

# Statement of Qualifications



[www.sagebrushadvisors.com](http://www.sagebrushadvisors.com)





## Profile

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As the America decides how to balance the need for clean water and wild places with abundant natural resources and a growing population, Sagebrush can help you navigate the evolving regulatory landscape. Rooted in the West, we specialize in the biology and environmental policies unique to the mountains, plains, deserts, and coasts.

Sagebrush is a Small Business Administration-certified Woman-Owned Small Business. Based in Golden, Colorado with a field office in Vernal, Utah. Sagebrush provides regulatory compliance, biological surveys, and environmental planning services to businesses, NGO's, and governmental agencies primarily in the West, though we have worked as far east as North Carolina, Indiana, and Wisconsin.

**Front: Packing up camp on a frosty Moab morning while in pursuit of elusive owls.**

**Back: Evaluating soil core during wetland delineation. Point Reyes National Seashore, California.**

## Location

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## NAICS Codes

- 541620
- 813312
- 115
- 115310
- 541
- 541690
- 541990

# Disciplines

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## Wetland Science & Permitting

Altogether, we've written 27 *Clean Water Act*, Section 401/404 permits, including two Individual Permits. Our wetland scientists have delineated jurisdictional waters for federal transportation rights-of way, National Park projects, BLM energy leases, and Department of Defense installations. More, we have written wetland reports for Regional Water Quality Control Boards, the California Coastal Commission, and Section 10 permits for coastal projects.

- *Clean Water Act* Section 401 certifications
- *Clean Water Act* Section 404 permits
- *Rivers and Harbors Act* Section 10 permits
- Regional Water Quality Control Board permitting
- National Park Service Wetland Statement of Findings
- California Coastal Commission permits

## Botany

Among our crew, we have Colorado and California Master Botanists. Whether its vegetation mapping, targeted surveys for federally protected Ute ladies' tresses, or clearance surveys for Uinta Basin hookless cactus, Sagebrush specializes in Western botany. Since September 2015, we have identified 394-federally endangered plants and many more Regional Forester's, BLM-sensitive, and state-protected species. We have also surveyed the temperate rainforest of Washington of rare non-vascular plants.

- Targeted threatened, endangered, and sensitive plant surveys
- Vegetation mapping
- Range management
- Forestry support

- Noxious weed mapping

## NEPA

We've worked on the largest Environmental Impact Statements for interstate highways and the smallest Categorical Exclusions for BLM energy leases. Making progress in the NEPA process requires engaging the lead agency, stakeholders, and public. We know how to build the relationships and collect the data necessary to take your NEPA project to the Record of Decision.

- Categorical Exclusions (CatEx's)
- Environmental Assessments (EA's)
- Environmental Impact Statements (EIS's)

## Geographic Information Systems (GIS)

Advances in technology allow small companies like ours to collect and present geospatial data just as efficiently and professionally at multi-national environmental consultants. We're outfitted with sub-foot GPS equipment and the latest in GIS software--in securing your permits it's often a game of inches.

## Threatened, Endangered & Sensitive (TES) Species

Sagebrush's staff has written 42 Biological Assessments/Biological Evaluations. Our biologists provide habitat assessments and conduct determinate surveys for special-status plants and animals protected by state and federal statutes. We work closely agencies, tribes, and land managers to ensure approval of survey methodologies and reports.

Our biologists are familiar with species' habitat components, life histories, and agency-approved survey methodologies. ECORP

staff assess project-related impacts and consult with regulatory agencies to avoid, minimize, and/or mitigate habitat impact.

- Presence/Absence surveys
- Biological Assessments/Evaluations (BA/BE)
- *Endangered Species Act* Sections 7 and 10 consultation
- Habitat Conservation Plans (HCP's)
- Formal and informal consultation with U.S. Fish and Wildlife Service, Bureau of Land Management, U.S. Forest Service, National Park Service, National Marine Fisheries Service, state game and fish agencies.

### Avian Biology

Our lead Avian Biologist started her career with the Plumas National Forest and Yosemite National Park where she led northern goshawk, spotted owl, and southwest willow flycatcher survey crews. She went on to perform the same work in the private sector.

- Mexican spotted-owl *Recovery Permit*
- Northern spotted-owl *Recovery Permit*
- Southwestern willow flycatcher *Recovery Permit*
- Western yellow-billed cuckoo *Recovery Permit*
- Northern goshawk survey experience in Colorado, Utah, New Mexico, and California.

## Sectors

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### State, Federal, Tribal, Municipal

Over the years, our people have built relationships with agencies and land managers across the West. Our staff includes former federal biologists, and our resume includes federal contracts with the Forest Service, Department of Defense, Federal Highways

Administration, Bureau of Land Management, and National Park Service.

### Energy/Mining

Few topics are as contentious as the future of American energy. While we debate the best way to power our homes and vehicles, Sagebrush can help wind, oil & gas, solar, and hydroelectric producers navigate the changing regulatory environment. We work with two of the largest oil and gas producers in America, and a wind farm with a dozen turbines. To us, they're equally valuable.

- ISNetworld registered
- SafeLand, OSHA, MSHA-certified staff
- Trained and equipped for H<sub>2</sub>S and methane

### Transmission/Transportation

Linear rights-of-way present unique biological permitting challenges--varied land ownership impacts to varying environments, and multi-agency involvement. We can help you with your transmission line or transportation project by building relationships with all involved and share our knowledge of the West's diverse environments. We have done the fieldwork and written an EA for a transmission line starting in the desert and ending at 11,000 feet, along the way crossing BLM, USFS, state, and private lands. Our transmission resume includes an 88-mile Xcel Energy line and 238-mile NV Energy line. Our transportation resume includes the Federal Highway Administration, and the Colorado and Wyoming Departments of Transportation.

