

The Citizens' Environmental Monitoring Program Partnership of the Cook Inlet Watershed

2004 Annual Report

*Creating the most comprehensive and credible
citizen-based water monitoring program in Alaska.*



CEMP Partnership Members:

Anchorage Waterways Council	Cook Inlet Keeper
Homer Soil and Water Conservation District	Kenai Watershed Forum
Matanuska-Susitna Borough	Palmer Soil and Water Conservation District
UAA Environment and Natural Resources Institute	Upper Susitna Soil and Water Conservation District
Wasilla Soil and Water Conservation District	

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Introduction to the CEMP Partnership

Since 1996, local organizations have coordinated citizen-based water quality monitoring programs to help the State of Alaska and her citizens assess waterbody health. In the Cook Inlet Basin, rapidly increasing population and development have heightened the need for scientifically defensible, baseline data that allows citizens and managers to protect their public water resources.

Beginning in 1997, organizations throughout Cook Inlet have forged partnerships to train citizens in credible and effective data collection methods that will help ensure resource protection. These partnerships have grown into the Citizen's Environmental Monitoring Program Partnership of the Cook Inlet Watershed (CEMP Partnership), currently consisting of nine organizations.

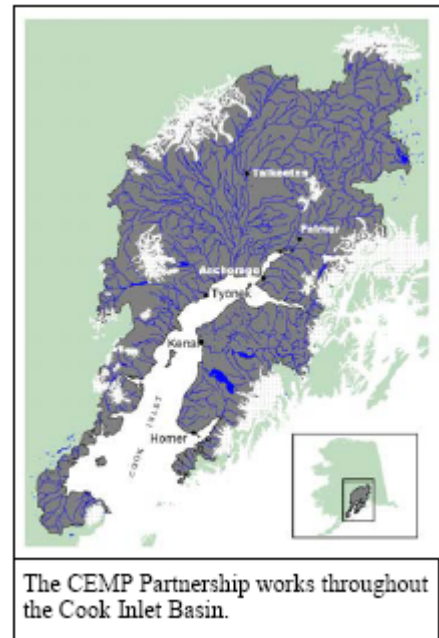
While each organization has a unique program, the CEMP Partnership has several priority objectives that all partners strive for, including:

- Inventory baseline water quality data in the waterways of the Cook Inlet Basin, and
- Detect and report significant changes and track water quality trends, and
- Raise public awareness of the importance of water quality through hands-on involvement.

Overview of 2004 Accomplishments

2004 was a year of increased collaboration within the CEMP Partnership and between the CEMP Partnership and local, regional, and statewide organizations and agencies. Specifically, 2004 accomplishments included:

- Many of the CEMP Partners formalized their relationship with each other by completing a region-wide Memorandum of Understanding;
- CEMP Partners helped organize and attend a meeting between EPA Region 10, the Alaska Department of Environmental Conservation, the Alaska Department of Fish and Game, the Alaska Department of Natural Resources, Tribal Representatives, and community organizations to seek ways of increased collaboration amongst each other, see page 7;
- New methods, such as phosphorous filtration and total phosphate measurements (Cook Inlet Keeper and the Mat-Su Borough respectively), and upgraded equipment (Upper Su SWCD) have been incorporated;
- Cook Inlet Keeper has opened up their community water quality laboratory (see page 16 for more information); and



Since 1996, over 700 citizens have been trained through partner organizations in the CEMP Partnership.

- Annual recertification of CEMP Partnership Coordinators, see page
- Continued outreach to the public through press releases and brochures

Since 1996, over 700 citizens have been trained through partner organizations in the CEMP Partnership. These citizens have collected almost 4800 observations at 250 stream, wetland, lake, and estuarine sites in the Cook Inlet Basin. Including both time and equipment donations, volunteers have contributed well over \$550,000 of in-kind donations towards the organization programs within the CEMP Partnership.

New to the 2004 Annual Report

The CEMP Partnership is pleased to announce that Chickaloon Village, who works closely with the Native American Fish and Wildlife Society and the CEMP Partnership, has enclosed an update on their accomplishments in 2004.

In addition, the results of the CEMP Partnership annual recertification of its volunteer coordinators can be found on page 17.

Anchorage Waterways Council

Citizens' Environmental Monitoring Program

The Anchorage Waterways Council (AWC) completed another year of baseline water quality monitoring, completed two in depth fecal coliform and stream flow studies and submitted an updated Quality Assurance Project Plan. AWC currently has 26 active sites, covering 12 watersheds in the Anchorage Municipality. The monitoring program also had numerous smaller successes this year including completed GIS locations for each site, site refinement due to inadequate mixing zones, and developing a partnership with a local high school for additional monitoring.



