

State of Alaska FY2010 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.

Core Services

- Stock Assessment and Applied Research: Maintain ongoing programs for the enumeration, assessment, and understanding of salmon, herring, groundfish, and shellfish stocks.
- Harvest Management: Control the harvest of fishery resources for subsistence, commercial, and personal uses according to plans and regulations.
- Aquaculture Permitting: Permit and provide regulatory, technical, and planning services to aquatic farmers and private nonprofit hatchery operators.
- Information Services and Public Participation: Develop, maintain and disseminate data, analyses, and published reports.

End Result	Strategies to Achieve End Result
<p>A: Stable or increasing economic and social benefits derived from the harvest and use of fish, shellfish, and aquatic plants in Alaska.</p> <p><u>Target #1:</u> Maintain total annual value of commercial harvests and mariculture production at over \$1 billion annually.</p> <p><u>Status #1:</u> Over \$1.7 billion value of commercial harvests and mariculture production of fish, shellfish, and aquatic plants - continuing a strong five year upward trend.</p> <p><u>Target #2:</u> Achieve the amounts necessary for subsistence established by the Board of Fisheries in seventy percent of subsistence fisheries.</p> <p><u>Status #2:</u> Amounts necessary for subsistence were met in over 75% of subsistence fisheries, above the 70% target for 2006</p>	<p>A1: Ensure the conservation of natural stocks of fish, shellfish and aquatic plants based on scientifically sound assessments.</p> <p><u>Target #1:</u> Achieve reproductive goals in 80% of monitored systems.</p> <p><u>Status #1:</u> The annual percentage of salmon reproductive goals achieved in monitored systems has remained above the 80% target and has shown an annual increase since 2004.</p> <p><u>Target #2:</u> Develop baselines of DNA-based markers for 100 Alaska salmon stocks for sockeye, chum, and Chinook salmon.</p> <p><u>Status #2:</u> The number of salmon stocks identified and sampled for inclusion in DNA databases continues to increase. The target has been reached for Chinook salmon and is nearly complete for sockeye and chum salmon.</p> <p><u>Target #3:</u> Establish reproductive goals or other baseline biological reference points for all harvested stocks.</p> <p><u>Status #3:</u> The Salmon and Groundfish harvested stocks demonstrate a high percentage of meeting the target of establishing reproductive goals or other baseline biological reference points for all harvested stocks. Other goals based on quantitative and qualitative analysis and assessment indicate more work is necessary in order to fully meet the target.</p> <p>A2: Sustain fisheries on stocks of fish, shellfish and</p>

	<p>aquatic plants based upon the control and regulation of harvests through responsive management systems.</p> <p><u>Target #1:</u> Meet 80 percent of user group allocation objectives established by the Board of Fisheries by region, plus or minus 10 percent.</p> <p><u>Status #1:</u> In this difficult task, the allocation objectives continue to fall below the target. This strategy is functional because it demonstrates the inherent challenge of achieving allocation targets.</p> <p><u>Target #2:</u> Provide data from coded wire tags and otolith marks within one week of receipt at Tag Lab.</p> <p><u>Status #2:</u> The Mark Tag and Age Lab is clearly meeting the goal of providing data within one week or less, usually the data is available within one day and the few occasions where slightly more time is required usually involve a weekend or some other explanation.</p> <p>A3: Expand production potential through mariculture and development of new commercial fishing opportunities on underutilized species.</p> <p><u>Target #1:</u> Establish harvest guidelines for 80 percent of all underutilized species/stock groups proposed for new fishery development annually by the public.</p> <p><u>Status #1:</u> There continues to be a high approval percentage of public requests for new fishery development for which basic harvest guidelines are developed.</p> <p><u>Target #2:</u> Process 100% of samples submitted by salmon hatcheries, shellfish hatcheries, and aquatic farmers.</p> <p><u>Status #2:</u> Commercial Fisheries continues to process 100% of all samples submitted.</p> <p><u>Target #3:</u> Ensure 100% of all active aquatic farms operate under the terms of a current aquatic farm permit.</p> <p><u>Status #3:</u> The mariculture section is now reporting a near 100% compliance that all farms operate under the terms of a current aquatic farm permit.</p>
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Major Activities to Advance Strategies	
<ul style="list-style-type: none"> • Collect age, size, and sex data on harvested finfish and shellfish populations. • Operate aging/tag/otolith, genetics, and pathology laboratories. • Collect and analyze genetic markers from finfish and shellfish populations. • Survey and sample marine finfish and shellfish populations. • Calculate annual escapement goals for salmon. • Establish annual harvest objectives for marine 	<ul style="list-style-type: none"> • Provide technical oversight in finfish and shellfish health for hatchery and farm operators. • Prevent or prescribe treatment for disease outbreaks at salmon hatcheries or shellfish farms. • Provide harvest and production data to Commercial Fisheries Entry Commission (CFEC) and North Pacific Fishery Management Council (NPFMC). • Comment to NPFMC and CFEC on fishery management and biological issues associated with rationalization proposals.

Major Activities to Advance Strategies

- species.
- Prevent the introduction and spread of invasive and introduced species.
- Permit aquatic farms for shellfish and aquatic plants.
- Provide biological and technical assistance to existing and prospective aquatic farmers.
- Open and close areas for commercial fishing to harvest surpluses.
- Collect harvest information from commercial, personal use and subsistence fisheries.
- Operate weirs, sonar projects, and counting towers to track salmon escapements.
- Conduct aerial surveys during management of salmon and herring fisheries.
- Place observers on fishing vessels to sample catches and collect data.
- Conduct test fishing operations as part of stock assessment efforts.
- Conduct life history and habitat utilization research.
- Conduct stock assessment and recruitment modeling.
- Investigate new and improved technologies for determining biological productivity and calculating yields.
- Conduct collaborative research with universities, federal agencies, and non-governmental organizations.
- Expand database of genetic markers to stocks not currently covered.
- Develop models for calculating Maximum Sustained Yield for stocks lacking them.
- Provide training and continuing education for staff from all job classes.
- Conduct life history and other biological research on underutilized fish stocks.
- Respond to industry requests for new fisheries on underutilized stocks.
- Work with Board of Fisheries to authorize fisheries on underutilized stocks.
- Permit and oversee private non-profit salmon hatchery program.
- Approve salmon and shellfish stocks with acceptable disease histories for mariculture and salmon aquaculture programs.
- Provide individual fishing history data to boat owners, captains, and federal and state agencies.
- Open and close areas and species for subsistence and personal use harvest.
- Issue permits for personal use and subsistence fisheries.
- Tabulate subsistence and personal use catches.
- Provide reports to the Board of Fisheries and other entities on subsistence and personal use fisheries.
- Work with the Board of Fisheries and the public to craft management plans and regulations that meet subsistence and personal use needs.
- Provide biological and fishery management information to the Board of Fisheries and state fish and game advisory committees.
- Submit proposals to the Board of Fisheries.
- Comment on both staff and public proposals before the Board of Fisheries.
- Provide oral and written biological and fishery management advice to the Board of Fisheries.
- Draft regulations and management plans based on proposals approved by the Board of Fisheries.
- Provide staff support to the Alaska Board of Fisheries.
- Design and maintain electronic databases for catch and production data.
- License fish processors.
- Design, print, issue, collect, edit, and data enter fish tickets recording harvests.
- Collect, edit and data enter annual buying and production data from seafood processors.
- Provide summary information on harvests and production in electronic and print media.
- Maintain confidentiality of protected data.
- Publish catch and production information on web site.
- Provide internet access to searchable database of division publications.
- Publish news releases on department research and management activities.
- Publish articles on fisheries management and research in magazines and trade journals.
- Provide photos and video footage on the web site and to the media.