- USFWS National Conservation Training Center-certified: Managing Utility Rights-of-Way for Wildlife Habitat (CSP7179-UDT)

## Habitat Mitigation Banking

Selling habitat-mitigation credits to offset impacts to wetlands, sage grouse, and other TES species is growing in popularity as an alternative to state and federal surface restrictions. Sagebrush provides biological-assessment and credit-valuation support to habitat mitigation banks in Colorado and Wyoming.

- Extensive sage grouse lek-survey experience
- Sagebrush is forming North Dakota's first privately owned wetland mitigation bank

## Forestry

Our resume includes forestry support projects for the U.S. Forest Service and private forestry companies. We have collected Forest Inventory Analysis (FIA) data, and performed pre-harvest surveys for spotted owl, endangered herpetofauna, and currently, rare-plant surveys in support of the Lincoln National Forest's forest-management program.

## Current Highlighted Projects

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### Meeker to Rangely 115kV Transmission Line Compliance

We were selected by Tri-State Generation and Transmission Association to conduct Bureau of Land Management-compliance for their project to repair a 40-year-old, 88-mile transmission line reaching from the desert to the sagebrush steppe of western Colorado. Responsibilities include construction monitoring, mapping rare plants, stormwater compliance, among others.



### USFS Region II Wildlife Studies

In 2018, Sagebrush began a variety of wildlife studies for Region II of the USFS. Region II includes Colorado, Wyoming, South Dakota, Kansas, and Nebraska. Sagebrush has intensively surveyed 93,000 acres of the Black Hills National Forest for rare species and habitats. Biologists conducted protocol-level surveys for special-status raptors, habitats, and sensitive animals. We located several Cooper's, sharp-shinned hawk, and northern goshawk nests as well as northern leopard frog, fens, mountain lion, and countless other rare animals and habitats



Cooper's hawk fledglings located not far from Mt. Rushmore.

## Lincoln National Forest Botanical Surveys and IDIQ

Sagebrush is in year six of an eight-year contract to conduct forestry-support rare plant surveys in southern New Mexico's Lincoln National Forest. During the first year of surveys our botanists located a fourth population of shootingstar geranium. Previously, only three populations had been known in the United States. In addition to general rare-plant surveys, we're also performing targeted surveys for federally listed species including Sacramento prickly poppy and Kuenzler's hedgehog cactus.



Entering Dog Canyon, Alamogordo, New Mexico

## Greater Natural Buttes Biological Surveys

We help our energy client comply with BLM energy lease stipulations by surveying for federally protected plants, raptors, and other sensitive species on their 237,000-acre Greater Natural Buttes natural gas field. Uinta Basin hookless cactus surveys require intensive transects, with botanists spaced 3-6 feet apart. With crews up to twelve people in size, we have mapped 394 federally endangered plants. Smaller crews, equipped with spotting scopes and binoculars, scan lease-adjacent cliffs and mesas for signs of nesting raptors.



BLM methodology requires botanist-intensive transects when searching for federally protected Uinta Basin hookless

## Elkhead Mountains Wetland Delineation and Environmental Assessment

Sagebrush has been retained to conduct an extensive wetland delineation, Biological Assessment/Biological Evaluation, and Environmental assessment in the remote Elkhead Mountains of northwestern Colorado. The area provides suitable habitat for a number of threatened, endangered, and sensitive species as well as a diversity of wetland and waters types including broad swaths of spring fed wet meadows.



Wetland meadow, Elkhead Mountains

## Tonto National Forest Mexican Spotted Owl Monitoring

In 2018, we began a formal monitoring project covering 35 Mexican spotted owl protected-activity centers (PACs)—covering approximately 13,500 acres of the remote and rugged Sierra Ancha Wilderness Area, Four Peaks Wilderness Area, and the massive Mogollon Rim.



Mexican spotted photographed on the Tonto National Forest



## Sacramento Prickly Poppy Inventories

In 2017, Sagebrush began a multi-year effort to inventory federally endangered Sacramento prickly poppy. Annual counts will gauge recruitment, survivorship, and population trends. Only 1,900 of these endangered flowers are believed extant and known only to the western escarpment of southern New Mexico's Sacramento Mountains.



Mature Sacramento prickly poppy photographed in the high Sacramento's.

## Sage Grouse Habitat Mitigation Banking

When the U.S. Fish and Wildlife Service announced that the greater sage grouse was a candidate for *Endangered Species Act* protection, Colorado, Wyoming, Nevada, and Utah, in concert with environmental NGO's, established their own plans to preserve the species. A major component of those plans involves habitat mitigation banks. This market-based approach allows landowners to sell habitat credits to industry offsetting their impacts on sage grouse habitat. Sagebrush has partnered with financial institutions, land owners, and state agencies forming some of the first habitat mitigation banks in Colorado and Wyoming.



Greater sage-grouse lek monitored near Rock Springs, Wyoming

## Our People

### Ben Eddy, Lead Biologist (Golden and Ridgway, Colorado)



Ben has 19-years' experience. Before starting Sagebrush, he was a Natural Heritage Program ecologist and geodatabase manager, energy-sector Regulatory Analyst, and environmental consultant. His formative projects include Section 401/404 Individual Permits following a wetland delineation at Point Reyes National Seashore, sage grouse surveys and monitoring of the 238-mile One Nevada transmission line, and plant ecology study of White Sands. He has completed bryophyte surveys in the Cascade Mountains, arthropod studies on the Great Plains, and wetland delineations in the Sonoran Desert. He has completed 34 Biological Assessments, four Environmental Assessments, and contributed to two Environmental Impact Statements.