Two high school seniors volunteer as a part of a service learning project.

Phase III certified volunteers man the AWC's 26 active sites. These volunteer monitors complete a 12 hours of training and are recertified on an annual basis. Currently there are 45 active volunteers, and over 120 citizens have participated in the training over the years. Many volunteers commit to several years and are involved in additional AWC activities. The AWC technical advisory committee met this year to evaluate nutrient testing methods, and due to their recommendations AWC is currently considering lab analysis of nutrients. Funding is the main roadblock to adopting this new strategy.

With the assistance of the Alaska Department of Environmental Consideration, the fecal bacteria and streamflow assessment of two smaller creeks in Anchorage was completed in the summer of 2004. Little Survival and Little Campbell Creeks were studied. Weekly streamflow measurements were taken and lab analysis for bacteria was submitted. UAA ENRI provided training to complete habitat assessment and macroinvertebrate inventories on these creeks as well.



Volunteer trainer Bob Mitchell assists a new monitor with the titration process.

In addition, UAA ENRI trained 5 other volunteers, who conducted macroinvertebrate inventories on 7 creeks in Anchorage. AWC monitoring staff provided guest lectures to six schools in Anchorage, and staffed stations at three day long science fairs. The estimated number of students reached is 425.

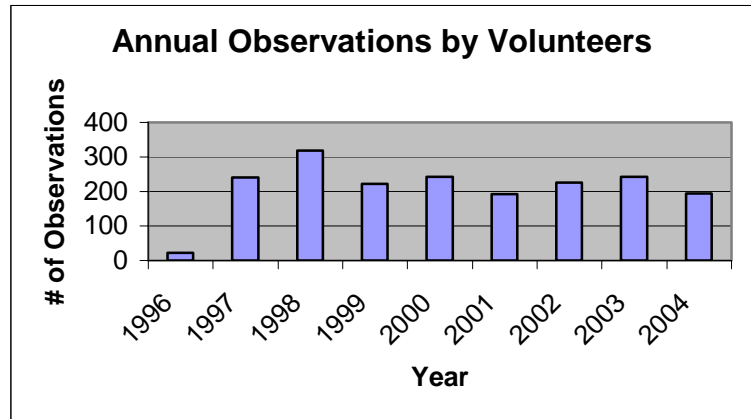
The Anchorage Waterways Council looks forward to another successful year. In 2005, AWC plans to develop a pilot project for collecting hydrologic information, develop lake monitoring protocols, and resolve our nutrient analysis challenges.

Cook Inlet Keeper

Kachemak Bay and Anchor River

Citizens' Environmental Monitoring Program

The Kachemak Bay and Anchor River Citizens Monitoring Program (KBCEMP) continues to inventory baseline water quality in the Kachemak Bay and Anchor River watersheds with 34 volunteers actively monitoring 23 wetland, stream, and estuary sites. In 2004, KBCEMP expanded its water quality and biological monitoring programs by adding new sites within the Diamond Creek, Miller's Landing, and Mariner Creek watersheds. New sites have been added on Mariner and Miller Creek to better understand the impacts of recent road construction. The KBCEMP biological monitoring program continues to expand by adding the Diamond Creek watershed to its repertoire.



2004 observations show water temperatures in the Anchor River watershed have exceeded state water quality standards for egg and fry incubation. These observations have included:

- Water temperature in Two Moose Creek exceeded state water quality standards for spawning areas and egg & fry incubation (13°C) on 48 different days between 6/30/04 and 10/20/04.
- Water temperatures in Two Moose Creek also exceeded state water quality standards for migration routes and rearing areas (15°C) on 35 different days between 6/30/04 and 10/20/04.
- Water temperatures in Ruby Creek exceeded state water quality standards for spawning areas and egg & fry incubation on seven different days between 6/30/2004 and 10/20/04, but did not exceed the standards for migration routes and rearing areas during the same time.

Other 2004 discoveries include high turbidity levels in Woodard Creek and Miller Creek that may be attributed to erosion associated with past flooding or road construction.

In 2004, Cook Inlet Keeper opened the Cook Inlet Community-Based Water Quality Laboratory, and on July 22, 2004, Keeper held a laboratory Dedication Ceremony to honor the CEMP volunteer monitors. KBCEMP volunteer monitors use the lab regularly to conduct water quality analyses and is used to conduct water quality trainings. This new facility has allowed Keeper to conduct in-house macroinvertebrate analysis and expand upon existing chemical water quality analysis. This is an exciting development and will provide tremendous opportunities for expanding Keeper's and the CEMP Partnership's capacity to monitor water quality within Cook Inlet.

