

Interagency Special Status and Sensitive Species Program Update– February 2017

Websites – ISSSSP and Survey & Manage

The Survey & Manage website (<http://www.blm.gov/or/plans/surveyandmanage/>), currently hosted by the Bureau of Land Management (BLM) Oregon State Office, will need to be taken off line within the next year. This website will remain static as of January 23, 2017. Prior to the site going offline, the website content will be moved to the Forest Service (FS), Region 6 (R6) servers. The Interagency Special Status and Sensitive Species Program (ISSSSP) is currently strategizing with R6 Data Resource Management on a solution to BLM no longer being able to support the site. As of now, we will either be creating a new Survey and Manage website hosted by FS R6, or we will create a Survey & Manage webpage within the ISSSSP website (<http://www.fs.fed.us/r6/sfpnw/issssp/>).

If you have suggestions for other improvements to the websites or, as you use the websites, if you find errors or encounter problems, please notify Carol Hughes.

CONTENTS

Inventory and Monitoring	2
Conservation Planning	4
Program Information	6
Survey and Manage Update	7
White-nose syndrome- ISSSSP response	8
Contact Information	9

Data Management

NRIS/NRM Wildlife

The NRIS Wildlife application will be down the week of March 13, 2017, in preparation for a major release to the Wildlife application on March 19th. The updated application will be available to users on March 20, 2017. The Wildlife 2.12.0 release will include moving Wildlife from the forest level schema to the national level schema.

NRIS Wildlife Training: May 9-11 will be in either Vancouver or Hood River. There must be 15 people to hold the class. Contact Ann Glidden (aglidden@fs.fed.us).

Data snapshots

For improved project analyses, data snapshots of flora and fauna data from Oregon Biodiversity Information Center, Washington Natural Heritage Program, and Washington Department of Fish and Wildlife are taken and updated every six months.

For R6 Forest Service, the snapshots (including a snapshot of Oregon and Washington [OR/WA] BLM data: GeoBOB) can be found at the following location: T:\FS\Reference\GIS\r06\LayerFile\Wildlife\WildlifeObservations. Even though the folder is called "WildlifeObservations", the snapshots include flora species. Contact Carol Hughes if you have problems or questions.

For OR/WA BLM, the above noted data snapshots (including a snapshot of FS R6 data: NRIS) are provided via the "Layer Browser" tool in ArcGIS. Please contact Chelsea Waddell if you have any questions.

GeoBOB

BLM has developed a new, simpler version of GeoBOB! GeoBOB Version 2.0 was deployed in November 2016.

UPCOMING TRAINING: Vale, Oregon

March 7th - Desktop Flora Training

March 8th - Desktop Fauna Training

March 9th - Mobile Training for ArcPad and Junos

Training sessions were also held in Spokane, Springfield, and Medford in 2016. Please contact Chelsea Waddell to enroll in the upcoming training or for more information about GeoBOB Version 2.0.

Key Points in this issue:

