



# News from the WEST, Inc.

Fall/Winter 2008



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## Water in the WEST: *WEST*, Inc Water Development Projects

The semi-arid environment of Wyoming and Colorado has made water a valuable resource to farmers, ranchers, municipalities and industries. Since settlers arrived in the American West, water projects have been developed to divert, relocate, and store water with objectives typically to provide additional supplies to meet growing demands, storage for re-timing seasonal use of water and drought protection, and to develop other management techniques to increase efficiency of water use. Today, water projects are developed to meet similar objectives, and *WEST*, Inc. has been involved in several water projects including the Greybull Valley Dam and Reservoir Project, the Westside Land Conveyance Project, and most recently the Halligan-Seaman Water Supply Projects.

The Greybull Valley Dam and Reservoir was proposed by the Bureau of Land Management (BLM) in Worland, Wyoming to provide irrigation water to farmers in the lower Greybull River Valley. *WEST*, Inc. was the Team Lead that evaluated the proposed project along with two other alternatives. The Final EIS was completed in 1997.

The Westside Land Conveyance Project is a result of Public Law 106-485 directing the Secretary of the Interior, acting through the BLM, to convey a parcel of public land in Big Horn County and Washakie County, Wyoming to the Westside Irrigation District. *WEST*, Inc. has been the Team Lead in the preparation of the EIS evaluating this project. Although the proposed action itself is not directly related to water, the connected action of irrigating the transferred acres was evaluated in the Draft EIS to the extent possible. The Final EIS for this project

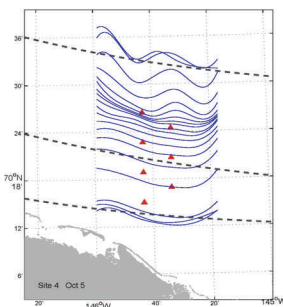
*Water Projects, to pg 2*

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## USFWS Contemplates New Aerial Surveys for Polar Bear in the Chukchi Sea

The US Fish and Wildlife Service (FWS) is responsible for managing the polar bear populations that at least seasonally occupy US territories and territorial waters. To date, little is known about the number of polar bears in the subpopulation occupying the Chukchi Sea. Ryan Nielson, Michelle Bourassa Stahl and others with *WEST*, Inc. were contracted by the FWS to develop a ship-based aerial line transect survey protocol to estimate the number of polar bears in the Chukchi Sea, and to investigate the properties of the protocol and different population estimators using computer simulation. Specifically, the simulation investigated a new method using the application of a resource selection function to extrapolate population estimates beyond the regions accessible to an icebreaker in mid-autumn.



*Water Projects from pg 1* will likely be available early 2009.

Currently, *WEST*, Inc. is leading an EIS Team in Colorado to assess the impacts related to the Halligan and Seaman Water Supply Projects for the cities of Greeley and Fort Collins. These projects involve the enlargement of two existing reservoirs, Halligan and Seaman, located on the North Fork of the Cache La Poudre River. The Cities recognize that potential coordination of releases could provide some environmental benefits to the portion of the river between the two reservoirs as well as meeting their storage needs. The uniqueness of this arrangement has prompted the Cities of Greeley and Fort Collins to enter into a process referred to as a "Shared Vision Planning" (SVP) with other interested parties, such as The Nature Conservancy, Ducks Unlimited, and Trout Unlimited, to develop possible operational scenarios that are agreeable to participants in the SVP. The SVP process involves only the stretch of the North Fork of the Cache La Poudre River that is between the two existing reservoirs. The SVP is not part of the EIS process, but its results could potentially be utilized by the Army Corp of Engineers in defining permit requirements.

## Study of Effects of Seismic Exploration on Bowhead Whale Migration

In ongoing work, *WEST*, Inc. statisticians have been studying the effects of seismic exploration for oil on bowhead whale migration in Alaska's Beaufort Sea. Shell Oil has been conducting seismic operations in autumn in waters off of Alaska's north coast. During operations, specialized underwater airguns towed behind a ship are fired repeatedly. Sounds that are refracted and reflected off the seafloor are recorded by large arrays of hydrophones also towed by the ship. Seismic operations coincide with the autumn migration of bowhead whales along the Alaskan coast. The effects of high sound levels on whale migratory movements are not well-understood; though there is concern that prolonged loud sounds could cause whales to move farther off-shore.



