

Upper Columbia Basin Network Inventory and Monitoring

National Park Service
U.S. Department of Interior
Pacific West Region



Basin Bulletin

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In This Edition

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Cover story: Bats Conservation, pg. 5

What's new with bats? Read about their importance and the current threats they are facing. *Cover photo:* Townsend's big-eared bat exiting a cave in CRMO.

Water Day at Nez Perce NHP, pg. 7

UCBN Aquatic Biologist joined NEPE staff in a day to celebrate the importance of water and talked about macroinvertebrates in Lapwai Creek.

Staff Insider, pg. 7

Get to know Beth Erdey, the new Archivist and Research Center Manager at Nez Perce National Historical Park.

Plus!

- Our field season has started, we are and will be in your parks in the upcoming months. Check out our schedule on pg. 4
- Got the Futbol fever? We did! Check out who won our prediction bracket for the Soccer World Cup on pg. 3
- Know all related to bat monitoring? You can learn the details in our "Making sense of I&M non-sense" section, on pg. 6
- Rarely seen, but very interesting. Learn about our "Featured Creature," on pg. 8



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BASIN NETWORK
UCBN



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National Park Service
U.S. Department of
Interior



The National Park Service has implemented natural resource inventory and monitoring on a servicewide basis to ensure all park units possess the resource information needed for effective, science-based managerial decision-making, and resource protection.

Upper Columbia Basin Network
105 East 2nd Street
Suite 5
Moscow, ID 83843

Program Manager

Gordon Dicus (208) 885-3684
Gordon_Dicus@nps.gov

Ecologist

Tom Rodhouse (541) 312-6425
Tom_Rodhouse@nps.gov

Aquatic Biologist

Eric Starkey (208) 885-3010
Eric_Starkey@nps.gov

Biological Technician

Devin Stucki (541) 312-2323
Devin_Stucki@nps.gov

Biological Technician

Dan Esposito
espositd@onid.orst.edu

GIS Analyst

Meghan Lonaker (208) 885-3014
Meghan_Lonaker@partner.nps.gov

Science Communication Specialist

Paulina Starkey (208) 885-3015
Paulina_Starkey@partner.nps.gov

Newsletter Contributors

Beth Erdey
Tom Rodhouse
Eric Starkey

Distribution

Please distribute this newsletter on to any person or group who is interested!

Questions about the newsletter?

Write to: Editor
Paulina Starkey
Paulina_Starkey@partner.nps.gov

Upper Columbia Basin Network Inventory and Monitoring Program



PARKS IN THE NETWORK

Big Hole National Battlefield (BIHO)

City of Rocks National Reserve (CIRO)

Craters of the Moon National Monument and Preserve (CRMO)

Hagerman Fossil Beds National Monument (HAFO)

Minidoka National Historic Site (MIIN)

John Day Fossil Beds National Monument (JODA)

Lake Roosevelt National Recreation Area (LARO)

Nez Perce National Historical Park (NEPE)

Whitman Mission National Historic Site (WHMI)

<http://science.nature.nps.gov/im/units/ucbn/>
Taking the pulse of the National Parks

The Program Manager's Corner

Another field season is in full swing. Summer fieldwork includes Sagebrush Steppe monitoring at Lake Roosevelt National Recreation Area and at John Day Fossil Beds National Monument (with field crew led by Devin Stucki); Riparian Condition and Stream Channel Characteristics monitoring at Nez Perce National Historical Park and at Whitman Mission National Historic Site (by US Forest Service PIBO field crews, and Eric Starkey coordinating for UCBN); Water Quality monitoring at Nez Perce NHP and Whitman Mission NHS (by Eric Starkey, with some park assistance); Pika and Limber Pine monitoring at Craters of the Moon National Monument and Preserve (led by Devin Stucki, with some park assistance); Camas Lily monitoring at Nez Perce NHP (with lots of park assistance); plus Camas Lily and Lemhi Penstemon monitoring at Big Hole National Battlefield (again, with lots of park assistance). In addition, Bat and Sage Grouse monitoring at Craters of the Moon NM&P was accomplished during late winter and spring

by park staff (led by Todd Stefanic). Our field crew includes a new face – Matt Hovland is helping with sagebrush and pika sampling, including continued collaboration with Klamath Network parks (Matt will do pika surveys at Lava Beds NM and Crater Lake NP). The UCBN greatly appreciates all the field assistance from our parks, the valuable contributions to our reporting efforts, and on-going efforts to integrate monitoring data with park management needs. Another important aspect of these collaborative efforts is safety. Our monitoring project leads communicate on safety readiness reviews and field itineraries with park resource managers and superintendents. We value this engagement that highlights safety as a daily discussion and assessment topic during field operations. New this year is the acquisition of two field radios for the UCBN field crew leaders. Eric Starkey has created a Standard Operating Procedure, providing the programmed radio channels and proper radio operations. We welcome feedback from our parks about the usefulness of these radios for

daily check-in procedures by our field crews.