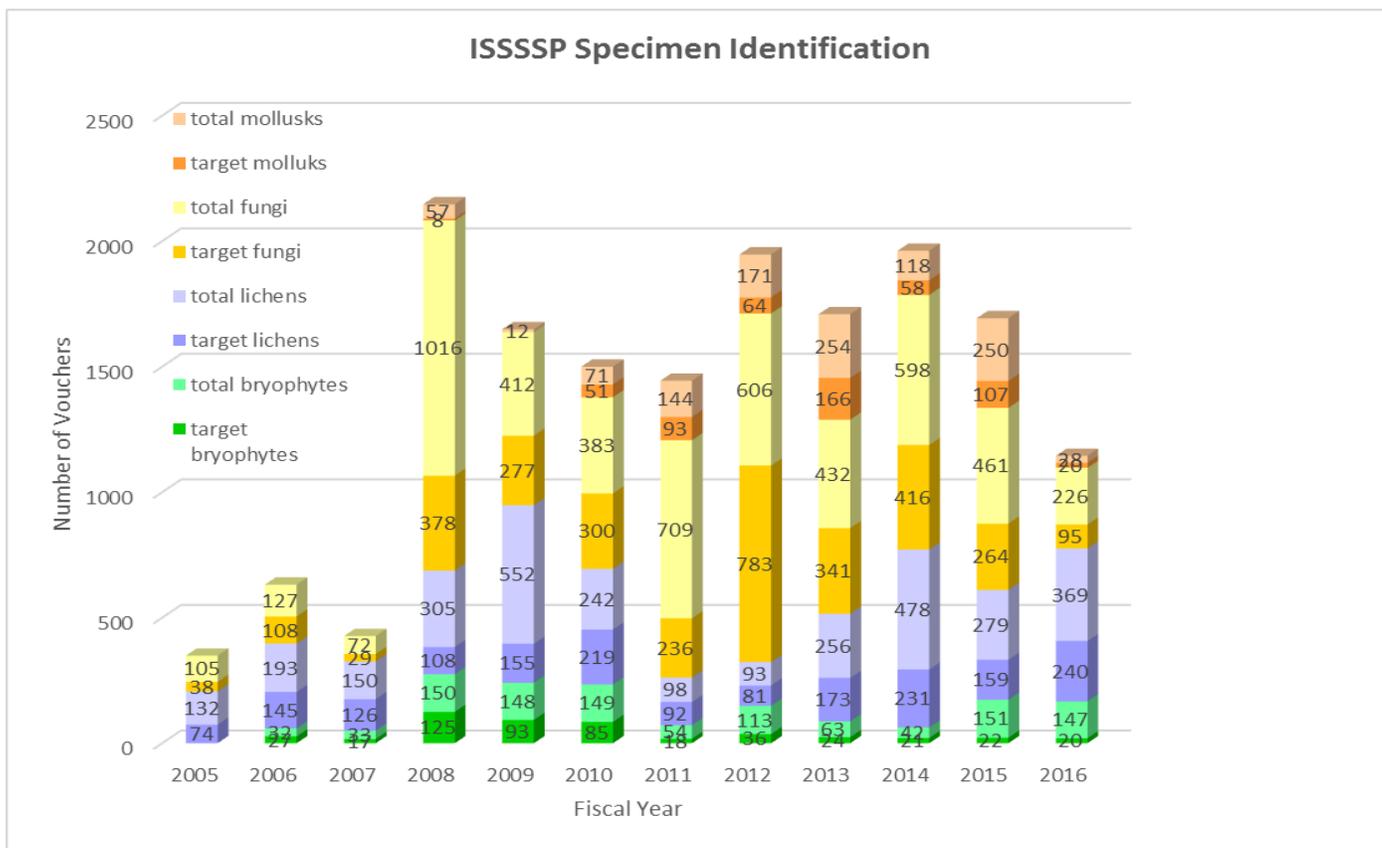
- eDNA shows promise for aquatic multi-species surveys
- New rare lichen and bryophyte species books for Oregon
- Fungi work group tasks address getting more information for very rare sensitive species
- Multiple Agreements available to FS and BLM field units for assistance regarding rare species management
- A number of new Survey and Manage products available for NWFPP units
- New SSSS list out this FY

Inventory and Monitoring

Specimen Identification Services

R6 Forest Service and OR/WA BLM require that all new sites of Sensitive, Strategic, and Survey and Manage bryophytes, lichens, fungi, and invertebrate species be documented with specimen voucher collection. Usually when a specimen is collected in the field, it's not even known if it is the target species. ISSSSP covers the cost of expert identification of these vouchers. In some cases a photo voucher is adequate for expert ID. Representative samples of the vouchers are curated and submitted to regional repositories.

The following figure summarizes the number of voucher specimens that have been submitted through ISSSSP (excludes bryophytes in 2005, mollusks in 2005-2008, and non-mollusk invertebrates all years). Note that more vouchers are collected than are determined to be "target" Sensitive, Strategic, or Survey & Manage species, which emphasizes why we have the vouchering/ expert ID requirement.



All contact information, voucher tracking forms, and guidelines are available from <http://www.fs.fed.us/r6/sfpnw/issssp/inventories/identification.shtml>

Training

ISSSSP has sponsored workshops when training needs are identified for large groups. Since 2014, there have been 11 Bumble Bee Workshops presented by The Xerces Society. In 2016 Chris Loggers from the Colville National Forest (NF) partnered with USFWS to host 3 Bumble Bee workshops that included a Citizen Science component.

In late spring 2017, lichen and bryophyte training sessions will be held in central Washington and central Oregon in response to requests from field units in those areas.

If your Forest or BLM District has a training need that you think others may have as well, please contact Rob Huff, Carol Hughes, or Kelli Van Norman. Another way to get training is to incorporate it into your ISSSSP project proposal.

Inventory and Monitoring, continued

Species Highlight – Gray Blue Butterfly (*Plebejus podarce klamathensis*) in southwestern Oregon

Prior to 2013, the Gray Blue Butterfly was known in northern California, but in southwestern Oregon it was known from only ten sites spread out between Mt Ashland in the Klamath Mountains north to Diamond Lake in the Cascade Range. A 3-year survey project was initiated by Medford District BLM, Rogue River-Siskiyou NF, and Umpqua NF to confirm persistence at historic sites and to locate new populations. The biologists worked closely with botanists since the host plants are believed to be *Dodecatheon jeffreyi* and *D. alpinum*. Their surveys confirmed Gray Blue Butterflies at the 4 historic populations they surveyed, and they found 12 new populations including range extensions.

