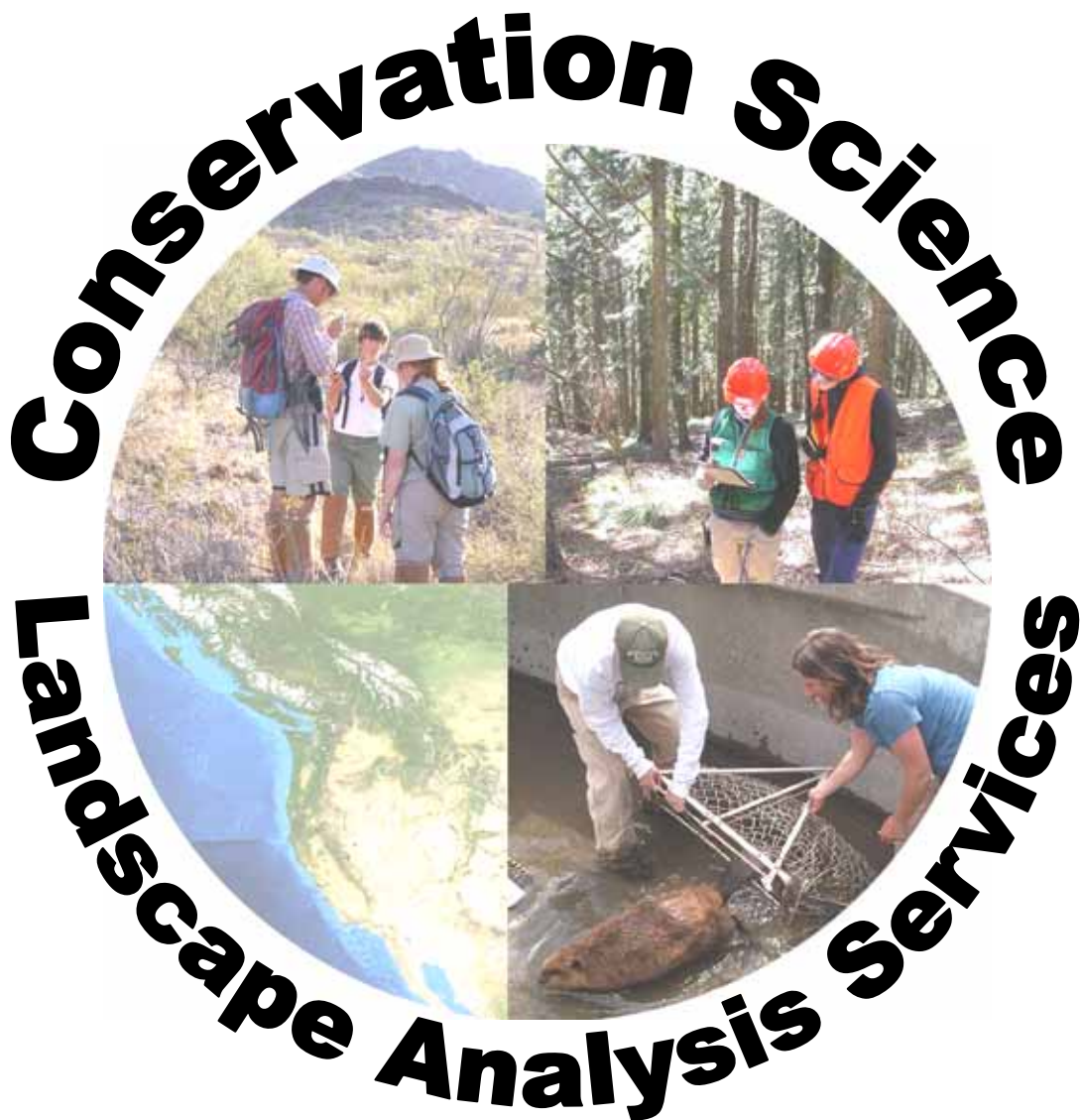


2011

Statement of Qualifications



Central Contractor Registration Profile

Duns Number: 049215085

TIN/EIN: 311602392

CORPORATE INFORMATION

Corporate Entity, Federal Tax Exempt
(State of Incorporation is WA)

Business Types/Grants

77 - Service Provider

95 - Research and Development

A8 - Nonprofit Organization

VW - Contracts and Grants

GOODS / SERVICES

North American Industry Classification System (NAICS)

115310 - Support Activities for Forestry

541370 - Surveying and Mapping (except Geophysical) Services

541620 - Environmental Consulting Services

541690 - Other Scientific and Technical Consulting Services

Standard Industrial Classification (SIC)

8999 - SERVICES, NEC

Product Service Codes (PSC)

AH91 - R&D-OTHER ENVIRONMENT-B RES

AJ21 - R&D-MATH & COMPUTER SCI-B RES

AJ31 - R&D-ENVIRONMENTAL SCI-B RES

AJ91 - R&D-OTHER SCIENCES-B RES

AP96 - R&D-OTHER NAT RESOURCE-MGMT SU

Statement of Qualifications Guide

- About Pacific Biodiversity Institute 4
- Services Offered 5
 - Ecology, Botany, Forestry, Wildlife Science 6
 - Conservation Planning and Resource Management 6
 - Spatial Analysis and Remote Sensing 6
 - Project Facilitation and Management 7
- Awards and Recognition..... 7
- Science and Technical Staff and Consultants 8
 - Overview 8
 - Staff and Consultant Profiles 8
- Abbreviated Project History..... 11
- Featured Project Summaries 12
- Organization’s Publications List 16



About Pacific Biodiversity Institute

Pacific Biodiversity Institute conducts conservation science research, consulting, and data management services for organizations concerned with natural resources, land management and conservation. We are a non-profit organization founded on the principle that good environmental stewardship and natural resource conservation requires integrating objective, high-quality science and information resources. To meet our mission goals we offer advanced technology and natural science services to projects in the United States and abroad. We are a non-advocacy group dedicated to using the best available science to enhance planning and management decisions.