FY2010 Resources Allocated to Achieve Results

FY2010 Results Delivery Unit Budget: \$60,488,800

Personnel:

Full time 312

Part time 465

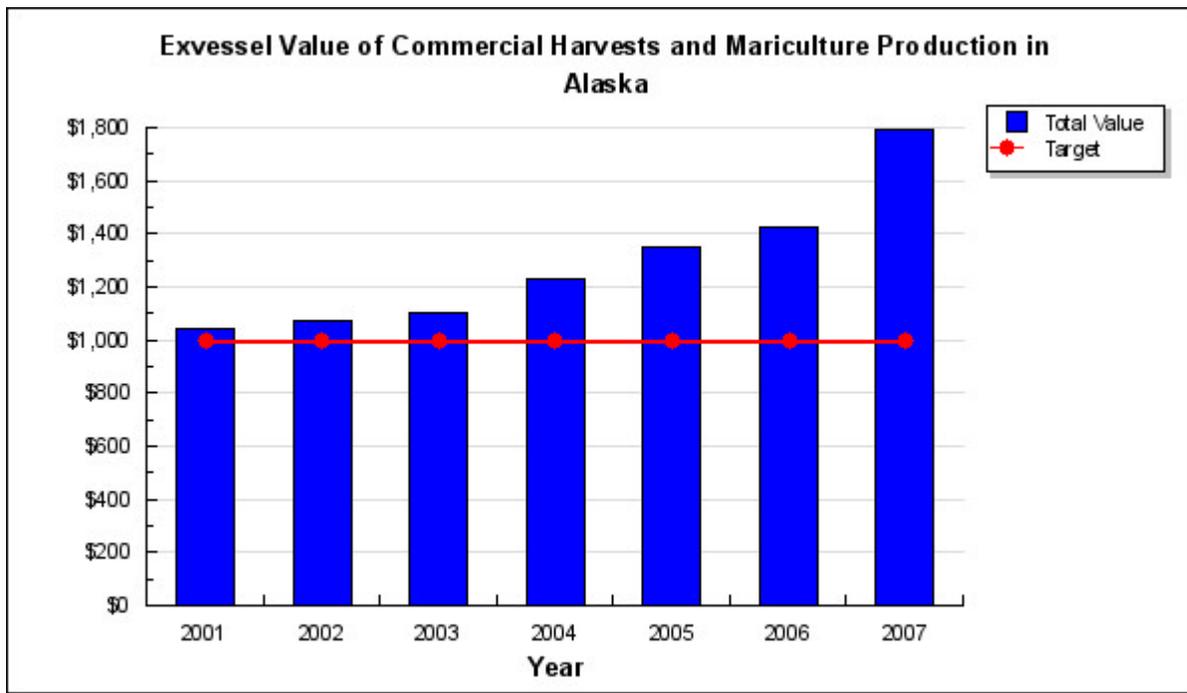
Total 777

Performance

A: Result - Stable or increasing economic and social benefits derived from the harvest and use of fish, shellfish, and aquatic plants in Alaska.

Target #1: Maintain total annual value of commercial harvests and mariculture production at over \$1 billion annually.

Status #1: Over \$1.7 billion value of commercial harvests and mariculture production of fish, shellfish, and aquatic plants - continuing a strong five year upward trend.



Methodology: Exvessel values are calculated using a combination of aggregated price point per species derived from the Commercial Operators Annual Report, fish ticket databases and annual fishery harvest summary reports.

Exvessel Value of Commercial Harvests and Mariculture Production in Alaska

Year	Total Value	Target
2007	\$1,789	\$1,000
2006	\$1,426	\$1,000
2005	\$1,353	\$1,000
2004	\$1,233	\$1,000
2003	\$1,100	\$1,000
2002	\$1,074	\$1,000
2001	\$1,040	\$1,000

Analysis of results and challenges: The Alaska Department of Fish and Game contributes to the success of the seafood industry through its scientific management of the various fisheries resources. Scientific management practices allow for the largest harvests that can be biologically sustained over time. ADF&G also plays a vital role by the adoption of regulations and fisheries management plans, in conjunction with the Alaska Board of Fisheries, fishermen, and processors, that provide orderly fisheries producing high quality products in a cost effective manner for utilization by the seafood industry.

The 2007 commercial salmon harvest was among the top five largest commercial salmon harvest ever and drove both exvessel and wholesale values up for the fifth consecutive year. Consistently high harvests are providing abundant and stable supplies of raw materials needed by the salmon industry as it works to regain market position relative to farmed salmon. Salmon populations in the AYK region are steadily recovering under the conservative

management regime put in place by ADF&G.

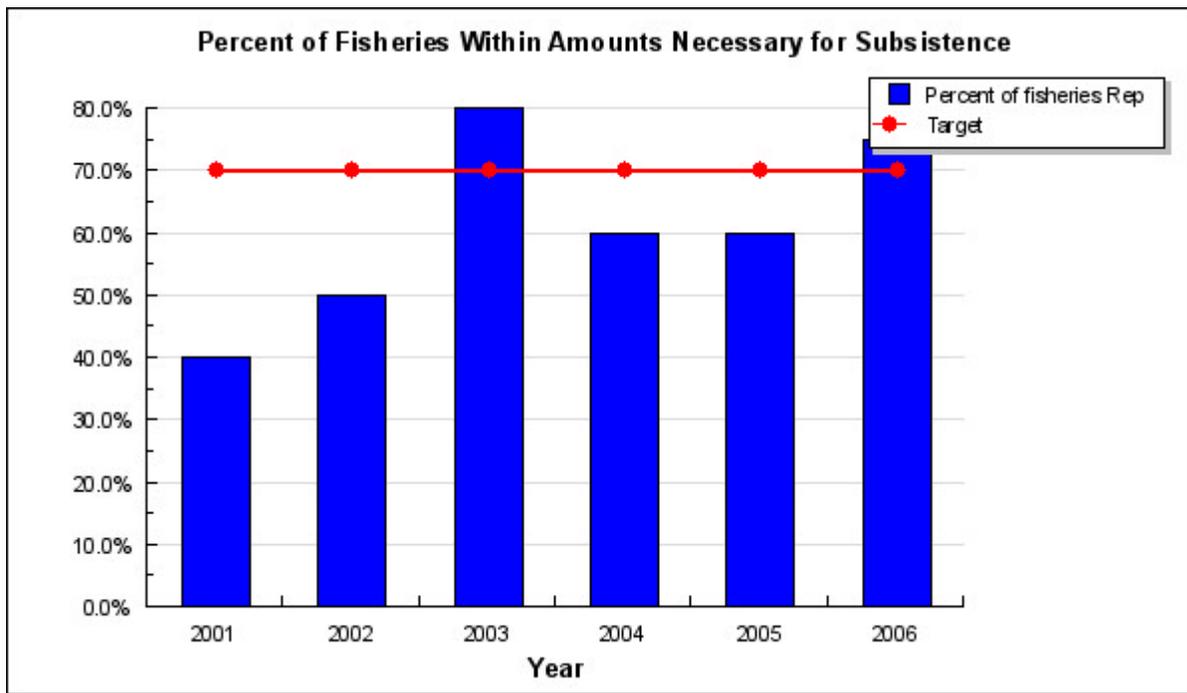
Alaska's herring resources remain underutilized, because of limitations in market demand and low prices.

Pacific cod, pollock, and other groundfish species remain strong contributors to the value of Alaska's fisheries.

Tanner crab fisheries around Kodiak Island that had been closed for many years have rebuilt to the point that fisheries are now being conducted on these stocks. The size of the very valuable Bristol Bay red king crab stock has increased under conservative management and had an exvessel value of nearly \$92 million in 2007, an increase of \$10 million above the 2006 exvessel value.

Target #2: Achieve the amounts necessary for subsistence established by the Board of Fisheries in seventy percent of subsistence fisheries.