Based on these results, the Willamette NF then started a survey effort and found several new large populations on the Middle Fork Ranger District. They collaborated with the local North American Butterfly Association and a local botanist, Tanya Harvey, who wrote several blogs. Read more about the surveys at <http://westerncascades.com/2016/07/09/more-butterfly-surveying-in-the-calapooyas/>



Adult male Gray Blue Butterfly. Note row of black dots on apical margin of the dorsal hind wing and haloed black spots across ventral wing. Photo J. Reilly 2013.

Survey Methodology Highlight – eDNA

All organisms shed cells. The premise of environmental DNA (eDNA) sampling is that organisms can be detected from their shed cells. It's an especially practical method to use with water samples. Back in 2013 Trish Johnson from the Wallowa-Whitman NF submitted the first eDNA proposal ISSSSP had ever received. It was for the Rocky Mountain tailed frog (*Ascaphus montanus*). Since then, the use of eDNA methods has exploded. For FY17 ISSSSP received six eDNA proposals.

There are now a number of labs that are working with eDNA. One of the specialties of the Rocky Mountain Research Station's (RMRS) National Genomics Center for Wildlife and Fish Conservation are eDNA projects. RMRS recently published a protocol (http://www.fs.fed.us/rm/pubs/rmrs_gtr355.pdf). The Pacific Northwest (PNW) Research Station has been doing eDNA work too. BLM has a Financial Assistance Agreement with Washington State University's Dr. Caren Goldberg for a Columbia spotted frog (*Rana luteiventris*) Great Basin clade field study using eDNA, and her lab is developing eDNA markers for the western pond turtle (*Actinemys marmorata*) and foothill yellow-legged frog (*Rana boylei*). There is not yet a national or international database of eDNA markers. Those who develop eDNA markers must write a manuscript and submit it to a peer-reviewed journal for publication. This doesn't always happen so it's been a bit difficult to find out which species have eDNA markers already developed, by whom, and if it's valid and publically available for others to use.

Willamette NF has an especially exciting project to sample for Pacific lampreys (*Entosphenus tridentatus*), which are particularly difficult to detect. They worked with a number of partners to develop a spatially balanced and randomly selected survey protocol to test for lamprey presence and absence. The implementation has been progressing so smoothly that they will be expanding it to the Northwest Oregon BLM District (formerly Eugene and Salem Districts) and the Umpqua NF within the Willamette watershed. As part of this project they are evaluating Pacific lamprey habitat and assessing restoration needs.



For additional information about ISSSSP inventory or monitoring efforts, please contact Kelli Van Norman.

Conservation Planning

Under Conservation Planning, informational documents are created, such as species fact sheets for the little known SSSS (fungi, lichens, bryophytes, invertebrates), as well as more detailed conservation and management oriented documents (Conservation Assessments, Conservation Strategies, Conservation Agreements, Site Management Plans) for higher-priority species or species with more information known about them. Conservation Planning also includes planning and implementation of habitat restoration and enhancement projects.

Completed and posted documents

Documents that have been completed and posted on our website since the last ISSSSP update include:

Conservation assessments for red-tailed chipmunk, spotted bat, pallid bat, kit fox, pygmy shrew and the mollusks *Cryptomastix devia*, *Cryptomastix hendersoni*, *Helminthoglypta hertlieni*, *Hemphillia burringtoni*, *Hemphillia glandulosa*, *Monadenia fidelis minor* and *Prophysaon coeruleum*

Species Fact Sheets:

Fungi: *Bryoglossum gracile*

Lichens: *Arctoparmelia incurva*, *Dactylina arctica*, *Ramalina thrausta*, *Umbilicaria lambii*, *Umbilicaria phaea* var. *coccinea*

Invertebrates: *Allomyia scotti*, *Boloria selene*, *Callophrys johnsoni*, *Driloleirus americanus*, *Hesperia colorado oregonia*, *Homoplectra schuhi*, *Juga hemphilli dallesensis*, *Juga hemphilli hemphilli*, *Juga hemphilli maupinensis*, *Lanx klamathensis*, *Lanx subrotunda*, *Lepidostoma astanea*, *Megomphix lutarius*, *Monadenia fidelis celeuthia*, *Monadenia fidelis flava*, *Oreohelix strigosa delicata*, *Pomatiopsis californica*, *Pristiloma pilsbryi*, *Polites sonora siris*, *Vespericola sierranus*