Pacific Biodiversity Institute specializes in combining extensive expertise in conducting field surveys of diverse landscapes and ecosystems with advanced remote sensing and GIS technologies to create high quality information on important environmental resources. We also offer a full suite of services that can assist in the planning and management of natural resources at multiple levels. We have been successful at working with a diverse set of public and private sector entities focused on a range of conservation-related topics both in the United States and abroad.

Our project history includes diverse topic areas such as:

- **Inventorizing, mapping and monitoring rare plant populations and their critical habitats**
- **Conducting forest and rangeland health and wildfire risk assessments**
- **Conducting field inventories to provide new scientific data on vegetation communities and plant associations**
- **Evaluating the ecological integrity of ecosystems at multiple spatial scales**
- **Determining conservation priorities in landscapes critical to preserving biodiversity and rare/threatened biological elements**
- **Inventorizing and mapping exotic and noxious plant populations and designing studies to better understand their demographics and distribution**
- **Conducting impact assessments of proposed development activities on wildlife habitat, wildlife use, rare plant populations and other important ecosystem elements**
- **Developing management recommendations related to minimization and mitigation of impacts to critical ecosystem elements**
- **Designing and implementing GIS and remote sensing based landscape analysis protocols used to map important habitat and ecological features across diverse landscapes**
- **Designing, creating, and distributing educational resources and science based data regarding conservation science and natural resource issues**

Services Offered

GIS, Remote Sensing and Mapping

Advanced Spatial Analysis
Vegetation Community Modeling and Mapping
Habitat Suitability Modeling and Mapping
Future Scenarios Modeling and Mapping
Customized Environmental Mapping

Ecology, Forestry, Wildlife Science

Botanical Inventories
Rare Species Inventories
Vegetation Community Assessments
Rangeland Health Inventories and Assessments
Forest Health Inventories and Assessments
Ecological Health Assessments
Wildlife Biology and Wildlife Habitat Assessments

Conservation Planning and Resource Management

Wildfire Behavior Analysis
Forest Health Prescriptions
Grazing Effect Analysis
Conservation Decision Support Systems
Development Impact Analysis
Spatially Explicit Conservation Prioritization

Project Facilitation and Management

Coordination of Multiple Disciplinary Personnel
Scientific/Environmental Data Management
Technical Report Writing
Environmental Education Outreach,
Content Development and Public Relations

Ecology, Botany, Forestry, Wildlife Science

Our staff and consultants have a keen understanding of the natural sciences and natural resource management. We have natural science educations and extensive work histories in ecology, botany, forestry, and wildlife science. Collectively we have applied our expertise across many different landscapes, ecosystems and projects. We have extensive expertise in botanical inventories, rare plant surveys, and invasive species surveys. We have conducted inventories of wildlife habitats, vegetation and imperiled species across the Americas. We excel at field science operations ranging from simple resource inventories to complex habitat and ecological condition evaluations. A quick look at our staff profiles and the featured project summaries later in this Statement of Qualifications illustrates our strengths in these areas.

Conservation Planning and Resource Management

Many agencies and organizations have selected Pacific Biodiversity Institute to assist them in conservation planning and resource management efforts. Combining our expertise in spatial analysis, data management, and the natural sciences, we are able to provide a host of support activities to our partners that can help make planning and management decisions clear. Drawing on our technical expertise and project history experience, we can provide resource planning and management services suited to a wide variety of topics. These include: wildfire risk reduction, habitat restoration, forest health prescriptions, rangeland grazing prescriptions, land acquisition and conservation easement prioritization, and development impact analysis. Again, a review of our featured project summaries illustrates our strengths in these areas.

Spatial Analysis and Remote Sensing

Pacific Biodiversity Institute is a leader in applying spatial analysis and remote sensing to natural resources and conservation issues. We have received international recognition for our work in advanced GIS, including Environmental Systems Research Institute's 2001 Outstanding Achievement Award. Pacific Biodiversity Institute maintains an advanced spatial analysis and remote sensing lab at our office in Winthrop, Washington. In our lab we retain a vast spatial data library of both current and historical GIS data, satellite imagery, aerial photography, LIDAR imagery, and ground-truth data. Our GIS and remote sensing systems consist of:

GIS and Remote Sensing Lab - Hardware

Six GIS workstations
Eight mobile GIS/GPS units running ESRI's ArcPad software
14 handheld GPS units
Two flatbed scanners, one film scanner
Large format, 48" wide HP 800PS plotter
Many notebook and desktop computers
Several color and monochrome printers
Several digitizing tables/tablets
High-speed tape archives
Over 20 terabytes of online data storage, containing
a vast library of GIS data, and satellite and aerial images

GIS and Remote Sensing Lab - Software

ESRI

ArcGIS 10, ArcPad 10.0, ArcServer 10,

ERDAS

Imagine 8.5

LizardTech

MrSID Geospatial Encoder, GeoViewer,
DjVu Solo 3.1

MultiSpecW32

Google Earth Pro

***GPS Utility**

***GPSU FC**

In addition to advanced GIS services we provide high-quality map printing and cartographic services. We can provide large format customized maps on an assortment of paper types.

Project Facilitation and Management

Many of our project endeavors require us to provide additional professional services beyond the scope of a specific scientific expertise. To be successful in our project endeavors we have had to excel at coordinating multiple disciplinary personnel, scientific/environmental data management, and technical report writing. We have also undertaken projects for clients that require environmental education outreach and content development for public review.

Awards and Recognition

In 2001, Pacific Biodiversity Institute received the highest international award given in the GIS field: the “GIS Special Achievement Award from Environmental Systems Research Institute”. This award is given to only a few organizations and businesses around the world that represent the most advanced state of professional work in GIS and landscape analysis.

Pacific Biodiversity Institute was recognized by University of Idaho in 2001 for their “employer of the year” award.

Science and Technical Staff and Consultants

Overview

Pacific Biodiversity Institute's science and technical staff is currently made up of seven individuals. All science staff members have natural science and/or resource management educational backgrounds. Many staff members have over 10 years of work experience in their fields.

