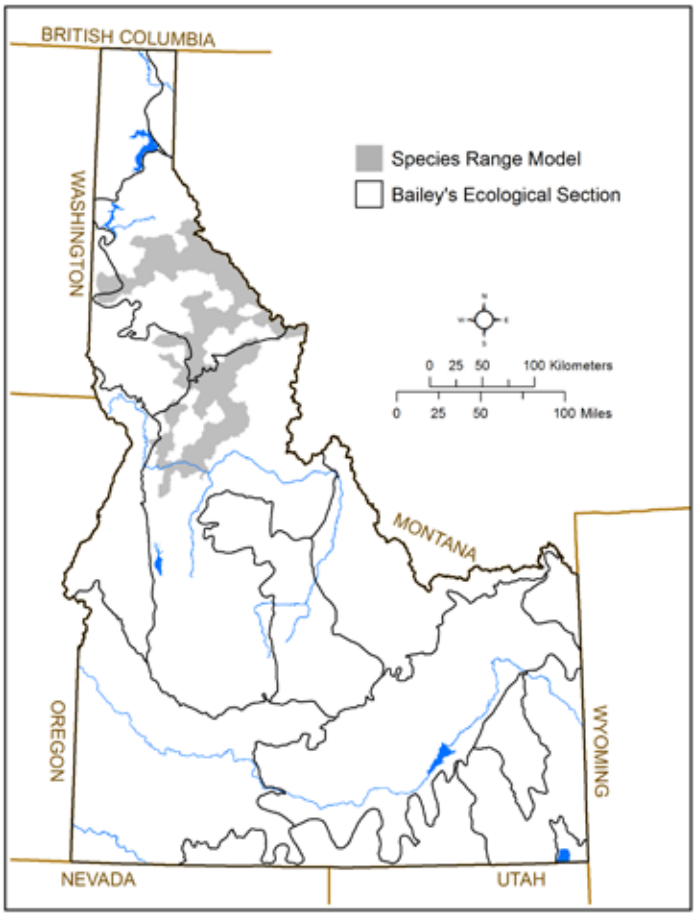
Harvestman Species Group

Acuclavella Species Group



Class: Arachnida
Order: Opiliones
Family: Ceratolasmatidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: GNR
S-rank: SNR

SGCN TIER: 3
Rationale: Idaho endemics, data deficient, restricted range

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 16,700 km^2 (~6,400 mi^2)
Key Ecological Sections: Bitterroot Mountains, Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: At least 5 Acuclavella species, including 4 Idaho endemics (*A. sheari*, *A. quattuor*, *A. merickeli*, *A. shoshone*) and 1 regional endemic (*A. cosmetoides*) occur in the Clearwater region of Idaho. *Acuclavella sheari* is currently known only from an area just south of the Salmon River in Idaho County. *A. quattuor* occurs between the South Fork of the Clearwater River and the Salmon River, but may also occur between the Selway and Lochsa rivers. Known *A. merickeli* populations are all on the Nez Perce National Forest between the Selway River and the South Fork of the Clearwater River. *A. shoshone* is known only from its type locality at Hobo Cedar Grove, Shoshone County. Conversely, *A. cosmetoides* is more widespread ranging from the Clearwater River north to the Coeur d'Alene River with 1 known location in Montana.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: These species are riparian obligate forest-dwellers, typically found in litter, moss, or moist woody debris adjacent to small perennial seeps and headwater streams. Coniferous canopy cover generally includes grand fir, Douglas fir, Engelmann spruce, western hemlock and/or western redcedar.

POPULATION TREND
Short-term Trend: Unknown

Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown
Description: Threats to these populations have not been specifically identified but could include any changes to the riparian forest found at known sites.

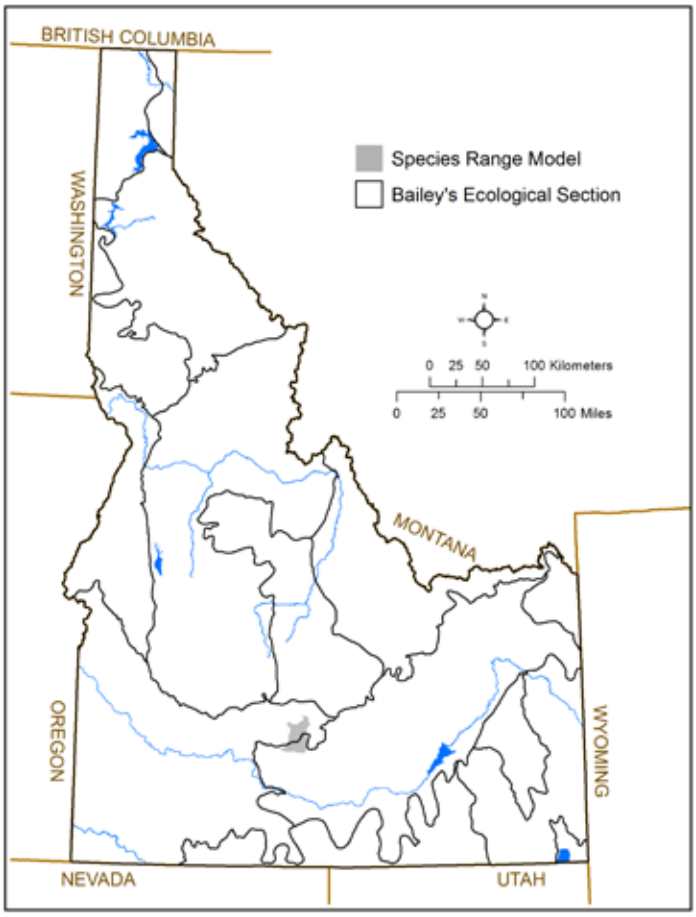
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for these species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. In addition, further taxonomic work is needed for this genus to support the separation of *A. shoshone* and *A. cosmetoides* as well as the possiblity of 2 species in the *A. quattuor* lineage.

ADDITIONAL COMMENTS
None.

Information Sources: Richart, C. H. and M. Hedin. 2013. Three new species in the harvestmen genus Acuclavella (Opiliones, Dyspnoi, Ischyropsalidoidea), including description of male Acuclavella quattuor Shear, 1986. ZooKeys 311:19-68; Shear, W. A. 1986. A cladistic analysis of the Opilionid superfamily Ischyropsalidoidea, with descriptions of the new family Ceratolasmatidae, the new genus Acuclavella, and four new species. American Museum Novitates 2844:1-29.
Map Sources: Richart, C. h. and M. Hedin. 2013. Three new species in the harvestmen genus Acuclavella (Opiliones, Dyspnoi, Ischyropsalidoidea), including description of male Acuclavella quattuor Shear, 1986. ZooKeys 311:19-68; Integrated digitized Biocollections (iDigBio) Specimen Portal. Accessed Dec. 12, 2014. <https://www.idigbio.org/portal>

A Cave Obligate Harvestman

Speleomaster lexi



Class: Arachnida
Order: Opiliones
Family: Cladonychiidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1G2
S-rank: S1

SGCN TIER: 2
Rationale: Idaho endemic, data deficient, restricted range, habitat specialist

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 600 km^2 (~200 mi^2)
Key Ecological Sections: Owyhee Uplands, Snake River Basalts
Population Size in Idaho: Not applicable for invertebrates.
Description: This cave obligate species is an Idaho endemic known from a single lava tube cave complex in Lincoln County. The distribtion of populations within the complex is not known, but the species may be restricted to a limited area of suitable habitat. Individuals are rarely encounterd.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: While specific habitat requirements have not been documented, specimens have all been found in various locations within a single lava tube cave.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented. The species appears to be very reclusive and population estimates are difficult.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable

Description: Threats are unknown, but any activity that might negatively disrupt the cave environment would be considered a threat.