Status #2: Amounts necessary for subsistence were met in over 75% of subsistence fisheries, above the 70% target for 2006



Methodology: The data presented are gathered from a variety of sources as each data set is compiled for individual and autonomous studies. These sources include Alaska Department of Fish and Game household surveys administered by the Division of Subsistence, various permits systems employed by the Division of Subsistence, and data compiled by the Division of Commercial Fisheries.

Percent of Fisheries Within Amounts Necessary for Subsistence

Year	Percent of fisheries Rep	Target
2006	75%	70%
2005	60%	70%
2004	60%	70%
2003	80%	70%
2002	50%	70%
2001	40%	70%

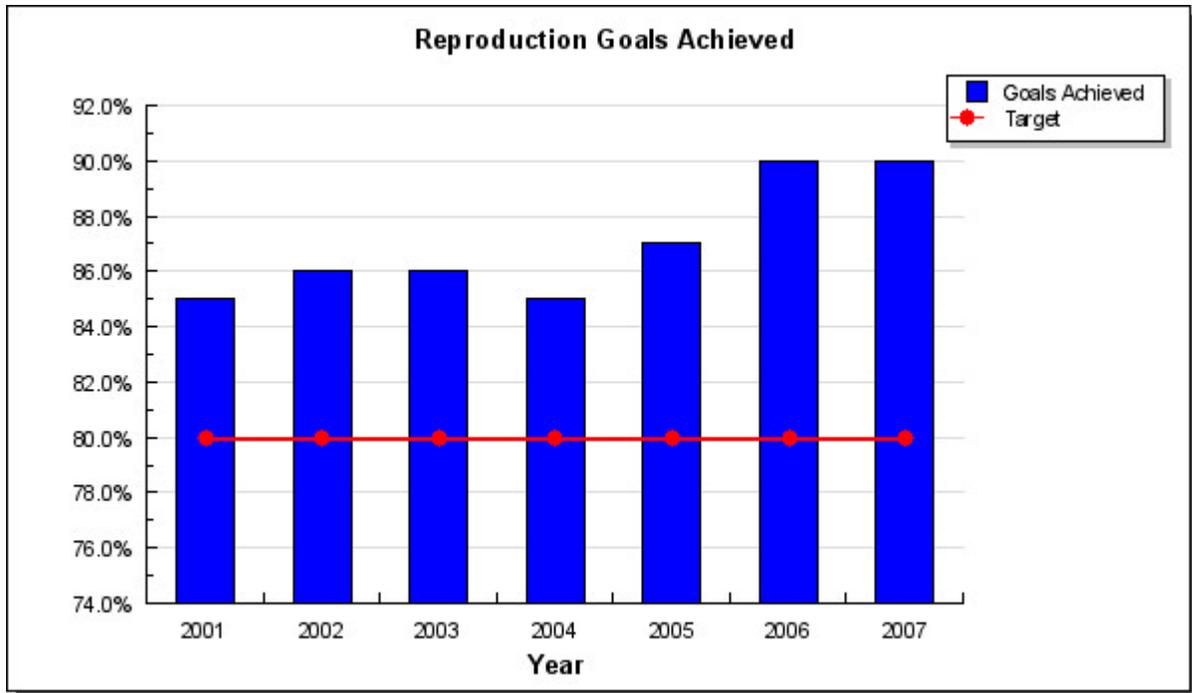
Analysis of results and challenges: Data provided by the Division of Subsistence for the following subsistence fisheries: Yukon and Kuskokwim River salmon, Kuskokwim Bay salmon, Bristol Bay salmon, Kvichak River drainage salmon, Alaska Peninsula salmon, Port Graham-Koyuktoik area salmon, and Sitka Sound subsistence herring. Data for 2007 is not currently available; Division of Subsistence expects 2007 data to be available in the Spring of 2009.

Most of the salmon runs in the Arctic-Yukon-Kuskokwim region are now providing adequate surpluses for subsistence use. In some cases, limited commercial fisheries are also occurring. Increased costs, especially for gasoline, may be reducing subsistence fishing activities. Decreases in earnings from commercial fisheries in some regions mean subsistence fishermen do not have money for gas, nets, and other equipment needed for subsistence fishing.

A1: Strategy - Ensure the conservation of natural stocks of fish, shellfish and aquatic plants based on scientifically sound assessments.

Target #1: Achieve reproductive goals in 80% of monitored systems.

Status #1: The annual percentage of salmon reproductive goals achieved in monitored systems has remained above the 80% target and has shown an annual increase since 2004.



Methodology: Regional tabulation of the monitored systems that are within or above the goal range.

Reproduction Goals Achieved

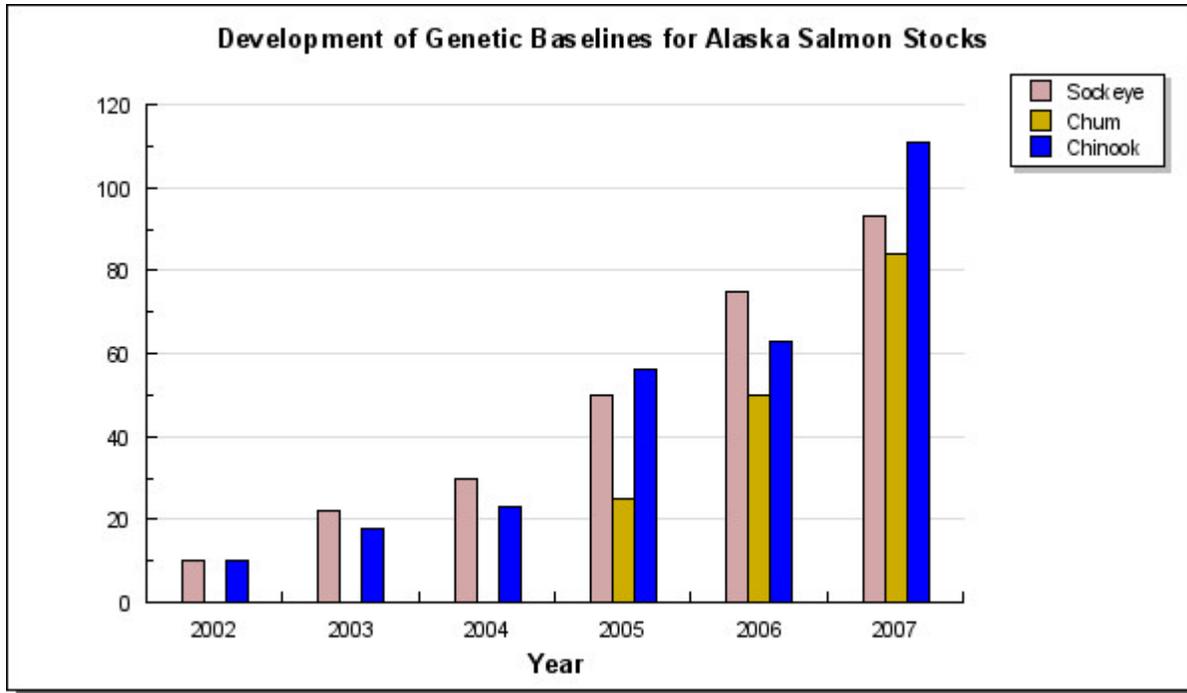
Year	Goals Achieved	Target
2007	90%	80%
2006	90%	80%
2005	87%	80%
2004	85%	80%
2003	86%	80%
2002	86%	80%
2001	85%	80%

Analysis of results and challenges: Managing commercial, subsistence, and personal use harvests in ways that protect the reproductive potential of fish stocks is the most basic responsibility of the Division of Commercial Fisheries. The division's success in performing this function is the most direct indicator of program success, as well as the best indicator of continued healthy fish stocks. Success in achieving salmon escapement goals is probably the most common measure of success that salmon managers and research staff apply to their own performance.

The division annually deploys and operates numerous weirs, counting towers, and sonar sites to conduct escapement counts. Aerial and foot surveys are also used extensively in the absence of other means of counting escapement.