Staff / Consultant	Title
Peter Morrison	Executive Director / Senior Staff Scientist, Botanist
Susan Snetsinger	Bio-statistical Analyst / GIS Analyst
George Wooten	Botanist / Ecologist
Katy Beck	Lead Botanist (consultant)
Florence Caplow	Lead Botanist (consultant)
Robin O'Quinn, PhD	Botanist (consultant)
Hans Smith	Conservation Scientist/ Botanist
Kim Romain-Bondi	Senior Wildlife Biologist
Juliet Rhodes	Botanist and Biological Technician

Staff and Consultant Profiles

Peter Morrison is the Executive Director and Founder of Pacific Biodiversity Institute and has over 30 years of work experience in conservation science. Peter's primary areas of expertise are in vegetation ecology, conservation botany, spatial analysis, remote sensing and project management. Recently, he has lead projects focused on forest and rangeland health assessments, field surveys and habitat mapping of imperiled and non-native species, landscape-level watershed and ecosystem analysis, mapping and analysis of wildlands, and conservation priorities. He has worked throughout the USA, western Canada, and Latin America. Before founding Pacific Biodiversity Institute, he worked as an ecologist for Sierra Biodiversity Institute, the Wilderness Society, the US Forest Service, Oregon State University and the Sierra Club. He has served as a scientific consultant for the Nature Conservancy, the US Forest Service, and the State of Washington. He is known internationally for his studies of ancient forests in northern California, Oregon, Washington and British Columbia. Peter received the 1992 Computer World-Smithsonian Award for innovation in information technology applied to the environment. He is an internationally recognized leader in applying advanced landscape analysis techniques to solving natural resource issues and conservation challenges. As a result of his work, Pacific Biodiversity Institute received the 2001 Special Achievement Award in GIS from Environmental Systems Research Institute. He has been an expert witness on key natural resource and conservation lawsuits. Peter is an author or co-author of over 100 scientific reports, papers and book chapters.

Susan Snetsinger is a conservation biologist and expert in statistics and GIS with a Masters in Conservation Biology and Sustainable Development from the University of Wisconsin. She also has an advanced statistics certificate from Arizona State University. Susan has worked as a biologist, conservation biologist and GIS expert for 18 years and has experience in Washington, Arizona, Montana and Hawaii.

George Wooten is a botanist with extensive experience in rare plant surveys, invasive species surveys, wetland delineation and botanical inventories. George has worked for Pacific Biodiversity Institute for over 13 years on botanical surveys, ecological assessments and wildfire behavior analysis. He spent ten years as a Forest Service Botanist and Contracting Representative, during which time he helped map and plan the layout of the Okanogan National Forest's plan and final EIS for the management of habitat for late-successional and old-growth forest related species. He also works as an adjunct instructor for Wenatchee Valley College where he teaches Botany and Ethnobotany. George also has expertise in fire behavior analysis website development and a Bachelors of Science in Biochemistry and graduate studies in Molecular Biology.

Katy Beck is a botanist with experience in the design and implementation of rare plant surveys, vegetation analysis, botanical resource reports, planning and management documents and papers on the identification of rare plants of eastern Washington. During rare plant surveys for The Nature Conservancy on Hanford Nuclear Reservation, Katy and Florence Caplow identified and published three previously undescribed plant taxa. More recently Katy completed rare plant surveys for relicensing the Boundary Hydroelectric Project.

Florence Caplow is a well-known botanist with a long history of experience in Eastern Washington. She has a BS from Evergreen State College and completed graduate studies in fire ecology at Western Washington University. In 2011, Florence worked with Katy Beck conducting rare plant surveys along the Creston-Bell Transmission Line corridor for the BPA. She was the lead botanist for the Washington Natural Heritage Program from 2001 to 2005, where she conducted rare plant monitoring and surveys on Fairchild Air Force Base. She has also conducted rare plant studies for Spokane County PUD, Washington Water Power in Spokane County, and Pend Oreille County PUD, where she conducted rare plant surveys for relicensing the Box Canyon Hydroelectric Project. During rare plant surveys for The Nature Conservancy on Hanford Nuclear Reservation, Florence and Katy Beck identified and published three previously undescribed plant taxa.

Robin O'Quinn, PhD, has authored many studies of plant phylogenetics and evolution. Her journal publications include the prestigious Ecology. Robin received her PhD from WSU and she is currently an Assistant Professor of Biology at Eastern Washington University. Robin's field experience includes rare plant surveys in the Siskiyou, range studies, greenhouse studies, and curatorial and collecting experience from California to the Yukon.

Hans Smith is a project manager, conservation scientist, and GIS analyst. He has worked at Pacific Biodiversity Institute for six years, and has conducted many projects including forest health assessments, salmon habitat modeling, sensitive species habitat modeling, botanical

inventories, ecological condition assessments, noxious species inventories, GIS based landscape prioritizations, and conservation element mapping. Hans has a Bachelors of Science in Conservation of Wildland Resources from the University of Washington College of Forest Resources and has worked in Washington, Oregon, Arizona, and Costa Rica.

Kim Romain-Bondi is a wildlife biologist with a Bachelor of Science in Zoology from Arizona State University and a Masters of Science in Natural Resources from Washington State University. Kim has worked as a wildlife biologist, conservation ecologist and public lands manager over the last 14 years. Most of her work has been in the Pacific Northwest.

Juliet Rhodes is a botanist and biological technician with a Bachelors of Science in Zoology from the University of Washington. She has worked on conservation science projects across Washington State as well as in Peru and Argentina. She has worked for Pacific Biodiversity Institute since 2005.

Abbreviated Project History

The following table provides an overview of some of the projects and partners we have been involved with as an organization. We can provide representative reports, work samples, GIS datasets, and/or project summaries on any of these listed projects upon request.