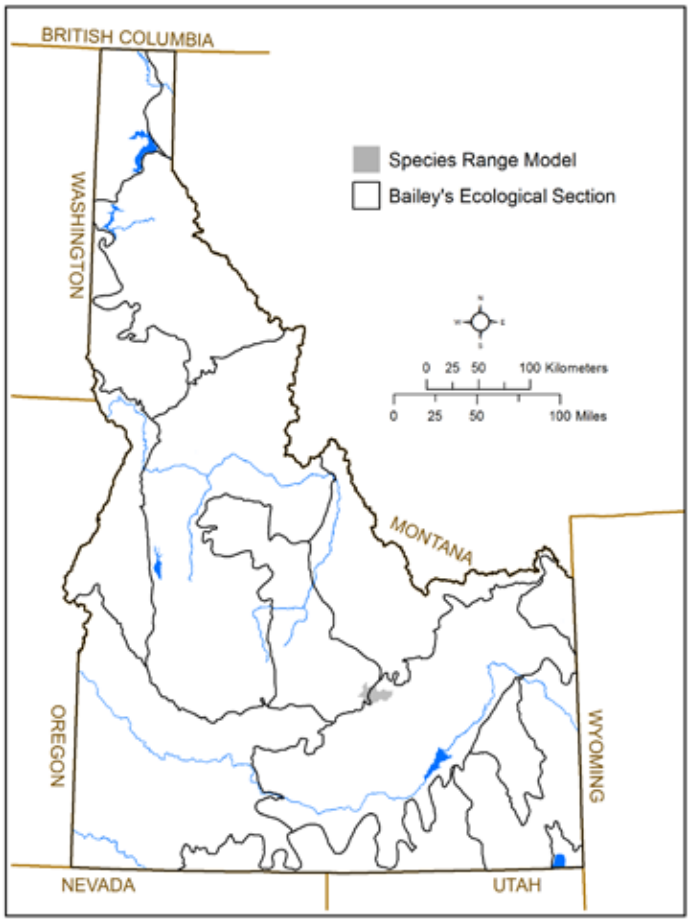
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Briggs 1974; Riggs 1994 (CWCS 2005)
Map Sources: IFWIS. July 2014 export

A Cave Obligate Harvestman

Speleomaster pecki



Class: Arachnida
Order: Opiliones
Family: Cladonychiidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1G2
S-rank: S1

SGCN TIER: 2
Rationale: Idaho endemic, data deficient, restricted range, habitat specialist

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 400 km^2 (~200 mi^2)
Key Ecological Sections: Challis Volcanics, Snake River Basalts
Population Size in Idaho: Not applicable for invertebrates.
Description: This cave obligate species is an Idaho endemic known only from a single cave in Craters of the Moon National Monument, Butte County.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: This harvestman is restricted to habitat found only in a lava tube cave, and has only been collected near a permanent ice flow.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable
Description: Threats are unknown, but any activity that might negatively disrupt the cave environment would be considered a threat.

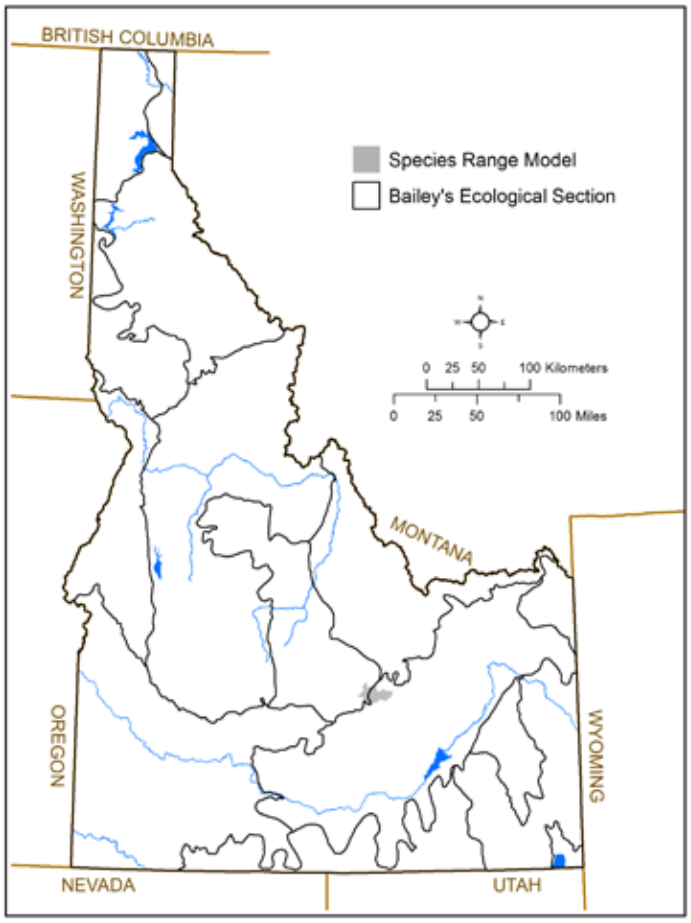
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Briggs 1974 (CWCS 2005)
Map Sources: IFWIS. July 2014 export

A Cave Obligate Mite

Flabellorhagidia pecki



Class: Arachnida
Order: Trombidiformes
Family: Rhagidiidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1G2
S-rank: S1

SGCN TIER: 2
Rationale: Idaho endemic, data deficient, restricted range, habitat specialist

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 400 km² (~200 mi²)
Key Ecological Sections: Challis Volcanics, Snake River Basalts
Population Size in Idaho: Not applicable for invertebrates.
Description: This cave obligate species is an Idaho endemic, known only from a single cave at Craters of the Moon National Monument.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: This species is an obligate cave inhabitant, but specific habitat requirements have not been published.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable
Description: Threats are unknown, but any activity that might negatively disrupt the cave environment would be considered a threat.

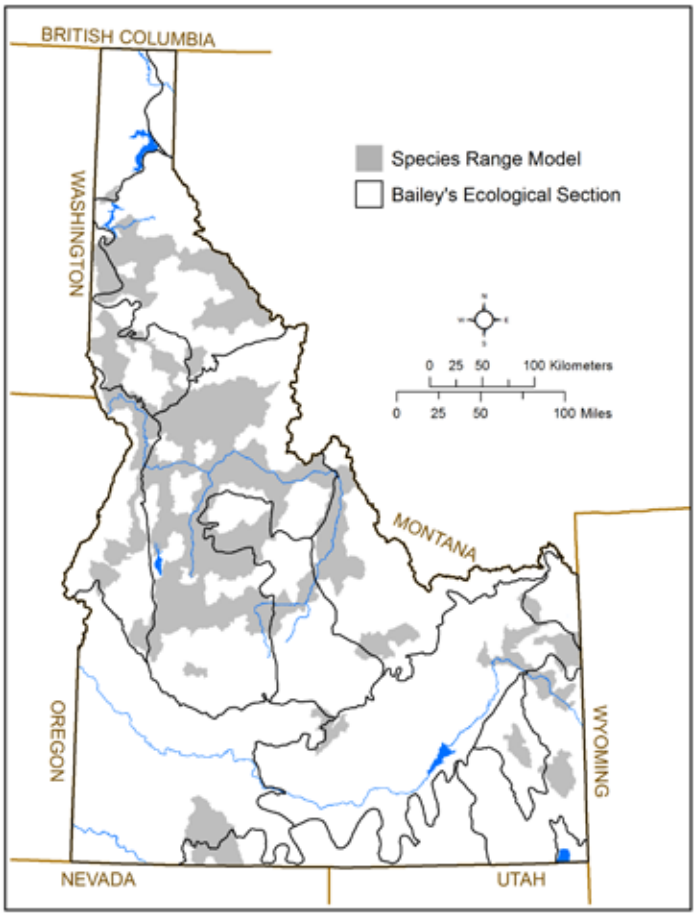
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Elliot 1976 (CWCS 2005)
Map Sources: IFWIS. July 2014 export

Western Pearlshell

Margaritifera falcata



Class: Bivalvia
Order: Unionoida
Family: Margaritiferidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G4G5
S-rank: S2

SGCN TIER: 2
Rationale: Significant rangewide declines, multiple threats

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 30,328 stream km (~ xxxxxx mi)
Key Ecological Sections: Beaverhead Mountains, Bitterroot Mountains, Blue Mountains, Challis Volcanics, Idaho Batholith, Palouse Prairie, Snake River Basalts
Population Size in Idaho: Not applicable for invertebrates.
Description: Historically, the Western Pearlshell was widespread across western North America, including the majority of Idaho. Once the most common mussel in the Pacific Northwest, it is now increasingly rare. Although the species continues to persist in the majority of forested streams across the state, it has been lost from large stretches of the Snake, Big Wood, Big Lost, Little Lost, Malad, Raft, Payette, Portneuf, Boise, Clearwater, and Bruneau rivers. Viability of populations in the Northern Rocky Mountains is questionable and lack of recruitment correlates with loss of the host fish.

