ABR is a leader in research associated with wind power siting, monitoring, and impact assessment. Our work with the wind industry began in 1994 and we have conducted over 70 wind and wildlife studies in 17 US states, Canada, Europe, and Mexico. Our scientific team has extensive experience addressing a wide range of pre-construction and post-construction wildlife issues, including studies and permitting based on the Land Based Wind Energy Guidelines and the Eagle Conservation Plan Guidance. Our lead scientists have developed highly effective, peer-reviewed techniques for investigating behaviors of birds and bats. We use state-of-the-art equipment (i.e., radar, night-vision optics, and acoustic detectors) and statistically rigorous analyses to assess spatial and temporal activity patterns of birds and bats, collision potential, and fatality estimates at wind turbines, meteorological towers, and transmission lines (see Mabee et al. 2006, Kunz et al. 2007). With offices in Alaska, Oregon, and Montana, we provide broad coverage of the country and a diverse set of services, including:

- Study design and data analysis for terrestrial and offshore projects
- Site characterization studies
- Wildlife inventories and surveys
- Bald and Golden Eagle Protection Act protocol surveys
- Eagle Conservation Plans (ECPs) and Permitting
- Endangered species surveys and risk assessment (e.g., Hawaiian Petrel, Newell’s Shearwater, Marbled Murrelet, Northern Spotted Owl, Hawaiian hoary bat)
- Avian point count surveys
- Raptor nest surveys and monitoring
- Nocturnal radar and visual surveys for birds and bats
- Collision risk modelling
- Post-construction fatality monitoring for birds and bats
- Bat acoustic monitoring
- Mist netting and telemetry studies for bats
- Modeling turbine exposure indices for birds and bats
- Behavioral studies of bird and bat interactions with wind turbines, met towers, and associated structures
- Independent review of wildlife studies

Clients

Alaska Village Electric Cooperative • Alaska Wind Power • AWS Truewind • California Energy Commission • CH2M Hill • Chugach Electric Association • Clipper Wind • Curry and Kerlinger • David Evans & Associates • Ecogen • Ecology and Environment • Energy NW • Entrix • E.ON. • Everpower • First Wind • FPL Energy • Gamesa Energy • Hawaii Renewable Development • Horizon Wind Energy • HT Harvey & Associates • Iberdrola Renewables • Invenergy • Kenetech • Klondike Wind Power III • Ned Power • NextEra Energy • Niagara Mohawk • Noble Wind Power • NW Wildlife Consultants • PPM Energy • Renewable Generation • RES-Americas • Seawest, Inc. • Shell Wind Energy • Superior Renewable • Tetra Tech • UPC Wind Partners • U.S. Air Force • U.S. Fish and Wildlife Service • WEST
Representative Projects

SITE CHARACTERIZATION AND SCREENING
Summarized existing literature, expert opinions, site information, and field studies (e.g., bird surveys, sensitive species distributions) and mapped habitats to assess use of proposed wind energy developments by sensitive wildlife species.

BASELINE AVIAN USE
Alaska, California, Colorado, Oregon, Texas, Washington, & Wyoming, 2002–Present
Conducted year-round bird surveys (e.g., point counts and displacement surveys) to document species composition, activity patterns, and spatial use at proposed wind energy developments. Determined avian exposure and potential sensitivity to wind turbines at proposed site facilities. Developed Bird and Bat Conservation Strategies for guidance in minimizing and mitigating potential impacts to birds and bats during project development and operations. Designed post-construction fatality monitoring studies.

BALD AND GOLDEN EAGLE STUDIES AND PERMITTING
Alaska, California, & Oregon, 2009–Present
Conducted field studies including eagle point-count surveys, migration surveys, nesting surveys and monitoring, and post-construction fatality monitoring. Developed permitting documents including Eagle Conservation Plans, Bird and Bat Conservation Strategies, Power-pole Retrofit Plans, Post-Construction Fatality Monitoring, and Incidental Wildlife Reporting Systems.

