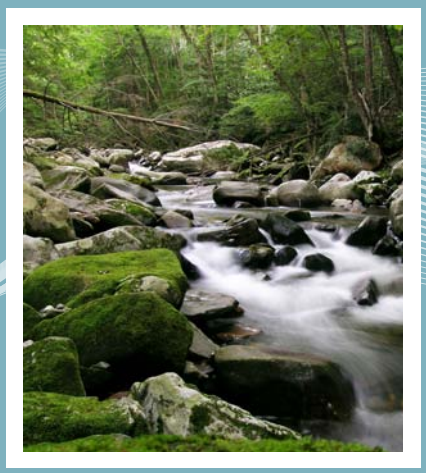
ABR inc.



Statement of Qualifications

Fisheries & Aquatic Sciences Services

Northeast Regional Office
15 Bank Row, Suite B
Greenfield, MA 01301
413-774-5515
Contact: Mike Cole
mcole@abrinc.com

Corporate Headquarters
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907-344-6777
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503-359-7525
Contact: Todd Mabee
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April 2011

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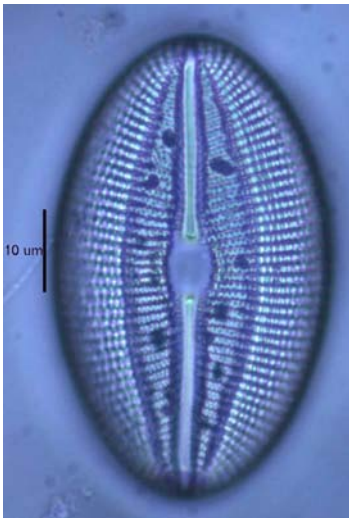
Introduction



ABR's Fisheries and Aquatic Sciences program **provides research and consulting services to help those working to manage or restore aquatic habitats, water quality, and biological resources**. We specialize in assessment and monitoring of aquatic resource conditions for a variety of applications, including baseline condition assessments, status and trends monitoring, restoration effectiveness evaluation, and environmental impact assessment. ABR's work has been used in support of NPDES permit requirements, FERC relicensing requirements, and Forest Practice Act requirements. Our fisheries and aquatic sciences program has benefitted a diverse array of clients, including every level of government, non-profit conservation organizations, the timber and energy industries, public utilities, native groups, and academia. With offices located in Alaska, Oregon, Montana, and Massachusetts, we are able to offer services to clients in each of these regions and beyond.

ABR scientists' provide expertise in taxonomy, distribution, and ecology of North American fish, macroinvertebrates, and algae; effects of disturbance on, and restoration of, freshwater ecosystems; limnology; stream ecology; estuarine ecology; design and analysis of ecological studies; and watershed processes.

Services

- Fisheries Research, Surveys and Monitoring
- Macroinvertebrate and Algae/Diatom Sample Processing and Identification
- Watershed Assessment and Analysis
- Macroinvertebrate Monitoring and Assessment
- Restoration Monitoring Design & Implementation
- Applied Aquatic Ecology Research
- Otolith Aging and Microchemistry
- Amphibian Research and Surveys
- Project Design, Data Analysis, and Quality Control Plan Development

Aquatics & Fisheries Staff

Dr. Cole currently holds **five active taxonomic NABS certifications** and is among the most highly certified taxonomists in the country

MICHAEL COLE, PH.D. – SENIOR AQUATIC SCIENTIST AND NABS-CERTIFIED TAXONOMIST

Location: Massachusetts and Oregon offices

Expertise: Effects of disturbance on aquatic resources, fisheries biology, design and analysis of ecological studies, macroinvertebrate ecology and taxonomy, watershed assessment, and monitoring and assessment of aquatic resources

JOHN SEIGLE, M.S. – SENIOR SCIENTIST

Location: Anchorage, Alaska, office

Expertise: Estuarine & stream and lake ecology, fisheries biology, otolith microchemistry, age and growth

JENA L. LEMKE, M.S. – RESEARCH BIOLOGIST

Location: Oregon office

Expertise: Fisheries biology, aquatic ecology, monitoring and assessment of aquatic resources, field sampling and logistics coordination

JOHN ROSE, M.S. – RESEARCH BIOLOGIST

Location: Fairbanks, Alaska, office

Expertise: Fisheries biology, field sampling and logistics coordination

JOEL GOTTSCHALK, M.S. – RESEARCH BIOLOGIST

Location: Anchorage, Alaska, office

Expertise: Taxonomy and ecology of diatoms and other algae, aquatic ecology, fisheries biology, monitoring and assessment of aquatic resources