In 2005 KBCEMP hopes to expand its nutrient analysis capabilities to include silica and all forms of nitrogen and phosphorus. Nitrogen and phosphorus are nutrients that are important for water quality and aquatic life, but at high levels they are considered contaminants. Excessive levels of nitrogen and phosphorus in waters can cause a number of different effects. The most detrimental effect that could result is excessive plant and algae growth called eutrophication. Other effects include foul odors and tastes and the removal of dissolved oxygen from the water.

Cook Inlet Keeper's KBCEMP continues to work with local individuals and organizations including the Homer Soil and Water Conservation District, Alaska Department of Transportation, Kachemak Bay Research Reserve, Pratt Museum and local landowners and businesses to ensure we are meeting our mission of protecting Cook Inlet and the life it sustains.

Volunteers in the KBCEMP program donated 433 volunteer hours in 2004, valued at \$7400 of in-kind donations to Keeper's monitoring program. Clare Kryshak was the KBCEMP volunteer of the year for 2004. Clare monitored an estuarine site in the Homer Harbor and also volunteered in the lab doing turbidity analysis.



KBCEMP monitoring sites located in the Miller's landing area.

Homer Soil and Water Conservation District

CEMP Coordination and Conservation Education

Increased Statewide Collaboration

On April 9, 2004, watershed organizations, water-resource professionals, agency representatives and organizations held a forum with Environmental Protection Agency (EPA) Region 10 representatives to discuss the changing role of the Alaska Clean Water Action (ACWA) program, initiated by the Alaska Department of Environmental Conservation in 2003. This forum was the first of its kind in Alaska and sought to understand the new EPA and ACWA structures and to have a statewide discussion that would lead to recommendations for the future.

Meeting participants brought up concerns such as policy changes without local government and nonprofit involvement, the problem of maintaining quality programs without multi-year funding, and the lack of surface-water flow information for water quality projects. Several of the recommendations from the group include:

- Meaningful public involvement in ACWA, early in the process and throughout;
- Applications should focus on watersheds rather than water bodies; and
- Foster continuing dialogue on ACWA that is results oriented.

Increased Partnership Coordination

In 2003, the Homer Soil and Water Conservation District took the lead role in coordinating the CEMP Partnership. Since taking on this role, the Partnership has become formalized through a Memorandum of Understanding. In addition, annual recertifications have become increasingly effective for meeting the needs of local programs.

The Homer SWCD has actively worked with the CEMP Partners to increase communication with local, state, and national agencies. Goals for 2005 include increasing our partnership with the US Environmental Protection Agency to finalize the Quality Management Plan.

Increased Student Involvement through the Natural Resources Class

The Homer SWCD believes Alaska's youth have the ability and potential to be the foundation of sustainable development of Alaska's natural resources.

To help them reach this potential, the Homer District sponsors a Natural Resources Technology class at Homer High School that places a large emphasis on aquatic resources. A team of students and the class facilitator actively monitor a stream site within the heart of Homer, Mariner Creek. This creek runs past the high school, providing a great opportunity for service learning through a citizen monitoring program.



Homer District Natural Resources Class Students' Casey Aderhold, Hannah Harrison, and Gillian Beran-Maryott monitor Mariner Creek in January of 2005.

Kenai Watershed Forum

Collaborative Water Quality Monitoring

While fewer resources are available to the Watershed Forum to maintain their citizens water quality monitoring program (CEMP), volunteers continue to be active in their monitoring efforts within the Kenai River watershed. Seven active volunteers, including four new volunteers trained in 2004, monitored 14 sites within the watershed, with a total of 77 site visits.

In 2004, the Kenai Watershed Forum increased their usage of electronic equipment for CEMP on some streams, to measure the standard CEMP water quality parameters, temperature, dissolved oxygen, and pH. The Kenai Watershed Forum uses the Hydrolab Mini-Sonde to conduct these measurements.



Martina Pilatova, Bud Crawford, and Robert Ruffner at No Name Creek at the Kenai Beach.

Recognizing the limitations of fewer resources for the citizens environmental monitoring program, the Kenai Watershed Forum has focused their efforts to monitor individual rivers or creeks at various locations. The goal is to gain a larger perspective on what is happening within an individual river or creek's watershed. By recognizing changes within the spatial arena, the Watershed Forum hopes to be able to build meaningful baseline data that can be used for future reference.