HABITAT & ECOLOGY
Environmental Specificity: Narrow: Specialist—key requirements are common.
Description: This species inhabits cold, clear streams and rivers often in reaches with fast current and coarse substrates. It is long-lived (average 60-70 years, but some as long as 100 years), is very slow to reproduce, and relies on fish hosts, predominantly native salmonids.

POPULATION TREND
Short-term Trend: Decline 30–50%
Long-term Trend: Unknown

Description: Western Pearlshell have declined across much of the historical range. In Idaho, the species has declined between 37% and 57% when compared to estimates of historical distribution. These declines have been attributed to changes in water quality and the loss of riparian zones as well as competition by the opportunistic, and native, Western Ridged Mussel, which are better adapted to lower quality stream habitats.

THREATS
Overall Threat Impact: Medium
Intrinsic Vulnerability: Moderately vulnerable
Description: This species is sensitive to changes in water quality and is particularly intolerant of heavy nutrient loads and siltation. Thus, threats to the species include impoundments, channel modification, dredging/mining, contamination, sedimentation, nutrient enrichment, water withdrawal and diversion, thermal pollution, and livestock grazing in riparian areas. In addition, loss of host fish populations and introduction of non-native fish and invertebrate species are also threats.

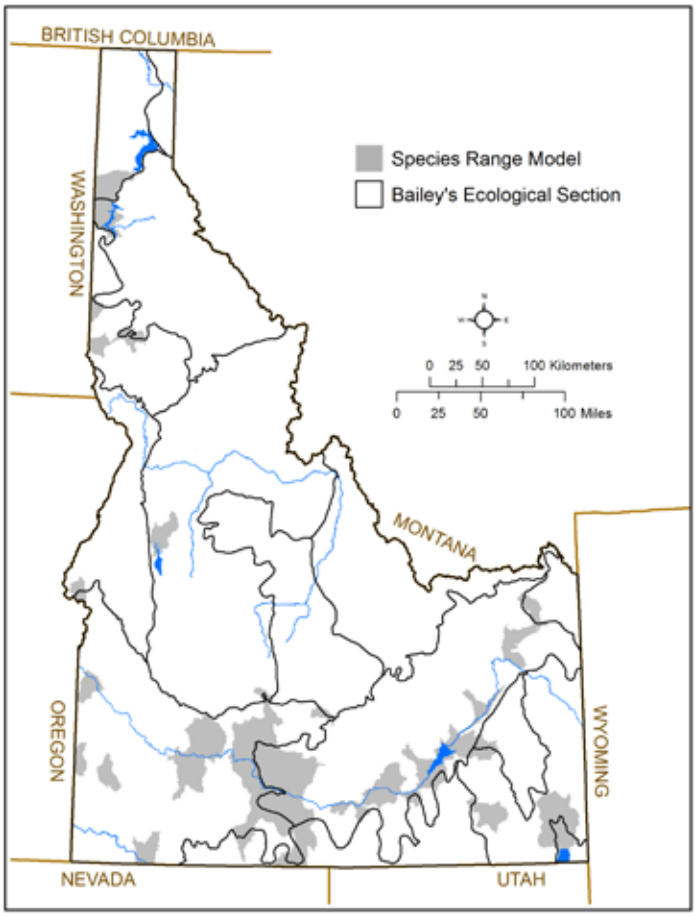
CONSERVATION ACTIONS
Priority conservation strategies include conducting surveys to determine the current abundance and trends of this species in Idaho and maintaining water quality and quantity at both known and potential sites.

ADDITIONAL COMMENTS
None.

Information Sources: Lysne, S. 2009. A Guide to Southern Idaho's Freshwater Mollusks. US Fish and Wildlife Service, Boise, ID; Stagliano, D. M. and B. A. Maxell. 2010. Aquatic invertebrate species of concern: updated distributions, vital watersheds, and predicted sites within USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, Montana; Xerces Society. 2012. Status Review of Margaritifera falcata (Gould, 1850) Western Pearlshell (Bivalvia: Margaritiferidae). <www.xerces.org> [Accessed Jan 6, 2015]; Frest, T. J. and E. J. Johannes. 2000. An annotated checklist of Idaho land and freshwater mollusks. Journal of the Idaho Academy of Science 36:1-51; Hovingh, P. 2004. Intermountain freshwater mollusks, USA (Margaritifera, Anodonta, Gonidea, Valvata, Ferrissia): Geography, conservation and fish management implications. Western North American Naturalist 2:109-135; Lysne, S.J. & Krouse, B.R. 2011. Margaritifera falcata in Idaho: using museum collections and GIS to demonstrate a declining trend in regional distribution. Journal of the Idaho Academy of Science, 47(2), 33 – 39; Vannote, R.L. & G.W. Minshall. 1982. Fluvial processes and local lithology controlling abundance, structure, and composition of mussel beds. Proceedings of the National Academy of Science, 79, 4103 – 4107.
Map Sources: Range extent is based on the current stream occupancy in Idaho (30,328 stream km, Lysne and Krouse 2011). Occurrence data from IDEQ export Feb 13, 2015; IFWIS. July 2014 export; The Xerces Society for Invertebrate Conservation and the Confederated Tribes of the Umatilla Indian Reservation Mussel Project. 2015. Western Freshwater Mussel Database. Database available by request; GBIF download 11/20/2014; iDigBio download Dec 10, 2014; Holderman, C., B. Shafii, P. Anders, G. Lester. 2009. Characterization of the Kootenai River aquatic macroinvertebrate community before and after experimental nutrient addition, 2003-2006. Chap 3 in Kootenai River Macroinvertebrate Characterization, 2009 KTOI Report <https://pisces.bpa.gov/release/documents/documentviewer.aspx?doc=P110393> [Accessed Feb 20, 2015]; Stagliano, D. M. and B. A. Maxell. 2010. Aquatic invertebrate species of concern: updated distributions, vital watersheds, and predicted sites within USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, Montana; Lysne, S. J., G. Garcia, B. R. Krouse. 2011. Molluscan community composition and richness in four high-elevation Idaho streams includes an exotic taxon. American Malacological Bulletin 29:127-133; Lysne, S.J. and B. R. Krouse. 2011. Margaritifera falcata in Idaho: using museum collections and GIS to demonstrate a declining trend in regional distribution. Journal of the Idaho Academy of Sciences 47:33-39.

California Floater

Anodonta californiensis



Class: Bivalvia
Order: Unionoida
Family: Unionidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: Type 2
IDAPA: Unprotected Wildlife
G-rank: G3Q
S-rank: S3

SGCN TIER: 3
Rationale: Significant rangewide declines

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 23,300 km^2 (~9,000 mi^2)
Key Ecological Sections: Bear Lake, Northwestern Basin and Range, Overthrust Mountains, Owyhee Uplands, Snake River Basalts
Population Size in Idaho: Not applicable for invertebrates.
Description: The California Floater is widespread across the western US, but scarce. In Idaho, populations primarily occur in the Snake River Plain and it can still be locally common in some reaches.

HABITAT & ECOLOGY
Environmental Specificity: Moderate: Generalist—some key requirements are scarce.
Description: This species occurs in large, cold, slow-moving streams and lakes at lower elevations. It is typically found on soft substrates, is relatively sedentary and is thought to be a fast-growing species that reaches sexual maturity in 4-5 years with a lifespan of 10-15 years. Host fish in Idaho are unknown.