Fish: Pygmy whitefish

Site Management Plans for mardon skipper areas (Rogue River-Siskiyou NF and Gifford Pinchot NF, Cowlitz Valley RD) and for the Siuslaw hairy-necked tiger beetle (Coos Bay BLM)

Habitat enhancement/restoration actions: *Ophioglossum pusillum* enhancement (Willamette NF), restoration for invertebrates associated with xeric meadows (Olympic NF) and protection of a Townsend's big-eared bat maternity colony (Columbia River Gorge NSA)

Completed work but not yet posted on the website

Conservation strategies: Inland redband trout

Conservation assessments for pygmy rabbit and *Sanicula marilandica*

Species Fact Sheets:

Invertebrates: *Colias christina sullivani*, *Fluminicola modoci*, *Juga acutifilosa*

Site Management Plans for mardon skipper sites (Gifford Pinchot NF, Mt. Adams RD)

Habitat enhancement/restoration actions: Whitebark pine 2015 progress report

Other conservation planning tools: Updated bibliography and associated tables on effects to fungi

For additional information about Conservation Planning please contact Rob Huff.

FY17 work in progress

Conservation Strategies: 3 vascular plant species

Conservation Assessments for 3 bats, 2 birds, 2 butterflies, and 4 vascular plants

Species highlight– Whitebark pine (*Pinus albicaulis*)

The whitebark pine is a federal candidate species for listing as threatened or endangered, and as a federal candidate, it is a sensitive species for both BLM and Forest Service in Oregon and Washington. The U.S. Fish and Wildlife Service will be making a determination on listing the species by fiscal year 2019. The species is documented on a number of National Forests: Colville, Gifford Pinchot, Mt. Baker-Snoqualmie, Okanogan-Wenatchee, Olympic, Deschutes, Fremont-Winema, Malheur, Mt. Hood, Rogue River-Siskiyou, Umatilla, Umpqua, Wallowa-Whitman, and the Willamette. For the BLM, the species is only documented on Spokane and Vale BLM Districts. Threats to the species include vulnerability to infection by the non-native fungus *Cronartium ribicola* (which causes white pine blister rust), susceptibility to infestation by mountain pine beetle (*Dendroctonus ponderosae*), wildfires, and encroachment from shade-tolerant tree species, exacerbated by fire exclusion. There are also significant concerns about the impacts of climate change, particularly warming, on this high-elevation, cold-adapted species.

The species is considered a high-priority for ISSSSP, and in FY17 the following conservation and monitoring actions were funded:

- Whitebark pine plot monitoring on the Malheur, Colville, Fremont-Winema, and Deschutes National Forests (funding in coordination with the Forest Health Protection, Westside Insect and Disease Service Center)
- Kettle Crest whitebark pine project, filling information gaps, informing management and implementing restoration (Colville NF)
- Bonaparte Mountain whitebark pine fuels reduction project (Okanogan-Wenatchee NF)
- Vinegar Hill verbenone application whitebark pine project (Umatilla NF)
- Evaluation of thinning encroaching tree species in whitebark pine populations (Fremont-Winema NF)
- Whitebark pine restoration NEPA analysis (Fremont-Winema NF)

For additional information on this species or these projects, contact Andy Bower (abower@fs.fed.us), Area Geneticist and Region 6 Forest Service Whitebark Pine Restoration Program Lead or Rob Huff.

Other Highlights

NEW BOOK ANNOUNCEMENTS: Rare Bryophytes of Oregon, Rare Lichens of Oregon

Ron Exeter (retired), former botanist on the Mary's Peak Resource Area, Salem BLM, was the lead author and main shaker behind these publications. National Forests and BLM Districts were mailed copies of these in fall 2016. The ISSSP helped fund the creation and publication of these documents.

