ABResearch Notes

ABR, Inc., Environmental Research and Services

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Central Oregon Watershed Monitored during Restoration

Ranching and forestry practices in the upper South Fork of the John Day River Basin in central Oregon have degraded riparian and instream conditions throughout the area. Several ranchers in the watershed have been working to improve conditions for fish and other aquatic life by implementing a number of best management practices and restoration projects. Check dams have been installed to raise the water table, fencing keeps cattle out of revegetated streambanks, and thousands of linear feet of eroding streambank have been stabilized with juniper riprap.

Bank Stabilization, South Fork, John Day River, Oregon

To measure the restorative effects of these efforts and expand on current biomonitoring programs, ABR has implemented a long-term biomonitoring project in the upper watershed. Our focus will be to measure changes in water quality and physical habitat, and responses by macroinvertebrates to these changes. To conduct this work, ABR and Phil St. Clair, the rancher credited for implementing these restoration efforts, have secured funding from the Oregon Department of Environmental Quality's (DEQ) Non-point Source Pollution (NPS) Program.

The need for watershed restoration and monitoring continues to increase in the wake of Endangered Species Act listings of salmonids on the West Coast. DEQ's NPS program and Oregon Watershed Enhancement Board (OWEB) are two funding sources that are available to groups in Oregon with needs for this type of work. For further information, visit DEQ's NPS website (www.deq.state.or.us/wq/nonpoint/nonpoint.htm) or OWEB's grant program website (www.oweb.state.or.us). For information about our aquatic restoration program, contact Mike Cole at 503-359-7525 (**mcole@abrinc.com**).

ABR Involved in Long-term Gulf of Alaska Studies

Dr. Robert H. Day, ABR Senior Scientist, has been involved in an oceanographic study in the Gulf of Alaska since 1997. The GLOBEC (Global Ocean Ecosystem Dynamics) project is an interdisciplinary oceanographic study funded by the National Science Foundation and National Oceanic and Atmospheric Administration (NOAA). The main objective of the GLOBEC program is to understand the effects of climate change at inter-seasonal and inter-annual scales on oceanographic processes and dynamics at selected locations around the US. The Alaska GLOBEC study is concentrated in the northern Gulf of Alaska and in Prince William Sound. Topics studied include physical oceanography, nutrient chemistry and primary productivity, zooplankton ecology, hydroacoustics, fisheries, and seabirds and marine mammals. Research cruises occur 7 times annually, starting in 2001, and are conducted on the University of Alaska's research boat R/V *Alpha Helix*.

Bob is studying the seasonal, interannual, and geographic variation in the at-sea distribution of seabirds and marine mammals with respect to changes in oceanography. His funding is from the *Exxon Valdez* Oil Spill Trustee Research Council. For more information, contact Bob Day (**bday@abrinc.com**).

Anchorage Coastal Trail Project

ABR recently completed a 2-year study for the Alaska Department of Transportation and Public Facilities (ADOT&PF) to evaluate fish and wildlife resources for the proposed extensions of the Anchorage South Coastal Trail from its current southern terminus at Kincaid Park to the southern end of Potter Marsh.

The study entailed evaluating fish and wildlife populations and their habitats in areas where wildlife potentially will be impacted by trail construction and use.

Bald Eagles along the coast

Our goal in this study was to provide quantitative information, which the various stakeholders in this project can use to evaluate trail alternatives as they pertain to direct and indirect effects on sensitive fish and wildlife resources. ABR is currently working with HDR Alaska, Inc. on the Environmental Impact Statement (EIS) for this project.

Steve Murphy, ABR's Research Coordinator, is the Principal Investigator for this study, and he is being assisted by Angela Palmer, Research Biologist. For more information, contact Steve Murphy (**smurphy@abrinc.com**).