- Western gray squirrel conservation project in the Methow Valley in partnership with the **Washington Department of Fish and Wildlife**.
- Wildlife habitat and developments impact assessment at Mount Spokane State Park - **Washington State Parks and Recreation Commission**
- Inter-agency beaver habitat analysis and site release prioritization in the Methow Sub-basin - **The Methow Conservancy, USFS, and WDFW**
- Inventory and mapping of noxious plant species in 3 municipal watersheds - **Seattle Public Utilities**
- Technology assistance to non-profit conservation organizations establishing parks and biodiversity reserves in Chile and Argentina - **Parques Para Chile**
- Vegetation community mapping and rare plant surveys in 4 Oregon State Parks - **Oregon Parks and Recreation Department**
- Forest health, wildlife habitat modeling, and wildfire risk assessment and planning in Mount Spokane State Park - **Washington State Parks and Recreation Commission**
- Vegetation community mapping and rare plant surveys in the Methow Wildlife Area - **Washington Department of Fish and Wildlife**
- Development of ecological and biological data for a comprehensive Conservation Needs Assessment of the Methow River Basin. - **The Methow Conservancy**
- Vegetation community mapping and rare plant surveys in 66 Washington State Parks - **Washington State Parks and Recreation Commission**
- Ecological characterization, mapping and assessment of native grass assemblages and xeroriparian areas in the Sonoran Desert - **The Nature Conservancy, US Bureau of Land Management, Department of Defense**
- GIS and remote sensing based ecological classification of the Upper Columbia Evolutionarily Significant Unit for spring chinook salmon and summer steelhead trout - **Bonneville Power Administration (BPA) and Upper Columbia Salmon Recovery Board and North Central Washington Resource Conservation District (NCW RC&D)**
- A series of studies of the major wildfires during 2000, 2001 and 2002 focusing on the factors with contributed to the fires including past landscape condition - **Grant Funded Projects**
- Assessment of the ecological condition of natural communities in the Sonoran Desert - **The Nature Conservancy, US Bureau of Land Management, Department of Defense, and the Tohono O'odham Nation**
- Development of a GIS based conservation decision support system for use in the Wenatchee River Sub-basin - **The Icicle Fund**
- Development of an improved vegetation map for the Wenatchee River Basin - **The Icicle Fund**
- Mapping of vegetation for a research project on bear habitat in the Washington Cascades - **United States Forest Service**
- Priority salmon habitat assessment of the Puget Sound Basin - **Trust for Public Land, Puget Sound Waterways**

Featured Project Summaries

➤ **Vegetation Community and Rare Plant Surveys of 60+ Washington State Parks (2004 – 2009)**

Clients: Washington State Parks and Recreation Commission
Points of Contact: Robert A. Fimbel, Ph.D., Resource Stewardship
Washington State Parks and Recreation Commission
7150 Cleanwater Lane, PO Box 42650, Olympia, WA 98504-2650
Phone: (360) 902-8592, Email: Robert.fimbel@parks.gov

Services Required: Program Manager, Botanist, Forest Ecologist, Rangeland Management Ecologist and Botanist, Writer/Editor, Biological Technician, Geographic Information System (GIS) Analyst and Technician

Project Team: Peter Morrison, George Wooten, Hans Smith, Juliet Rhodes

Project Summary: We conducted botanical surveys and ecological assessments in over 60 Washington State Parks using survey protocols developed by the Resource Stewardship Division of the Washington State Parks and Recreation Commission (WSPRC) for vegetation community and rare plant inventories. Since 2004 we have surveyed and mapped vegetation characteristics on tens of thousands of acres of Washington State Park properties across a broad range of landscapes and ecosystems. For each park surveyed we produced technical reports and GIS data products, providing WSPRC with an extraordinary library of GIS and field-derived information regarding their natural resource elements across the State of Washington.

➤ **Forest Health, Fire Risk, and Wildlife Habitat Assessment of Mount Spokane State Park (2007 – 2009)**

Clients: Washington State Parks and Recreation Commission
Points of Contact: Robert A. Fimbel, Ph.D., Resource Stewardship
Washington State Parks and Recreation Commission
7150 Cleanwater Lane, PO Box 42650, Olympia, WA 98504-2650
Phone: (360) 902-8592, Email: Robert.fimbel@parks.gov

Services Required: Program Manager, Wildlife Biologist, Botanist, Forest Ecologist, Writer/Editor, General Forest Laborer, Biological Technician, Geographic Information System (GIS) Analyst and Technician

Project Team: Peter Morrison, Hans Smith, Susan Snetsinger, George Wooten, Juliet Rhodes

Project Summary: To assist planning activities taking place in the 16,000 acre Mount Spokane State Park, the Washington State Parks and Recreation Commission hired us to consult on forest health, wildlife habitat needs, wildfire risk, and recreational use priorities over a large portion of the park. Our project required intensive plot based forest stand sampling of the project area, botanical inventories to map and define vegetation communities, developing fire risk models based on field derived data, developing wildlife habitat suitability models based on field derived

data, statistical analyses of our field data, GIS and remote sensing analysis of the project area landscape, development of silvicultural prescriptions for forest health improvements and wildfire risk reduction, and technical report writing and the production of GIS dataset deliverables.

➤ **Natural Community Mapping, Description and Ecological Assessment of the Sonoran Desert National Monument , Arizona (2002 – 2006)**

Clients: The Nature Conservancy Arizona, US BLM,
Point of Contact: Dale Turner, Conservation Planner
The Nature Conservancy
1510 East Ft. Lowell Rd., Tucson, AZ 85719
Phone: 520-622-3861, Email: dturner@tnc.org

Services Required: Program Manager, Botanist, Rangeland Management Ecologist and Botanist, Writer/Editor, Biological Technician, Geographic Information System (GIS) Analyst and Technician

Project Team: Peter Morrison, Hans Smith, Susan Snetsinger

Project Summary: We inventoried and mapped the natural communities of the Sonoran Desert National Monument and some surrounding properties on the Barry Goldwater Air-Force Base, conducted field-based vegetation assessments, described the composition, structure and ecological condition of the natural communities, and provided GIS datasets and reports detailing our findings. This project required advanced GIS analysis and processing of remote sensing data, botanical and ecological surveys, natural resource inventory, creation of rigorous and repeatable survey protocols, establishment of long-term research plots, statistical analysis of field-derived ecological data, technical report writing, and extensive work in a rugged and hazardous backcountry environment.