Several monitoring efforts are underway to assess the effects of Shell's seismic activity on the behavior and movements of bowhead whales. LGL Limited is coordinating and conducting both ship-based and aerial visual surveys. One limitation of visual surveys is that relatively few whales are at the water surface at any given time. Much of the time, most whales remain below the surface and, thus, are not detected by these surveys. LGL, Greeneridge Sciences, Inc. and *WEST*, Inc. are collaborating on another monitoring approach that exploits whales' vocalizations. Greeneridge has deployed several underwater arrays of directional hydrophones along the bowhead migratory route, including the region where Shell's seismic explorations are being conducted. These hydrophones continuously record whale vocalizations throughout the migratory season (roughly 7 weeks). *WEST*'s contribution to this work includes study design and analysis of the acoustic data from the hydrophones.



Our analyses encompasses a wide range of methods and goals: robust estimation of whale call location based on triangulation techniques; assessment of the relationship between whale calling rates and periods of seismic operations (before, during, and after); estimation of the sound levels experienced by whales, for sounds originating from seismic pulses; and quantile regression on whale locations to determine whether calling whales are displaced during seismic operations. The 2008 field season was completed recently and analyses of acoustic data are in progress.



## WEST, Inc. Publications

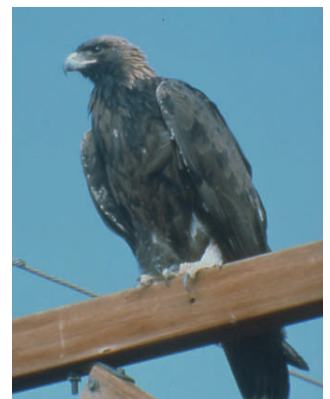
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## Fourth Golden Eagle Survey Completed

*WEST*, Inc. successfully completed another golden eagle survey in the western US. Over 17,400 km of transects were surveyed from small, fixed-wing aircraft across four Bird Conservation Regions in the western U.S. between August 15 and September 15. This is the fourth year the US Fish and Wildlife Service has contracted *WEST*, Inc. to run the survey and estimate the total number of golden eagles in the western U.S. The final report should be available during summer 2009.

Also available for download is "Population Survey of Golden Eagles (*Aquila chrysaetos*) in the Western United States". 2004. This Final Report can be found at

[http://www.west-inc.com/wildlife\\_surveys.php](http://www.west-inc.com/wildlife_surveys.php)





## ***WEST, Inc. Welcomes New Staff Members***

### **Michelle Carder, Bloomington IN**

Michelle Carder joined *WEST, Inc* in March 2008 and has worked as a Technician and Research Biologist. Michelle has been primarily involved with the potential impacts of wind power developments on wildlife. This work has involved performing songbird and raptor point counts, sensitive bird species surveys, habitat mapping, carcass searching, carcass removal trials, searcher efficiency trials, site visits and writing a variety of reports. Michelle received a Bachelor of Science in Wildlife and Fisheries from Frostburg State University, Frostburg, Maryland in 2003 and a Master of Science degree in Biology from Eastern Kentucky University, Richmond, Kentucky in 2008.

### **Kristen Chodachek, Bismarck ND**

Kristen Chodachek joined *WEST's* Bismarck, North Dakota team as a Wildlife Biologist in July 2008. She received her B.S. in Zoology from the University of Manitoba, Canada and her M.S. in Wildlife from Louisiana State University. Kristen's experiences include working with and managing waterfowl, raptors and conducting aerial surveys from a fixed wing aircraft for big game and birds. Her experiences in avian ecology include trapping, monitoring, radio telemetry (aerial and foot) and nuisance management in Wyoming, North Dakota, Louisiana and Manitoba. Currently, Kristen conducts pre- and post construction wildlife surveys at proposed wind energy sites and writes technical reports.