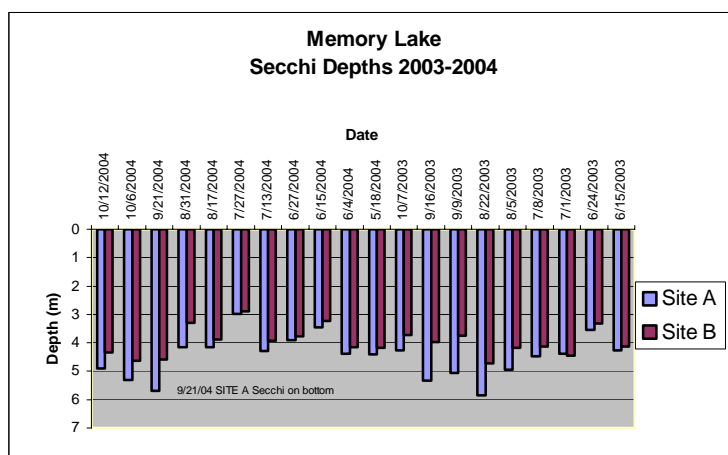
Volunteer Lee Blaney at the Slikok Creek site.

In 2005, the Kenai Watershed Forum plans on maintaining, or increasing when possible, the number of active monitoring sites. CEMP is just one aspect of the KWF Water Quality monitoring program but one that helps promote an understanding of what good water quality is. Our volunteers deserve the credit for making this happen.

Matanuska-Susitna Borough Lake Monitoring Program

The Borough's Lake Monitoring Program collected data on 30 sites from 24 different lakes during the 2004 season. A few volunteers chose to do Level I monitoring only (Secchi clarity and weather, land use and wildlife observations); most did Level II monitoring which adds lake profile measurements of water temperature, dissolved oxygen, pH and conductivity. Most Level II monitors also collected water samples for chlorophyll *a* and total phosphate analysis. With a switch in lab methods, we achieved a lower detection limit for total phosphate so that naturally low background levels can be detected in our lakes.

The monitoring program had both successes and challenges in the 2004 season. We were able to individualize the monitoring more this season, based on the experience of the monitors and level of information desired. In addition to monthly lake profiles, the Big Lake and Memory Lake monitors collected Secchi clarity data 6 and 12 times respectively, providing a great baseline for water clarity. Another highlight was sampling the very remote HiLine Lake, where two families participated in measuring water clarity and collected lake profile measurements and water samples. The lake is nearly 200 feet deep and set a new volunteer record for Secchi clarity at nearly 10.5 meters.



Secchi Clarity measured at Memory Lake from 2003-2004.

Other successes included recording GPS coordinates for most sample sites, and adding three new lakes in the northern part of the Borough. Challenges included continuing to collect information on a monthly basis - even dedicated volunteers can find it hard to get out once a month during our short and busy summers! Several lakes, however, have hit either a three- or five-year mark of continuous data, and we will be focusing on compiling the information for those lakes in summary reports.



Marking 100 meters of Quanta cable, HiLine Lake.

Related outreach projects this year will include the production of large educational display panels that can be used at meetings, in schools, or for display at local libraries. The “Lawns, Lakes and Water Quality” display will focus on nonpoint source pollution in the watershed and how to maintain water quality through best management practices.

University of Alaska Anchorage

Environment and Natural Resources Institute (ENRI)

Biological Monitoring and Assessment Program (BMAP)

In 2004, the Environment and Natural Resource Institute (ENRI) Biological Monitoring and Assessment Program (BMAP) trained 4 bioassessment volunteers for the Anchorage Waterways Council in June 2004. AWC Volunteers and ENRI staff conducted a total of three volunteer bioassessments in June: one on Little Rabbit Creek and two on Chester Creek).



ENRI staff provided training on Stamp Creek in 2004.

ENRI plans to assist CEMP partners in conducting bioassessments for their water quality monitoring programs. ENRI staff will provide volunteer training and help with quality assurance and data management for these important programs. ENRI has planned bioassessment training for volunteers in the Upper Susitna Soil and Water Conservation District in 2005.



ENRI trains local groups to identify macroinvertebrate populations in their streams. Seen here is a member of the Caddisfly family, *Onocosmoecus*.

In addition, ENRI have worked with all CEMP partners and continue to provide training for Alaskan Tribes through the Native American Fish and Wildlife Society's Tribal Water Quality Training Program. The program also has been working with teachers in the Anchorage School District, the Juneau School District and the Kenai Peninsula Borough School District on water quality education programs and bioassessment training.

Upper Susitna Soil and Water Conservation District Citizens' Environmental Monitoring Program

The Upper Susitna Soil and Water Conservation District's CEMP Program continues to survive in the wake of minimal sustainable funding for the program. The Upper Su SWCD has come together after a trying year and agreed to fund the CEMP program from October of 2004 to the present. The Upper Su SWCD stream monitoring coordinator is seeking additional funds to keep the program afloat during 2005.