➤ **Vegetation Community and Rare Plant Surveys of 4 Oregon State Parks (2007 – 2008)**

Clients: Oregon Parks and Recreation Department
Point of Contact: Noel Bacheller, Botanist / Natural Resource Coordinator
Oregon Parks and Recreation Department
725 Summer Street NE, Salem, OR 97301
Phone: (503) 986-0732, Email: Noel.Bacheller@state.or.us

Services Required: Program Manager, Botanist, Forest Ecologist, Rangeland Management Ecologist and Botanist, Writer/Editor, Biological Technician, Geographic Information System (GIS) Analyst and Technician

Project Team: Peter Morrison, Hans Smith, George Wooten

Project Summary: We conducted botanical surveys and ecological assessments of four Oregon State Parks using survey protocols developed by the Oregon Parks and Recreation Department (OPRD) to ensure data quality and consistency. We produced technical reports and GIS data layers for each park depicting the locations, status, and conditions of vegetation communities and

rare plant populations with reference to their sensitivity based on up-to-date scientific data and literature. We also provided in-depth information on noxious species infestations and the occurrence of wetland plant communities.

➤ **Noxious Weed Surveys of Roads and Special Habitats in the Cedar River, Tolt River, and Lake Youngs Reservoir Watersheds (2007 – 2008)**

Clients: Seattle Public Utilities
Point of Contact: Sally Nickelson, Wildlife Biologist/Watershed Ecologist
Cedar River Watershed
19901 Cedar Falls Rd. S.E., North Bend, WA 98045
Phone: 206-233-1564, Email: Sally.Nickelson@Seattle.Gov

Services Required: Program Manager, Botanist, Forest Ecologist, Writer/Editor, Biological Technician, Geographic Information System (GIS) Analyst and Technician

Project Team: Peter Morrison, Hans Smith, George Wooten, Juliet Rhodes

Project Summary: We were hired by Seattle Public Utilities (SPU) to survey for and map noxious species infestations in 3 SPU properties over a two year period. Our surveys were conducted along the road systems and within special habitats such as alpine meadows and wetlands within the 3 watersheds. We produced a summary report and extensive GIS datasets detailing our survey paths and noxious weed findings.

➤ **GIS and Remote Sensing Based Landscape Classification System of Ecological Indicators for Salmon Habitat in the Upper Columbia Basin (2004 – 2007)**

Clients: Northwest Fisheries Science Center, Bonneville Power Administration
Point of Contact: Chris Jordan, Ph.D., Program Manager
Northwest Fisheries Science Center
2725 Montlake Blvd. East, Seattle, WA 98122-2097
Phone: (541) 754 4629, Email: chris.jordan@research.nwfsc.noaa.gov

Services Required: Program Manager, Writer/Editor, Geographic Information System (GIS) Analyst and Technician

Project Team: Peter Morrison, Hans Smith

Project Summary: We undertook the creation of a GIS based landscape classification system to support salmon recovery planning and monitoring efforts by the Upper Columbia ESU Regional Technical Team (UCESU-RTT). We provided to the UCESU-RTT and NOAA Fisheries an extensive list of GIS datasets describing the hydrological, geomorphological, geological, and ecological characteristics of individual stream reaches, sub-watersheds and sub-basins within the Upper Columbia Basin. We provided metadata and a comprehensive technical report detailing our methods and results in creating the foundational data for a multi-scale, ecologically-based landscape classification system for the Upper Columbia Basin. Knowledge of natural sciences, natural resources, advanced spatial analysis and remote sensing coupled with detailed knowledge

of existing spatial datasets suitable for depicting hydrological and ecological indicators across such a broad geographic region was required to complete this job.

➤ **Mapping Sensitive Areas in the Methow River Basin through Remote Sensing and GIS Analysis (2005 – 2006)**

Clients: Methow Conservancy
Points of Contact: Jason Paulsen, Executive Director
The Methow Conservancy
315 Riverside * PO Box 71, Winthrop, WA 98862
Phone: 509-996-2870, Email: jason@methowconservancy.org

Project Team: Peter Morrison, Hans Smith

Resource Areas: Program Manager, Writer/Editor, Ecologist, Remote Sensing Analyst, Geographic Information System (GIS) Analyst and Technician

Project Summary: We were hired by the Methow Conservancy to create a comprehensive map of ecologically sensitive areas to assist their goal of preserving ecologically sensitive habitats, productive agricultural lands, and the rural character of the Methow Valley. We developed a series of GIS datasets about sensitive areas to inform their strategic planning activities. This project required ecological expertise, our knowledge of the best existing data sources for sensitive habitat types, and our ability to process high-resolution aerial imagery, satellite imagery and topography data.

➤ **Methow Sub-Basin Beaver Re-introduction Project (2008 – 2009)**

Clients: USFS, Methow Conservancy
Points of Contact: 1) Steve Bondi, Stewardship Director
The Methow Conservancy
315 Riverside * PO Box 71, Winthrop, WA 98862
Phone: 509-996-2870, Email: info@methowconservancy.org

2) Kent Woodruff, Wildlife Biologist
Methow Valley Ranger District, US Forest Service
24 West Chewuch, Winthrop, WA 98862
Phone: 509-996-4000, Email: steve@methowconservancy.org

Resource Areas: Program Manager, Wildlife Biologist, Writer/Editor, Biological Technician, Geographic Information System (GIS) Technician

Project Team: Hans Smith, Kim Bondi, Juliet Rhodes

Project Summary: Beavers captured on private lands are being strategically re-located onto USFS property throughout the Methow Sub-Basin to regain the ecological benefits of beaver activities in tributary stream systems. Successfully establishing sustainable beaver colonies on relocation sites requires preliminary landscape analysis of target release areas to identify the most strategic and suitable release locations. We created a GIS/remote sensing based landscape analysis model for predicting the best release sites throughout the entire Methow Sub-Basin.