POPULATION TREND
Short-term Trend: Decline 10–30%
Long-term Trend: Unknown
Description: This species is declining both in terms of the area occupied and the number of sites and individuals across much of its range, but predominantly in the southern extent. Recent analyses by the Xerces Society indicates that a major range contraction has not yet taken place in Idaho.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable
Description: Sensitive to changes in water quality and quantity, the primarly threats to this species include impoundments, channel modification, dredging/mining, contamination, sedimentation, nutrient enrichment, water withdrawal and diversion, thermal pollution, and livestock grazing in riparian areas. In addition, loss of host fish populations and introduction of non-native fish and invertebrate species are also threats.

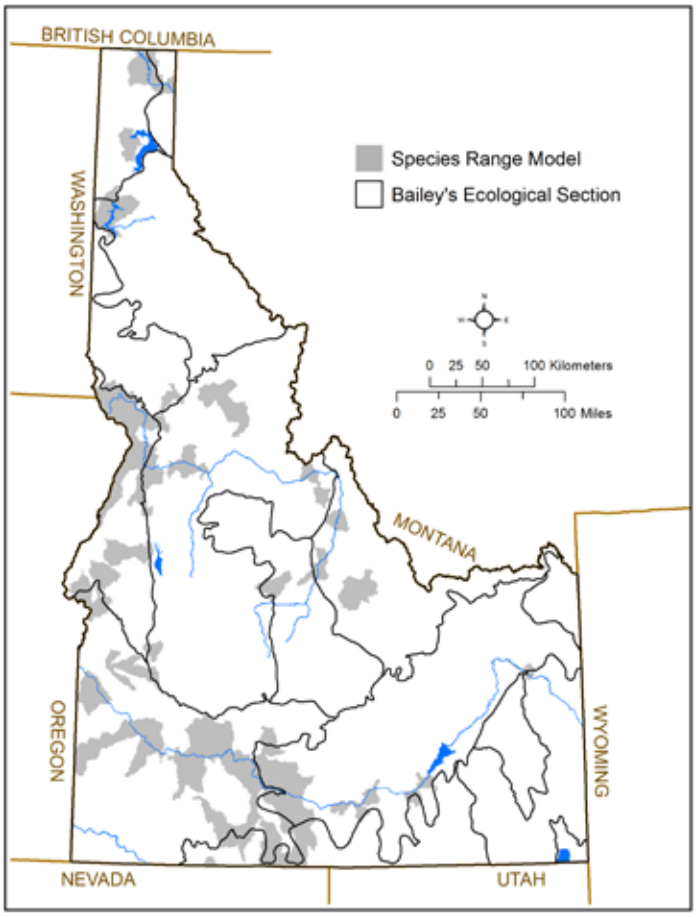
CONSERVATION ACTIONS
Priority conservation strategies for this species include conducting surveys to determine the current abundance and trends in Idaho and genetic work to determine the possible synonymy with Anodonta nuttalliana.

ADDITIONAL COMMENTS
The taxonomy of the California Floater is uncertain and it is considered likely synonymous with Anodonta nuttalliana by the Xerces Society and Chong et al. (2008).

Information Sources: Xerces Society. 2009. Freshwater mussels of the Pacific Northwest, Second edition. The Xerces Society, Portland, Oregon; Frest, T. J. and E. J. Johannes. 2000. An annotated checklist of Idaho land and freshwater mollusks. Journal of the Idaho Academy of Science 36:1-51; Hovingh, P. 2004. Intermountain freshwater mollusks, USA (Margaritifera, Anodonta, Gonidea, Valvata, Ferrissia): Geography, conservation and fish management implications. Western North American Naturalist 2:109-135.; Chong, J. P., J. C. Brim Box, J. K. Howard, D. Wolf, T. L. Myers, and K. E. Mock. 2008. Three deeply divided lineages of the freshwater mussel genus Anodonta in western North America. Conservation Genetics 9:1303-1309.
Map Sources: IFWIS. July 2014 export; The Xerces Society for Invertebrate Conservation and the Confederated Tribes of the Umatilla Indian Reservation Mussel Project. 2015. Western Freshwater Mussel Database. Database available by request; iDigBio download Dec 10, 2014; Lysne, S. J. and W. H. Clark. 2009. Mollusc survey of the lower Bruneau River, Owyhee County, Idaho, USA. American Malacological Bulletin 27:167-172

Western Ridged Mussel

Gonidea angulata



Class: Bivalvia
Order: Unionoida
Family: Unionidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G3
S-rank: S3

SGCN TIER: 3
Rationale: Rangewide declines

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 30,500 km^2 (~11,800 mi^2)
Key Ecological Sections: Blue Mountains, Idaho Batholith, Okanogan Highlands, Owyhee Uplands, Snake River Basalts
Population Size in Idaho: Not applicable for invertebrates.
Description: The Western Ridged Mussel is widespread across the western US, but with declining populations in many areas of its range. Historically, populations existed in much of the Snake, Clearwater, Salmon, and Little Salmon rivers in Idaho. Recent analyses by the Xerces Society suggests that the species has been lost from about a third of its range in Idaho. The Snake River is considered a stronghold for this species and it can still be locally common in some areas.

HABITAT & ECOLOGY
Environmental Specificity: Moderate: Generalist—some key requirements are scarce.
Description: This species is found in cold creeks and streams, mainly in low to mid-elevations. Adults are sedentary with an estimated lifespan of 20-30 years. Host fish in Idaho are unknown.

POPULATION TREND
Short-term Trend: Decline 10–30%
Long-term Trend: Unknown
Description: This species is declining both in terms of the area occupied and the number of sites and individuals across much of its range, though a population on the Humboldt River in Nevada appears to be stable. In Idaho, the species is estimated to have declined by about 30% of its historic range but current trend estimates are unknown.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable
Description: This mussel is a cold-water filter feeder and is fairly sensitive to nutrient enhancement, pollution, and temperature changes. Thus, the primary threat to this species is the degredation of water quality and quantity through impoundments, channel modification, reduced stream flow, contamination, sedimentation, nutrient enrichment, and thermal pollution. In addition, the loss of host fish and introduction of non-native fish and invertebrates are threats.

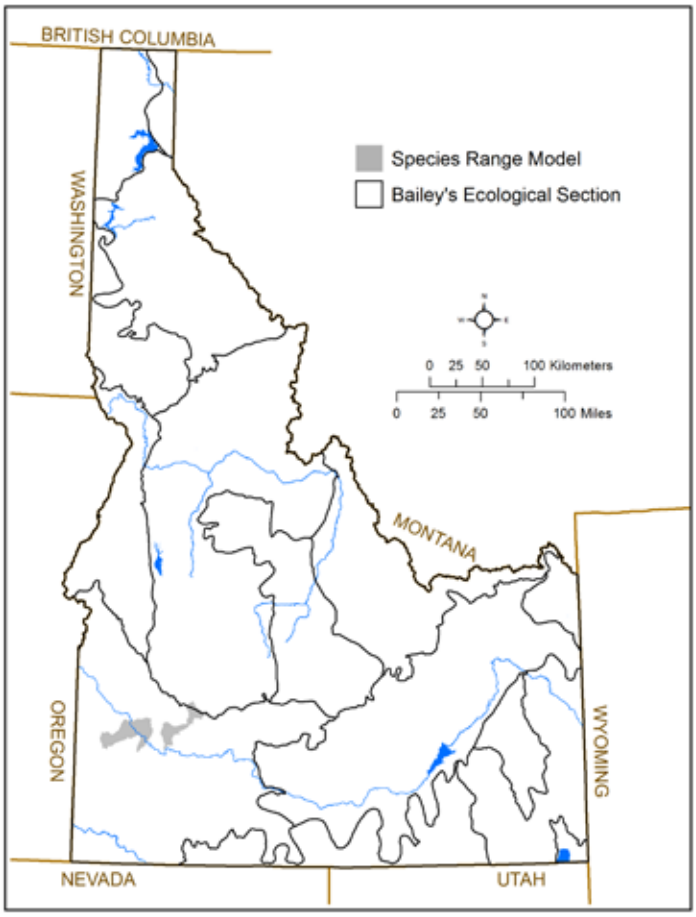
CONSERVATION ACTIONS
Priority conservation strategies include conducting surveys to determine the current abundance and trends of this species in Idaho and maintaining water quality and quantity at both known and potential sites.