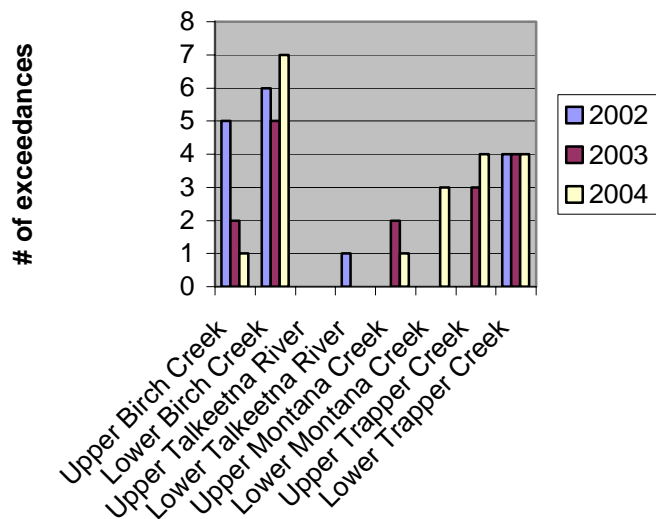
At the same time, volunteers continue to exceed expectations. 2004 saw seven volunteers trained and certified. With the original seven active volunteers trained in 2001 and 2002, 14 volunteers are monitoring waterways within the USSWCD.

The Upper Su SWCD continues to monitor our eight sites on four streams (Birch Creek, The Talkeetna River, Trapper Creek, and Montana Creek). The parameters measured include the following: Temperature (water and ambient), Dissolved Oxygen, PH, Nitrate-nitrogen, Ortho-Phosphate, and testing for Coliform bacteria (Coliscan method). Equipment upgrades including Hanna Combo Meters have made monitoring more efficient for volunteers by being easier to calibrate. The Combo Meters measure pH, conductivity, and ppm.

The Upper Su SWCD hopes to open 4 new sites in 2005 on streams that are getting some human impact and hope to get baseline data while they are still in a healthy and unaffected state. Upper Su SWCD has found that several streams have exceeded the State Standards for temperature for all the habitat requirements for migration, spawning, rearing and egg fry incubation. They are trying to get a handle on this with Jeff Davis, a fish habitat biologist in the area. Future plans to understand these temperature exceedances include the installation of temperature loggers that will illustrate a better picture of the exact conditions present in these streams during the summer season.

The Upper SU SWCD worked with the Upper Susitna High School to demonstrate the effectiveness of citizen monitoring. In addition, the District has held volunteer appreciation events and contributed to the Talkeetna Times discussing what healthy watersheds look like.

Temperature Exceedances in the Upper Su SWCD



Volunteers at a training session in October 2004.

Wasilla and Palmer Soil and Water Conservation Districts Citizens' Environmental Monitoring Programs



Monitors Allan and Elizabeth
Nakanishi at their monitoring site.

Water monitoring by the Wasilla Soil and Water Conservation District has been going on since May of 2000 on the Little Susitna River and Cottonwood Creek as part of an EPA grant. Other creeks and sites have been added to their monitoring list as concerns and observations have directed. 17 sites are currently under observation by staff and volunteer monitors. There are 13 active volunteer monitors assisting staff and an April 23rd and 24th training session will add several more to our ranks. Some of our volunteers have been active for years. John Koutsky, Kathleen Asay and Lawrence McGee are long time veterans of our volunteer core.

The Wasilla and Palmer Soil and Water Conservation Districts have a cooperative agreement whereby they divide and delineate responsibilities with an EPA Wetlands Grant. Due to their close proximity and mutual interests this arrangement has been beneficial to both districts and helped make their combined efforts more efficient.

The Wasilla district staff is working in the area's public schools to raise awareness about conservation issues with assistance from a Coastal Impact Assurance Project grant. Upper elementary and middle school aged students are learning about watershed issues in their area and will be involved in two stream restoration projects this spring. Both restoration sites will occur alongside roadway alterations which have impacted tributaries within the Little Susitna Drainage and the Cottonwood Creek Drainage. Both projects are designed to enhance riparian zone health and improve conditions for anadromous fish.

Additional classroom time is given by staff to use an Enviroscope Model and to discuss watersheds, point and non-point pollution, riparian zones, land use ordinances and water monitoring.

In 2004 there were 307 monitor hours volunteered by members of the Wasilla/Palmer communities for a donation value of \$4605. One hundred twenty site observations were made. Nine new volunteers were trained in September.