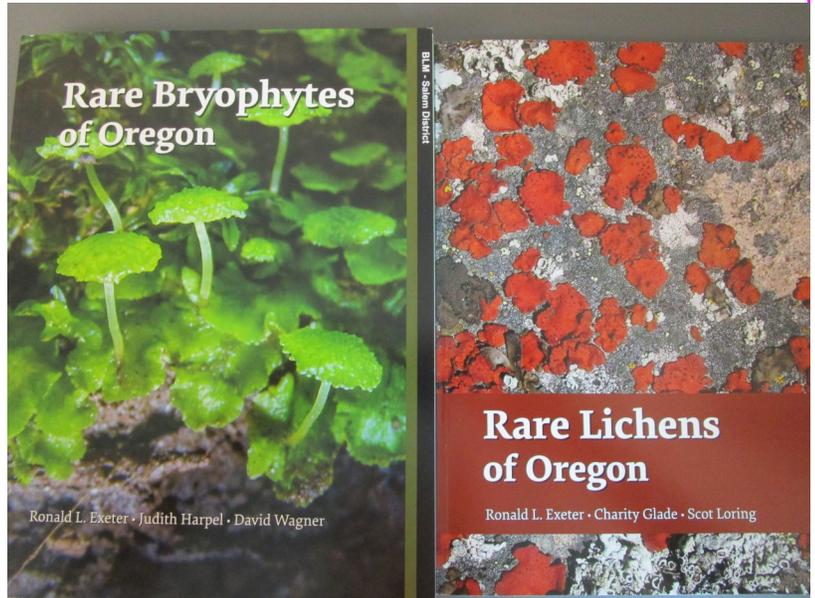
Rare Bryophytes of Oregon is a cooperative venture five years in the making. It includes one hornwort, 39 liverworts and 102 mosses. It contains approximately 1,350 photos on 153 plates and provides for each species current taxonomy, distinctive characteristics, technical description, similar species, ecology, references, and county distribution maps. There is a CD of the book inside the back cover which has the complete book in pdf format, either low resolution or in full resolution. These can be downloaded onto a computer hard drive for quick reference anywhere, anytime. Exeter, Ronald, Judith Harpel and David Wagner. 2016. Rare Bryophytes of Oregon. Salem District, Bureau of Land Management, Salem, Oregon, 97306. ISBN-13: 978-09791310-4-2. 378 p.

Rare Lichens of Oregon provides species-specific information on 78 special status lichen species included in the 2016 publication of Rare, Threatened and Endangered Species of Oregon by the Oregon Biodiversity Information Center (ORBIC). Additionally, *Leptogium compactum* is included and considered rare in Oregon. Individual treatments include synonyms, common names, field summaries, diagnostic characters, species descriptions, ecologies, distributions, similar species, and county distribution maps. Also included are species distribution maps by Oregon counties and over 290 photos and drawings.

Exeter, Ronald L., Charity Glade, and Scot Loring. 2016. Rare Lichens of Oregon. Salem District, Bureau of Land Management, Salem, Oregon. ISBN-13: 978-0-9791310-6-6. 195 p.

The bryophyte publication is \$42, while the lichen book is \$30. The price includes shipping. To order copies phone 503-375-5646, or mail checks to:

Rare (Bryophyte or Lichen-fill in appropriate one) Book
Salem District, Bureau of Land Management
1717 Fabry Road SE
Salem, Oregon 97306



For additional information
about these topics contact
Rob Huff or Kelli Van Norman.

Fungi Work Group Tasks

The OR/WA FS and BLM Fungi Work Group met in late October 2016 to outline priority tasks for the Group to work on over the next couple of years. The Fungi Work Group tries to develop tools and gather information to help manage for the conservation of rare fungi species. Priority work identified by the Group includes:

- Strategic surveys in Washington and SW Oregon, targeting high-quality habitat. Includes Mt. Baker-Snoqualmie NF, Olympic NF, Colville NF, Rogue River-Siskiyou NF, and Medford BLM.
- Additional strategic surveys for very rare sensitive species; 17 of the 28 sensitive fungi species are known from 10 or fewer known sites on FS and BLM lands in Oregon and Washington. Nine of those species are truffles. Strategic surveys will focus on surveys for these nine truffle species, conducting surveys radiating out from known sites.
- Query genera and species experts about the 17 very rare Sensitive species, to see if they are aware of additional sites of these species, or have additional knowledge that can help us find more sites and manage sites or habitat.
- Monitor effectiveness of buffers placed around known fungi sites. Botanists on 4 FS and BLM units are revisiting a total of 15 fungi sites where projects have been implemented, with various buffer sizes placed around those sites, to see if they can relocate the rare fungi.
- Develop project design criteria, for potential use at project and landscape planning scales, to help promote or maintain sensitive fungi species. We're reviewing papers to see what information we can draw out and is practical to apply, and will share with field units.

Program Information

Lists of Agreements in Place that Support ISSSSP and Survey and Manage

Attached is a list of agreements established by the ISSSSP and OR/WA BLM State Office Plant Conservation Program that support the inventory and conservation of rare species for both BLM and FS in Oregon and Washington. These agreements can provide efficiency for transfer of funds or completion of work associated with rare species inventory and management, and they can be modified to support this work at the field level. Please contact Carol Hughes or Kelli Van Norman if you have a need to work with one these agencies/organizations.

