by the University of Alaska.

As budgets become tighter and positions are either laid off or kept vacant through attrition, existing workloads tend to rise while morale worsens. Highly qualified and motivated staff are the core of our operations without which all functions of the department are diminished. The potential loss of highly qualified individuals seeking more stable work elsewhere coupled with fewer qualified applicants wishing to work for a division going through budget reductions is a significant challenge.

Vessels and Aircraft Maintenance and Replacement
The division has five large research and smaller support vessels and five small aircraft, which require regular maintenance and periodic overhauls. They are integral to a variety of stock assessment programs and coupled with commercial charters provide platforms for inseason management. Maintenance must be provided to protect this capital investment, assure efficient operations, and meet safety requirements.

Additionally, three of the division's vessels have reached replacement age and the division must find funds to replace them in the near future. The division received capital funds in FY2013 to begin the replacement process for the R/V Resolution, which services the Westward Region. Given the great expense of building a vessel, we are finalizing plans to retrofit the existing vessel. We are continuously exploring options to complete deferred maintenance demands on all our vessels.

Maintaining a high quality aircraft program for salmon stream surveys depends on the ability to recruit and retain excellent pilots experienced in rural Alaska and flying low altitude and float equipped planes. Safely operating and maintaining aircraft within existing budgets is always a challenge. Adequate housing for pilots, as well as field staff, is also an ongoing challenge.

Data Resource Management (DRM)
The division collects a vast amount of data, including various types of biological data on fish stocks, environmental data, records of commercial harvests, and records on the buying and production activities of seafood processors. The headquarters component is responsible for development and coordination of the databases, data warehouse and applications used by the entire division. Demand for access to this data and the complexity of analysis needs continually increase and the division is challenged with developing the means to integrate numerous independent datasets into a unified structure. The volume, scale and requirements for new functionality as well as accurate and timely data continue to increase while staffing does not.

Geographical information systems (GIS)
GIS are being increasingly used to analyze biological data and the division has only a minimal capability with GIS and no dedicated resources. Without adequate resources to locate, obtain and preserve this data, historical data and spatial data are endangered. The division has obtained a two year grant to assist in this endeavor, but must be able to implement change control and assign permanent staff to ensure the ongoing accuracy of spatial data when integrated with fisheries data.

Business Intelligence and Data Warehouse (OceanAK)
This project's goal is to provide a single toolset and portal for reporting and analysis of all commercial fisheries data. Resources for this project continue to be a major challenge as teams to support an asset like this are usually comprised of a large, dedicated information technology staff. This project uses statewide division IT resources which already support multiple projects and systems. Currently, there are only three core IT staff with the knowledgebase to maintain and enhance this system. In-house cross training has started, but budget does not exist for the level of

professional training required.

eLandings
The Interagency Electronic Reporting System; eLandings, is designed to provide a single reporting system to electronically report all commercial catch. Personnel and funding for this project continue to be a major challenge. The division has applied to NMFS for cost recovery in order to continue maintenance and development of this project for non-salmon activities and components, however salmon must be covered by limited general funds only. One of the three Analyst Programmer IV positions required to maintain, implement, enhance and test this system has been eliminated. Of the two staff remaining, one will be leaving state service soon. A replacement Analyst Programmer can take up to two years before they can function independently in this complex system.

Significant Changes in Results to be Delivered in FY2018

If FY2018 allocations remain stable, there are no significant changes to be delivered.

Contact Information

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Commercial Fisheries
RDU Financial Summary by Component

All dollars shown in thousands

	FY2016 Actuals				FY2017 Management Plan				FY2018 Governor			
	UGF+DGF Funds	Other Funds	Federal Funds	Total Funds	UGF+DGF Funds	Other Funds	Federal Funds	Total Funds	UGF+DGF Funds	Other Funds	Federal Funds	Total Funds
Formula Expenditures None.												
Non-Formula Expenditures												
SE Region Fisheries Mgmt.	9,379.3	1,189.1	3,078.3	13,646.7	8,513.0	1,312.5	3,290.3	13,115.8	8,763.8	1,323.8	3,270.1	13,357.7
Central Region Fisheries Mgmt.	8,695.0	1,628.8	196.3	10,520.1	8,293.1	1,881.0	236.7	10,410.8	8,369.7	1,889.1	237.4	10,496.2
AYK Region Fisheries Mgmt.	7,594.8	916.6	824.3	9,335.7	7,383.2	1,054.1	1,297.7	9,735.0	7,459.0	1,058.2	1,301.1	9,818.3
Westward Region Fisheries Mgmt.	10,047.6	1,325.1	2,061.7	13,434.4	9,821.1	2,060.0	2,377.5	14,258.6	9,809.5	2,070.7	2,382.6	14,262.8
Statewide Fisheries Management	12,230.1	2,735.6	1,779.5	16,745.2	13,247.5	3,851.2	2,241.9	19,340.6	13,131.1	3,832.5	2,240.6	19,204.2
Commercial Fish Entry Commission	3,522.1	0.0	0.0	3,522.1	3,579.6	0.0	114.4	3,694.0	3,632.6	0.0	0.0	3,632.6
Totals	**51,468.9**	**7,795.2**	**7,940.1**	**67,204.2**	**50,837.5**	**10,158.8**	**9,558.5**	**70,554.8**	**51,165.7**	**10,174.3**	**9,431.8**	**70,771.8**

Commercial Fisheries
Summary of RDU Budget Changes by Component
From FY2017 Management Plan to FY2018 Governor

All dollars shown in thousands

	Unrestricted Gen (UGF)	Designated Gen (DGF)	Other Funds	Federal Funds	Total Funds
FY2017 Management Plan	**36,140.4**	**14,697.1**	**10,158.8**	**9,558.5**	**70,554.8**
Adjustments which continue current level of service:					
-SE Region Fisheries Mgmt.	76.0	207.7	11.3	29.1	324.1
-Central Region Fisheries Mgmt.	74.2	2.4	8.1	0.7	85.4
-AYK Region Fisheries Mgmt.	74.4	1.4	4.1	3.4	83.3
-Westward Region Fisheries Mgmt.	71.3	21.4	10.7	5.1	108.5
-Statewide Fisheries Management	80.0	-190.8	22.3	8.3	-80.2
-Commercial Fish Entry Commission	0.0	54.0	0.0	0.0	54.0
Proposed budget decreases:					
-SE Region Fisheries Mgmt.	-32.9	0.0	0.0	-49.3	-82.2
-Westward Region Fisheries Mgmt.	-62.6	-41.7	0.0	0.0	-104.3
-Statewide Fisheries Management	-5.6	0.0	-41.0	-9.6	-56.2
-Commercial Fish Entry Commission	0.0	-1.0	0.0	-114.4	-115.4
FY2018 Governor	**36,415.2**	**14,750.5**	**10,174.3**	**9,431.8**	**70,771.8**