Ben spent two years as an agricultural development volunteer in Central Asia and helped launch an NYC-based internet startup. Although he spends most of the spring and summer in a tent, Ben splits his time between Golden and Ridgway where he lives with his wife, Meghan, and son, Gus. He earned a B.S. in Biology and B.A. in English from Indiana University before studying GIS as a Purdue graduate student.

B.S./B.A. Indiana University,  
Biology and English

M.A. Purdue University,  
Geographic Information  
Systems

Former Natural Heritage  
Program, State Ecologist

Former USFWS state liaison  
for National Wetlands  
Inventory

NEPA-Practitioner Certified,  
USFWS, National  
Conservation Training Center

DOT NEPA-40 Training

Shipleigh/National  
Conservation Training Center  
Advanced NEPA courses:

*Overview of the California  
Environmental Quality Act*

*NEPA Cumulative Effects  
Analysis and Documentation*

*Overview of the Marine  
Mammal Protection Act and  
Magnuson-Stevens Act  
Consultations*

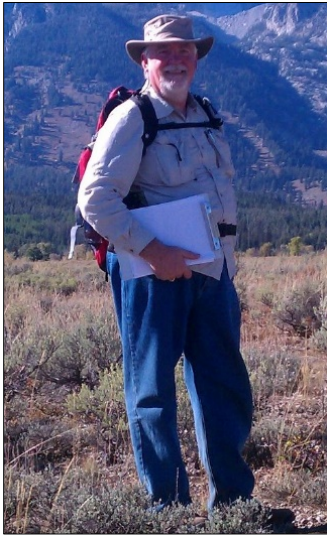
California Native Plant Society  
Master Botanist

Army Corps of Engineers  
Certified Wetland Delineator

Southwest willow flycatcher  
Recovery Permit holder

Spotted owl Recovery Permit  
holder

## David Herrington: Senior Advisor (41-years' experience)



After graduating from college in 1978, David began a 20-year career with the National Park Service. He began his NPS career as a ranger and was shortly promoted to Ecologist working at several parks across the nation. Later in his NPS/DOI career, he undertook a DC nationwide role, duty stationed in Denver for geographic availability, often overseeing contentious projects. Among them included, a supervisory role on the Greater Yellowstone Task Force for the Reintroduction of Wolves, Wrangell-St. Elias Minerals Resource Survey, promulgation of the 36 CFR 9(b) regulations governing non-federal oil and gas regulations on NPS lands, NPS representative for the Uinta-Southwest Regional Mining Team (now Ex-officio). David has overseen Resource Management Plans and General Management Plans for DOI properties nationwide.

During his nationwide NPS career, he directed environmental planning projects, Federal interagency operations, prepared documents and testimony for the GAO, Congressional Subcommittees, the media, and Federal environmental and impact-mitigation task forces. He was also assigned to perform NEPA support and New-Area Studies. During his Washington posting, he was an instructor for the NPS in the subject fields of resource management, impact assessment, compliance, Ranger Skills, and extraction industry oversight.

In Emeritus, he has been involved with a diversity of Federal projects across the world. Projects include the USAF Space Command Pollution Prevention Study at bases in Spain, Italy, and Japan. He has also contracted to the Air Force and Army National Guard to develop programs for waste-stream analyses and pollution-prevention at Aviano, Italy; Moron, Spain; Yokota and Okinawa, Japan.

David also has considerable experience in historical preservation and Section-106 compliance. In an advisory role, he oversaw advancements to the Colorado State Historic Preservation Office and SHPO. In this capacity, he reviewed NCFD grants and improved processes for Historic Preservation Act, Archeological Resources Protection Act, and Antiquities Act of 1906.

Before joining Sagebrush, David was a highly sought-after consultant due to his breadth of knowledge in government contracting, NEPA, and GSA procedures. He has managed \$100-million-dollar federal projects

B.S. School of Natural Biological Science, Texas A&M University

20 years as NPS Ecologist, Natural Resource Manager, and later posted to Washington for special projects

University of Denver, Geology Department, adjunct professor; taught courses in NEPA, mineral and water rights law

Advised state SHPO offices in upgrading management and compliance

Interagency coordinator for controversial projects including Exxon Valdez and Yellowstone grey wolf reintroduction

Conducted over 100 site assessments and reclamation estimates on abandoned mine lands for NPS nationwide

At DOI Washington post, managed nationwide environmental planning and Federal-Interagency operations

Experience project managing 8-figure Federal projects for several agencies/land managers

Wetland Institute Certified

Formerly possessed DOD "Secret Clearance"

with BOR, GSA, DoD, NPS, BLM, USFWS, DoE, USFS, FAA, and EPA. He has also consulted Fortune 500 companies in developing SBA Mentor-Protégé programs

### Jack Sosebee: Senior Biologist and NEPA Specialist (47-Years' Experience)



Since receiving his M.S. in Environmental Studies, Jack has spent the last 40-years conducting NEPA analyses, DOI permitting, and water-quality investigations. During the intervening 40+ years he has managed, and participated in, water-quality investigations where he modeled the downstream effects of reservoir water-quality on salmonid fisheries, designed studies, conducted sampling, laboratory analyses, statistical analyses, chemical-equilibrium modeling, and data evaluation. He has studied reservoirs, lakes, streams, rivers, estuaries, and coastal waters in 41 states.

His largest project (to date) was a water-quality survey of a large reservoir involving sampling and analysis of physical and chemical parameters, phytoplankton, zooplankton, benthic macroinvertebrates, mollusks, fish, and sediments; in aggregate, these samples were to identify the affects on a critical salmonid fishery. He has conducted numerous projects of this nature throughout the PNW.