Bridgette Preston, on the left, is a student teacher at Teeland Middle School and is using the Enviroscope model to demonstrate point and non-point source pollution issues.

Native American Fish and Wildlife Society's Tribal Water Quality Training Program (TWQTP)

In 2004 The Native American Fish and Wildlife Society (NAFWS) held five workshops under the Tribal Water Quality Training Program, training a total of 44 people. 26 new participants from 18 different villages successfully completed Phase I: "Introduction to Water Quality Assessment". This also includes an introductory workshop held specifically for fisheries technicians in the Lake Clark area sponsored by the Lake Clark National Park Service.

Phase II: "Development of a Water Quality Program" was held in Homer, August 23-27 at the Island and Ocean Visitor's Center who generously allowed us to use their classroom for this course. 17 people completed this training that included an introduction to Quality Assurance Project Plans (QAPPs), and a tour of Cook Inlet Keeper's laboratory.

Two Phase III workshops were conducted, training 18 people of workshops from previous years in the development of QAPPs. A QAPP template for tribal villages was created by NAFWS and Joel Cooper with Cook Inlet Keeper. The template was finally approved by the EPA earlier in the year.

To date, there are approximately four Tribal communities who have developed their own approved QAPPs based on the NAFWS template. These villages include Chickaloon, Chenega Bay, Newhalen, and Kokhanok. There are several more villages anxiously awaiting the approval of their QAPPs.

Chickaloon Village Traditional Council, Environmental Protection Program (CVEPP) Watershed Health Project

The Chickaloon Village Watershed Health Project's goal is to protect and restore the Matanuska River watershed. Protecting and restoring our watersheds are done by documenting traditional knowledge about the watershed and its traditional uses, tracking local development plans and commenting where necessary, planning and implementing restoration projects, conducting water quality monitoring, developing tribal water quality and other environmental ordinances, mapping important watershed features including salmon habitat, and providing watershed-based public education to both Tribal members and the larger community. Project support is provided by the U.S. Department of Health and Human Services, Administration for Native Americans.

Summary

2004 was an exciting year for Chickaloon Village Watershed Health Project, as CVEPP initiated our water quality monitoring program. Over the past several years, four Tribal staff members have received training through the Native American Fish and Wildlife Society's (NAFWS) Tribal Water Quality Training Program. In 2003, using a template developed by NAFWS for Alaska Tribes, CVEPP developed our Quality Assurance Project Plan and submitted it to the U.S. Environmental Protection Agency (EPA) and the State of Alaska, Department of Environmental Conservation (DEC) for approval.

In January 2004, Chickaloon received approval of our Quality Assurance Project Plan from EPA.

Samples were collected at least once per month from April through October at nine sites on tributaries within the Matanuska River watershed including Caribou Creek, Purinton Creek, Chickaloon River, Yellow Jacket Creek, Kings River, Granite Creek, Eska Creek, and Moose Creek (upper and lower sites). In addition to these streams, two additional, more remote streams (April Creek and Wolverine Creek) were visited once during 2004.



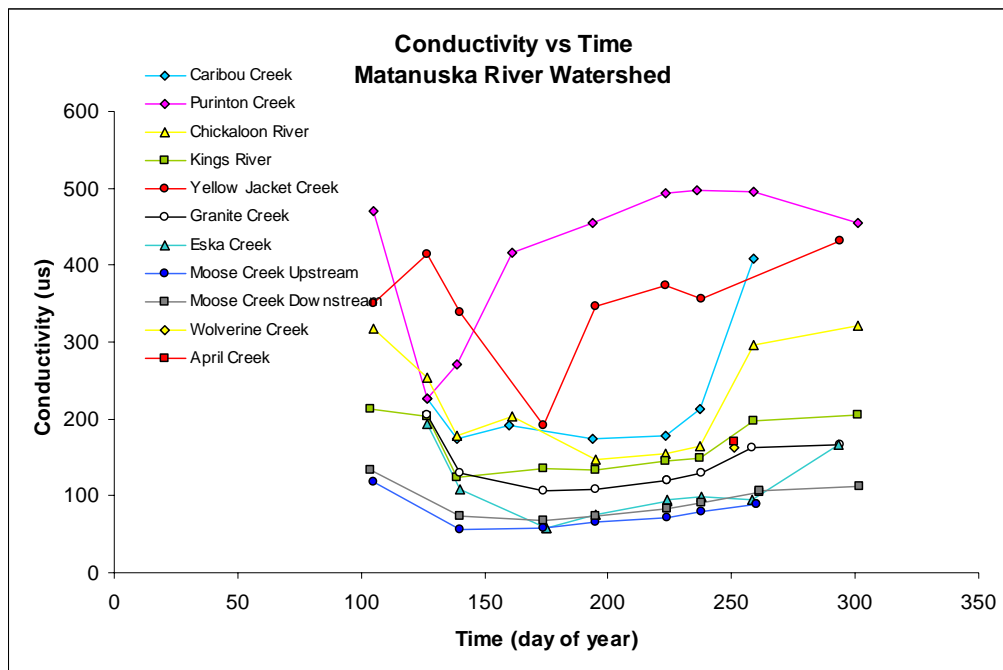
Jennifer McGill samples water from Upper Moose Creek