ADDITIONAL COMMENTS
None.

Information Sources: Xerces Society. 2009. Freshwater mussels of the Pacific Northwest, Second edition. The Xerces Society, Portland, Oregon; Frest, T. J. and E. J. Johannes. 2000. An annotated checklist of Idaho land and freshwater mollusks. Journal of the Idaho Academy of Science 36:1-51; Hovingh, P. 2004. Intermountain freshwater mollusks, USA (Margaritifera, Anodonta, Gonidea, Valvata, Ferrissia): Geography, conservation and fish management implications. Western North American Naturalist 2:109-135.
Map Sources: IDEQ export Feb 13, 2015; IFWIS. July 2014 export; The Xerces Society for Invertebrate Conservation and the Confederated Tribes of the Umatilla Indian Reservation Mussel Project. 2015. Western Freshwater Mussel Database. Database available by request; GBIF download 11/20/2014; iDigBio download Dec 10, 2014; Holderman, C., B. Shafii, P. Anders, G. Lester. 2009. Characterization of the Kootenai River aquatic macroinvertebrate community before and after experimental nutrient addition, 2003-2006. Chap 3 in Kootenai River Macroinvertebrate Characterization, 2009 KTOI Report <https://pisces.bpa.gov/release/documents/documentviewer.aspx?doc=P110393> [Accessed Feb 20, 2015]; Lysne, S. J. and W. H. Clark. 2009. Mollusc survey of the lower Bruneau River, Owyhee County, Idaho, USA. American Malacological Bulletin 27:167-172

Raptor Fairy Shrimp

Branchinecta raptor



Class: Branchiopoda
Order: Anostraca
Family: Branchinectidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1
S-rank: S1

SGCN TIER: 3
Rationale: Idaho endemic, data deficient, range restricted

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 1,400 km^2 (~500 mi^2)
Key Ecological Sections: Owyhee Uplands
Population Size in Idaho: Not applicable for invertebrates.
Description: To date, Raptor Fairy Shrimp are known from only two playas in southwestern Idaho - Tadpole Lake in the Idaho Army National Guard Orchard Training Area and Armadillo Lake in the Snake River Birds of Prey National Conservation Area.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: The two localities for this species are playas less than 5 ha in size and 10 -30 cm in depth with turbid water, pH of 10 or higher, and temperatures ranging between 4 and 25 degrees C. Spring rainfall is variable and combined April - June rainfall ranges from 2.5 to 10 cm. This species is a predatory shrimp preying primarily on the Alkali Fairy Shrimp (Branchinecta mackini).

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown

Intrinsic Vulnerability: Highly vulnerable
Description: Threats to the population are not specifically identified but primarily include any changes to water quality and quantity including pollution, pH level, and temperature. Climate change will likely exacerbate these threats given current and projected changes in temperature and precipitation patterns.

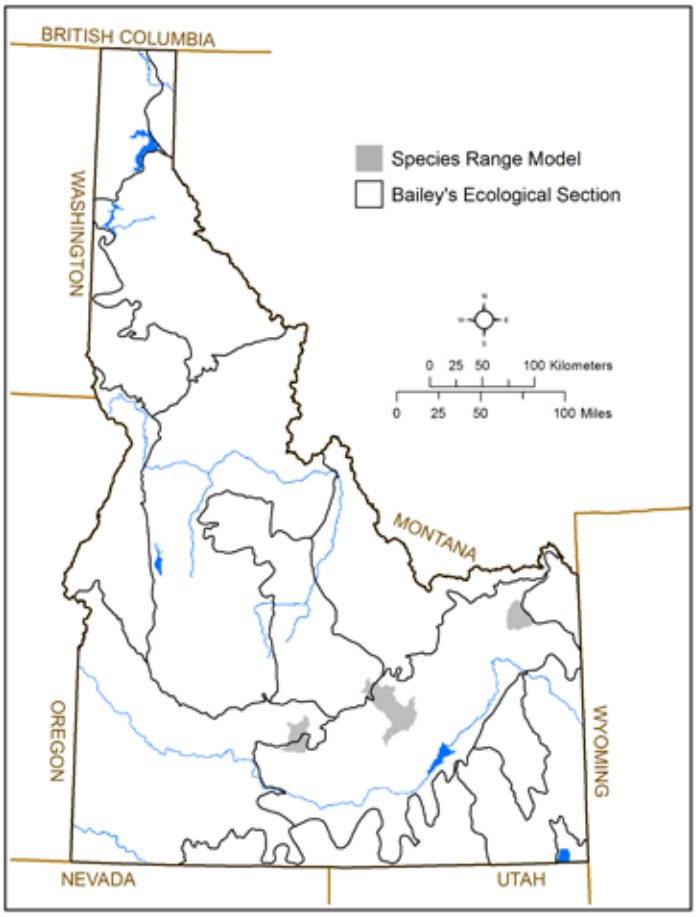
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Rogers, C.D., D.L. Quinney, J. Weaver, and J. Olesen. 2006. A NEW GIANT SPECIES OF PREDATORY FAIRY SHRIMP FROM IDAHO,USA (BRANCHIOPODA: ANOSTRACA). Journal of Crustacean Biology 26:1-12.
Map Sources: IFWIS. July 2014 export

Idaho Lava Tube Millipede

Idagona westcotti



Class: Diplopoda
Order: Chordeumatida
Family: Conotylidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1G2
S-rank: S1

SGCN TIER: 2
Rationale: Idaho endemic, data deficient, restricted range, habitat specialist

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 2,400 km^2 (~900 mi^2)
Key Ecological Sections: Challis Volcanics, Snake River Basalts, Owyhee Uplands
Population Size in Idaho: Not applicable for invertebrates.
Description: The Idaho Lava Tube Millipede is an Idaho endemic known from four clusters of lava tube caves in southern Idaho, it may however be more widespread across the Snake River plain in similar cave systems.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: The species is a cave obligate but little else is known about its specific habitat requirements. The lava tubes where it is found generally have permanent ice and constant temperatures around 4°C (39°F).

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable

Description: The primary threat to this species is alteration of cave habitat which may include climate change, human activities, nutrient loads, and insecticides.

CONSERVATION ACTIONS
Priority conservation strategies for this species include surveys to determine the current abundance and trends of this species in Idaho, maintaining suitable habitat at both known and potential sites, and managing human uses of caves to prevent unintentional damage.

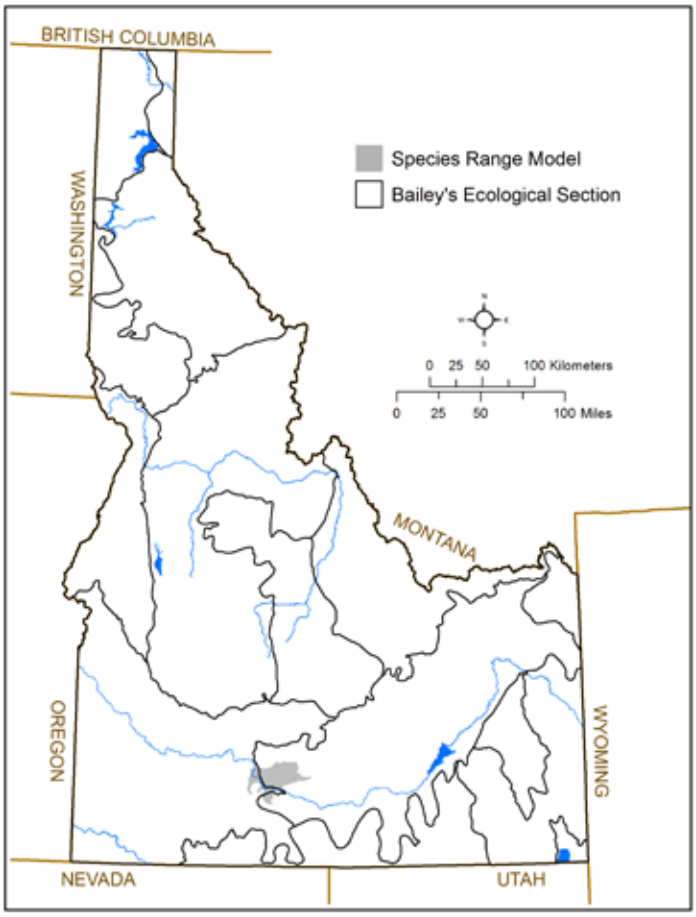
ADDITIONAL COMMENTS
None.