Jack devised a study of the Clark Fork River (tributary to the Columbia) in which he measured the presence of phenolic compounds leached from kraft-pulp mills along the river and its tributaries and its effect on Salmonid populations. He was responsible for overall project design, sampling, and laboratory analyses. He also developed a dissolved-oxygen modeling effort which predecided in-stream concentrations in five reaches based on physical, hydraulic, and biological processes. His study received funding from the *U.S. Department of Interior Office of Water Resources Research* and was published by *The Montana University Joint Water Resources Research Center*.

As a post-graduate, Jack also studied the viability of the South Platte River coldwater recreational fishery downstream of Chatfield Reservoir. He collected physical and hydraulic (water quality, current velocities, and bottom substrate composition) data to evaluate fish populations, habitat, reproductive success, and abundance/diversity of benthic macroinvertebrates.

Jack also has extensive expertise related to NEPA, environmental impact analysis, natural resources, and regulatory compliance and permitting. Much of that experience has involved public lands, including wilderness areas, national parks, national forests and grasslands,

M.S., University of Montana,  
Environmental Studies:

- Water Rights Law
- Water Quality/Quantity Law and Conflict
- Water Statistical Methodology/modeling
- Benthic Macroinvertebrates

B.S., Texas Tech, Chemistry and Zoology

B.A. University of Colorado, Geology

Former NRCS Senior Scientist for water quality and fish  
USACE Certified Wetland Delineator

Professional Geologist (PG)

Certified Groundwater Professional

BLM-administered land, and a variety of lands protected by states and local governments. These projects included EAs and EISs for interagency wildlife management plans, the siting of coastal military installations, resource development projects, utility corridors.

NPS hired Jack to help prepare the Final EIS for the Interagency Bison Management Plan for Yellowstone NP, States of Montana and Wyoming. He has managed the EIS for a coastal power plant and 400-miles of transmission line in which he oversaw investigations of aquatic (marine and freshwater) resources, fisheries' impacts, terrestrial ecology, viewshed, and a host of other subjects. He was contracted by the U.S. Navy Facilities Command to manage an EIS for a ballistic missile submarine base. In addition to evaluating natural-resource impacts, he managed the writing and production of five candidate site evaluations, writing and production, public hearings, Draft and Final EIS comments and responses.

Jack managed an areawide (208) water-quality management study conducted for a four-county region on the Gulf Coast including an evaluation of impacts of non-point sources on stream, lake, ground water, and coastal water quality; an environmental inventory of aquatic systems; and an assessment of the effects of the plan on environmental, sociocultural, recreational, and historic resources. He also served as a senior project scientist for three baseline water quality and fish studies for the Natural Resources Conservation Service in Missouri.

These are only a few of the major NEPA projects Jack has project managed.

### Rick Obernolte: NEPA-Compliance Lead and Co-Project Manager (47-Years' Experience)



Since receiving his B.S. in Environmental Engineering in 1974, Rick has been hard at work in the changing regulatory environment of the American West. During his wide-ranging career he has developed expertise in project planning and management, regulatory compliance, permitting, Environmental Assessments, and especially geology and hydrogeology. We estimate that he has prepared over 60 third-party NEPA documents for the BLM and USFS.

He has also been specifically hired to prepare specific sections or requirements for NEPA analyses. He has prepared socioeconomic evaluations, coordinated public outreach, developed Alternatives, etc. Rick has continued his education at the University of Oxford (Archeology and Anthropology), Colorado School of Mines (Mineral Economics, Environmental Law and Natural Resources), and University of Colorado (Management).

His planning and permitting projects span 36 states and include designated Wilderness Areas, state parks, DOI, and USFS-managed lands. Rick has project managed dozens of high-seven-figure projects involving contentious public engagement. Just a few include:

- The Pinedale Environmental Impact Statement, where Rick managed project scheduling, public outreach, document compilation and QA/QC , Gantt charts, and project tracking for a massive BLM-energy project.
- Stone Cabin Environmental Assessment, in which assumed responsibility for the Alternatives, public outreach, supervising and coordinating BA-related field surveys and all other NEPA components for a 56,000-acre energy development on USFS and Utah Division of Wildlife Resources lands.
- Whitewater Exploratory Environmental Assessment – an applicant-prepared environmental assessment for a large energy exploration project near Grand Junction, Colorado which included stakeholder meetings, public announcements, project scheduling utilizing Gantt charts, project scoping, and agency coordination.
- Gibson Gulch Master Development Plan – an applicant-prepared Environmental Assessment for a natural gas project near Silt, Colorado which included project scoping, stakeholder meetings, project coordination, public announcements, Gantt charts and project scheduling, and agency coordination.
- East Kokopelli 1 Environmental Assessment, Rick prepared the Garfield County, Colorado socio-economic impact study for the Environmental Assessment by the BLM.
- East Kokopelli 2 Master Development Plan – proposed action prepared for a natural gas project near Silt, Colorado which included project scoping, stakeholder meetings, and agency coordination on a natural gas project near Silt, Colorado.
- Shavetail Environmental Assessment, in which Rick prepared the proposed action and the Environmental Assessment for a project involving several oil and gas wells on Federal and private lands in Rio Blanco County, Colorado including preparation of the proposed action and project scoping documents, coordination of public meetings and agency meetings, and project scheduling.

M.E.P.M., University of Denver, Environmental Policy and Management

B.S., Colorado School of Mines, Geological Engineering

Professional Geologist (PG)

Continuing Education at Oxford, University of Colorado, Colorado School of Mines (Graduate-level):

- Environmental Law
- Economics
- Natural Resource Development
- Archeology
- Management

OSHA Hazwoper Supervisor

Former National Fire Academy Instructor

Colorado Parks and Wildlife Volunteer Naturalist

## Liz Cresto: Hydrologist and Fisheries Biologist (17-Years' Experience)



From 2004 to 2018, Liz served as a Hydrologist for the Idaho Department of Water Resources. In this capacity, she balanced the needs of agricultural allotments and flows necessary to sustain endangered species.