Target #2: Develop baselines of DNA-based markers for 100 Alaska salmon stocks for sockeye, chum, and Chinook salmon.

Status #2: The number of salmon stocks identified and sampled for inclusion in DNA databases continues to increase. The target has been reached for Chinook salmon and is nearly complete for sockeye and chum salmon.



Methodology: All genetic analyses proceed from collection of samples from spawning salmon, through extraction and purification of the DNA, followed by the amplification of the genetic markers through a process called polymerase chain reaction, to the detection of genetic variation. The Gene Conservation Laboratory uses assays for several genetic marker types, including microsatellites and single nucleotide polymorphisms.

Development of Genetic Baselines for Alaska Salmon Stocks

Year	Sockeye	Chum	Chinook
2007	93 +24%	84 +68%	111 +76.19%
2006	75 +50%	50 +100%	63 +12.5%
2005	50 +66.67%	25 0%	56 +143.48%
2004	30 +36.36%	0 0%	23 +27.78%
2003	22 +120%	0 0%	18 +80%
2002	10	0	10

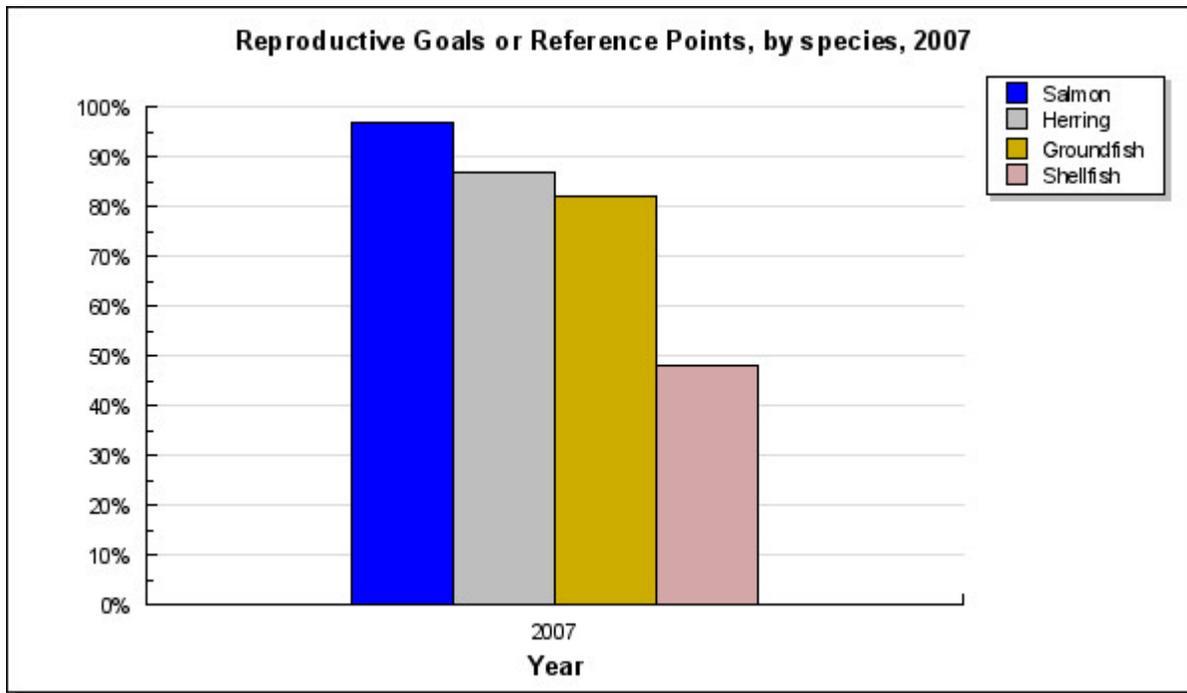
Analysis of results and challenges: The division is developing baselines of genetic (DNA) markers for three of the salmon species harvested in Alaska. More comprehensive baselines have a wide application in fisheries management and research. For example, this information will enable managers and researchers to estimate the harvest of each stock group in commercial, subsistence, and sport fisheries throughout the state. Baselines for pink and coho salmon are beginning to be developed.

Genetic information greatly contributes to the management of Alaska's fishery resources. Along with other kinds of information, genetic markers are used to identify appropriate population units (discrete stocks) for management. These markers can also be used to identify individuals of particular stocks in mixed-stock fisheries to allow escapement of spawners to declining populations. The ability to identify stock origins can also assist the

enforcement of conservation closures. In addition to providing population tags, genetic variability itself is important for the survival of a population. The State's genetic policy attempts to project the level and integrity of genetic variability within populations, by limiting stock transfers between distinct stocks and by limiting the effects of hatchery fish on wild stocks.

Target #3: Establish reproductive goals or other baseline biological reference points for all harvested stocks.

Status #3: The Salmon and Groundfish harvested stocks demonstrate a high percentage of meeting the target of establishing reproductive goals or other baseline biological reference points for all harvested stocks. Other goals based on quantitative and qualitative analysis and assessment indicate more work is necessary in order to fully meet the target.



Methodology: Salmon escapement goals are best established in a manner consistent with sustained yield. Salmon spawning escapements are assessed both temporally and geographically and escapement monitoring programs are appropriate to the importance of each salmon stock's use. Escapements are monitored through a variety of methods which include weirs, towers, side scan sonar, mark-recapture, and aerial survey programs.

Shellfish and groundfish harvests are based on guideline harvest levels. These harvest levels are set such that the harvests are sustainable. Harvests are monitored and managed through fish ticket harvest information, which is required by law.

Reproductive Goals or Reference Points, by species, 2007

Year	Salmon	Herring	Groundfish	Shellfish
2007	97%	87%	82%	48%

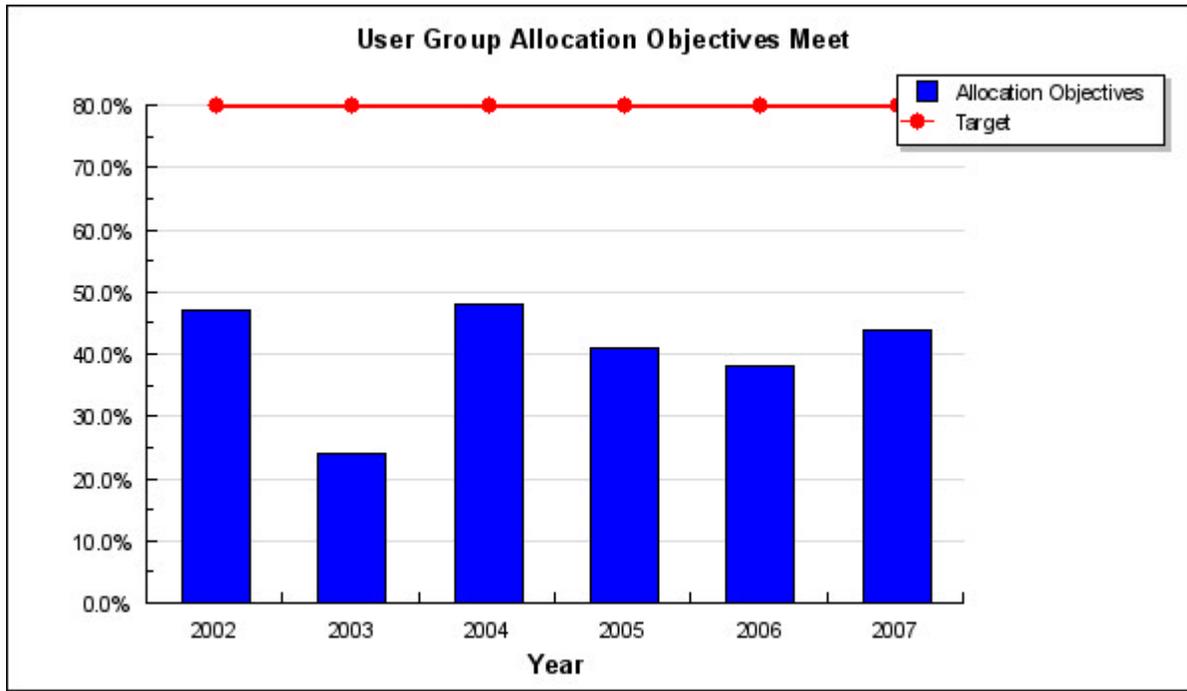
Analysis of results and challenges: The reproductive goals for salmon cover a diversity of types of goals and quality of data. Some goals are specific to a single species in a single river; others represent a goal for a group of closely related spawning populations that are managed as a unit. Some goals are based on a quantitative analysis, with good, consistently collected data on catches and escapements; and others are based on a qualitative assessment from more fragmentary data. The division is continually working to improve its data and the precision of its salmon escapement goals.