Information Sources: Buckett, J. S. & Garner, M.R. (1967) A new family of cavernicolous millipedes with description of a new genus and species from Idaho (Diplopoda: Chordeumida: Chordeumidea). The Michigan Entomologist, 1, 117–126. Shear, W.A. 2007. Cave millipeds of the United States. V. The genus Idagona Buckett & Gardner (Chordeumatida, Conotylidae, Idagoninae). Zootaxa 1463:1-12.
Map Sources: IFWIS. July 2014 export; Shear, W. A. 2007. Cave millipeds of the United States. V. The genus Idagona Buckett & Gardner (Chordeumatida, Conotylidae, Idagoninae). Zootaxa 1463:1-12.

Banbury Springs Limpet

Lanx sp. 1

Class: Gastropoda
Order: Basommatophora
Family: Lymnaeidae



CONSERVATION STATUS & CLASSIFICATION
ESA: Endangered
USFS:
Region1: No status
Region 4: No status
BLM: Type 1
IDAPA: Unprotected Wildlife
G-rank: G1
S-rank: S1

SGCN TIER: 1
Rationale: Idaho endemic, ESA Listed, significant declines, high vulnerability

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 1,200 km^2 (~500 mi^2)
Key Ecological Sections: Owyhee Uplands
Population Size in Idaho: Not applicable for invertebrates.
Description: The Banbury Springs Limpet is an Idaho endemic currently known to occur in only 4 coldwater springs along the Snake River - Briggs Springs, Banbury Springs, Box Canyon Springs, and Thousand Springs. The status of the 4 separate populations is uncertain, but experts estimate approximately 2500 individuals.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: The species appears to prefer deep, cold, high quality water and stable substrates.

POPULATION TREND
Short-term Trend: Decline 30–50%
Long-term Trend: Unknown
Description: While the 4 populations have persisted, the decline reported here represents the average decline in estimated density (individuals/m2) among the 4 populations.

THREATS
Overall Threat Impact: Very High
Intrinsic Vulnerability: Highly vulnerable

Description: This species is sensitive to small changes in water quality (e'g., temperature, dissolved oxygen, sediment, pollution) and quantity. Thus, the primary threats include the effects from habitat modification, water diversion, spring flow reduction, and reduced groundwater quality due to contamination from agriculture. The invasive New Zealand mudsnail is also a threat.

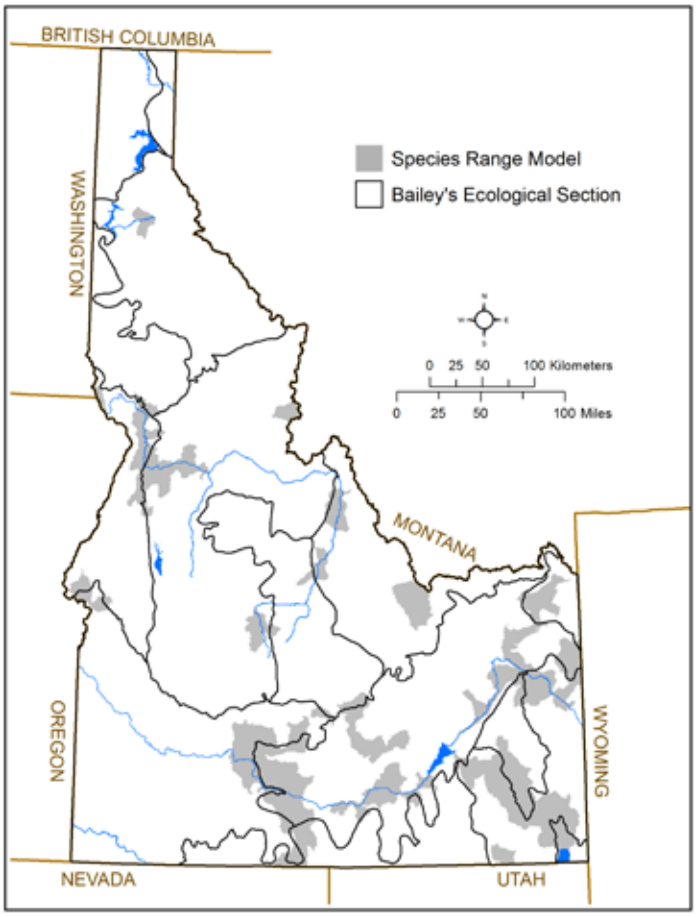
CONSERVATION ACTIONS
Although first discovered in 1988 by Terrence Frest, this species has never been formally described or named in the scientific literature. The priority conservation need for this species is that it be described in the scientific literature within the next ten years. In addition, conservation strategies address maintaining water quality and quantity at both known and potential sites.

ADDITIONAL COMMENTS
None.

Information Sources: Michael Lucid, Dave Hopper - expert opinion; Lysne, S. 2009. A Guide to Southern Idaho's Freshwater Mollusks. US Fish and Wildlife Service, Boise, ID; Burak, G. and D. Hopper. 2014. 2014 Banbury Springs lanx monitoring report for Banbury, Box Canyon, Thousand, and Briggs springs, Idaho. USFWS Internal Status Report, Boise, Idaho.
Map Sources: Extent based on expert opinion (Dave Hopper) // LKS: IFWIS. July 2014 export

Pondsnail Species Group

Stagnicola Species Group



Class: Gastropoda
Order: Basommatophora
Family: Lymnaeidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank:
S-rank: SNR

SGCN TIER: 3
Rationale: State and regional endemics, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 39,500 km^2 (~15,300 mi^2)
Key Ecological Sections: Bear Lake, Beaverhead Mountains, Blue Mountains, Overthrust Mountains, Owyhee Uplands, Snake River Basalts, Yellowstone Highlands
Population Size in Idaho: Not applicable for invertebrates.
Description: This species group consists of 9 species (Stagnicola apicina, S. caperata, S. elodes, S. emarginata, S. hinkleyi, S. idahoensis, S. montanensis, S. traski, and S. utahensis) found in various parts of the Salmon and Snake River drainages. Four of these species (hinkleyi, idahoensis, montanensis, and traski) are currently considered to be rare or uncommon and 1 (S. utahensis) is thought to be extinct in Idaho. Current population status for all species is unknown.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: All of these Pondsnails are cold water stenotherms, found in cold streams often with coarse substrates.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown

Intrinsic Vulnerability: Unknown
Description: Threats to the populations have not been documented however changes in water quality though agricultural pollution, road consturction and mining, as well as habitat loss through the conversion of springs and streams for stock and domestic use and grazing have been identified as primary issues for some of the species.