She began as a Technical Hydrologist and was promoted to Supervisory Hydrologist. She supervised the state's surface-water staff providing technical support to the BOR and state agencies; recommended policy to lawmakers. She was the chief decision maker for complex water-use policies for the Snake, Boise, Payette, Bear and Big Lost River water-rights accounting programs. In doing so, she balanced contentious, complex water-policy and management issues through hydrological modeling and statistical analyses. Liz also assumed responsibility for determining water-right priority dates throughout Idaho.

Liz was also the Idaho State liaison to the *Snake River Water Rights Accounting Program*. In this capacity, she tracked ESA salmon-flow augmentation releases from BOR reservoirs and BOR water-rights agreements. She provided regular updates to the BOR. Similarly, Liz was the Idaho Technical Advisor to the *Bear River Commission*.

As Idaho's Supervisory Hydrologist, Liz forecasted water supply for basins, reservoirs, and canal companies in all of the state's major watersheds. She determined water allocations and storage allocations in accordance with Federal water-supply contracts while evaluating water-supply impacts on agricultural users. She completed technical analyses concerning water rights in the *Snake River Basin Adjudication*, among other basins, presenting her findings and resolution proposals to state attorneys.

In her capacity as Idaho's most senior hydrologist, water rights and policy composed much of her responsibilities. Liz analyzed water-management proposals, facilitated stakeholder groups, and presented alternative distributions between natural flow water rights holders and storage water users on the Snake and other rivers. Stakeholders included the BOR, tribal members, private irrigators, and fishing interests. Significantly, Liz led a working group to renegotiate the *1990 Fort Hall Indian Water Rights Agreement on the Blackfoot River*. She managed public input, facilitated educational workshops, updated models, managed adversarial stakeholders, and introduced the importance of Climate Change in future modeling. Liz compiled and processed feedback from workshops and developed an action plan to address water-policy issues identified during these workshops. Participants included irrigators, Idaho Power, groundwater pumpers, tribal members, and BOR. The issue was resolved and implemented

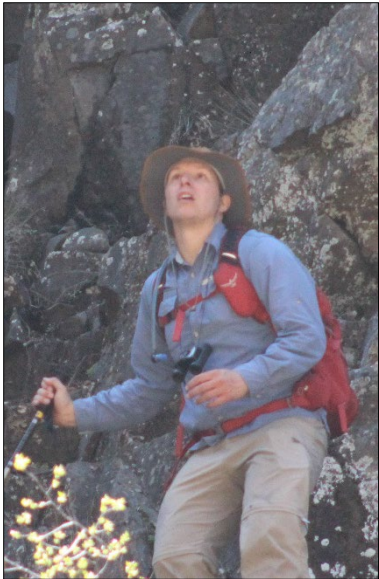
M.S. University of Arizona, Hydrology  
B.S. Virginia Tech, Environmental Science and Chemistry (Magna Cum Laude)  
State of Idaho Supervisory Hydrologist (retired 2018)  
Responsible for reservoir allocations throughout Idaho BOR reservoirs (2015-2018)  
Tracked ESA salmon-flow augmentation releases from BOR reservoirs and BOR water-rights agreements  
Idaho State liaison to the Snake River Water Rights Accounting Program  
Idaho Technical Advisor to the Bear River Commission  
Facilitated the Idaho Water Supply Committee  
10-years' experience managing water contracts and MOA with agriculture, tribal, federal (BOR), and corporate shareholders  
Facilitated Idaho Water Supply Committee, including monthly meetings with NOAA, BOR, USGS, USACE, state, and power companies, tribes, irrigation districts, and general public

without litigation in under one year. In this capacity, solved or mitigated several additional water controversies, including the settlement of the *Boise River Refill Litigation*.

Liz collaborated with academics, agencies, and NGO's, providing data to climatologists, geologists, agriculture, snow survey, soil scientists, and studies related to evapotranspiration.

Prior to her supervisory role, Liz was a “nuts-and-bolts’ hydrologist for the State of Idaho; a data-crunching scientist. As the state’s Technical Hydrologist, she researched complex surface-water management issues, determining water rights priorities for federal and private reservoirs and water delivery. She developed a unique model to determine recharge availability on several reaches of the Snake River. These models and calculations informed policy at state and federal levels. Liz tracked ESA salmon-flow augmentation releases from BOR reservoirs and BOR water right agreements. Compiled and reported releases to BOR. Forecasted water supply for basins, reservoirs.

### Alec Wolsefier, GIS Discipline Lead and Ecologist (Denver, Colorado)



Alec has 6 years’ experience and is equally valuable in the field and office. He comes to us after careers in wildlife rehabilitation and habitat geospatial mapping. He is an experienced raptor ecologist and our GIS discipline lead.

Before joining Sagebrush, Alec rehabilitated raptors, researched animal DNA with the Global Field Genome Project at the Sackler Institute and studied the efficacy of prescribed burns on Rush oak habitats for the New York State Department of Environmental Conservation using R programming and GIS. Alec graduated with a B.S. in Biology at State University of New York, Geneseo

State University of New York at Geneseo, Wildlife Biology  
Teaches college-level GIS courses during the winter  
Thesis on the efficacy of prescribed burns on rush oak opening habitats  
Expert in R and SAS modeling  
Former wildlife rehabilitation specialist



## Amadeus Guy, Biologist (Vernal, Utah)



Amadeus brings a diversity of biological experience gained from his 30-years career in natural resources. He's worked as a biologist for Yellowstone National Park, Nez Perce National Forest, and Forest Service Goshawk Crew. In addition to his work at Sagebrush, Amadeus is an aquatic biologist with the U.S. Fish and Wildlife Service's Upper Colorado River Endangered Fish Recovery Program. Amo, as well call him, is our Senior Raptor Biologist. He possesses a sixth sense in his ability to pinpoint the exact location of reticent birds of prey during their nesting season.