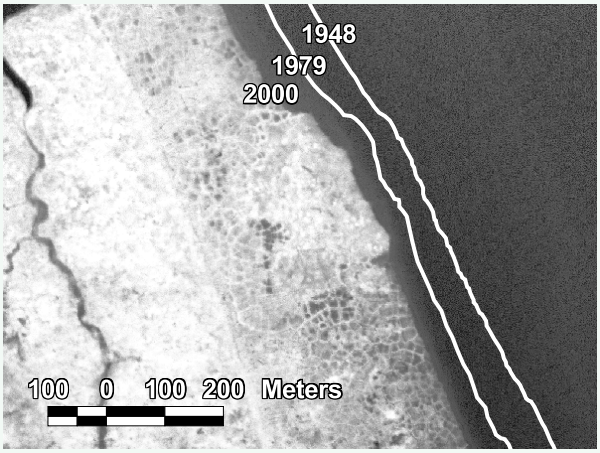
Salamander Surveys in Coastal Oregon

Torrent Salanamder from Oregon watershed

ABR began a study of the distribution and abundance of stream amphibians in the Coast Range of Oregon for Willamette Industries in 2000. The Columbia torrent salamander (*Rhyacotriton kezeri*), a species of concern in Oregon, was the focal species in our research. Results from this initial study highlighted the importance of lithology (e.g., basalt, marine sediment) in determining presence of torrent salamanders. In summer 2001, we examined stream attributes, physical habitat, and macroinvertebrate communities in streams with torrent salamanders to determine the importance of these variables to salamander presence and abundance. Contact Todd Mabee for more information (**tmabee@abrinc.com**).

Coastal Erosion along the Arctic Ocean

Coastal erosion rates along the Arctic Ocean are among the highest in the world due to the prevalence of ice-rich permafrost onshore. To help assess the human consequences of this erosion and its effects on nearshore processes, ABR is collaborating with an international network of scientists under the Arctic Coastal Dynamics program (www.awi-potsdam.de/www-pot/geo/acd.html) by helping establish key monitoring sites at Elson Lagoon near Barrow and the Beaufort Lagoon in the Arctic National Wildlife Refuge. Photogrammetric analysis of aerial photography and IKONOS satellite imagery from 1948, 1979 and 2001 revealed a mean erosion rate of 0.6 m/yr. For more infromation, contact Torre Jorgenson (**tjorgenson@abrinc.com**).



Historic coastlines over lain on 2000 IKONOS satellite imagery

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ABR Developing Tools to Better Assess Health of Streams

Using macroinvertebrate communities to assess and monitor stream conditions is becoming increasingly popular with water resource management agencies and other organizations. Unfortunately, in many areas, we still lack understanding of how stream communities respond to increased human influence. In the Willamette Valley, Oregon, for example, we know very little about relationships between land use type and intensity, effects on instream habitat, and the resulting changes in aquatic communities in low gradient streams. Cleanwater Services has contracted ABR to perform such a study in the Tualatin River Basin west of Portland. Sampling physical habitat, water chemistry, and macroinvertebrates at more than 60 sites has been completed. We will now develop models and other analytical tools that will allow resource managers to better assess the degree of biological impairment in running waters in this basin. Contact Mike Cole (**mcole@abrinc.com**) for details.

CONSERVATION TIP: *Battery Solutions will recycle alkaline batteries for $0.85/pound.(www.batteryrecycling.com)*

Staff Notes

Angela Palmer, M.S., ABR *Research Biologist,* joined our Anchorage office in March 2000. Her professional specialties include raptor, marine bird, and mammal survey and census techniques, and wildlife disturbance studies. She has participated in field studies in coastal areas including the Aleutians, Prince William Sound, and northern California and has hands on experience with a number of TES and sensitive species including Steller's Sea Lions, Bald Eagles, Peregrine Falcons, and Aleutian Canada Geese. Angela is conducting a wildlife investigation for the Anchorage Coastal Trail Project. (**apalmer@abrinc.com**)

Alex Prichard, M.S., ABR *Research Biologist*, joined our staff in Fairbanks in May 2000. Alex has conducted research on both marine and terrestrial topics in and out of Alaska since 1992. His research has included such diverse topics as blood biochemistry as a bioindicator of oil pollution in Pigeon Guillemots; predation of Pacific herring eggs and mussels by birds; use of GIS systems in managing reindeer herding; and competition between baitfishes and ducks for food. He currently is involved in a number of ABR wildlife programs in northern Alaska. **(aprichard@abrinc.com)**