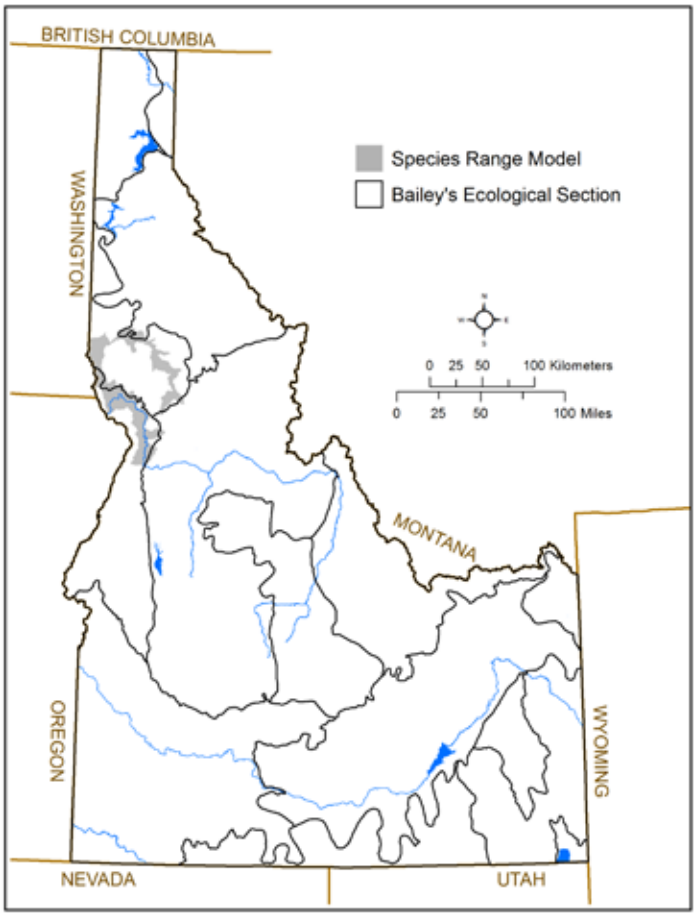
CONSERVATION ACTIONS
Uncertainties in the taxonomy of Stagnicola have been raised (Stagliano et al. 2007) and some of these species may be synonyms of more common species (e.g., S. catascopium) and may be actually be in the Lymnaea genus. Priority conservation strategies include genetic work to determine taxonomic uniqueness of these species and surveys to determine the current abundance and trends in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: Stagliano, D. M. and B. A. Maxell. 2010. Aquatic invertebrate species of concern: updated distributions, vital watersheds, and predicted sites within USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, Montana; Frest, T. J. and E. J. Johannes. 2000. An annotated checklist of Idaho land and freshwater mollusks. Journal of the Idaho Academy of Science 36:1-51.
Map Sources: Extent includes all Stagnicola species in Idaho.

Nez Perce Pebblesnail

Fluminicola gustafsoni



Class: Gastropoda
Order: Neotaenioglossa
Family: Hydrobiidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G2G3
S-rank: SNR

SGCN TIER: 3
Rationale: Idaho endemic, data deficient, range restricted

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho:
Key Ecological Sections: Blue Mountains, Palouse Prairie
Population Size in Idaho: Not applicable for invertebrates.
Description: The Nez Perce Pebblesnail is restricted to the Clearwater River and the lower Salmon River, as well as the reach of the Snake River in between these two rivers.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: The species has been found in shallow water on rocks and cobbles, but additional habitat requirements are unknown.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown
Description: This species is newly described and its status in Idaho is uncertain and threats are unknown.

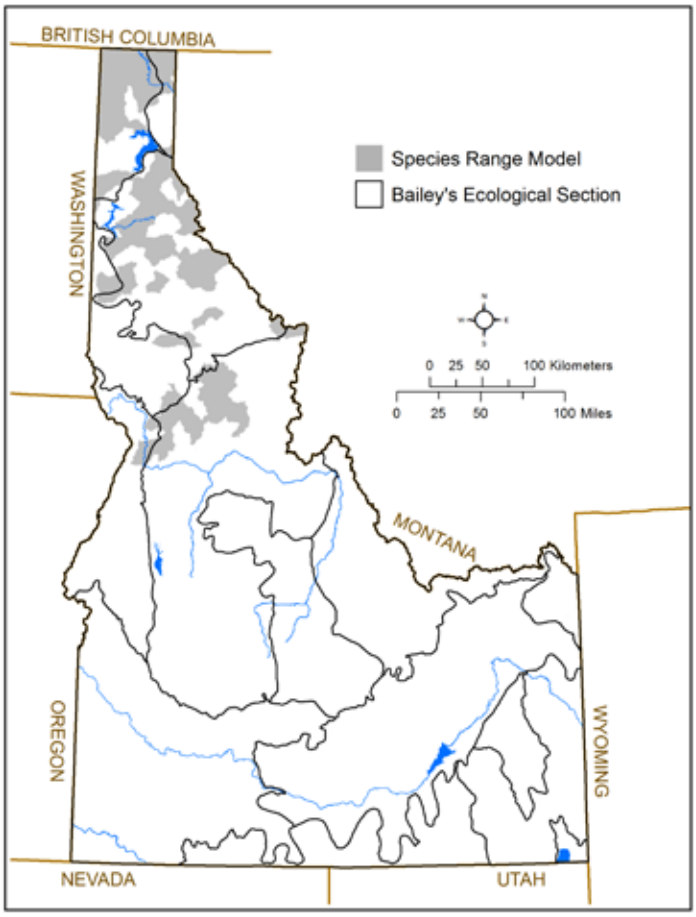
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Hershler, R. and H-P Liu. 2012. Molecular phylogeny of the western North American pebblesnails, genus Fluminicola (Rissooidea: Lithoglyphidae), with description of a new species. Journal of Molluscan Studies 78:321-329.
Map Sources: Hershler, R. and H-P Liu. 2012. Molecular phylogeny of the western North American pebblesnails, genus Fluminicola (Rissooidea: Lithoglyphidae), with description of a new species. Journal of Molluscan Studies 78:321-329.

Pale Jumping-slug

Hemphillia camelus



Class: Gastropoda
Order: Stylommatophora
Family: Arionidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G4
S-rank: S2

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 20,900 km^2 (~8,100 mi^2)
Key Ecological Sections: Bitterroot Mountains, Flathead Valley, Idaho Batholith, Okanogan Highlands
Population Size in Idaho: Not applicable for invertebrates.
Description: Originally thought to be in Idaho endemic, the Pale Jumping-slug is now known to also occur in adjacent parts of surrounding states and provinces. In recent surveys across north Idaho, the species was found to be widespread. Its range overlaps, but is mostly disjunct from a new, undescribed, species of Hemphillia (see Hemphillia sp.1).

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: Slugs in this genus inhabit moist, coniferous forests with abundant large, woody debris and extensive litter and duff layers. This species in particular is associated with a narrow cold air temperature envelope below the mean annual air temperature in the Idaho Panhandle. It is one of the 4 most cold-associated gastropods studied during the recent Multispecies Baseline Initiative.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown

Description: According to Frest and Johannes (1997), the number of occupied sites and population size are declining. However, more current population trends have not been documented and the number of documented locations is increasing.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable
Description: Threats to the population are not specifically identified but could include any changes to the moist, forested habitat at known sites. Little is known about this species, including its sensitivity to disturbance.

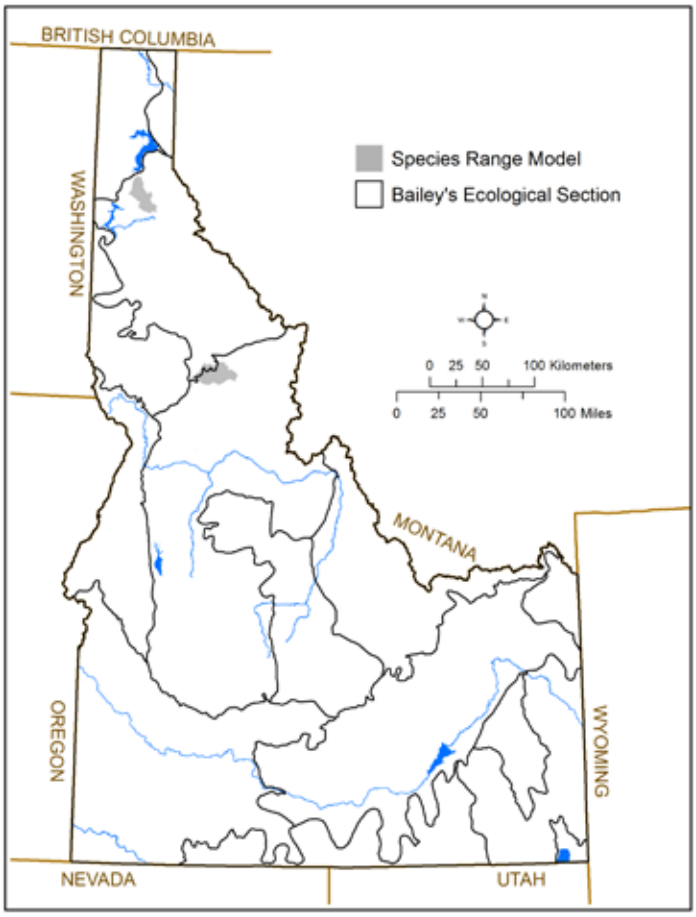
CONSERVATION ACTIONS
Priority conservation strategies for this species include surveys to determine the current abundance and trends in Idaho, managing habitat to maintain cool micro-climate at known sites, and taxonomic research to describe characteristics which differentiate this species from the new undescribed Hemphillia which also occurs in the Panhandle.