Data

Data collected at all sites included general observations (weather, wind speed/direction, precipitation, and water level) and quantitative data (air and water temperature, conductivity, pH, settleable solids, and concentration of dissolved oxygen and nitrate). Five sites (Yellow Jacket CEMP Partnership of the Cook Inlet Watershed

Creek, Eska Creek, Moose Creek, Wolverine Creek, and April Creek) were sampled for macroinvertebrate density and species under an agreement with the University of Alaska Anchorage's Environment and Natural Resources Institute.

In general, water quality in the eight sampling locations was good - in all locations water quality met drinking water standards for all measured variables.



Sampling for macroinvertebrates in Wolverine Creek

Future Direction

For both educational purposes and cost-effectiveness CVEPP is exploring the possibility of transitioning monitoring into a volunteer-based program and is talking with several CEMP partners to coordinate our efforts.

CVEPP is also planning to cooperate with community groups and other agencies throughout the Matanuska River watershed to develop and ecosystem-based plan. Ecosystem-based planning helps communities plan local economies while at the same time preserving the integrity of local ecosystems.

Cook Inlet Keeper's Community-Based Water Quality Laboratory

On July 22, 2004, Cook Inlet Keeper fulfilled a long-awaited dream by opening their Community-Based Water Quality Laboratory. The day was marked by dedicating the lab to Keeper's volunteers, a proclamation from the City of Homer, and a tour of the lab's capabilities.

July 22nd was the culmination of three years of efforts to establish such a laboratory in the Cook Inlet Basin. In 2003, Keeper received funding from the Coastal Impact Assessment Program to initiate the lab in a three-phase process:

- **Phase I** focused on furnishing and equipping the lab with necessary laboratory and safety equipment, including cabinetry and counter tops, fume hood, water purification system, analytical balance, refrigerator and a freezer for sample storage;
- **Phase II** charged Keeper with increasing the water quality monitoring efficiency and capabilities of to provide localized services, including services to the Kachemak Bay and Anchor River CEMP, the Lower Kenai Salmon Stream Monitoring Project, the CEMP Partnership, and to the Kachemak Bay Research Reserve.
- Currently, Keeper is conducting **Phase III** of the program, including the development of a business plan that will illustrate potential customers and the types of tests the lab will conduct. Keeper has already coordinated an area-wide laboratory needs assessment to understand roles that are already filled and gaps within services. Also, Keeper has established an advisory committee to provide guidance and technical support for the plan's development and execution.

In addition to providing service-based analyses, the community-based water quality laboratory also provides Technical and Quality Assurance/Quality Control support for the CEMP Partnership. In March of 2004, Keeper hosted four organizations' volunteer monitoring coordinators to receive their annual recertification. The results of this event can be found on page 17.

The Citizens' Environmental Monitoring Program Partnership of the Cook Inlet Watershed

2004 Volunteer Coordinator Performance Evaluation (PE) Results				
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CEMP Partnership of the Cook Inlet Watershed Quality Assurance and Quality Control Measures

The CEMP Partnership recognizes the need for a quality system of program management that offers performance uniformity among the numerous volunteer water quality monitoring projects throughout the Cook Inlet basin. Only through such a documented management system can quality assured data be obtained for valid comparisons and interpretations. The CEMP Partnership uses many quality assurance and quality control measures to assure the quality of the collected data. These include:

TRAINING

- Monitors are required to complete Phase I through III of training to be eligible to collect data for the CEMP Partnership.
- Quality Control (QC) Coordinators are required to complete Phase I through IV of training to be eligible to collect data for CEMP Partnership.
- Monitors attend annual re-certification to review monitoring procedures, ask questions and fine-tune skills.
- Monitors analyze performance evaluation standards during annual re-certification to check their precision and accuracy.
- QC Coordinators attend annual re-certification conducted by the CEMP Quality Assurance (QA) Officers to review monitoring procedures, ask questions and fine-tune skills.