Amadeus has lived and worked around the world, becoming a fluent Spanish speaker during his years in South America. He studied at Reed College and the University of California, Santa Cruz.

Reed College,  
Evolutionary Biology  
University of California,  
Santa Cruz, Ecology  
Former Upper Colorado  
Endangered Fish  
Recovery Biologist  
Ashley National Forest  
Goshawk Survey Crew  
Leader  
Southwestern willow  
flycatcher Recovery  
Permit holder

## Georgia Lopez, Biologist (Longmont, Colorado)



Georgia is a true renaissance woman. She is a beekeeper, jeweler, and expert birder. She's among the most respected birders in Colorado, lending her expertise to the Bird Conservancy of the Rockies, Denver Museum of Nature and Science, and Front Range Nesting Bald Eagle Study, among others. Beyond birds, Georgia has 9 year's of experience in a broad range of biological surveys, studies, and monitoring, regularly contracting to Colorado Parks and Wildlife. She is an experienced botanist, falconer, and wildlife rehabilitator.

Georgia earned her B.S. in Organismal Biology from Adams State University.

B.S. Organismal Biology, Adams  
State University  
The Wildlife Society, Certified  
Wildlife Biologist  
University of California, Certified  
GIS Technician  
Colorado Wildlife Rehabilitator-  
Licensure  
Skilled project manager  
Member and volunteer, Rocky  
Mountain Bird Conservancy, Xerces  
Society, Audubon Society

## Theresa Schaffner: Junior Biologist (6-years' experience)



Theresa has six-years' experience as a National Park Service Biological Technician. In this capacity, she has researched a diversity of natural resources disciplines, ranging from wildfire modeling, range management, to large mammals, moose collaring, and macroinvertebrates. She is skilled in data management and analysis using R and GIS software. At the Northern Great Plains Inventory and Monitoring Center, she field-collected and synthesized prairie and forestry data to model fire behavior and plan prescribed burns. At the National Ecological Observatory Network (NEON), Theresa assisted in designing and implementing longitudinal research to monitor the effects of Climate Change in the Sierra Nevada.

Theresa participated in two NPS research projects at Fire Island National Seashore. First, she assisted in monitoring federally listed piping plover and its post Hurricane Sandy habitat; observed shoreline for plover and its endangered food sources: sea beach amaranth and knotweeds. Theresa also counted horseshoe crabs, another critical food source for the rare bird. Measured dune "over-wash" grasses to evaluate critical nesting habitat. The second involving white-tailed deer research, including parasitic infection, effects of prescribed burn on deer browse, and movement patterns within the National Park.

Theresa is also an experienced wildland firefighter, deployed to frontline duty on major burns in the western United States.

B.S. Sustainable Management,  
Bucknell University

U.S. Fish and Wildlife Service  
National Conservation Training  
Center:

*Integrating NEPA into FWA  
Activities (CSP3121)*

*Partnership and Community  
Collaboration: Managing by  
Network (CLM8123)*

*Making Sense of Biological Data  
using R (CSP4200)*

DOI Fire Management S-130, S-  
190, L-180, ICS-100, FEMA IS-  
007000, NIMS Introduction

Type 2 Wildland Firefighter

U.S. Forest Service, Vegetation  
Dynamics Development Tool  
(VDDT) and Fuel Characteristic  
Classification System

## Jodi Armstrong, Biologist (Reno, Nevada)



Jodi came to Sagebrush with 19-years' avian biology experience. She's conducted northern/California/Mexican spotted owl, northern goshawk, southwestern willow flycatcher, golden eagle, flammulated owl, and great-grey owl surveys as a biologist and wildlife technician for the U.S. Forest Service, National Park Service, and in the private sector for timber companies, wind, and solar farms. She also conducted research at the Idaho Bird Observatory. Jodi brings years of sage grouse experience, too. In addition to birds, Jodi has surveyed and monitored for red and yellow-legged frog, desert tortoise, and other herpetofauna. At the University of Arizona, Jodi conducted radio-telemetry surveys and habitat delineations for the federally protected Mt. Graham red squirrel.

Jodi is Quebecois, fluent in French, English, and Spanish. After graduation, she became a water resources Policy Analyst for the Federated Farmers of New Zealand. She analyzed water-use and it's effect on New Zealand's aquatic biodiversity.

- B.S. McGill University (Montreal), Agriculture and Environment—that's Canadian for "Biology".

# Resume

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## State and Federal Projects

### USFS Region II Wildlife Surveys IDIQ

#### *Prime*

Awarded 4-year contract to conduct diverse range of surveys across the Intermountain West and Great Plains states. To date, we have intensively surveyed 93,000-acres for this wildlife and forest-ecology project. Work included protocol-level, broadcast-acoustical surveys for northern goshawk, Cooper's hawk, sharp-shinned hawk, and broad-shouldered hawk, mapping sensitive habitats and animals, and measuring impact of mountain pine beetle.

CO, WY, SD, NE, KS



### Lincoln National Forest Botanical Survey

Sacramento & Capitan Mountains, New Mexico

#### *Prime*

Awarded 8-year Forest Service contract (2015-2018) to conduct rare plant surveys. Identified previously unknown population of *Geranium dodecatheoides*, only the fourth known occurrence in the United States. In 2017, the Forest Service selected Sagebrush to conduct annual inventories of the Forest's federally endangered Sacramento prickly poppy population. In 2018, requested to conduct additional surveys for Kuenzler's hedgehog cactus and Sacramento Mountain thistle (*Cirsium vinaceum*), both Federally Endangered species. Using a multivariate predictive habitat analyses, we were able to locate a previously unknown population of the thistle; a population estimated to be in the thousands.