### **Jamey Eddy, Laramie WY**

Jamey Eddy works as a Field Technician for *WEST, Inc.* Jamey began his tenure with *WEST, Inc.* in 1995 as a temporary seasonal employee, joining *WEST, Inc.* as a regular employee in 2008. He is primarily involved with tasks in support of wind power development. These tasks have included aerial and ground raptor nest surveys and monitoring, avian and raptor point counts, mountain plover surveys and nest monitoring, lagomorph and prairie dog surveys, and sage grouse lek counts. He has also performed carcass searching, carcass removal and searcher efficiency trials in support of actual turbine mortality studies. Prior to starting at *WEST, Inc.*, Jamey received a B.S. degree in animal science from California Polytechnic State University - San Luis Obispo.

### **Matt Kesterke, Cheyenne WY**

Matt Kesterke joined *WEST, Inc.* as an environmental report writer in 2008. Matt received his B.A. in Anthropology from the University of Wyoming in 2003, and received his MA in Physical Anthropology from the University of Wyoming in 2008. Matt's prior work has included publications on sample bias in anthropology, heritability of skeletal traits in paleoanthropology and forensics, and coroner investigations in Wyoming. Matt has participated in field studies and excavations for archaeology across the Rocky Mountains, Great Plains, and Eastern Europe. Currently, Matt is writing reports for wind energy and wildlife studies for *West, Inc.*

### **Elizabeth Lack, Cheyenne WY**

Elizabeth Lack has been a botanist with *WEST, Inc.* since 1999. She received a B.S. degree in Forest Biology from Colorado State University in 1988. Elizabeth has extensive experience in botanical and wetland work, including rare plant surveys, noxious weed surveys, vegetation classification and mapping, and vegetation inventory and description. She is familiar with all phases of the NEPA process and has been project manager or task leader on many Environmental Impact Statements and Environmental Assessments. Her work has been focused in the western United States including work in Washington, Oregon, Idaho, Nevada, Utah, Arizona, Montana, Wyoming, Colorado, New Mexico, Nebraska, and Kansas. Elizabeth served as a Peace Corps volunteer, living and working in Zambia on a forestry project while on a 2-year sabbatical from *WEST, Inc.* between 2005 and 2007, returning to *WEST, Inc.* in 2008.

### **Luke Martinson, Cheyenne WY**

Luke Martinson joined *WEST Inc.* in the winter of 2008 as a Biologist-Wetland Specialist. Luke's previous experience

includes monitoring of wetland and upland restoration/creation sites, completing wetland delineations, threatened and endangered species surveys, mitigation bank assessments, and impact assessments. Luke has also helped draft FERC resource reports, NEPA EA/EIS documents, Environmental Resource Permit applications, and habitat restoration design plans. His project involvement includes development, pipeline, airport, mine, and restoration projects for public and private entities. Luke received a B.S. in Biology with a Minor in Mathematics from Wittenberg University in Springfield, OH. While in college Luke worked for the BLM as a Fire Technician out of the Worland, WY office.

### **Jason Ritzert, Bloomington IN**

Jason Ritzert joined *WEST*, Inc. in March 2008 and has been primarily involved with studies of potential impacts of wind power developments on wildlife. These tasks have included avian and raptor point counts, sensitive bird surveys as well as performing carcass searching, carcass removal and searcher efficiency trials in support of actual turbine mortality studies. Since September 2008 Jason has been working out of the Bloomington field office writing SCS reports, doing habitat characterizations, wetland assessments, and coordinating field technicians in Illinois. Jason is currently finishing up his M.S. in Biology at Eastern Kentucky University where he studied the crevice characteristics of green salamanders in Red River Gorge, KY. He received his B.S. in Environmental Sciences from Ferrum College in 1998. Jason is currently working on becoming more involved with the bat community to obtain a federal mist-netting permit.