Agency	Agreement	Partner	Project Description
FS	IA	Bureau of Land Management, Oregon/Washington	General ISSSSP support, and inventory and conservation of rare species
FS	Purchase order	Washington Natural Heritage Program (WNHP)/Washington Department of Natural Resources (WDNR)	Data services and support to rare flora and fauna conservation and inventory
FS	Purchase order	Oregon Biodiversity Information Center (ORBIC)/Portland State University (PSU)	Data services and support to rare flora and fauna conservation and inventory
BLM	IA	Forest Service, Region 6	General ISSSSP support, and inventory and conservation of rare species
BLM	FAA	Biodiversity Research Collective	Lichen & bryophyte studies, inventory, conservation, documentation, and education
BLM	FAA	Oregon Wildlife Institute	Conservation of rare vertebrates
BLM	FAA	The Smithsonian Institution	Taxonomic work on aquatic mollusks
BLM	FAA	The Xerces Society, Portland	Invertebrate inventory, conservation, and education
BLM	FAA	Chicago Botanic Gardens	Conservation Land Management interns; further the development and maintenance of natural resources by America's youth, and in doing so, prepare them for the responsibility of maintaining and managing these resources for the American public.
BLM	FAA	NW Lichenologists	Lichen & bryophyte advocacy, conservation, education, and outreach
BLM	FAA	Institute for Applied Ecology	Rare vascular plant conservation, management, inventory, and monitoring
BLM	FAA	WNHP/WDNR	Plant and animal conservation, analysis and data services; maintain, develop and distribute biodiversity information in Washington
BLM	FAA	Oregon Department of Agriculture	Vascular plant conservation, management, monitoring and overall recovery of Oregon State and federally listed species in Oregon
BLM	CESU-FAA	ORBIC/PSU	Plant and animal conservation, analysis, and data services; maintain, develop and distribute biodiversity information in Oregon
BLM	CESU-FAA	University of Washington Rare Care and the Miller Seed Bank	Rare plant conservation, monitoring, inventory, education, and seed collection and storage
BLM	CESU-FAA	Portland State University - Rae Selling Berry Botanic Seed Bank & Plant Conservation Program	Plant conservation, rare plant seed collection and storage to conserve the genetic resources of Oregon's native plants for current and future generations
BLM	CESU-FAA	University of Washington Herbarium	Vascular plant reference on taxonomy; develop web based tools to disseminate this information to the public
BLM	CESU-FAA	Oregon State University-Oregon Flora Project	Vascular plant reference on taxonomy focusing on data management, data access, and dissemination vascular plant information for the State of Oregon
BLM	CESU-FAA	Washington State University – Dr. Caren Goldberg	Environmental DNA for inventory and monitoring aquatic species
BLM	CCS-FAA	Carex Working Group, LLC	Grass, sedge, willow and paintbrush conservation, inventory, and education

IA = Interagency Agreement
FAA = Financial Assistance Agreement

CESU = Cooperative Ecosystem Studies Unit
CCS = Challenge Cost Share

Program Information, continued

ISSSSP List Update

In August 2016, the Oregon Biodiversity Information Center updated their list of rare species for the state of Oregon. That updated list triggers a re-assessment of the R6 Regional Forester and OR/WA State Director Sensitive and Special Status Species Lists to determine if there should be species additions, removals, or category changes. New draft R6 Regional Forester and OR/WA State Director Sensitive and Special Status Species Lists will be shared with Forests and BLM Districts this spring. Forests and BLM Districts will be asked to review the lists and provide information on whether species newly added should be considered documented or suspected on their units, as well as to update suspected and documented statuses for species that were previously on their lists.

FY2017 and 2018 Project Proposals

Seventy FY17 proposals were submitted in spring 2016. Twenty-six proposals have been selected and funded thus far. New in FY17 was having proposals for whitebark pine (WBP), a federal Candidate species, evaluated separately by the Regional Office WBP group. From 10 WBP proposals submitted, 5 were funded for a total of \$90,000. The request for FY18 proposals was recently sent out. We'll continue with having biologists and botanists from across Oregon and Washington help evaluate the proposals, which is a great learning experience for all of us.

A quick review of proposals submitted to ISSSSP from 2005 through 2017 shows that we've received 832 proposals for an average of 64 proposals per year. ISSSSP has funded almost 400 of those proposals, or an average of 30 new proposals per year. For the Forest Service, ISSSSP has funded approximately \$325,000 per year and \$170,000 per year for the BLM. Outcomes of funded project proposals have informed species' ranges/distributions, informed species condition in the state (threats, trends, rarity), improved survey methodology and reliability in survey results, strengthened confidence in project NEPA analysis, and improved confidence in site management, therefore, improving species' conservation. Apart from proposals, ISSSSP also funds high priority tasks identified by work groups, Strategic species information gathering, and addressing conservation needs such as actions identified in Site Management Plans and Conservation Strategies. Contact Kelli Van Norman or Rob Huff for more info.