The division continues to research required to establish additional biological reference points for shellfish/groundfish stocks that do not currently have reference points or reproductive goals and to conduct additional research to refine and improve existing reference points. Biological reference points are necessary to maintain population viability and sustainable harvests.

A2: Strategy - Sustain fisheries on stocks of fish, shellfish and aquatic plants based upon the control and regulation of harvests through responsive management systems.

Target #1: Meet 80 percent of user group allocation objectives established by the Board of Fisheries by region, plus or minus 10 percent.

Status #1: In this difficult task, the allocation objectives continue to fall below the target. This strategy is functional because it demonstrates the inherent challenge of achieving allocation targets.



Methodology: Regional tabulation of fisheries actively managed that are within 10% of allocation goal.

User Group Allocation Objectives Meet

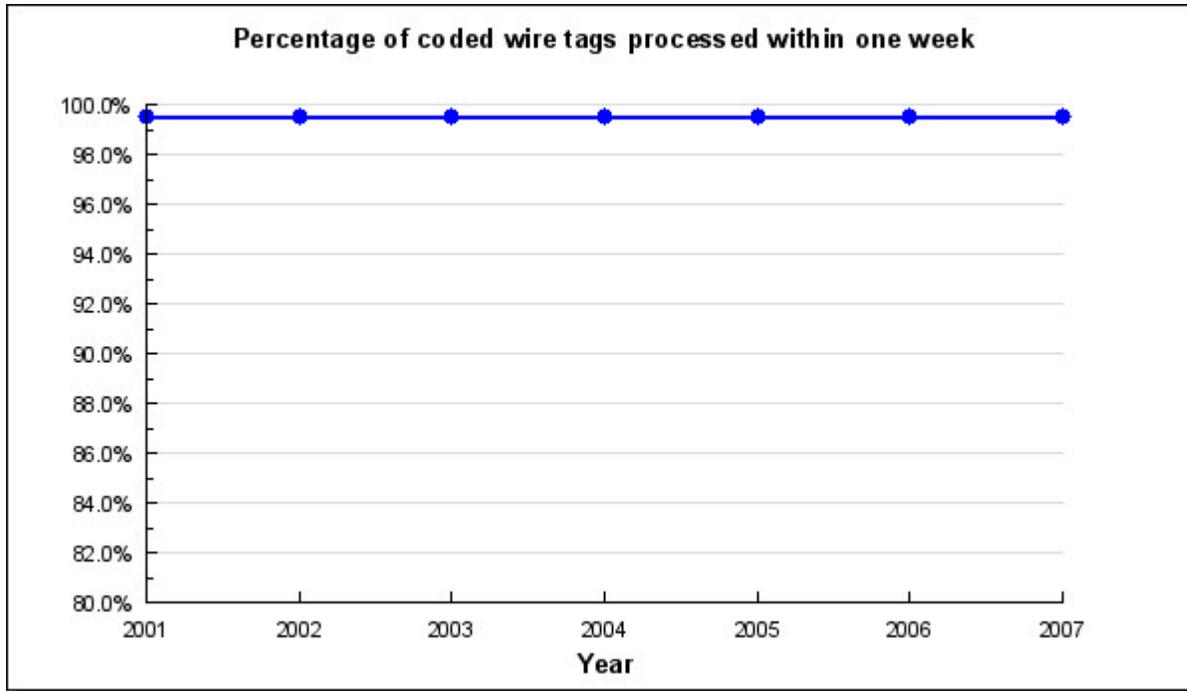
Year	Allocation Objectives	Target
2007	44%	80%
2006	38%	80%
2005	41%	80%
2004	48%	80%
2003	24%	80%
2002	47%	80%

Analysis of results and challenges: In particularly contentious fisheries allocation issues, the Alaska Board of Fisheries may make direct allocations of specific stocks to particular user groups. The division is then charged with managing commercial, subsistence, and personal use fisheries to achieve these targets. This is often one of the most challenging tasks that the division faces. Frequently, the division is faced with limited and fragmentary information and must make decisions on a daily basis to open or close fisheries. Despite these difficulties, the division generally comes relatively close to the allocation targets established.

The current measure requires a high precision for success, within 10 percent above or below the target. The division achieves this measure of success in less than 50 percent of the fisheries subject to these allocations. However, in most instances where the actual harvest falls outside of the targeted range, the variance is relatively small; often only a few percentage points.

Target #2: Provide data from coded wire tags and otolith marks within one week of receipt at Tag Lab.

Status #2: The Mark Tag and Age Lab is clearly meeting the goal of providing data within one week or less, usually the data is available within one day and the few occasions where slightly more time is required usually involve a weekend or some other explanation.



Methodology: Coded Wire Tag Processing – ADFG samplers collect heads from adipose clipped salmon and ship them to the Tag Lab. The Tag Lab receives the frozen heads, dissects the 1.25mm tags out, decodes the tags and enters sampling and tag code details into a Oracle Database, nightly processes run to combine catch information, CFEC data, sampling data and tag release information. The product is an estimate of the numbers of salmon caught in various time and areas for all recovered coded wire tags. Results are available through various online reports.

Percentage of coded wire tags processed within one week

Year	YTD Total
2007	99.5%
2006	99.5%
2005	99.5%
2004	99.5%
2003	99.5%
2002	99.5%
2001	99.5%

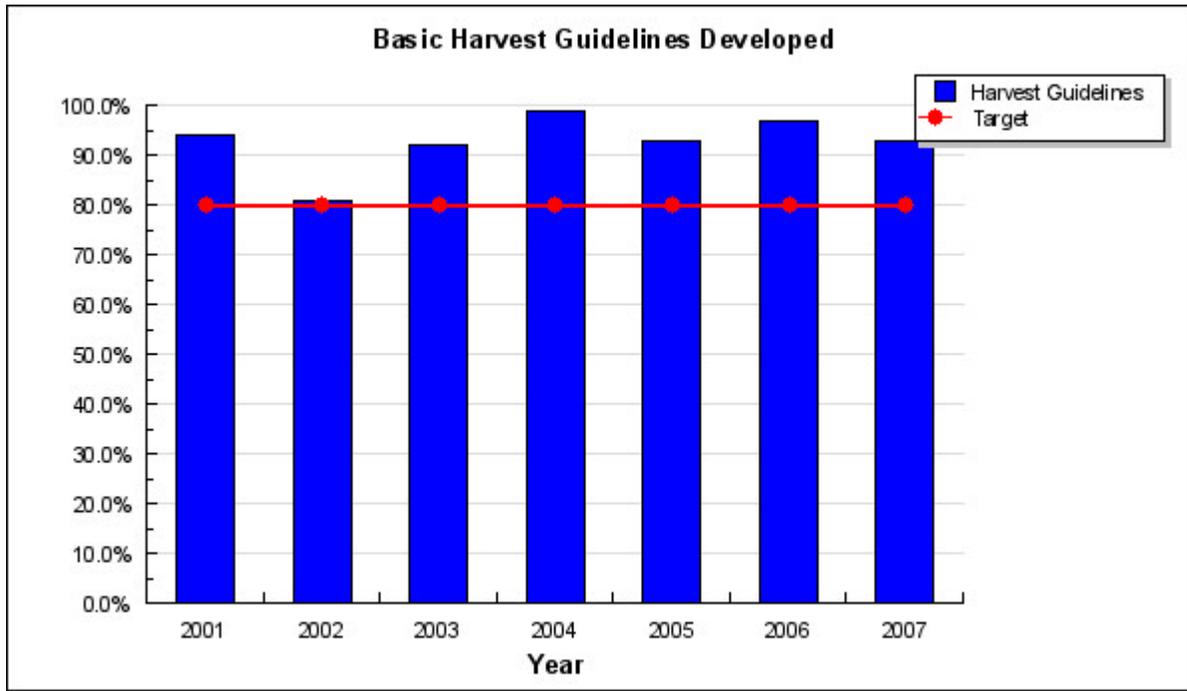
Analysis of results and challenges: Identifying the contribution of hatchery salmon to various salmon fisheries is a very important management requirement. The use of coded wire tags, inserted at the hatchery prior to release, has become a widespread practice. The division maintains a state of the art laboratory to recover and read these tags. The information contained on the tags is then stored in an electronic database and is available for the use of salmon managers, researchers, and hatchery managers. Often this information is needed quickly in order to be used by managers to make decisions on opening and closing fisheries. The laboratory completes the reading of over 90% of tags submitted in one day or less, and 99% in 4 days or less.