This model was developed with consistency to available literature and expert opinion on site release suitability metrics. Additionally, PBI performed field assessments of model output release sites to gather baseline data with which to monitor the ecological impacts of beaver colony establishment. In 2008 our efforts contributed to the release of 4 beaver colonies. We contributed technical writing and statistic tables to project reports authored by USFS biologist Kent Woodruff. It is estimated that in 2009 we will release an additional 10 colonies onto USFS land in the Methow Sub-Basin.

Organization's Publications List

- Link S.O., Morrison, P.H. and H.M. Smith IV, 2009. Rare Plant and Vegetation Survey of Sacajawea State Park. Pacific Biodiversity Institute, Winthrop, Washington. 57 p.
- Morrison, P.H. and H.M. Smith IV. 2009. Rare Plant and Vegetation Survey of Doug's Beach State Park. Pacific Biodiversity Institute, Winthrop, Washington. 84 p.
- Morrison, P.H. and H.M. Smith IV. 2009. Rare Plant and Vegetation Survey of Klickitat Rail Trail State Park. Pacific Biodiversity Institute, Winthrop, Washington. 76 p.
- Morrison, P.H. and H.M. Smith IV. 2009. Rare Plant and Vegetation Survey of Maryhill State Park. Pacific Biodiversity Institute, Winthrop, Washington. 41 p.
- Morrison, P.H., G. Wooten, J. Rhodes, R. O'Quinn and H.M. Smith IV, 2009. Rare Plant and Vegetation Survey of Riverside State Park. Pacific Biodiversity Institute, Winthrop, Washington. 433 p.
- Smith, H.M. IV and S.O. Link, 2009. Rare Plant and Vegetation Survey of Potholes State Park and the Potholes Agreement. Pacific Biodiversity Institute, Winthrop, Washington. 83 p.
- Smith, H.M. IV, G. Wooten, and P.H. Morrison, P.H. 2009. Rare Plant and Vegetation Survey of Palouse Falls State Park. Pacific Biodiversity Institute, Winthrop, Washington. 88 p.
- Smith, H.M. IV, G. Wooten, and P.H. Morrison, P.H. 2009. Rare Plant and Vegetation Survey of the Columbia Plateau Trail. Pacific Biodiversity Institute, Winthrop, Washington. 171 p.
- Wooten, G. and P.H. Morrison, 2009. Rare Plant and Vegetation Survey of the Bridgeport State Park. Pacific Biodiversity Institute, Winthrop, Washington. 80 p.
- Wooten, G. and P.H. Morrison, 2009. Rare Plant and Vegetation Survey of the Conconully State Park. Pacific Biodiversity Institute, Winthrop, Washington. 54 p.
- Wooten, G. and P.H. Morrison, 2009. Rare Plant and Vegetation Survey of the Daroga State Park. Pacific Biodiversity Institute, Winthrop, Washington. 34 p.
- Wooten, G. and P.H. Morrison, 2009. Rare Plant and Vegetation Survey of the Lake Chelan State Park. Pacific Biodiversity Institute, Winthrop, Washington. 44 p.

- Wooten, G. and P.H. Morrison, 2009. Rare Plant and Vegetation Survey of the Wenatchee Confluence State Park. Pacific Biodiversity Institute, Winthrop, Washington. 58 p.
- Wooten, G., P.H. Morrison and J. Rhodes, 2009. Rare Plant and Vegetation Survey of the Alta Lake State Park. Pacific Biodiversity Institute, Winthrop, Washington. 80 p.
- Wooten, G., P.H. Morrison, and H.M. Smith IV, 2009. Rare Plant and Vegetation Survey of Fort Simcoe State Park. Pacific Biodiversity Institute, Winthrop, Washington. 91 p.
- Wooten, G., R.O'Quinn and P.H. Morrison, 2009. Rare Plant and Vegetation Survey of the Lake Newport State Park. Pacific Biodiversity Institute, Winthrop, Washington. 48 p.
- Morrison, P.H. 2008. "Anexo 6. Modelo de zonificación de la Reserva de Biosfera Araucarias" in Expediente de Propuesta Para la Ampliación y Zonificación de la Reserva de Biosfera Araucarias, Region de la Araucania, Chile. Man and the Biosphere Program, UNESCO, May 2008.
- Morrison, P.H. 2008. Rare Plant and Vegetation Survey of the Proposed Campground Expansion Areas, Steamboat Rock State Park. Pacific Biodiversity Institute, Winthrop, Washington. 48 p.
- Morrison, P.H., S.D. Snetsinger, H.M. Smith IV, and G.F. Wooten. 2008. Recommendations on Sampling Design and Scope of Work for Forest Health Assessments Conducted by Washington State Parks. Pacific Biodiversity Institute, Winthrop, Washington. 63 p.
- Smith, H.M. IV and P.H. Morrison. 2008. Vegetation Inventory and Mapping of Bonnie Lure State Park. Pacific Biodiversity Institute, Winthrop, Washington. 49 p.
- Smith, H.M. IV, Morrison, P.H. 2008. Vegetation Inventory and Mapping of Milo McIver State Park. Pacific Biodiversity Institute, Winthrop, Washington. 68 p.
- Smith, H.M. IV, Morrison, P.H. 2008. Vegetation Inventory and Mapping of Molalla River State Park. Pacific Biodiversity Institute, Winthrop, Washington. 57 p.
- Morrison, P.H. 2007. Roads and wildfires. Pacific Biodiversity Institute, Winthrop, Washington. 40 p.
- Morrison, P.H. and H.M. Smith IV. 2007. Ecological Classifications of the of the Upper Columbia Evolutionarily Significant Unit for Spring Chinook Salmon and Summer Steelhead Trout, Pacific Biodiversity Institute, Winthrop, Washington. 133 p.
- Morrison, P.H. and H.M. Smith IV. 2007. Rare Plant and Vegetation Survey of Bottle Beach, Grayland Beach, Twin Harbors, Westhaven and Westport Light State Parks. Pacific Biodiversity Institute, Winthrop, Washington. 149 p.
- Morrison, P.H. and H.M. Smith IV. 2007. Rare Plant and Vegetation Survey of Damon Point, Griffith-Priday, Ocean City, and Pacific Beach State Parks. Pacific Biodiversity Institute, Winthrop, Washington. 118 p.