Terry Schick, Ph.D., ABR *Senior Research Biologist*, recently joined our Anchorage office. Terry received his doctoral degree in Plant Ecology from UC Santa Barbara. He has 13 years of environmental research experience in Alaska and 7 years in California and the Pacific Northwest. His work has emphasized studies of bird populations, vegetation, and landscape-scale monitoring. Recently he provided team leadership in the development of ecosystem management programs for Army lands in Alaska, and he will continue to pursue his interests in landscape and ecosystem planning, environmental assessment, and habitat studies at ABR. (**tschick@abrinc.com**)

Kimberly Augenfeld, ABR *Reseach Biologist*, recently joined ABR's staff in Oregon. Kimberly has eight years of experience in the PNW. Her research interests include passerine and seabird ecology, and TES surveys. She has worked in Washington, and throughout Oregon. Currently, she is helping lead our radar study of marbled murrelets in the Elliott State Forest and finishing up a bird migration study in Eastern Oregon.
(**kaugenfeld@abrinc.com**)

Alternative Transportation

Honda Insight

ABR purchased a gas-electric hybrid—the **Honda Insight**—for testing in northern environments. Under ideal conditions, the Insight gets 65-70 mpg. In winter, given the colder temperatures and increased tire size for icy conditions, the Insight is averaging 55 mpg. For more information visit www.insightcentral.net/faq-efficiency.html or www.honda.com.

Bioshare

ABR's staff shares a sense of responsibility for the well-being of our local and global communities. We try to meet this responsibility by seeking out opportunities to assist worthwhile projects and programs by providing resources, biological expertise, and our time through a program we call ***Bioshare****.*

ABR has provided support for the **Calypso Farm and Ecology Center** in Fairbanks (Calypso@mosquitonet.com). Calypso's mission is to encourage environmental awareness through "experiental education in natural and farming ecosystems".

Bobbie Ritchie continues to work with the local **Habitat for Humanity** Affiliate, which started its second house this summer. HFH Global Village occurred in mid-June, with 16 volunteers from across the country. Bobbie also invited **Scott Pope, Progressive Investment Management** (Eugene, OR), to provide the Fairbanks community with a free seminar on socially responsible investing (SRI). For more information on SRI, check out www.enn.com.

Recent Publications

Cole, M. B., D. E. Arnold, B. J. Watten, and W. F. Krise. 2001. Haematological and physiological responses of brook charr to untreated and limestone-neutralized acid mine drainage. *Journal of Fish Biology* 59:79–91.

Cooper, B. A., M. G. Raphael, and D. Evans Mack. 2001. Radar-based monitoring of marbled murrelets. *Condor* 103:219–229.

Day, R. H., I. J. Stenhouse, and G. S. Gilchrist. 2001. Sabine's Gull (*Xema sabini*). *In* A. Poole and F. Gill, eds. *The Birds of North America*, No. 594. Birds of North America, Inc., Philadelphia, PA. 32 pp.

Garshelis, D. L., and **C. B. Johnson**. 2001. Sea otter population dynamics and the *Exxon Valdez* oil spill: disentangling the confounding effects. *Journal of Applied Ecology.* 38:19–35.

Jorgenson, M. T. 2000. Hierarchical organization of ecosystems at multiple spatial scales on the Yukon-Kuskokwim Delta, Alaska. *Arctic, Antarctic, and Alpine Research* 32:221–239 .

Murphy, S. M., and **T. J. Mabee**. 2000. Status of Black Oystercatchers breeding in Prince William Sound, Alaska, 10 years after the *Exxon Valdez* Oil Spill. *Waterbirds* 23:204–213.

Murphy, S.M., and **B.E. Lawhead**. 2000. Caribou. *In* J.C. Truett and S.R. Johnson, eds. The natural history of an arctic oilfield: development and the biota. Academic Press, San Diego.

Palmer, A. G., D. Nordmeyer, and D. D. Roby. 2001. Factors influencing nest attendance and time-activity budgets of peregrine falcons in Interior Alaska. *Arctic* 54:105–114.

Ritchie, R. J., **R. M. Burgess**, and R. S. Suydam. 2000. Status and nesting distribution of lesser Snow Geese and Brant on the western Arctic Coastal Plain, Alaska. *Can. Field-Naturalist* 114: 395–404.

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"Since wars begin in the minds of men,
it is in the minds of men that the defenses of peace must be constructed"

from UNESCO charter

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