Otolith data is similarly important to managers, and is needed quickly in order to be used by managers to make decisions on opening and closing fisheries. A slightly different measure applies to thermal mark samples; here our goal is to complete reading of 96 specimens per samples within one week of receipt. Using this measure, the laboratory completes the reading of over 90% of otoliths in two days or less, and 99% in 4 days or less.

A3: Strategy - Expand production potential through mariculture and development of new commercial fishing opportunities on underutilized species.

Target #1: Establish harvest guidelines for 80 percent of all underutilized species/stock groups proposed for new fishery development annually by the public.

Status #1: There continues to be a high approval percentage of public requests for new fishery development for which basic harvest guidelines are developed.



Methodology: Regional area office tabulation of requests.

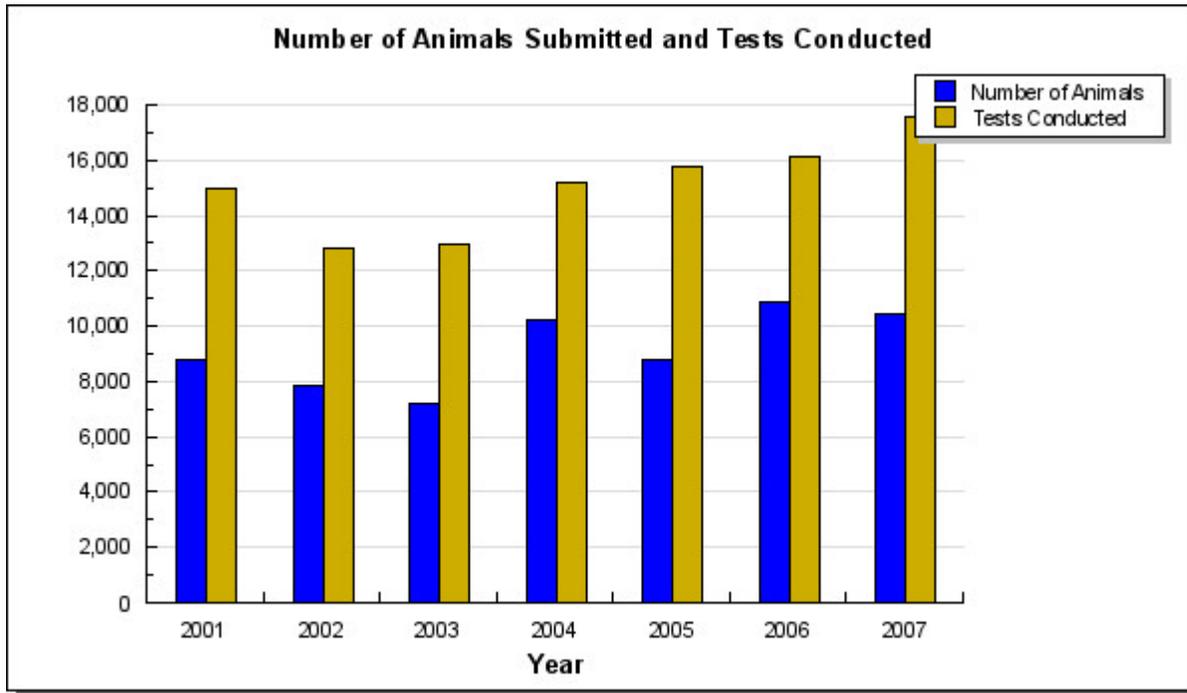
Basic Harvest Guidelines Developed

Year	Harvest Guidelines	Target
2007	93%	80%
2006	97%	80%
2005	93%	80%
2004	99%	80%
2003	92%	80%
2002	81%	80%
2001	94%	80%

Analysis of results and challenges: The division's area offices receive numerous requests from commercial fishermen to attempt new fisheries that target underutilized or unutilized species. The division does not have funding to develop stock assessment programs for these new fisheries and so instead puts into place, through a commissioner's permit, harvest restrictions, reporting requirements, and other measures that fishery managers consider prudent and necessary to maintain harvests at low levels and prevent overfishing.

Target #2: Process 100% of samples submitted by salmon hatcheries, shellfish hatcheries, and aquatic farmers.

Status #2: Commercial Fisheries continues to process 100% of all samples submitted.



Methodology: Samples are processed and tested using a wide range of diagnostic laboratory methodologies including: bacteriology; virology; histology; ELISA; FAT; PCR; light and electron microscopy.

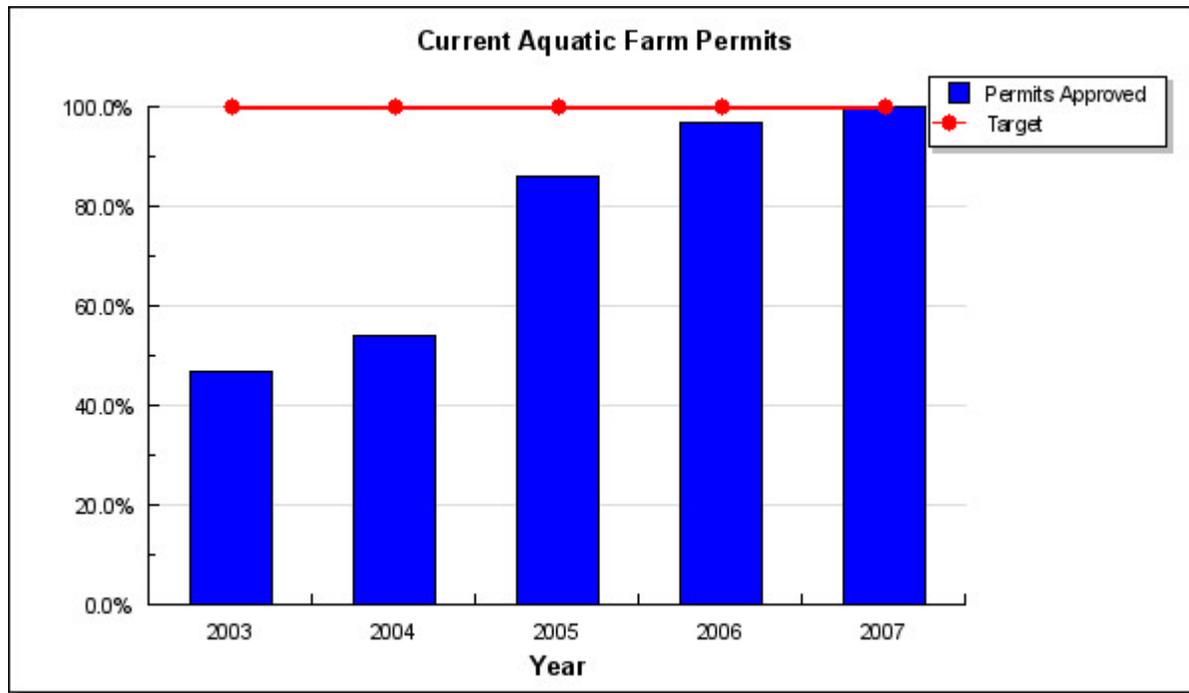
Number of Animals Submitted and Tests Conducted