Survey and Manage Update

On August 5 2016, the BLM signed two records of decisions, replacing their resource management plans for western Oregon. These new plans do not include the Survey and Manage standards and guidelines from the Northwest Forest Plan (NWFP). The field units may still utilize the older resource management plans, which include Survey and Manage mitigation, for those projects that were initiated before August 5th, 2016 as long as the decisions for those projects are signed by August 5, 2018. Projects initiated after August 5, 2016, must utilize the new plans.

Survey and Manage related products that have been created since the last ISSSSP update (June 2015) include:

- Updated Great Gray Owl Survey Protocol (version 4.0).
- Conservation Assessments for some mollusk species that are both Survey and Manage and Sensitive: *Cryptomastix devia*, *Cryptomastix hendersoni*, *Hemphillia burringtoni*, *Hemphillia glandulosa*, *Prophysaon coeruleum*, and *Monadenia fidelis minor*. These documents should be utilized as management recommendations for the species, to determine how to best manage species' sites.
- Red Tree Vole High-Priority Site Management Recommendations (version 1.0).
- Dunk and Hawley 2009 Red Tree Vole model extrapolated to the range of the species
- Published new model, and model evaluation for Red Tree Voles: <http://onlinelibrary.wiley.com/doi/10.1002/ecs2.1630/epdf>
- Although not created or funded by ISSSSP, another important Red Tree Vole product was also created: Tree Voles, an Evaluation of Their Distribution and Habitat Relationships Based on Recent and Historical Studies, Habitat Models, and Vegetation Change https://www.fs.fed.us/pnw/pubs/pnw_gtr948.pdf

A number of Survey and Manage associated tasks are currently in progress:

- Updating species list, to correct misspellings, and recognize recent taxonomic changes
- Updating the Red Tree Vole survey protocol
- Creating a photographic guide to Red Tree Vole nests
- Conducting strategic surveys for some fungi species that are both Sensitive and Survey and Manage
- Conducting taxonomic work on some *Monadenia* species that are both Sensitive and Survey and Manage
- Developing a Conservation Assessment for *Corydalis aqua-gelidae*

For additional information contact Rob Huff or Carol Hughes

NWFP related products created since last ISSSSP update– Bat Specific standards and guidelines

- A Conservation Assessment for the pallid bat was created and can be used in conjunction with the NWFP standards and guidelines specific to bats, modified via the 2001 Survey and Manage Record of Decision and Standards and Guidelines.

White-nose syndrome in bats: ISSSSP response

Background

White-nose syndrome (WNS) is a disease caused by the fungus *Pseudogymnoascus destructans*. The disease is estimated to have killed over six million bats in eastern North America since 2006, and can kill up to 100% of bats in a colony during hibernation. In March 2016, Washington's first case of WNS was confirmed in a Little Brown Bat (*Myotis lucifugus*) near North Bend, 30 miles east of Seattle. Prior to this discovery, the nearest known occurrence of the fungus or WNS was in eastern Oklahoma and eastern Nebraska. Though the disease has devastated bat populations in eastern North America, we do not yet know how it will impact western bats. In general, bats in Washington do not hibernate in large aggregations like bats do in eastern North America. Thus, the spread of the disease in western North America may be different.

The fungal disease is spread primarily from bat-to-bat contact. Bats can also contract the disease from an environment where the fungus is present. People can carry fungal spores on clothing, shoes, or recreation equipment that has come in contact with the fungus. Appropriate cleaning or decontamination of clothes and equipment used in areas where bats may live is critical to reduce the risk of spreading this catastrophic bat disease.

Oregon and Washington FS/BLM response

The Washington Department of Fish and Wildlife (WDFW) is the lead agency determining the appropriate response to the discovery of WNS in Washington. We (FS/BLM) participate on a Pacific Northwest (Oregon, Washington, Idaho, British Columbia) interagency team with representatives from WDFW, US Fish and Wildlife service, US Geological Survey, National Park Service, Idaho Fish and Game, Oregon Department of Fish and Wildlife, Canadian government agencies, and counterparts from both the FS and BLM in Idaho. One of the main objectives of the interagency team is to ensure consistent messages and responses per the national WNS response plan. The interagency effort has a number of smaller interagency teams to focus on diagnostics, disease management, surveillance, data management, and communications, to increase efficiency and consistency across agencies.

The Region 6 Forest Service and Oregon/Washington BLM WNS core team is comprised of two ISSSSP personnel, Rob Huff and Kelli Van Norman, as well as Josh Chapman (FS Regional Wildlife Program Manager) and Shawna Bautista (FS Invasive Plant and Pesticide Use Coordinator). Together we work with the larger Pacific Northwest group to identify surveillance strategies and priorities within Oregon and Washington, response strategies, and decontamination and cleaning requirements.