NICK HAXTON, M.S. – RESEARCH BIOLOGIST

Location: Oregon office

Expertise: Aquatic ecology, water quality sampling, field methods in monitoring and assessment of aquatic resources ABR's Oregon macroinvertebrate lab supervisor

ANN SCHROT GREGOIRE, M.S. – RESEARCH BIOLOGIST AND NABS-CERTIFIED TAXONOMIST

Location: Montana

Expertise: Taxonomy and ecology of freshwater macroinvertebrates

JASON T. SALTMAN, M.S. – BIOLOGICAL TECHNICIAN AND GIS ANALYST

Location: Massachusetts office

Expertise: Monitoring and assessment of aquatic resources, freshwater ecology, GIS mapping and spatial data management and analysis

Selected Client List

Federal

National Park Service

United States Forest Service

United State Fish and Wildlife Service

United States Army Corps of Engineers

National Wild and Scenic Rivers Program

State/County

Washington Department of Natural Resources

Oregon Department of Fish & Wildlife

Oregon Department of Environmental Quality

Pennsylvania Department of Environmental Protection

Massachusetts Department of Environmental Protection

New Jersey Department of Environmental Protection

West Virginia Department of Environmental Protection

Alaska Department of Fish and Game (AK)

King County (WA)

Clackamas County (OR)

Grant SWCD (OR)

Wheeler SWCD (OR)

Franklin County Council of Governments (MA)

Local Government

City of Portland (OR)

City of Wilsonville (OR)

City of Lake Oswego (OR)

City of Salem (OR)

Metropolitan Washington Council of Governments (DC)

Franklin Regional Council of Governments (MA)

North Slope Borough, Department of Wildlife Management (AK)

Industry

Weyerhaeuser Company (WA and OR)

Longview Fibre (WA)

Port Blakely Timber Company (WA)

AMEC Earth & Environmental (WA)

Clean Water Services (OR)

Hatch Acres (AK)

ConocoPhillips Alaska, Inc. (AK)

Sphere Consulting Group (GA)

WPC, Inc. (GA)

Anchorage Water & Wastewater Utility (AK)

R&M Consultants, Inc. (AK)

Non-Profit

The Nature Conservancy (OR/WA)

South Coast/Lower Rogue Watershed Council (OR)

Long Tom Watershed Council (OR)

Middle Fork Willamette Watershed Council (OR)

Tillamook Estuary Partnership (OR)

The Xerces Society (OR)

Deerfield River Watershed Association (MA)

Connecticut River Watershed Council (MA)

Academia

University of Connecticut

Oregon State University

Portland State University

Native Groups

Yakama Nation (WA)

Confederated Colville Tribes (WA)

Columbia River Intertribal Fish Commission (OR)

Fisheries Research & Surveys

ABR performs fish distribution and abundance surveys (employing a variety of sampling techniques); fish behavior, movement, and habitat use investigations; and instream habitat surveys for a wide variety of applications.

BIOLOGICAL RESOURCE STUDIES FOR ALLISON CREEK HYDRO PROJECT, VALDEZ, AK (2008–2010)

Client: Hatch Acres for Copper Valley Electric Association, AK

ABR conducted surveys of fish and macroinvertebrate distribution, habitat quality, riparian zone conditions, water quality, and hydrology in support of a proposed hydro-electric project. Analyses included a quantitative assessment of project impacts on aquatic resources in support of the FERC permitting process.

TUALATIN BASIN FISH AND MACROINVERTEBRATE BIOTIC INTEGRITY STUDIES

Client: Clean Water Services, OR

ABR has been monitoring benthic macroinvertebrate (since 2001) and fish (since 2005) communities throughout the Tualatin River Basin, Oregon. ABR performs all field work, macroinvertebrate taxonomic work, analysis, and reporting for the project. Our client, Clean Water Services, uses this information to track status and trends of water resources in relation to their programmatic activities, including waste water and stormwater management, as well as restoration activities.

EASTERN WASHINGTON LAST FISH TEMPORAL VARIABILITY STUDIES

Client: Washington Department of Natural Resources, WA

ABR performed field research to examine seasonal and annual changes in the upper limits of fish distribution in forested watersheds across eastern Washington. The data were used to evaluate to test assumptions of a newly developed stream-typing model for eastern Washington State forested watersheds. ABR published this research in *Transactions of the American Fisheries Society*.