### Four-Mile Raptor Surveys

Chequamegon-Nicolet National Forest, Wisconsin

#### *Prime*

In the spring of 2017, Sagebrush's avian biologists conducted protocol-level broadcast surveys for raptors in the Wisconsin North Woods. The survey's primary focus was the elusive red-shouldered hawk. Four red-shouldered hawks were observed during the two-week project.

### Tonto National Forest Wildlife Survey and NEPA IDIQ

Payson, Arizona

#### *Prime*

Selected among four firms to conduct wildlife surveys and NEPA analyses over four-year contract period. In 2018, we began the three-year process of a protocol-level Mexican spotted owl survey in the Mazatzal Mountains. Per U.S. Fish and Wildlife Service protocol, we will assess the survey area and establish calling routes, then proceed with 8 nighttime monitoring sessions to confirm the presence/absence of the federally protected bird.

## **S. Fork Stillaguamish Vascular and Non-Vascular Botanical Survey**

**Mt. Baker-Snoqualmie National Forest, Washington**

### *Prime*

During the spring and summer of 2016, Sagebrush's botanists conducted a baseline and rare-plant survey on approximately 2,000 acres of western Washington's Mt. Baker-Snoqualmie National Forest. Fourteen previously unknown populations of rare species were mapped in the highly biodiverse temperate rainforest. Additionally, Sagebrush was tasked with mapping noxious weeds along 132 miles of Forest Service roads.



Temperate rainforest in the MBS National Forest

## **Cibola National Forest Mexican Spotted Owl and Goshawk Surveys**

**Zuni Mtns, New Mexico**

### *Prime*

During the 2016 nesting season, Sagebrush's avian biologists conducted protocol-level, broadcast-acoustical surveys for MSO and NOGO on tens' of thousands of acres in central New Mexico's Zuni Mountains. Five previously unknown NOGO nests and three previously unknown federally endangered MSO nests were located and mapped.

## **San Isabel National Forest Wetland Delineation and Ute-Ladies' Tresses Inventory**

**Salida, Colorado**

### *Sub-contractor*

Tasked with two-year study, per USFWS protocol, locating, identifying, and mapping occurrences of federally protected *Spiranthes*.

## **Grandview BLM Rare Plant Clearances**

**Owyhee Front, Idaho**

### *Prime*

In support of the Boise BLM's travel management plan (TMP), Sagebrush conducted a series of rare plant surveys in habitats ranging from Aspen-Mixed Pine montane to Salt-Desert Scrub desert. We mapped 15 rare plant populations, including Snake River milkvetch and the diminutive, very rare Mulford's milkvetch. Due to the remoteness and rough topography, dirtbikes were a necessity to complete the project.

## **White Sands Plant Ecology Study**

**Alamogordo, New Mexico**

### *Sub-contractor*

Nine-month botanical study encompassing 77,000 sq. mi. Study results used to inform longitudinal study begun by New Mexico Natural Heritage (Muldavin et. al., 2000) <https://nhnm.unm.edu/sites/default/files/nonsensitive/publications/nhnm/U00MUL02NMUS.pdf>.

## **Las Cienegas BLM National Conservation Area Wetland Delineation and Rare Plant Survey**

**Sonoita, Arizona**

### *Sub-contractor*

Mapped wetlands and rare plants in 21-mile by 300-foot transportation ROW through rare mesic-desert grassland.

**Point Reyes National Seashore Wetland Delineation and Rare Plant Survey**

*Sub-contractor*

Specifically requested by National Park Service staff to conduct rare plant survey in one of the most floristically diverse habitats in the Continental U.S. Delineated diverse fresh and saltwater habitats. Wrote reports for California Coastal Commission, NPS, and Individual Permit for Army Corps.

**Marin County, California**



Estuarine wetlands, Point Reyes

**Wyoming National Guard Baseline Botanical Inventory**

**Statewide, Wyoming**

*Sub-contractor*

Designed and conducted two-year, comprehensive botanical survey of over 75,000 acres on four Army National Guard properties. Habitats ranged from montane to desert scrub.

**Mendocino & Modoc National Forest Goshawk and Spotted-Owl Surveys**

**Willows, California**

*Sub-contractor*

Two-year protocol-level, call-back surveys for northern goshawk and California/ northern spotted-owl surveys on over 10,000 acres.

**Camp Guernsey Invertebrate Study**

**Guernsey, Wyoming**



Mayfly collected during nighttime inventory along Platte River, Guernsey,

*Sub-contractor*

Collected and identified over 22,000 specimens representing nearly 500 species.

**Colorado River Valley BLM Unit Botanical Surveys**

**Silt, Colorado**

*Prime*

Responsible for rare plant surveys of Pinyon-Juniper habitat in advance of oil & gas developments on Colorado's arid Western Slope.

**Rocky Mountain National Park/Arapahoe National Forest Wetland Delineation and Rare Plant Study**

**Estes Park, Colorado**

*Sub-contractor*

Delineated wetlands and mapped state, federal, and Regional Forester's plants.

**Denver Regional Transportation District Wetland and Rare Plant Survey**      **Metro Denver, Colorado**

*Sub-contractor*

Mapped rare plants including previously unknown population of federally protected Colorado butterfly plant within 28-mile by 100-foot ROW.

**McInnis Canyons Conservation Area Botanical Study**      **Grand Junction, Colorado**

*Prime*

Vegetation mapped and monitored riparian corridors, sage grouse habitat, and upland communities for BLM restoration project.