### **Michelle Sonnenberg, Cheyenne WY**

Michelle Sonnenberg is a statistician in the *WEST*, Inc. Cheyenne office. Prior to employment at *WEST*, Inc. in 2008, Michelle earned two M.S. degrees from Colorado State University, in Mathematics (1996) and Statistics (2008). For her Statistics master's project, she investigated group sequential methods in clinical trials. Shortly after graduation, she worked briefly for the USDA modeling avian influenza. Michelle's primary responsibilities at *WEST*, Inc. include analyzing bird and bat data for windpower projects, and writing, editing and running code in SAS and R.

### **Joel Thompson, Cheyenne WY**

Joel Thompson joined the *WEST*, Inc staff in 2008 as a Field Biologist. After spending the 2008 field season collecting data on avian and bat use at proposed wind energy sites throughout the Appalachian Mountains, Joel moved to the Cheyenne, WY office and assumed his new role as a Wildlife Biologist/Project Manager. Joel received his B.S. degree in Wildlife Management from Humboldt State University in 1995 and his M.S. in Wildlife Management from Humboldt State in 2008. Joel's M.S. research focused on estimating fisher density on a managed landscape in northern California. In his role with *WEST*, Inc., Joel will primarily oversee projects related to wind energy development.

## ***WEST*, Inc. Awarded WYDOT Project**

Hall Sawyer and Dave Young were recently awarded a contract to evaluate the effectiveness of 6 new underpasses designed to provide safe highway crossings for mule deer underneath US 30, near Kemmerer, Wyoming. The project is sponsored by the Wyoming Department of Transportation (WYDOT) and funded by their Resource Advisory Committee. This 19-mile segment of highway is located adjacent to a major winter range that supports >10,000 mule deer. Because of long-term chronic problems with vehicle-deer collisions, WYDOT recently constructed 6 new crossing structures and 14 miles of game fence aimed at funneling mule deer underneath the highway and reducing vehicle-deer collisions. *WEST*, Inc. will use remote cameras at the structures to determine levels of deer use at each structure. Chad LeBeau of *WEST*, Inc. will be coordinating the field work.



## *WEST, Inc. Opens New Regional Offices:* **Waterbury, VT**

Dr. Wendy Tidhar and Mr. David Tidhar recently opened a new *WEST, Inc.* branch in Waterbury, Vermont, to provide services on projects located within the East Coast region, including the Northeast, Mid-Atlantic and Southeast. The East Coast is a dynamic region with a large population located within numerous geographical zones including Atlantic Coast, Appalachian Mountains and Great Lakes. As the region continues to grow, local and state governments are modifying their energy portfolios to increase supply from “green” and “alternative energy solutions” such as wind power. By developing an office in this region *WEST, Inc.* is able to provide cost-effective services to clients in the public and private sector, such as the wind energy industry. Complex questions over the effects developments might have on species or habitats in the region demand high quality ecological studies and analysis. *WEST, Inc.* has conducted a number of studies in the region, utilizing advanced technologies and statistical techniques to assess the potential risk proposed development may pose to wildlife. For instance, each spring and fall hundreds of thousands of songbirds migrate to and from breeding grounds at night. Nocturnal migration is notoriously difficult to study; one cannot assess species composition or flight patterns visually, and current knowledge of migration ecology is limited. *WEST, Inc.* has used marine radar systems to study nocturnal songbird migration patterns at proposed wind power



projects and been a leader in developing analytical tools to assist the wind industry and wildlife agencies in determining the relative risk a proposed project may pose to nocturnal migrants.

*WEST, Inc.* is currently working for several clients on proposed and existing wind-energy projects within the region for which Wendy and David serve as Project Managers and Research Biologists. They met in Edinburgh, Scotland in 1994, and married in Aberdeen, Scotland in 1999. Wendy holds a PhD in Zoology from the University of Aberdeen, Scotland, and Mr. Tidhar an MS in Ecology from the same institution. They have worked for *WEST, Inc.* since 2005 and cumulatively have over 25 years of professional experience working on various taxa, and research in more than 25 States as well as the UK. While their focus is currently on studying the effects of wind power on wildlife in the region, they aim to broaden the scope of work and services *WEST, Inc.* provides in the region to include research, statistics, and other opportunities. Wendy and David share a philosophy of scientific integrity, hard work and having fun!

