

DIDSON Sonar Equipment Purchase**FY2006 Request: \$500,000****Reference No: 39293****AP/AL:** Appropriation**Project Type:** Equipment**Category:** Natural Resources**Location:** Statewide**Contact:** Doug Mecum**House District:** Statewide (HD 1-40)**Contact Phone:** (907)465-4150**Estimated Project Dates:** 07/01/2005 - 06/30/2010**Brief Summary and Statement of Need:**

The Division of Commercial Fisheries is seeking funding for five DIDSON (Dual Frequency Identification Sonar) units. This sonar equipment would be used to count migrating salmon at the Kasilof and Yentna Rivers within Central Region, at the Anvik, Chena, Salcha, and Sheenjek rivers in AYK Region, and at Alitak Bay and Chignik Lake in Westward Region. The cost of each unit is about \$100.0, including transducer rotator and computer equipment for a total requested amount of \$500.0. The division will prioritize where the sonar units will be installed based on the five units being funded.

| Funding: | FY2006 | FY2007 | FY2008 | FY2009 | FY2010 | FY2011 | Total |
|-----------------|------------------|---------------|---------------|---------------|---------------|---------------|------------------|
| Bond Funds | \$500,000 | | | | | | \$500,000 |
| Total: | \$500,000 | \$0 | \$0 | \$0 | \$0 | \$0 | \$500,000 |

| | | | | |
|---|--|---------------------------------------|---|-----------------------------------|
| <input type="checkbox"/> State Match Required | <input checked="" type="checkbox"/> One-Time Project | <input type="checkbox"/> Phased - new | <input type="checkbox"/> Phased - underway | <input type="checkbox"/> On-Going |
| 0% = Minimum State Match % Required | | <input type="checkbox"/> Amendment | <input type="checkbox"/> Mental Health Bill | |

Operating & Maintenance Costs:

| | <u>Amount</u> | <u>Staff</u> |
|----------------------|---------------|--------------|
| Project Development: | 0 | 0 |
| Ongoing Operating: | 0 | 0 |
| One-Time Startup: | 0 | 0 |
| Totals: | 0 | 0 |

Additional Information / Prior Funding History:

FY04 - \$300.0

Project Description/Justification:

One of the core services of the Commercial Fisheries Division is stock assessment and applied research. Sonar is an important stock assessment tool for estimating salmon abundance in many river systems around Alaska. Accurate and timely estimates of spawning salmon abundance are used to make fishery management decisions during the season that maximize sustainable harvest opportunities and provide stable or increasing economic benefits to commercial fisheries. Funding is sought for five DIDSON (Dual Frequency Identification Sonar) units. This sonar equipment is needed to count migrating salmon at the Kasilof and Yentna Rivers within Central Region, at the Anvik, Chena, Salcha, and Sheenjek Rivers in AYK Region, and at Alitak Bay and Chignik Lake in Westward Region. The cost of each unit is about \$100.0, including transducer rotator and computer equipment for a total requested amount of \$500.0. The division will prioritize where the sonar units will be installed based on the five units being funded.

The DIDSON is newly developed imaging sonar that has demonstrated itself to be easy to use, the data easy to interpret, and produce results that are highly accurate. The DIDSON system that provides accurate passage estimates with minimal required training and supervision. At this time, the department has settled on the use of DIDSON sonars built by the Applied Physics Lab at the University of Washington.

In Central Region, the Bendix sonar systems used to count salmon escapement into the Kasilof and Yentna Rivers must be replaced as soon as possible. The contractor that originally built the units in the late 1970s and 1980s, and repaired and serviced them in the 1990's has retired. We will soon lose our ability to count salmon using Bendix sonar. The conversion from Bendix to DIDSON began during the summer of 2003. The \$300.0 CIP approved by the legislature in

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FY05 will provide units for the Kenai and Kasilof Rivers. The FY06 request would provide three units to complete the Bendix to DIDSON conversion. One additional unit is needed on the Kasilof River, and two units to begin the Yentna River conversion.

In the AYK Region we are requesting four units. The transition at the Aniak River will be complete with the acquisition of one unit using \$100.0 in CIP funds granted by the legislature in FY05. For the Anvik and Sheenjek Rivers, two systems will be required to move these projects forward to the imaging sonar. The Anvik River is one of the largest producers of summer chum salmon in the Yukon River drainage while the Sheenjek River is an important producer of fall chum salmon. In addition, we are requesting two systems for the Chena and Salcha Rivers to complement the existing tower projects and allow the department to acquire counts of chinook and chum salmon during high water events that commonly hinder our ability to obtain complete abundance estimates. The Chena and Salcha River chinook salmon stocks are two of the most important US stocks in the Yukon River drainage. It is important for the sound management of these stocks that we obtain the best possible abundance estimates to manage the fisheries.

At Chignik Lake, the department currently uses Scale Pattern Analysis (SPA) to provide salmon stock composition estimates. A sonar project would provide more reliable and timely stock composition estimates independent of SPA. Sonar estimates of stock composition would aid in run reconstruction, run forecasting and management of the commercial salmon fishery. In addition to providing stock composition estimates, an additional objective of this project would be to obtain and assess the accuracy of escapement estimates generated by sonar equipment by comparing these estimates to the Chignik weir counts prior to a washout event. The Chignik weir has washed out on numerous occasions, and depending on flow conditions, it can take considerable time to reinstall. Sonar is the only known technology other than a weir that can be used to count sockeye salmon escapement in the Chignik River.

The proposed sonar project for Alitak Bay would fund the acquisition and deployment of hydroacoustic equipment to monitor the passage of sockeye salmon from the Moser Bay Section into the Olga Bay Section of the Alitak Bay District of the Kodiak salmon management area. Currently, the Alitak Bay test fishery (located at the mouth of Olga Narrows) is conducted during late May to the end of July to provide data, which aids the management of the Alitak Bay District commercial salmon fishery. While the test fishery is a useful index for commercial fishery managers, technology exists to more accurately assess the movement of sockeye through Olga Narrows in a more timely manner. Hydroacoustic equipment deployed in the Olga Narrows could precisely estimate the movement and relative abundance of fish through the narrows.

The purchase of these DIDSON sonar units addresses fundamental requirements for salmon fishery management. Specifically, it helps "maintain total annual value of commercial harvests and mariculture production at over \$1 billion" (Target #1) within the end result of "Stable or increasing economic benefits derived from the harvest and use of fish, shellfish, and aquatic plants in Alaska."

This CIP directly addresses two strategies to achieve those end results: Target #3 (Achieve reproductive goals in 80% of monitored systems) of the strategy to "Ensure the conservation of natural stocks." It also addresses Target #1 (Harvest 80 percent of maximum biologically sustainable harvest in monitored systems) and Target #3 (Achieve allocation objectives plus or minus 10%) of the strategy to "Sustain fisheries on stocks of fish...based upon control and regulation of harvests..."