FALL FISHERY MONITORING ON THE COLVILLE RIVER, AK

Client: Conoco Phillips Alaska, Inc. (CPAI)

ABR conducted harvest assessments for the Native subsistence fishery on the Colville River at Nuiqsut, AK, near the Alpine oil development. Gill net data was combined with harvest records and age analysis for arctic cisco *(Coregonus atumnalis)* to determine the relative strength of annual harvests between October and November of each year since 2007.

Macroinvertebrate Sample Processing & Taxonomy

ABR has provided laboratory sample processing and taxonomy services for clients across the United States, including Alaska, for more than a decade. ABR's two macroinvertebrate labs, one in located in Greenfield, Massachusetts, and one in Forest Grove, Oregon, provide full in-house taxonomic services. All identification work is performed by the aquatics program senior scientist and taxonomist, Dr. Michael Cole, and by taxonomist, Ann Gregoire.

ABR has performed taxonomic work for clients across the Pacific Northwest, mid-Atlantic, southeast, and Northwest regions of the country and is familiar with many state and federal laboratory protocols that apply to these regions.

2007–2010 PENNSYLVANIA DEP MACROINVERTEBRATE SAMPLE PROCESSING AND TAXONOMIC SERVICES

Client: Pennsylvania Department of Environmental Protection

Since 2007, ABR has processed and performed taxonomic work on more than 400 benthic samples collected by the Pennsylvania Department of Environmental Protection. Samples were subsampled to 200-organism target counts and then macroinvertebrates were identified to standard levels of resolution (generally genus) for input into Pennsylvania DEP's Water Quality Network database.

2009–2010 YAKAMA NATION MACROINVERTEBRATE SAMPLES

Client: Yakama Nation, WA

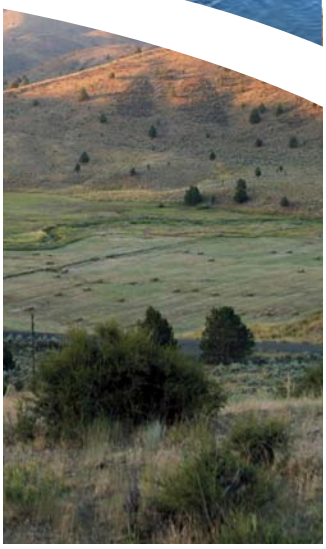
ABR processed and performed taxonomic work on more than 40 samples for the Yakama Nation. Samples were subsampled to achieve 500-organism target counts and then macroinvertebrates were identified to standard levels of resolution (generally genus/species) for Northwest taxonomic groups. The data were used by the tribe to assess the condition of small streams in tribal land and determine whether current water quality standards are appropriate for the stream types sampled.

2006–2010 NPS ARCTIC MONITORING NETWORK MACROINVERTEBRATE SAMPLES

Client: National Park Service, AK

Between 2006 and 2010, ABR processed, performed taxonomic work, and analyzed more than 250 benthic samples collected by the National Park Service in Alaska. Samples were subsampled and then macroinvertebrates were identified to standard levels of resolution (generally genus/species) for Northwest taxonomic groups.

Watershed Assessment



ABR's scientists are experienced in watershed assessment and analysis. ABR works with our clients to develop assessment materials that are both technically sound and easily communicated to the general public. We use both historic data and collect additional data to characterize past and current watershed conditions in relation to land use and management activities. A staff of GIS and remote sensing analysts supports our watershed projects.

ASSESSMENT OF THE UPPER SOUTH FORK OF THE JOHN DAY RIVER, OREGON

Client: Grant Soil & Water Conservation District, OR

ABR performed an assessment of the Upper South Fork of the John day River watershed using the methods described in the Oregon Watershed Enhancement Board's (OWEB) *Oregon Watershed Assessment Manual* to characterize current watershed conditions in relation to current and past land use and management activities. Assessment activities included characterization of historic conditions, classifying stream-channel types, and examining fish distribution, habitat quality, riparian zone conditions, water quality, and hydrology. The assessment products produced by this project have aided resource managers and land owners in developing specific plans and monitoring strategies to improve or restore watershed conditions.

BUTTE CREEK WATERSHED ASSESSMENT, OREGON

Client: Wheeler Soil & Water Conservation District, OR

ABR performed an assessment of the Butte Creek watershed using the methods described in the OWEB *Oregon Watershed Assessment Manual* to characterize current watershed conditions in relation to current and past land use and management activities. Activities included characterization of historic conditions, classifying stream-channel types, and examining fish distribution, habitat quality, riparian zone conditions, water quality, and hydrology. The assessment products produced by this project have aided resource managers and land owners in developing specific plans and monitoring strategies to improve or restore watershed conditions.