**For *WEST, Inc.* Corporate, Branch and Field Office  
locations and contact information,  
please go to**

**[www.west-inc.com/about.php](http://www.west-inc.com/about.php)**



## WEST, Inc. Opens New Regional Offices: Bloomington, IN

WEST, Inc. opened its Bloomington, Indiana, Field Office on July 7, 2008. The Bloomington branch office is staffed by three full time research biologists in Bloomington, and 7 field technicians based in Missouri, Illinois, Indiana and Ohio. The Bloomington office currently manages or coordinates field studies for WEST, Inc. in the eastern portion of the Midwest, including Missouri, Arkansas, Illinois, Indiana, Ohio and Michigan. Field studies currently managed by the Bloomington branch office include pre-construction and post-construction wildlife surveys for proposed and constructed wind-energy facilities. The Bloomington branch office is planning on expanding into other fields and industries, such as wildlife and plant surveys for highway projects, mining industries, powerline and pipeline construction.



Rhett Good currently serves as Branch and Project Manager for the Bloomington Office. Rhett has worked as a Research Biologist for WEST, Inc. in Laramie, Wyoming for the past 10 years on various wildlife research projects. Jason Ritzert and Michelle Carder were hired as Research Biologists with WEST, Inc. during the spring of 2008, and are based in Bloomington. Since joining WEST, Inc., Jason and Michelle have been primarily involved with studies of potential impacts of wind power developments on wildlife.

Jason has a diverse background in fieldwork, including surveys of golden-winged warblers, Allegheny woodrats, breeding birds, running buffalo clovers, bats, frogs (acoustical), waterfowl, aquatic turtle, seeps/springs characterizations and collected data on target and non-target fish species, endangered sea birds and marine mammals.

Michelle has a variety of avian research experience including mist netting and banding songbirds and saw-whet owls, eastern phoebe and chimney swift nest monitoring, and behavioral studies. She has worked on a variety of wildlife research projects including a small mammal inventory project for the National Park Service and a project examining the effects of white-tailed deer on nitrogen redistribution in Baltimore MD. with the University of Maryland's Appalachian Laboratory.

## 2008 Conferences & Workshops Attended by WEST, Inc. Staff

**Gretchen Norman** attended the 2008 National Association of Environmental Professionals conference in San Diego. She also attended the Society for Range Management workshop in Cheyenne: Climate Change in Western Rangelands - A Workshop and Field Day for Discussing its Relevance to Ranchers, Public Land Managers, and Society.

**Ryan Nielson, Hall Sawyer, and Lyman McDonald** presented a workshop on *Regression Modeling for Habitat Selection Using GPS Data* at the 2008 Wildlife Society Conference in Miami, FL. This 1-day workshop was held on November 8th, and was attended by over 40 wildlife professionals. Workshop materials, including example R code, can be downloaded from the WEST, Inc. website, [www.west-inc.com/workshops.php](http://www.west-inc.com/workshops.php).

**Saif Nomani** gave a presentation on *Accuracy and Precision of Estimates of Abundance Obtained From Distance Sampling Along Line Transects* at the 2008 Wildlife Society Conference in Miami, FL.

**Donald Solick** attended the Indiana Bat Workshop, which was offered by Bat Conservation and Management at Shawnee State Park, PA; Acoustics Monitoring Workshop, which was offered by Bat Conservation International at Lava Beds National Monument, CA; and the 38th Annual North American Society for Bat Research Conference in Scranton, PA.

**Jeff Gruver** attended the Bat Wind Energy Collaborative (BWEC) Meeting in Austin, TX, Jan. 08, and the National Wind Coordinating Collaborative (NWCC) meeting in Milwaukee, WI, Oct. 08.