Year	Number of Animals	Tests Conducted
2007	10,423 -4.42%	17,569 +8.85%
2006	10,905 +23.67%	16,140 +2.17%
2005	8,818 -13.93%	15,797 +4%
2004	10,245 +41.9%	15,190 +16.9%
2003	7,220 -7.67%	12,994 +1.29%
2002	7,820 -11.07%	12,829 -14.18%
2001	8,793	14,948

Analysis of results and challenges: An important component of the salmon enhancement and aquatic farming programs administered by the division is the prevention or treatment of disease pathogens that occur in conjunction with aquaculture activities. The division's pathology laboratory tests samples of cultured animals to determine what, if any, disease pathogens are present. If any are detected, treatment programs are required of operators to control or eliminate diseases. Disease testing and treatment is critical to successful aquaculture operations as well as to the protection of Alaska's wild fish stocks. The division's pathology laboratory conducts appropriate testing on all samples submitted to it each year.

Target #3: Ensure 100% of all active aquatic farms operate under the terms of a current aquatic farm permit.

Status #3: The mariculture section is now reporting a near 100% compliance that all farms operate under the terms of a current aquatic farm permit.



Methodology: Data for the ADF&G Commercial Fisheries Division Aquatic Farm Performance measures (% of permits that are not out of date) was determined from our Mariculture Program database. Percentages were determined by database queries that count a) the number of aquatic farm permits that have the status code equal to "expired" and b) the number of aquatic farm permits that have status code "active", "renewal", and "expired". The database is updated by staff as permit actions are completed.

Current Aquatic Farm Permits

Year	Permits Approved	Target
2007	100%	100%
2006	97%	100%
2005	86%	100%
2004	54%	100%
2003	47%	100%

Analysis of results and challenges: Four years ago, the division recognized that many of its aquatic farm permits were expired. An assessment indicated that less than 50 percent of aquatic farms were operating under the terms of current percentage.

Key RDU Challenges

Bering Sea Crab Research

The multi-year federal grant that had been supporting Bering Sea crab research for several years was discontinued in the federal FY08 budget. Some federal funding remained from previous year grants, but state funds were also required to maintain existing Bering Sea/Aleutian Islands crab research programs in state FY09. The Alaska Legislature provided one-time funding in the FY09 budget for this purpose. In order to continue to conduct research on the crab stocks that support this valuable fishery, the division is requesting General Funds for FY10. The division is working on new methodologies for stock assessments of Bering Sea snow crab, a stock that until recently provided the largest crab harvests in Alaska. The department is also attempting to improve stock assessment of king

crab. Improved stock assessments will allow the department to maximize harvests, which is especially important to industry during periods of low stock productivity.

Employee Recruitment and Retention Difficulties

The division continues to work, in cooperation, with the University of Alaska, to maintain and grow the program "Fish and Wildlife Careers for Alaskans" (FWCA Program) that helps to identify and recruit young Alaskans interested in working for the Department of Fish and Game. This year the department took on its 5th Alaska Science and Engineering Program (ANSEP) student intern as well as continued to foster partnerships with the UAF School of Fisheries and Ocean Sciences, UAS Fishery Technology Program, Alaska Sea Grant Marine Advisory Program and the newly formed Alaska Marine Science and Fisheries Career Coalition. In addition to these efforts the FWCA Program has enlarged its scope to include workforce development and is currently dedicating substantial effort to improve retention and recruitment within the department. As part of the workforce development 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. Insufficient applicants from within the state are requiring supervisors to recruit from out of state for almost all positions and even then many of our vacancies attract an insufficient applicant pool. The division is addressing this problem through broader recruitment efforts, workforce development for new and existing employees, and development of a program to interest young Alaskans, especially from rural areas, in careers with the Department of Fish and Game.

Rebuilding Salmon Fisheries Research Program

The division's statewide salmon research program has eroded badly due to retirements of key personnel and the inability to replace key positions due to budget constraints. It is essential to rebuild this program by replacing the statewide biometrician, which was lost due to erosion of the budget, and adding three post graduate interns. These positions will strengthen the division's capabilities in stock assessment, setting escapement goals, and conducting applied research in stock identification, genetics, and pathology. The post graduate intern positions are critical to attracting talented professionals to the division to help address the recruitment and retention difficulties described above.

Susitna and Cook Inlet Sockeye Salmon Stocks

New research projects were begun during the 2006 field season, and continued during 2007 and 2008, on sockeye salmon stocks in the Kenai and Susitna Rivers. This research is intended to answer a number of questions about the abundance, productivity, and harvests of sockeye salmon in upper Cook Inlet. Low numbers of sockeye salmon have been returning to the Susitna River and other northern Cook Inlet systems in recent years, while the Kenai and Kasilof Rivers have experienced very good returns. Increased funding will be required for research to determine the cause of the poor returns to northern Cook Inlet, to set appropriate sockeye salmon escapement goals in the Susitna River drainage, and to determine if effective management measures can be deployed to in the Central District commercial fisheries of Upper Cook Inlet to achieve those goals while still allowing the harvest of abundant Kenai River and Kasilof River sockeye stocks and meeting other established management goals, such as reducing king salmon catch.

Genetic Stock Identification

As Alaska's salmon fisheries become more complex, the department and the public have identified a need for greater genetic stock identification capability. Genetic stock identification helps in dealing with fishery allocation issues, meeting treaty obligations in Southeast Alaska and on the Yukon River, assessing stock composition changes in fisheries due to management actions, and allocating catches to the correct stock to better determine stock productivity and set escapement goals that provide for maximum sustained yield. Our lab has begun the analysis of some 140,000 tissues collected under the Western Alaska Salmon Stock Identification Project (WASSIP) to determine stock specific contributions in Western Alaska and Alaska Peninsula fisheries. As the demand for genetic stock identification has increased, the department faces a challenge staffing the genetics lab adequately to run the required number of samples, analyze the data, and report the results. Current lab capacity is 15 to 30 times that of most other fisheries genetics labs and is still inadequate to meet the demand. Difficulty hiring trained geneticists and biometricians has slowed analysis and reporting of results. Potential Endangered Species Act listings also point out the need to expand lab capability to better deal with such diverse species as beluga whales and herring. The division is seeking to expand its genetics capabilities into marine species to answer a variety of questions related to endangered species listings, federal fisheries management, and mariculture.

Federal/State Subsistence

In order to minimize disruption to state residents; to protect state fish resources; and minimize federal intrusion into state management, significant staff time is spent interacting with the federal system of Regional Advisory Councils, which represent federal subsistence users, and the federal bureaucracy. The division, and the department, must find ways to ensure that federal decisions do not adversely impact conservation of the resources or unnecessarily restrict non-federally qualified users.

Federal Fishery Rationalization

The North Pacific Fishery Management Council (NPFMC) has a number of initiatives underway that affect state managed fisheries. These include proposals for rationalization of the groundfish fisheries in the Gulf of Alaska. State managers and researchers must work with the NPFMC to avoid deleterious impacts to state fisheries and coastal communities as federal rationalization occurs. The first two seasons under the Bering Sea/Aleutian Island (BSAI) crab rationalization program saw reduced vessel participation and fewer crew member jobs. A number of communities have expressed concern about the effects of crab rationalization.