RAPTOR NEST SURVEYS
Alaska, California, Colorado, Oregon, Texas, Washington, & Wyoming, 2002–Present
Conducted aerial- and ground-based raptor nest surveys and monitoring to assess risk to nesting raptors at proposed wind energy developments.

RADAR AND VISUAL STUDIES OF MIGRATORY BIRD AND BAT ACTIVITY
Alaska, California, Ohio, Oregon, Maryland, New York, Pennsylvania, Texas, Virginia, Washington, West Virginia, Mexico & Spain, 1994–Present
Conducted concurrent radar and visual surveys to assess migratory and resident bird and bat activity at proposed and operational wind energy developments. Determined flight directions, passage rates, and flight altitudes of birds and bats to assess exposure and associated risk at facility structures (e.g., wind turbines and met towers).

BAT ACOUSTIC MONITORING AND VISUAL STUDIES
California, Colorado, Hawaii, Idaho, New Mexico, New York, Oregon, Texas, & Washington, 2007–Present
Conducted bat acoustic monitoring and visual studies to investigate temporal and spatial activity patterns of bats and associated risk at proposed wind energy developments.

ENDANGERED, THREATENED, AND SENSITIVE RAPTOR STUDIES
Alaska, California, Colorado, Oregon, Texas, Washington, & Wyoming, 2002–Present
Conducted extensive point count surveys, nest surveys, and nest monitoring to determine presence, number, and activity patterns of various raptor species of concern at proposed wind energy developments. Focal species included Bald Eagles, Golden Eagles, and other sensitive raptor species (e.g., Peregrine Falcon, Ferruginous Hawk, Swainson’s Hawk, Northern Spotted Owl).

ENDANGERED AND THREATENED SEABIRD STUDIES
Alaska, California, Hawaii, Oregon, & Washington, 2006–Present
Conducted concurrent radar and visual surveys of endangered and threatened seabirds at wind energy developments in the Pacific Northwest (Marbled Murrelets), Alaska (Spectacled Eiders, Steller’s Eiders) and Hawaii (Hawaiian Petrels and Newell’s Shearwater). Used study results to estimate potential collision fatalities of seabirds at wind turbines, meteorological towers, and transmission lines.

ENDANGERED BAT STUDIES
Hawaii, 2006–Present
Conducted acoustic monitoring and concurrent radar and visual surveys to determine presence and activity patterns of Hawaiian hoary bats at proposed wind energy developments throughout the Hawaiian Islands.
Research Team

Robert H. Day, PhD, Senior Scientist, Ornithologist. Over 30 years experience in endangered species, seabirds, migration, collision assessment studies, and mitigation strategies.

Adrian E. Gall, Senior Scientist. Over 15 years’ experience with marine birds and avian collision assessments at rural Alaska wind developments.

Robert M. Burgess, Senior Scientist and Research Coordinator. Nearly 40 years’ experience with bird and mammal studies, NEPA, and management of utility-related projects.

John E. Shook, Senior Scientist, Raptor Biologist. Over 20 years of experience in wildlife studies with a focus on raptor ecology and avian migration in Alaska.

Brian A. Cooper, Vice President, Wildlife Biologist, and Avian Studies, Pacific Northwest. Over 25 years experience in bird-collision assessment studies near structures in North America and Europe.

ABR, Inc.—Environmental Research and Services, is a growing and diverse firm founded in 1976. It specializes in fish and wildlife studies, aquatic sciences, ecological restoration, wetland sciences, impact assessment, ecological support for risk assessment, and GIS mapping and analyses. Our efforts to seek practical solutions for our clients’ needs—within the framework of company resource stewardship, community support, and economic viability—have been prominent in our evolution. For more information visit our website www.abrinc.com or contact us directly.

Alaska Regional Office
P.O. Box 240268
Anchorage, AK 99524
907-344-6777
Contact: Steve Murphy
smurphy@abrinc.com

Corporate Headquarters
P.O. Box 80410
Fairbanks, AK 99708
907-455-6777
Contact: John Shook
jshook@abrinc.com

APRIL 2016