AKMAP

Alaska Monitoring and Assessment Program

Freshwater Coastal

www.dec.alaska.gov/water/akmap

AKMAP obtains data on a large scale and reports it to help better understand the overall condition of alaska's water quality. This allows DEC to:

- Report the overall condition of all Alaskan waters, a responsibility through the Clean Water Act.
- Use this information to make good decisions about our laws and regulations that protect the Nation's most pristine water sources.

US Environmental Protection Agency only provides partial funding for AKMAP implementation. Partnerships with the University of Alaska, Cook Inlet Regional Advisory Council, Mineral Management Service, and other entities are a vital part of these surveys. They lend expertise and add to the holistic picture of water quality in Alaska.

The BIG picture of Alaska's Water Quality

The Environmental Protection Agency (EPA) created a National Coastal Assessment Environmental Monitoring and Assessment Program (EMAP) in the mid 1990s to survey the environmental condition of the Nation's coastal water resources. DEC's Alaska Monitoring and Assessment Program (AKMAP) is part of this nationwide effort and is responsible for surveying Alaska's coastal water resources. AKMAP surveys report on the status of Alaska's costal regions with a known statistical confidence, allowing resource managers, elected officials, and the public to understand the "big picture" of Alaska's coastal water resources. No similar probabilistic sampling survey studies are currently providing regional, ecological information on such a large scale within Alaska.

DEC staff collect a water sample from the Aleutian Survey with the R/V Norseman in the background.

Kelp samples being taken.

Alaskan Coastal Surveys

AKMAP uses protocols described by EMAP to obtain datasets comparable to rest of the nation's coastal regions. Alaska, which contains over 50 percent of the nation's coastline, began survey efforts in 2001 and is completing five biogeographical regional coastal surveys. Using funding from various federal and state grant sources, AKMAP has begun to meet the National Coastal Assessment requirements for Alaska. AKMAP completed a 2002 Southcentral Survey, a 2004 Southeast Survey, a 2006 and 2007 Aleutian Survey, and will complete the Chuckchi Sea Survey in 2009-2010.

2002 Southcentral Survey

DEC collaborated with the Cook Inlet Regional Citizen Advisory Council (CIRCAC) to sample the Southcentral Coastal waters during June and July of 2002. This region, containing Prince William Sound and Cook Inlet, is important to local and state economies, and to living aquatic resources. During the survey a variety of parameters were monitored at 55 sites. The final report is available online.

2004 Southeast Survey

CIRCAC again collaborated with DEC to conduct the regional assessment of the Southeastern Coastal waters during July and August of 2004. The region contains waters important to the wildlife, communities, and economies of the panhandle. The survey monitored AKMAP parameters at 40 sites and DEC Cruise Ships Program parameters at 11 separate sites. Data is currently being reviewed and compiled into a final report available to the public in early 2009.

2006-07 Aleutian Survey

DEC partnered with the University Of Alaska Fairbanks Institute of Marine Science to complete the Aleutian Island Regional Survey in 2006 and 2007. AKMAP parameters were monitored at 23 sites in the eastern half of the region in 2006 and at 27 sites the western half in 2007. Data is currently undergoing review and being compiled into the final report due in late 2010.

What samples are taken?

- Water chemistry: dissolved oxygen, salinity, pH, temperature, light penetration, turbidity, total suspended solids, nitrogen/phosphorus content, and dissolved carbon.
- Sediments: (when encountered) grain size, total organic carbon, and silt/clay percent.
- Living resources: Chlorophyll *a*, benthic/epifauna community composition and abundance, and any observed fish pathologies or parasites.
- Habitat: type, occurrence of macroalgae.
- Contaminants: fish and algae for metals and organics, sediments for metals/organics content and sediment toxicity.

- Are the waters meeting the Alaska Water Quality Standards?
- Do contaminants found in fish reflect exposure to local or global sources?
- How does biodiversity vary throughout the region?

What's next?

Sample analysis, data entry and interpretation is ongoing. All samples must undergo a quality assurance/quality control review before findings can be released. Findings from this work will be reported in forums such as the Alaska Forum on the Environment, community meetings, by reports and publications including EPA National Coastal Assessment reports.

DEC will complete a survey of Chukchi Sea in 2010-2011. This project will be funded through a Coastal Impact Assessment Program Grant. Fifty sites will be sampled according to AKMAP protocols. It's critical to establish baseline characteristics since the area is seeing increased pressure from oil and gas development, climate change and international shipping.

To learn more about AKMAP and previous sampling, along with fresh water projects, log onto our web site at: www.dec.alaska.gov/water/akmap

RESEARCH IS AN ORGANIZED & SYSTEMATIC WAY OF FINDING ANSWERS TO QUESTIONS.

ALASKA MONITORING AND ASSESSMENT PROGRAM IS ADMINISTERED BY THE ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
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