- Morrison, P.H., and Smith, H.M. IV. 2007. Rare Plant and Vegetation Survey of Lake Easton State Park. Pacific Biodiversity Institute, Winthrop, Washington. 63 p.
- Morrison, P.H., H.M. Smith IV and D Visalli. 2007. Rare Plant and Vegetation Survey of Belfair and Twanoh State Parks. Pacific Biodiversity Institute, Winthrop, Washington. 95 p.
- Morrison, P.H., H.M. Smith IV and D Visalli. 2007. Rare Plant and Vegetation Survey of Eagle Island, Harstine Island, Hope Island, Jarrell Cove, McMicken Island, and Squaxin State Parks. Pacific Biodiversity Institute, Winthrop, Washington. 142 p.
- Morrison, P.H., H.M. Smith IV, G.F. Wooten and S.D. Snetsinger. 2007. Forest Health Assessment and Plan for the 2006-2007 project area of Mount Spokane State Park. Pacific Biodiversity Institute, Winthrop, Washington. 370 p. + one 406 pp. Appendix (PDF)
- Smith, H.M. IV, Morrison, P.H. 2007. Vegetation Inventory and Mapping of Tryon Creek State Natural Area. Pacific Biodiversity Institute, Winthrop, Washington. 37 p.
- Smith, H.M. IV, P.H. Morrison and D. Visalli. 2007. Rare Plant and Vegetation Survey of the Green River Gorge State Park Complex and Nolte State Park. Pacific Biodiversity Institute, Winthrop, Washington. 238 p.
- Morrison, P.H. 2006. Convergence of Stressors on Protected Desert Ecosystems in the Border Region of Southwestern Arizona. Presentation at Symposium on: Transborder Conservation between the U.S. and México: Binational Solutions to our Shared Problems. Society of Conservation Biology annual conference. San Jose, California. June 24-28, 2006.
- Morrison, P.H. 2006. Fire-induced mortality and prior landscape condition in western forests. Invited presentation for special session: Do past management activities compound the effects of fire exclusion in western forests? Third International Fire Ecology and Management Congress. November 13-17, 2006. San Diego, CA
- Morrison, P.H. 2006. Invasive Species Account: Dalmatian Toadflax in Boersma, P. D., S. E. Reichard, and A. N. Van Buren. Invasive Species in the Pacific Northwest. Seattle and London: University of Washington Press, 2006.
- Morrison, P.H. and H.M. Smith IV. 2006. Distribution and abundance of native grasses in the mountains of the Sonoran Desert National Monument and adjoining portions of the Barry M. Goldwater Range, Pacific Biodiversity Institute, Winthrop, Washington. 52 p.
- Smith, H.M. IV and P.H. Morrison. 2006. An Analysis of Roads and Roadless Areas on the Hiawatha National Forest, Michigan. Pacific Biodiversity Institute, Winthrop, Washington. 33 pp.
- Smith, H.M. IV and P.H. Morrison. 2006. An Analysis of Roads and Roadless Areas on the Ottawa National Forest, Michigan. Pacific Biodiversity Institute, Winthrop, Washington. 35 pp.
- Smith, H.M. IV and P.H. Morrison. 2006. Native Grass Characteristics within Xeroriparian Communities of the Sonoran Desert National Monument, Pacific Biodiversity Institute, Winthrop, Washington. 79 p.

- Smith, H.M. IV and P.H. Morrison. 2006. Rare Plant and Vegetation Survey of Lewis and Clark and Ike Kinswa State Park. Pacific Biodiversity Institute, Winthrop, Washington. 125 p.
- Smith, H.M. IV and P.H. Morrison. 2006. Rare Plant and Vegetation Survey of Sequest State Park. Pacific Biodiversity Institute, Winthrop, Washington. 88 p.
- Smith, H.M. IV, D. Visalli, and P.H. Morrison. 2006. Rare Plant and Vegetation Survey of Clallam Bay Spit County Park. Pacific Biodiversity Institute, Winthrop, Washington. 43 p.
- Visalli, J.D., H. M. Smith IV, and P.H. Morrison. 2006. Rare Plant and Vegetation Survey of Fort Worden, Lake Anderson and Old Fort Townsend State Parks. Pacific Biodiversity Institute, Winthrop, Washington. 142 p.
- Visalli, J.D., H.M. Smith IV, and P.H. Morrison. 2006. Rare Plant and Vegetation Survey of Fort Flagler, Kinney Point, and Mystery Bay State Park. Pacific Biodiversity Institute, Winthrop, Washington. 113 p.
- Visalli, J.D., H.M. Smith IV, and P.H. Morrison. 2006. Rare Plant and Vegetation Surveys of the Hoko-Cowan State Park Properties. Pacific Biodiversity Institute, Winthrop, Washington. 115 p.
- Visalli, J.D., H.M. Smith, IV, and P.H. Morrison. 2006. Rare Plant and Vegetation Survey of Pearrygin Lake State Park. Pacific Biodiversity Institute, Winthrop, Washington. 132 p.
- Visalli, J.D., Smith, H.M. IV, Morrison, P.H. 2006. Rare Plant and Vegetation Survey of a Section of the Methow Wildlife Area. Pacific Biodiversity Institute, Winthrop, Washington. 208 p.
- Morrison, P.H. 2005. A Strategic Wildfire Protection Plan for the South Fork Mill Creek Watershed, Mt. Hood National Forest, Oregon. Pacific Biodiversity Institute, Winthrop, WA. 42 p.
- Morrison, P.H. and H.M. Smith IV. 2005. Fire Planning Issues in the Cooper Area Mt. Hood National Forest and Adjacent Lands. Pacific Biodiversity Institute, Winthrop, WA. 38 p.
- Morrison, P.H. and H.M. Smith IV. 2005. Fire Regime Condition Classes and Forest Stewardship Planning on the Mt. Hood National Forest. Pacific Biodiversity Institute, Winthrop, WA. 33 p.
- Morrison, P.H. and H.M. Smith IV. 2005. Preliminary review of forest insect mortality and related wildfire risk issues on the eastside of the Mt. Hood National Forest. Pacific Biodiversity Institute, Winthrop, WA. 46 p.
- Morrison, P.H., Smith, H.M. IV, and D. Visalli. 2005. Rare Plant Survey of Lewis and Clark State Park. Pacific Biodiversity Institute, Winthrop, Washington. 23 p.
- Smith, H.M. IV, P.H. Morrison and D. Visalli. 2005. Rare Plant and Vegetation Survey of Blake Island State Park. Pacific Biodiversity Institute, Winthrop, Washington. 64 p.
- Smith, H.M. IV, P.H. Morrison and D. Visalli. 2005. Rare Plant and Vegetation Survey of Dosewallips State Park. Pacific Biodiversity Institute, Winthrop, Washington. 88 p.