The core team has also worked over the past year to:

- develop communication tools for our field units, including education signs and FAQ information sheets
- provide funding for Forest Service units with "show caves" to help with people management and education
- produce "cleaning" and "decontamination" signing to be displayed throughout National Forests and BLM Districts

Bat education signs (like the one pictured below) will be put up this spring on the Okanogan-Wenatchee, Gifford Pinchot, and Deschutes NFs, as well as Spokane, Prineville, Salem, and Lakeview BLM Districts and the San Juan Islands National Monument.

BATS IN PERIL

WHITE-NOSE SYNDROME KILLS
In 2006, a caver in New York noticed hibernating bats with an unusual white substance on their muzzles, like frost on the beard of a skier. This disease, called white-nose syndrome (WNS), is caused by a fungus (*Pseudogymnoascus destructans*) that has already killed over 6 million bats. WNS causes bats to lose their fat reserves long before the winter is over. Without these reserves—vital for surviving hibernation—they often die.
There is no known cure.

YOU CAN HELP REDUCE THE SPREAD
White-nose syndrome is primarily spread from bat to bat. However, people can potentially spread the fungal spores among caves, mines, and other bat roost sites with contaminated clothing or equipment. Here's how you can reduce the risk:
✓ Avoid areas where bats may be living to limit disturbance and the potential to spread the fungus. (Keep your dog out alone)
✓ Clean your footwear, clothing, and gear if you contact crevices in rock cliffs, talus areas, caves, or mines.
✓ If you see sick or dead bats, groups of bats, or bats flying in the daytime, please tell the appropriate state Department of Fish and Wildlife.

THE WONDER OF BATS
Bats are wonderfully beneficial creatures that provide invaluable services to both nature and human economies around the world. You may not see them but they are hard at work every night.
• Bats feed on agricultural and forest pests, saving \$3.7 billion/year in pest control.
• A bat can eat its body weight of insects in a night.
• Bats are not blind and most can see as well as humans. If a bat swoops toward you, it's probably after the insect hovering above your head.
• Bats have a sonar system (echolocation) that allows them to navigate at break-neck speed in total darkness. Nothing built by humans can compare.

For more information on Oregon/Washington FS/BLM management: <https://www.fs.usda.gov/detail/r6/home/?cid=FSEPRD501165>

For national information: <https://www.whitenosesyndrome.org/>

Environmental sampling in caves and mines on National Forests and BLM Districts is occurring right now in Oregon and Washington, with emergence surveys and bat swabbing set to occur this spring, and maternity site counts a little later after that. Environmental sampling and bat swabbing are the main active surveillance strategies used to detect the fungus causing white-nose syndrome. Passive surveillance is also conducted by both state wildlife agencies, which includes as assessment of dead or dying bats turned into the states for various reasons. Depending upon the outcome of the assessment, the states may then submit the bats for testing for the presence of the fungus.

We're asking Forests and BLM Districts again to engage your public lands visitors to help reduce the risk of spread of the fungus, and to report sightings of sick, dead or groups of bats to their respective state wildlife agency.

For additional information about this issue contact Rob Huff or Kelli Van Norman

For more information on Oregon/Washington FS/BLM management: <https://www.fs.usda.gov/detail/r6/home/?cid=FSEPRD501165>

For national information: <https://www.whitenosesyndrome.org/>

Contact Information and Feedback

We're always looking for feedback. Is this newsletter helpful? What other kind of information or topics would you like to hear about?

Please send any comments you have to Rob Huff,
Rhuff@blm.gov

Interagency personnel:

Rob Huff, rhuff@blm.gov, 503-808-6479,
Conservation Planning Coordinator

Carol Hughes, cshughes@fs.fed.us,
503-808-2661, SSSS Specialist

Darci Rivers-Pankratz, dpankratz@fs.fed.us,
503-808-2688, Inventory Coordinator Assistant

Kelli Van Norman, kvannorm@blm.gov,
503-808-6606, Inventory Coordinator

Agency Program leads, others:

John Chatel, jchatel@fs.fed.us, 503-808-2972,
Region 6 TES Program Leader

Cindy Lou McDonald, clmcdonald@blm.gov,
503-808-6571, Natural Resource Specialist-
Data Management

Mark Mousseaux, mmousseaux@blm.gov,
541-618-2232, OR/WA BLM Botanist

Mark Skinner, mkskinner02@fs.fed.us,
503-808-2150, Region 6 Botanist

Chelsea Waddell, cwaddell@blm.gov,
503-808-6302, Regional GeoBOB and ARIMS
Data Coordinator