LOWER MOLALLA RIVER AND MILK CREEK WATERSHED ASSESSMENT, OREGON

Client: Molalla River Watch, OR

ABR performed an assessment of the lower Molalla River watershed in western Oregon. Activities included characterization of historic conditions, classifying stream-channel types, and examining fish distribution, habitat quality, riparian zone conditions, water quality, and hydrology.

Macroinvertebrate Monitoring & Assessment

ABR specializes in the development and implementation of macroinvertebrate monitoring and assessment programs for a wide variety of applications, including status and trends monitoring, restoration effectiveness evaluations, and environmental impact assessments.

2003, 2007, AND 2009 MACROINVERTEBRATE COMMUNITY ASSESSMENTS, CLACKAMAS COUNTY, OREGON

Client: Clackamas Water Environment Services, OR

ABR has performed assessments of the condition of benthic macroinvertebrate communities in relation to instream physical and chemical conditions in 26 stream reaches throughout northwest Clackamas County, Oregon. Study watersheds included the lower Tualatin River basin, Mt. Scott and Kellogg Creeks, Rock Creek, Richardson Creek, and several smaller drainages.

2009 REFERENCE CONDITION CHARACTERIZATION AND MODEL DEVELOPMENT OF MACROINVERTEBRATE COMMUNITY CONDITIONS IN TUALATIN RIVER BASIN STREAMS, OREGON

Client: Clean Water Services, OR

ABR identified least-disturbed low-gradient stream reaches in the Tualatin River basin, sampled macroinvertebrates from these reaches, and developed a model to determine benthic ecological conditions in low-gradient streams throughout the basin from these data. The model is now undergoing validation and testing with additional data. The model will be used by Clean Water Services to provide a more accurate assessment of biological conditions in Tualatin River valley floor streams than current models allow.

CITY OF LAKE OSWEGO MACROINVERTEBRATE BIOASSESSMENTS

City of Lake Oswego, OR

ABR has performed monitoring and assessment of macroinvertebrate communities and stream habitat in streams within the city of Lake Oswego, Oregon, since 2004. Data and information from these studies are used to help inform local planning and restoration activities and to comply with monitoring requirements of their MS4 NPDES permit.

Restoration Monitoring Design & Implementation

ABR has extensive experience in the design and implementation of restoration monitoring projects and programs. ABR uses principles of experimental design, sampling design, and statistical analysis to develop robust, ecologically relevant monitoring programs. ABR has developed and executed monitoring projects in rivers and streams in both the northeast and northwest United States.

WILLAMETTE MODEL WATERSHED LONG TERM RESTORATION MONITORING DESIGN AND IMPLEMENTATION

Client: Bonneville Environmental Foundation, OR

ABR developed a 10-year restoration monitoring plan for the Bonneville Environmental Foundation and seven participating Willamette River basin watershed councils. ABR led all 2010 field data collection efforts throughout the model watersheds, analyzed the 2010 data, and developed and implemented a long-term data management strategy for the partnership.

2008–2009 GREEN RIVER DAMS REMOVAL BASELINE ECOLOGICAL ASSESSMENT

Client: Connecticut River Watershed Council, MA

ABR developed and monitoring plan assessing the effects of the removal of two Green River dams on macroinvertebrate communities. ABR performed field sampling, laboratory processing, and analysis of benthic macroinvertebrate communities above, within, and below impoundments along the Green River in Franklin County, Massachusetts, to characterize ecological conditions prior to the removal of two dams.

SOUTH FORK OF THE JOHN DAY RIVER WATERSHED RESTORATION MONITORING

Client: Grant Soil and Water Conservation District, OR

ABR designed and performed physical, biological, and chemical monitoring of the South Fork of the John Day River and several tributaries to evaluate the effectiveness of restoration projects and best management practices intended to improve watershed conditions and function. Physical monitoring included measuring instream, riparian, and upland habitat conditions, while biological monitoring focused on the benthic macroinvertebrate community.

Ecological Research

ABR is recognized for producing peer-reviewed-quality applied research in the fields of fisheries biology and aquatic ecology. Our scientists are experienced with the design, execution, and analysis of ecological field experiments. ABR's research in this field has focused on the effects of human-induced and natural perturbations on aquatic systems, as well as on relationships between land-use activities and instream ecological conditions.