- Smith, H.M. IV, P.H. Morrison and D. Visalli. 2005. Rare Plant and Vegetation Survey of Federation Forest State Park. Pacific Biodiversity Institute, Winthrop, Washington. 91 p.
- Smith, H.M. IV, P.H. Morrison and D. Visalli. 2005. Rare Plant and Vegetation Survey of Larrabee State Park. Pacific Biodiversity Institute, Winthrop, Washington. 197p.
- Smith, H.M. IV, P.H. Morrison and D. Visalli. 2005. Rare Plant Survey of Washington State Park's Parcels on the Long Beach Peninsula: Leadbetter Point, Skating Lake and Loomis Lake. Pacific Biodiversity Institute, Winthrop, Washington. 37 p.
- Smith, H.M. IV, P.H. Morrison and D. Visalli. 2004. Rare Plant and Vegetation Survey of Miller Peninsula State Park's Parcel. Pacific Biodiversity Institute, Winthrop, Washington. 19 p
- Snetsinger, S.D and P.H. Morrison. 2004. An Analysis of Roads and Roadless Areas on the Superior National Forest, Minnesota. Pacific Biodiversity Institute, Winthrop, Washington. 43 pp.
- Snetsinger, S.D and P.H. Morrison. 2004. Native Grass Abundance in the Sonoran Desert National Monument and Adjacent Areas, Pacific Biodiversity Institute, Winthrop, Washington. 63 p.
- Harma K.J. and P.H. Morrison. 2003. Analysis of Vegetation Mortality and Prior Landscape Condition, 2002 Biscuit Fire Complex. Pacific Biodiversity Institute, Winthrop, WA. 23 p.
- Harma K.J. and P.H. Morrison. 2003. Assessment of the 2002 Biscuit Fire Complex in Southwest Oregon and the Landscape Condition of the Fire Area. Pacific Biodiversity Institute, Winthrop, WA. 25 p.
- Morrison, P.H., and S.D. Snetsinger. 2003. The Natural Communities of the Sonoran Desert National Monument and Sand Tank Mountains. Pacific Biodiversity Institute, Winthrop, Washington. 67 p.
- Morrison, P.H., H.M. Smith IV, S.D. Snetsinger. 2003. The Natural Communities and Ecological Condition of the Sonoran Desert National Monument and Adjacent Areas. Pacific Biodiversity Institute, Winthrop, Washington. 113 + xvi p. + Vol. 2 (appendices) 395 p.
- Pacific Biodiversity Institute. 2003. Demographics of Selected Exotic Plants in the Chewuch Watershed, Okanogan County, Washington. Pacific Biodiversity Institute, Winthrop, WA. 123 p.
- Snetsinger, S.D. 2003. Database Development and Mapping of Crayfish Distribution in the White Mountain, Arizona. Pacific Biodiversity Institute, Tempe, Arizona. 21 p.
- Stokes, D.L., and P.H. Morrison. 2003. GIS-based conservation planning: a powerful tool... to be used with care. Conservation in Practice 4: 38-41.
- Morrison, P.H., and K.J. Harma. 2002. Analysis of Land Ownership and Prior Land Management Activities within the Rodeo & Chediski Fires, Arizona, Pacific Biodiversity Institute, Winthrop, WA. 13 p.
- Pacific Biodiversity Institute. 2002. Natural Resource Information and Conservation Decision Support for the Wenatchee River Basin: A Report to the Icicle Fund. Pacific Biodiversity Institute, Winthrop, WA. 123 p.

- Pacific Biodiversity Institute. 2001. A Natural Resource Profile and Initial Conservation Priorities for the Wenatchee River Basin: A Report to the Icicle Fund. Pacific Biodiversity Institute, Winthrop, WA. 140 p.
- Karl, J.W., P.H. Morrison, L.H. Swope, K. Ackley. 2001. Wildlands of the United States: A Report to the Pew Wilderness Center. Pacific Biodiversity Institute, Winthrop, WA. 52p.
- Morrison, P.H., K.J. Harma, J.W. Karl. 2001. Initial Assessment of Year 2001 Wildfire Situation in the Western U.S., Pacific Biodiversity Institute, Winthrop, WA. 73 p.
- Frissell, C.A., P.H. Morrison, S.B. Adams, L.H. Swope, and N.P. Hitt. 2000. Conservation Priorities: An Assessment of Freshwater Habitat for Puget Sound Salmon. Trust for Public Land, Seattle, WA. 149 p. (without appendices).
- Morrison, P.H., J.W. Karl, K.J. Harma. 2000. Assessment of summer 2000 wildfires: landscape history, current condition, and ownership, Pacific Biodiversity Institute, Winthrop, Washington.
- Morrison, P.H., S. Snetsinger, and G. Wooten. 1998. Unprotected Wild Lands in Washington State: an analysis of their current status and future under current management direction. Pacific Biodiversity Institute. 44 p.