In addition to new publications and updated program information (as always, available on the UCBN website, <http://science.nature.nps.gov/im/units/ucbn/>), we've been busy finalizing new monitoring protocols. This spring we submitted our Bat monitoring protocol for peer review, and we will soon be submitting our Lemhi Penstemon monitoring protocol for peer review. And we've begun a collaborative development of a Sage Grouse monitoring protocol.

Another exciting update for the UCBN program is the pending arrival of a new Data Manager. Kirk Sherrill will arrive in mid-August. Kirk has worked closely with the NPS I&M program in Fort Collins on innovative GIS and database applications, and will bring a strong suite of spatial analysis, modeling, and data management skills to the UCBN. We're very pleased to welcome him to our network.

Have a great summer! ~ Gordon Dicus, UCBN Program Manager

Futbol World Cup 2014 - Prediction Results



Futbol fans (i.e., soccer) in the UCBN enhanced their enjoyment of the 2014 World Cup tournament by predicting results. Eric Starkey was the overall winner, and JoAnn Blalack took second place. In the opening group stage, Devin Stucki (with assistance

from his wife, Emerald Shirley) had the best performance, correctly picking 12 of the 16 teams advancing to the Round of 16. Meghan Lonneker and Eric managed to correctly pick 6 of the 8 teams advancing to the Quarterfinals, allowing Meghan to overtake Devin in prediction points. All participants correctly picked 3 of the 4 teams moving

on to the Semifinals, leaving Meghan as the points leader. Eric and JoAnn were the only ones to pick Germany as World Cup champion, separating them from the rest of the prediction pack, with Eric as overall points leader. Cory Nash, of the Pacific Islands Network, gets honorable mention for correctly picking Netherlands in third place.

UCBN Inventory and Monitoring Program Schedule 2014

	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
MONITORING										
Bats	CRMO	CRMO								
Camas lily				NEPE	BIHO					
Lemhi penstemon and invasive weeds					BIHO					
Limber pine						CRMO	CRMO			
Osprey				LARO		LARO				
Pika							CRMO	CRMO		
Riparian Vegetation				NEPE WHMI	NEPE WHMI	NEPE WHMI				
Stream Channel Characteristics				NEPE WHMI	NEPE WHMI	NEPE WHMI				
Sagebrush-steppe vegetation				LARO	JODA	JODA				
Sage-grouse		CRMO	CRMO							
Water quality					NEPE WHMI	NEPE WHMI	NEPE WHMI	NEPE WHMI	NEPE WHMI	NEPE WHMI
Aspen	No additional data collection until 2015.									
INVENTORIES										
Vegetation mapping	All UCBN parks. Final maps and reports completed.									



Monitoring activities for which field operations are conducted by park staff.



Monitoring activities for which field operations are conducted by UCBN staff, or by UCBN staff in cooperation with park staff.



Monitoring activities for which field operations are conducted by NPS partners.

An update on the conservation crisis for bats

Tom Rodhouse - Upper Columbia Basin Network Ecologist

The radical transformation of the bat conservation scene in North America over the last few years has been nothing short of astounding. The disease known as White-nose Syndrome appeared seemingly out of nowhere in 2007 in New England and has now spread to 25 states and 5 Canadian provinces, and made some of our most common and secure species like the little brown bat at serious risk of regional extinction. I'll never forget during those early years of the outbreak watching the very best among our wildlife disease experts appear truly baffled during the question and answer sessions at the bat research symposia. We now know the disease is caused by a fungus accidentally spread by humans from Europe – one of the most poignant examples of how the global spread of invasive species is altering our ecosystems. Although it is impossible to know for sure, best guesses put the death toll at around 5 million bats. The worst wildlife catastro-

phe of our time – imagine if we were talking about something large and conspicuous like elk? To make matters worse, beginning only a few years earlier but accelerating recently, is the discovery of mass bat fatalities at some of the large wind energy farms. A recent paper in Science put the 2012 death toll in the continental US at around 600,000 bats. The species of bats most vulnerable to collisions with wind turbines, best exemplified by the migratory hoary bat, are not the same species dying from White-nose Syndrome. So it would seem as though there will be far fewer bats roaming our night skies in the near future, even here in the UCBN where White-nose Syndrome has not yet hit and where the distributed nature of bat migratory pathways and wind farms has so far yielded relatively modest death tolls. Quantifying the economic impacts of such large die-offs of insect-eating bats to ecosystems and agriculture is difficult, but thought to easily be

in the billions of dollars, when accumulated over many years and large areas of the country. Monitoring the actual changes in bat populations is also very tricky, but hopefully something the UCBN can contribute to soon. Already, Craters of the Moon National Monument and Preserve (CRMO) has been beefing up its winter cave bat monitoring and is assisting in the pilot testing of the nascent North American Bat Monitoring Program (NABat), and we hope other parks will be able to join in this effort soon as well. An interagency effort, NABat seeks to do for bats what the Christmas Bird Count and Breeding Bird Survey has done for birds – provide solid information on the status and trend of bat populations around the US, Canada, and northern Mexico. Stay tuned and check out our “Making sense of I&M nonsense” column in this issue of the Basin Bulletin to learn more about the what and how of bat monitoring.