Emergent wetland, Arapahoe NF

**Grand Mesa Moose Browse and Bighorn Sheep Utilization Study**

**Grand Mesa, Colorado**

*Prime*

Measured habitat utilization by moose, bighorn sheep, and other large mammals for Colorado Parks and Wildlife.

**Smoky Hill Training Area Wetland Study (U.S. Air Force)**

**Salina, Kansas**

*Botanist/ Wetland Scientist*

Delineated wetlands and mapped streams in 50 sq. mile, west-Kansas prairie Air Force base. Completed 401/404 permits for USACE, Regional Water Quality Board; designed wetland-mitigation plan.

## Energy

**Anadarko Petroleum Company, Uintah Basin Biological Surveys**

**BLM-Vernal Field Office, Utah**

*Prime*

As part of Master Services Agreement (MSA) with Anadarko, conduct biological surveys for BLM and Tribal energy-lease compliance. Ongoing inventory of federally protected plants, such as Uinta Basin hookless cactus, raptors, and other sensitive species on 237,000-acre natural gas field.

**Southwestern Energy, Northern Colorado Biological Surveys**

**BLM-Craig Field Office, Colorado**

*Prime*

Sagebrush has a Master Oilfield Service Contract with Southwestern Energy to conduct their BLM-stipulated environmental surveys and reporting.

**Kinder-Morgan, Ruby Pipeline Biological Compliance**

**Southwestern Wyoming**

*Sub-contractor*

Sage grouse lek survey and monitoring, cushion plant community mapping, wetland delineations, and raptor surveys.

**Southern Star, Missouri Central Gas Pipeline Biological Compliance**

**Western Missouri**

*Sub-contractor*

Indiana bat mist netting, wetland delineation, *Migratory Bird Treaty Act* and *Bald and Golden Eagle Protection Act* surveys.

**Southern Star, Cheyenne to Greely Pipeline Biological Survey**

**Weld County, Colorado**

*Sub-contractor*

Assessed federally protected species habitat, conducted TES and raptor survey, and wrote BA/BE.

**Transmission & Transportation**

**Meeker to Rangely 115kV Transmission Line BLM Compliance**

**Western Slope, Colorado**

*Prime*

Began four-year Bureau of Land Management-compliance project in 2020. Responsible for construction monitoring to ensure consistency with agreed-upon Plan of Development (POD) for 90-mile (plus 35 miles of access roads) right of way. Also conducted bald and golden eagle surveys, raptor surveys, rare-plant mapping, stormwater compliance, Clean Water Act 401/404 compliance, among other matters.

**Xcel Energy, Hopkins to Hagermann Pass Transmission Line Fen and Rare Plant Inventory**

**White River National Forest, Colorado**

*Sub-contractor*

Special-status plant surveys and high-altitude fen, seep, and spring mapping in 88-mile Xcel Energy transmission line ROW.

**NV Energy, One Nevada Transmission Line Sage Grouse and Rare Plant Surveys**

**Great Basin & Mojave Deserts, Nevada**

*Sub-contractor*

Greater sage grouse lek surveys and monitoring, rare plant inventory during two-year construction of 236-mile transmission line. Coordinated with and submitted data to multiple BLM field offices.



**FHWA, Ice House Road Wetland Delineation and Rare Plant Survey  
El Dorado National Forest, California**

*Sub-contractor*

Mapped rare plants, delineated montane wetlands, fens, streams, and bogs prior to writing wetland reports and securing Section 401 certification, Section 404 permit, and permit from the Sacramento Regional Water Quality Control Board.



Ice House Road project area

**WYDOT, Highway 14 Environmental Assessment  
Sundance, Wyoming**

*Sub-contractor*

Conducted biological work pursuant to Wyoming DOT/BLM Environmental Assessment. Project managed writing of NEPA documentation including public outreach. Designed Wildlife Management Plan accommodating winter-migration corridor for mule deer, elk, and other large mammals.

**CDOT, Grand Avenue Bridge Environmental Assessment**

**Glenwood Springs, Colorado**

*Sub-contractor*

Conducted fieldwork for *Endangered Species Act*, *Bald and Golden Eagle Protection Act*, and *Clean Water Act* during NEPA assessment of proposed replacement of State Highway 82 over the Colorado River. Contributed biological content to Colorado DOT Environmental Assessment; interacted with stakeholders during public outreach phase.

**Forestry**

**Mendocino Redwood Company Owl Surveys**

**Ft. Bragg, California**

*Sub-contractor*

Forestry support northern/California spotted-owl and great-grey owl surveys on nearly 50,000 acres over two years.

**Washington National Forest FIA (Forest Inventory Analysis)**

**Statewide, Washington**

*Sub-contractor*

Collected forestry data from hundreds of USFS-defined forestry plots. Data included species composition, DBH, succession, canopy cover, etc.

## Habitat Restoration & Mitigation Banking

### **Colorado Habitat Exchange**

**Western Slope, Colorado**

*Sub-contractor*

Providing biological support to Colorado Habitat Exchange greater sage grouse habitat mitigation pilot projects.

### **(Private Owner) Ranch Sage Grouse Habitat Mitigation Bank**

**Pinedale, Wyoming**

*Sub-contractor*

Assessing sage grouse habitat quality and mitigation-credit value for 75,000-acre mitigation bank.

### **City of Fort Collins Riparian Restoration Project**

**Fort Collins, Colorado**

*Sub-contractor*

Designed, implemented re-vegetation and bank stabilization of the Cache la Poudre River and tributaries in Ft. Collins following 2013's destructive floods. Installed 13,000 plants including willows, sedges, and cottonwoods.



Dark Horizons: Marin County, CA

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