Vessels and Aircraft Maintenance and Replacement

The division has several research and support vessels and four small aircraft, which require regular maintenance and periodic overhaul. They are integral to a variety of stock assessment programs and also 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.

Support for Aquaculture

Both private non-profit salmon hatchery operators and aquatic shellfish farmers depend on the division for planning, permitting, disease prevention, and other technical services. The division is frequently unable to provide the level of support desired, because of limited funding and staffing. Within the last year, interest has been growing to develop techniques for enhancing depressed shellfish populations like red and blue king crab. The division faces the challenge of supporting and helping these various aquaculture and hatchery programs develop while protecting wild stocks.

Test Fish Revenue Concerns

In recent years, members of the legislature and representatives from the commercial fishing industry have raised concerns over the division's test fish fund program, which uses the sale of harvested fish to pay for critical research and management programs. This practice is highly controversial and disliked by many fishermen. The division faces the challenge of finding alternative ways to support these programs. In the absence of these programs, many fisheries would have to be managed much more conservatively, which would result in reduced economic value of the fisheries.

Significant Changes in Results to be Delivered in FY2010

The division has requested an increment in the AYK Region Fisheries Management Component and a decrement of federal receipts authorization in the Special Projects Component to support continuation of two subsistence projects, a video monitoring project and a cooperative salmon drift test fishing project. An increment in Westward Region will continue funding the Bering Sea crab research program. One time funding was provided in FY09, and this increment will provide research funds in the base budget, but at a reduced amount over FY09.

Major RDU Accomplishments in 2008

- Final reports from seafood processors put the value of the 2007 commercial salmon harvest over \$400 million for the first time since 1995. The increase in value is due to a very large harvest and improving salmon prices.
- The preliminary estimate of the 2008 Alaska commercial salmon harvest is 146 million salmon. The value of the 2008 salmon harvest is \$409.3 million, marking the second consecutive year since 1995 that the total value has exceeded \$400 million. Final 2008 harvest and value figures will be produced in the spring of 2009 when the fish ticket database is complete and when processors have submitted their annual reports, which include the final prices paid for salmon in 2008.
- The Alaskan salmon management program passed its 2008 annual performance audit by the Marine Stewardship Council. This is the first annual audit completed since the second five year certification was

- awarded in 2007 to the Alaskan salmon management program.
- The division has increased the percentage of active aquatic farms operating with current permits to 100 percent. This brings the division's performance into compliance with our internal performance goal of 100 percent. Four years ago, only 47 percent of the active aquatic farms in the state were operating under the terms of a current permit.
 - Bering Sea crab harvest management reached a milestone this year with completion of a 4 year project to develop new quota setting rules. The new methods are required under federal law (Magnuson Stevens Fishery Conservation and Management Act) for the Bering Sea and Aleutian Islands crab fisheries, for which management responsibility has been delegated to the state. The major change was to take into consideration the number of crabs that die once discarded. This is a substantial source of mortality, especially in the Bering Sea snow crab and Tanner crab fisheries. Incorporation of these losses into the quota setting process is a precautionary measure that significantly enhances the scientific credibility of our crab management programs and helps to ensure the long-term economic viability of the fisheries.
 - The division expanded its programs for Bering Sea crab research and fishery data collection that are essential for implementation of the new quota setting rules described in the previous item. The at-sea crab fishery observer program coordinated the deployment of 106 observer trips during the 2007/08 season, resulting in collection of catch and bycatch data from 6,613 pot lifts; those data were entered into a database and distributed to state and federal assessment specialists for use in determining overfishing limits for the 2008/09 season. The department conducted stock assessment surveys for king crabs in the St. Matthew Island area in 2007 and in the Pribilof Islands area in 2008, continued research on productivity parameters of Bering Sea snow and Tanner crabs in 2008, and conducted a pilot study of applying video technology to assess Bering Sea crab stocks and habitat in 2008.
 - The division is working, in cooperation with the University of Alaska, to develop a program, "Fish and Wildlife Careers for Alaskans" that will identify and recruit young Alaskans interested in working for the Department of Fish and Game. The division is also helping to craft a memorandum of understanding with the University of Alaska to support graduate students in statistics and mathematics programs as a means of developing a pool of qualified candidates for professional biometrics positions.
 - The division has continued to build its genetic database of Alaskan sockeye, chum, and Chinook salmon stocks. As this tool has been developed, it has been used in more and more fisheries. Inseason analysis of genetics samples has aided management of Bristol Bay sockeye salmon and was tested in Cook Inlet. Genetic analysis of catches will also greatly assist the division and the Board of Fisheries in managing complex and controversial salmon fisheries such as those in Upper Cook Inlet and Southeast Alaska.

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**Commercial Fisheries
RDU Financial Summary by Component**

All dollars shown in thousands

	FY2008 Actuals				FY2009 Management Plan				FY2010 Governor			
	General Funds	Federal Funds	Other Funds	Total Funds	General Funds	Federal Funds	Other Funds	Total Funds	General Funds	Federal Funds	Other Funds	Total Funds
Formula Expenditures None.												
Non-Formula Expenditures												
SE Region Fisheries Mgmt.	4,365.7	444.8	1,017.2	5,827.7	5,923.9	508.2	1,132.8	7,564.9	5,957.4	514.4	1,138.0	7,609.8
Central Region Fisheries Mgmt.	6,982.1	0.0	501.2	7,483.3	7,621.1	0.0	708.9	8,330.0	7,702.6	0.0	711.8	8,414.4
AYK Region Fisheries Mgmt.	4,322.1	0.0	300.2	4,622.3	5,379.1	0.0	356.5	5,735.6	5,501.2	0.0	356.7	5,857.9
Westward Region Fisheries Mgmt.	5,667.8	0.0	1,105.0	6,772.8	7,682.3	0.0	1,844.9	9,527.2	7,486.1	0.0	1,851.2	9,337.3
Headquarters Fisheries Mgmt.	7,079.8	0.0	701.9	7,781.7	8,429.0	0.0	921.9	9,350.9	8,521.5	0.0	921.9	9,443.4
Comm Fish Special Projects	245.2	11,459.3	8,358.0	20,062.5	689.6	8,514.7	10,557.0	19,761.3	871.8	8,234.7	10,719.5	19,826.0
Totals	28,662.7	11,904.1	11,983.5	52,550.3	35,725.0	9,022.9	15,522.0	60,269.9	36,040.6	8,749.1	15,699.1	60,488.8

Commercial Fisheries
Summary of RDU Budget Changes by Component
From FY2009 Management Plan to FY2010 Governor

All dollars shown in thousands

	<u>General Funds</u>	<u>Federal Funds</u>	<u>Other Funds</u>	<u>Total Funds</u>
FY2009 Management Plan	35,725.0	9,022.9	15,522.0	60,269.9
Adjustments which will continue current level of service:				
-SE Region Fisheries Mgmt.	33.5	6.2	5.2	44.9
-Central Region Fisheries Mgmt.	81.5	0.0	2.9	84.4
-AYK Region Fisheries Mgmt.	42.1	0.0	0.2	42.3
-Westward Region Fisheries Mgmt.	-989.9	0.0	6.3	-983.6
-Headquarters Fisheries Mgmt.	92.5	0.0	0.0	92.5
-Comm Fish Special Projects	182.2	-200.0	-137.5	-155.3
Proposed budget decreases:				
-Comm Fish Special Projects	0.0	-80.0	-300.0	-380.0
Proposed budget increases:				
-AYK Region Fisheries Mgmt.	80.0	0.0	0.0	80.0
-Westward Region Fisheries Mgmt.	793.7	0.0	0.0	793.7
-Comm Fish Special Projects	0.0	0.0	600.0	600.0
FY2010 Governor	36,040.6	8,749.1	15,699.1	60,488.8