Photo of a long-legged myotis bat and a long-eared myotis bats at a cave at Craters of the Moon National Monument and Preserve.

Making sense of I&M non-sense: Bat monitoring

Tom Rodhouse - Ecologist, Upper Columbia Basin Network

The gee-whiz behind bat monitoring – the state of the art of nocturnal eavesdropping



Long-legged myotis (*Myotis volans*) photographed at CRMO.

How does one actually go about monitoring bats? Bats are **nocturnal** (active only at night) and **cryptic** (hard to find), spending days deep inside caves, mines, cliff crevices, and under the sloughing bark of big **snags** (standing dead trees). We used to have to rely on capture of bats as they flew along streams and other constrained flight paths at night – we still do for some studies. However, more recently, the development of bat “detectors” – small computers with microphones that can record bat calls - has revolutionized bat monitoring.



Bat detector used while monitoring bats at John Day Fossil Beds National Monument (JODA).

For example, the North American Bat Monitoring Program (NABat) is promoting heavy reliance on the use of these bat detectors. Although bats are most definitely not blind, they do rely heavily on echolocation to find their way around night skies. **Echolocation** is the process by which bats make a series of rapid, loud, high pitched shouts with their **larynx** (their “voice box”); being mammals too, bats make vocalizations with their larynx same as us humans).



Long-eared myotis (*Myotis evotis*) photographed at CRMO.

Problem is, we generally can't hear their shouts because they are calling at such a high **frequency** (pitch) that our ears can't pick them up. But the bat detectors can! The next big challenge is using computer software to distinguish among the different calls recorded and assigning them to specific bat species. Bats aren't like birds, which use their calls to mark out territories, resulting in very distinctive calls for each

species. Bats use their calls for very utilitarian purposes and so have not developed highly distinctive calls. The end result? Bats of different species can produce very similar calls, sometimes making it impossible to tell exactly which species the detector has recorded. Computer software development for bat call recognition is currently a very active area of research. The focus is on looking at **call morphology** (shape and duration of each call) and the timing between calls. Species with seemingly identical calls will sometimes show peak **decibels** (energy or intensity) at different time points within their respective calls. Clearly, successful bat monitoring will require help from acoustic and computer engineers as well as from biologists!



Bat detector placed close to the Palisades at the Clarno Unit in JODA.

“Water, the Nez Perce and You” at Nez Perce National Historical Park

Eric Starkey - Aquatic Biologist, Upper Columbia Basin Network

This past April, I was invited to participate in a water resource education day at Nez Perce National Historical Park (NEPE). The purpose of the event was to highlight the importance of water to the Nez Perce, ongoing issues, and status of water in the region. Throughout the day, there was a number of interactive stations setup in the Spalding visitor center. Amongst these, I setup a station highlighting Upper Columbia Basin Network’s aquatic macroinvertebrate (aquatic insect) monitoring. Visitors were able to look at locally collected macroinvertebrates under a microscope and identify them to family. In addition,

there was a variety of resources to learn about aquatic insect lifecycles and the status of water quality in NEPE. A number of visitors picked up a copy of the identification key for use this summer when they are out on the river. If you are interested in a copy let me know and I can send you the digital version. Additional topics covered by other booths/ presentations included ground water and wetland plants.

For the latest on water quality monitoring at NEPE and in your park make sure to check out our website, <http://science.nature.nps.gov/im/units/ucbn/monitor/waterquality.cfm>



UCBN Water Quality Station at the “Water Day” event held at Nez Perce National Historical Park Visitor Center.



Microscope and identification keys for macroinvertebrates.

New faces in our network

Beth Erdey

Archivist and Research Center Manager at Nez Perce National Historical Park



Beth is from Sheboygan, Wisconsin. She attended University of Wisconsin – Eau Claire where she received a BA in Political Science and History in 2003 and an MA in History with a certificate in Public History in 2007. In December 2013, Beth defended her doctoral dissertation in History at Washington State University. Her

dissertation “Wildly Contentious: The Battle for North Central Idaho’s Rivers, Roads, and Wilderness” examines 20th century federal public land management and natural resource policy in North Central Idaho and how the completion of US Highway 12, Dworshak Dam, and conflicts over wilderness designation of the Magruder Corridor, opened the region to natural resource extraction and outdoor recreation.

Beth began her work with the National Park Service in 2006 as a summer intern at Big Hole National Battlefield. In 2008, she worked at Nez Perce National

Historical Park as a seasonal park guide at the Spalding Visitor Center. In 2010, Beth transferred to the park’s resource management division, working in the park’s archives and museum collections. She currently serves as the Pacific West Region Park Representative to the NPS Museum Management Program Council and UCBN Representative to the Pacific West Region Cultural Resources Advisory Committee.

Beth and her husband, Jason, reside in Pullman, Washington with their beagle, Scooter. In her spare time, Beth enjoys outdoor activities, quilting, and cooking.