DEERFIELD RIVER HYDROPEAKING IMPACTS STUDY

Client: Deerfield River Watershed Association, MA

ABR developed and conducted a study that examined the impacts of hydropeaking activities on the macroinvertebrate communities of the Deerfield River for the Deerfield River Watershed Association. The study was funded, in part, by the MA Executive Office of Environmental Affairs.

FENTON RIVER MACROINVERTEBRATE RE-COLONIZATION STUDY

Client: University of Connecticut, CT

ABR performed a four-year study of re-colonization by macroinvertebrates of the Fenton River following drying of the river during the summer 2005 drought. For this study, ABR processed over 300 benthic samples using modified EPA-RBP protocols (500-organism counts). All aquatic insects were identified to the lowest practical level (generally genus/species), including Chironomidae.

STUDIES OF HEADWATER-STREAM AMPHIBIANS AND MACROINVERTEBRATES IN MANAGED FORESTS OF WESTERN OREGON

Client: Willamette Industries (now Weyerhaeuser Company), OR

ABR performed field studies of headwater-stream amphibian and macroinvertebrate communities in managed forests of the Oregon Coast and Cascade mountain ranges. Distribution and abundance patterns of torrent salamanders and macroinvertebrate taxa were characterized and related to stream-reach and landscape-scale features. Results of these studies have been published in the *Canadian Journal of Forest Research*, *Journal of Wildlife Management*, and the *Wildlife Society Bulletin*.

Corporate Profile

ABR, Inc. —Environmental Research & Services (formerly Alaska Biological Research) is a professional consulting group founded in Fairbanks, Alaska, in 1976. For over 35 years ABR has promoted objective science and measured its success by a triple bottom line philosophy: economic viability and innovation, environmental stewardship, and social responsibility. Today ABR has a team of over 75 scientists and support staff in offices in Alaska, Oregon, Montana, and Massachusetts. Our mission—to provide timely, accurate, and cost-effective services to those who protect, manage, and develop natural resources—remains strong, and we continue to serve a diverse array of clients, including resource management agencies, utilities, and the oil, gas, mining, timber, and wind energy sectors of private industry. ABR's involvement in long-term monitoring projects, returning clients, and publication in peer-reviewed journals are testaments to our leadership in environmental consulting.

Within this award-winning and dynamic corporate environment, ABR offers a variety of environmental expertise in wetland sciences, wildlife studies, fisheries and aquatic sciences, threatened and endangered species studies, ecological land surveys, NEPA documentation and impact analyses, permit support, GIS database creation and spatial analyses, permafrost studies, and ecological restoration and land rehabilitation. Our staff includes wetland scientists, wildlife and fishery biologists, landscape ecologists, GIS specialists, statisticians and ecological modelers, and environmental scientists. Many of our senior employees have over 20 years in their field at ABR.

For more information on all of our services and offices, please visit our website at www.abrinc.com.

Lab Services Pricing

Macroinvertebrate sample processing costs range widely, depending on a number of factors. ABR calculates a per-sample cost estimate that is based on project and client-specific parameters and needs. We do our best to determine actual processing costs to ensure the most reasonable cost to our clients.

Having the following information will assist ABR with providing an accurate cost quote:

- Number of samples to be processed:
- Services to be included: sample sorting and subsampling, or only taxonomy (i.e., pre-sorted samples):
- Expected sample delivery/pick-up date:
- Needed turn-around time:
- Preference/need to follow particular state or Federal protocols (if yes, please list protocols):
- Desired sub-sample size (100, 200, 300, 500 organisms, etc.):
- Desired levels of taxonomic resolution:
- Desired data formats (Access, Excel, custom database, etc.) and any desired analyses/indexes:
- Need for a synoptic voucher collection:
- Desire to have sample materials/vessels returned (please specify what):
- Habitat(s) sampled (rivers, streams, wetlands lakes, etc.):
- Approximate sample volumes (i.e., single-vessel samples, or multiple-vessel samples):

We understand that much of this information may not be available at the time that quotes are being requested. Under such circumstances, please indicate what is known or needed, and ABR will provide a cost estimate with available information.

Please email or fax your information to Mike Cole at mcole@abrinc.com, fax: (413) 774-5514. Questions may also be directed to Mike Cole at (413) 774-5515.

Illustration by Michael Cole

Prospective clients may request a price quote from ABR at any time.