QUALITY CONTROL REQUIREMENTS

- QC Coordinators analyze performance evaluation standards during annual re-certification to check their precision and accuracy.
- Monitors perform analysis on replicate samples each site visit.
- The QC Coordinator collects split samples at 10 % randomly selected active sites for analysis at state-certified laboratory.
- The QC Coordinator will perform split sample analysis at 10 to 20 percent of all active sites (randomly selected) during each year.
- Broken equipment and expired or defective chemical reagents are replaced immediately upon discovery.



Upper Susitna SWCD's Volunteer Monitoring Coordinator Rick Ernst, left, and Cook Inlet Keeper's Research Coordinator Joel Cooper at the 2005 annual recertification.

DATA VALIDATION AND USABILITY

- Raw data is entered into the CEMP Water Quality Database where mathematical calculations, when applicable are performed by the database.
- Data that do not meet project accuracy and precision objectives are entered in the CEMP Water Quality Database and flagged accordingly. All field and data entry comments are included with the dataset. Data that does not meet data quality objectives will not be

exported to STORET. Data that falls just outside of the objectives may be exported to STORET, but will be flagged accordingly.

- The QC Coordinator is responsible for contacting monitors to determine the cause of data errors and arranging for monitor re-training if necessary.
- The QC Coordinator determines reviews results to see if they are higher than expected for a particular site. If any results are found higher than expected, the QC Coordinator will arrange to re-sample that site. If necessary, the samples will be split with the QC Coordinator or an outside EPA approved laboratory will perform replicate analysis.

ASSESSMENT AND OVERSIGHT

- CEMP Partners operate under the guidance of the CEMP Partners of the Cook Inlet Watershed Quality Management Plan (QMP).
- CEMP Partners of the Cook Inlet Watershed hold an Annual Conference and conduct a Management System Review.
- The CEMP Partnership of the Cook Inlet Watershed receives comments and technical advice from a Technical Advisory Committee.
- The CEMP QA Officers perform an annual Technical System Review.

Future Direction of the CEMP Partnership

As seen through many of the partners within the CEMP Partnership, identifying a sustainable funding source to continue these efforts is the chief priority for 2005. The group has recognized that both local and regional fundraising will help the Partnership meet its goals.

Accordingly, local programs have sought to diversify their funding sources. One example is the current effort by Cook Inlet Keeper and Anchorage Waterways Council to develop an “Adopt-a-Stream” Program that will allow local businesses and citizens to show their support for the streams they are concerned with.

On a regional scale, the CEMP Partnership has been working with the US Environmental Protection Agency to complete the first region-wide Quality Management Plan (QMP) that outlines how the Partnership will uphold our Quality Assurance and Quality Control obligations. By completing the QMP, the Partnership will have secured a process for achieving their obligations. Simultaneously, the Partnership will be able to seek regional-based funding to maintain essential programs.

In addition, CEMP Partners are collecting up-to-date GPS information on monitoring sites to include in mapping projects in 2005.

In 2005, several Partners will increase their efforts to accomplish the CEMP Partnership objective that seeks to raise public awareness of the importance of water quality through hands-on involvement. Specifically, the Mat-Su Borough will develop a “Lawns, Lakes and Water Quality” display that will educate residents on watershed nonpoint source pollution and how water quality can be maintained through best management practices.

Finally, the CEMP Partnership will continue to participate in the efforts initiated by the Alaska Boreal Forest Council and the Kenai Watershed Forum to collaborate with state and federal agencies when addressing important water quality concerns.



Future limnologists on HiLine Lake.

CEMP Partnership of the Cook Inlet Watershed Annual Statistics

Organization	Number of Active Sites	Number of Observations	Number of Volunteers Trained In 2003	Number of Active Monitors	Hours of Contribution	Volunteer Donations
Anchorage Waterways Council	26	*	37	44	1408	\$28,160
Cook Inlet Keeper	23	195	12	34	433	\$7433
Kenai Watershed Forum	14	77	4	7	115	\$1977
Matanuska- Susitna Borough	30	92	9	31	300	\$5127
Wasilla and Palmer SWCDS	17	120	9	13	307	\$5277
Upper Susitna SWCD	8	*	7	14	293	\$5646
Total CEMP Partnership	119	484	78	159	2195	\$53,620

* Indicates information not available at the time of printing

Monitoring Program Contacts

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The Citizens' Environmental Monitoring Program Partnership Of the Cook Inlet Watershed

Annual Report 2004

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Anchorage Waterways Council Cook Inlet Keeper

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Matanuska-Susitna Borough Palmer Soil and Water Conservation District

UAA Environment and Natural Resources Institute Upper Susitna Soil and Water Conservation District

Wasilla Soil and Water Conservation District

