

## Alaska Department of Environmental Conservation

### "Fish Safety Monitoring Project"

FY 03 Grant Award \$180,000

Project Match \$180,000



#### **Description and Purpose:**

The objective of this project was to determine if nonpoint source pollution is impacting Alaskan fish. Environmental contaminants produced in heavily industrialized areas in temperate zones of the earth are being transported long distances to northern latitudes. These pollutants are transported by air and water currents and deposited in many areas of the Arctic, including Alaska. Recent studies have shown large atmospheric movements of particulate matter and other pollutants being transported east to Alaska from Asia. Mapping of ocean currents also documents flow of contaminants from the Asian coast to the North Pacific. The

biological effects of these chemicals can have negative effects on growth and neurological development, the immune system and the reproductive system. The environmental exposure to this trans-boundary pollution can contaminate the food chain and end up in the resident Alaskan fish. This can put people and other fish-eating wildlife at risk of exposure.

During the 2002 Fishing Season, different species of fish from across the state of Alaska were collected in order to test the fish tissue for specific chemical contaminants. Salmon (all 5 species), halibut, pacific cod, lingcod, sablefish, black rockfish, pollock, sheefish and northern pike were analyzed. Sampling different species of fish allowed the evaluation of the contaminant exposure to different marine and freshwater ecosystems. The plan was to collect eight halibut and six fish of the other species to be sampled at each of 13 coastal and marine locations: Kotzebue, Norton Sound, Yukon River, Kuskokwim River, Bristol Bay, Bering Sea, Dutch Harbor/Unalaska, Kodiak, Cook Inlet, Prince William Sound, Cordova, Juneau and Ketchikan. The project's sampling plan was designed for a general synoptic survey of Alaskan fish.

Several problems were encountered that delayed the progress of this project to allow completion of chemical analysis during FY 2002. In 2002, five hundred seventy six fish were collected (72% of the original planned for collection that year). Seventy samples were collected in 2001. Of the total 646 fish collected since the start of this project, by the end of FY02, 230 samples had been analyzed for heavy metals. No samples had been analyzed for the organic contaminants. Approximately 180 of the fish collected still required processing prior to chemical analysis. The primary objective of this grant was to complete the processing and analysis of the fish collected and to construct a database of information of contaminants levels in these fish.

#### ***The purpose of this project is:***

- 1) To determine what levels of environmental contaminants: methyl-mercury, chromium, arsenic, cadmium, nickel, lead, selected PCB congeners, dioxins, furans and organochlorine pesticides exist in the fillets of Alaskan salmon species, halibut, cod, rock fish, pike, pollock, sheefish (Alaskan Salmon



will be sampled more often than other species). All fish will be tested for heavy metals and only a sub-group of salmon will be analyzed for the organic contaminants.

2) To increase DEC coordination with other groups doing related research (communities, tribes, federal agencies).

3) To establish a data base of information that will link contaminant levels with geographic locations and allow for comparison with future sampling to document temporal changes.

4) To communicate this information to interested groups by means of a database that will be available on a public use Web Page, educational brochures, and public presentations.

### **Evaluation of Environmental Benefits:**

This research will provide baseline data that will help to answer the increasingly common questions all departments in the State of Alaska are hearing: Is Alaskan Seafood contaminated with nonpoint source (trans-boundary) environmental pollutants? Is this fish safe to eat? We do not have enough data to answer this question with any assurance to date. The outcome will be a significant amount of data that tells us what levels of contaminants exist in the meat of Alaskan fish, which is a representation of the status of the fish's habitat. Our performance measure is an increase in the amount of reliable results that exist determining the level of contaminants in commonly eaten Alaskan fish species and should reflect the contaminant load in the overall population.

### **Deliverables:**

- Sample plan and Sample Strategy for future sampling.
- A final report will be submitted describing the data collected and comparing these data to the results of other studies.
- Database of information available via the ADEC website.
- Brochures and fact sheets, will be created that describe the scientific information into easy-to-understand terms. These will be available for distribution when the final report is delivered. This same information will be available on the ADEC website. Copies of any brochures, fact sheets, web pages and other outreach material will be submitted with the final report.

### **Project Contacts:**

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