ADDITIONAL COMMENTS
None.

Information Sources: Michael Lucid - expert opinion; Hendricks, P., B. A. Maxell, S. Lenard, and C. Currier. 2007. Land mollusk surveys on USFS Northern Region lands: 2006. Report to the USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, MT.
Map Sources: ML: F - Bosworth 2012, Burke 2013, Lucid et al. 2015 // LKS: IFWIS. July 2014 export; MBI export Nov 14, 2014; GBIF download 11/20/2014; iDigBio download Dec 10, 2014

Marbled Jumping-slug

Hemphillia danielsi



Class: Gastropoda
Order: Stylommatophora
Family: Arionidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G2G3
S-rank: SNR

SGCN TIER: 1
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 1,000 km^2 (~400 mi^2)
Key Ecological Sections: Bitterroot Mountains, Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: The Marbled Jumping-slug appears to be restricted to the Northern Rocky Mountain Refugium in northern Idaho and Montana, with the majority of current observations occurring in Montana. Only 2 locations are recorded in Idaho, one along the Lochsa River in 1960 and the other along the Coeur d'Alene River in 2007.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: Slugs in this genus inhabit moist, coniferous forests with abundant large, woody debris and extensive litter and duff layers.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown

Description: Threats to the population are not specifically identified but could include any changes to the moist, forested habitat at known sites. Little is known about this species, including its sensitivity to disturbance.

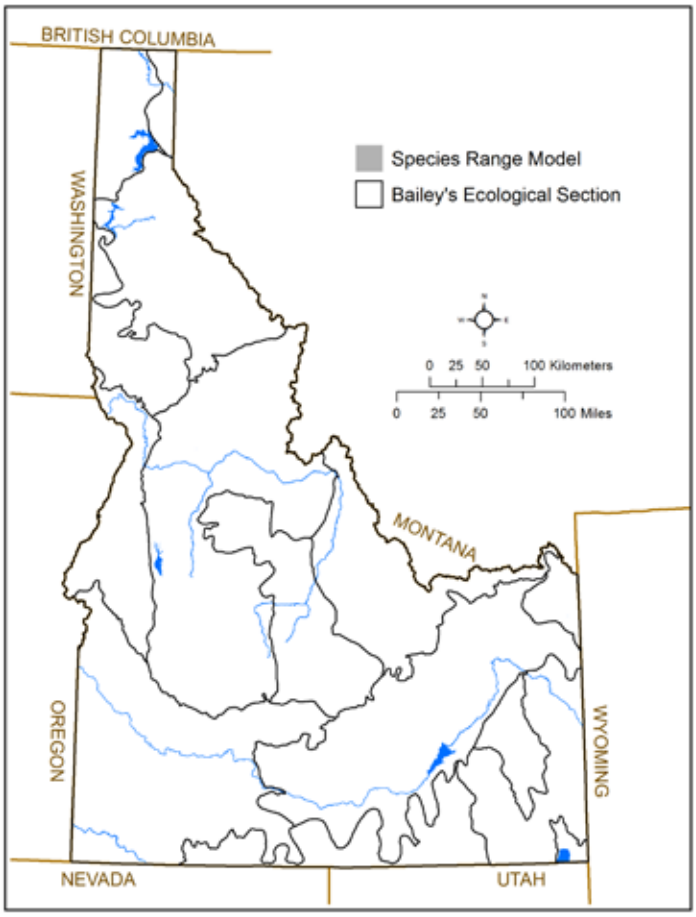
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Hendricks, P., B. A. Maxell, S. Lenard, and C. Currier. 2007. Land mollusk surveys on USFS Northern Region lands: 2006. Report to the USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, MT.
Map Sources: IFWIS. July 2014 export

A Roundback Slug

Hemphillia sp. 1



Class: Gastropoda
Order: Stylommatophora
Family: Arionidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: GNR
S-rank: SNR

SGCN TIER: 2
Rationale: Possible Idaho endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 1,300 km^2 (~500 mi^2)
Key Ecological Sections: Okanogan Highlands
Population Size in Idaho: Not applicable for invertebrates.
Description: This newly discovered species is apparently restricted to northern Idaho and adjoining states.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: Slugs in this genus inhabit moist, coniferous forests with abundant large, woody debris and extensive litter and duff layers. This species in particular is associated with cold air temperatures (<2°C [1.8°F] below mean annual air temperature) in the Idaho Panhandle. It is one of the 4 most cold-associated gastropods studied during the recent Multispecies Baseline Initiative.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable

Description: Threats to the population are not specifically identified but could include any changes to the moist, forested habitat at known sites. Little is known about this species, including its sensitivity to disturbance.

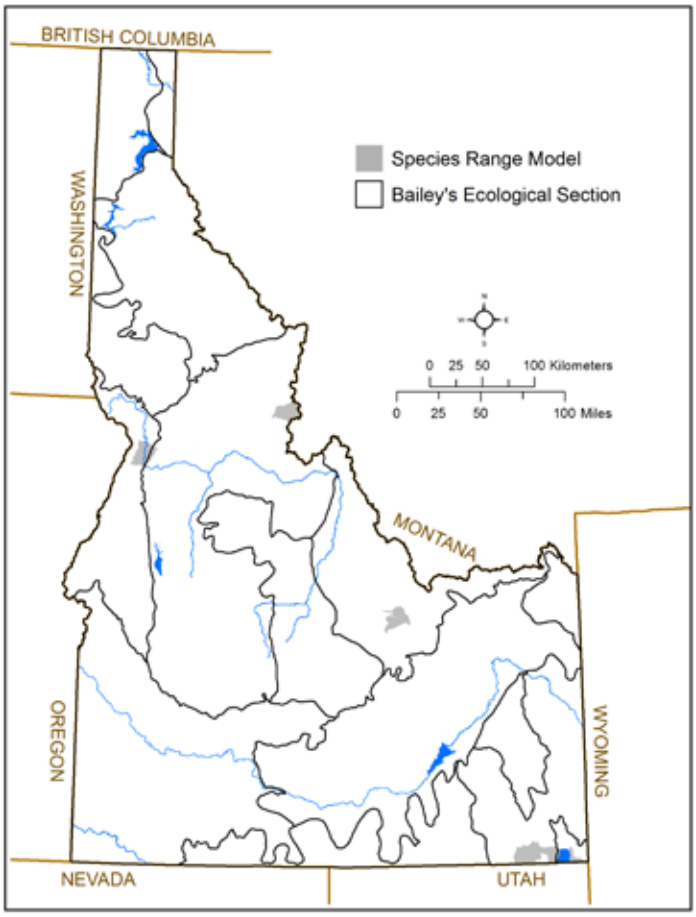
CONSERVATION ACTIONS
Priority conservation strategies for this species include surveys to determine the current distribution and abundance in Idaho, managing habitat to maintain cool micro-climate at known sites, and taxonomic research to describe characteristics which differentiate this species from Hemphillia camelus.

ADDITIONAL COMMENTS
This is a newly discovered species in north Idaho collected as part of the Multispecies Baseline Initiative. Taxonomic research needed to describe characteristics which differentiate this species from the Pale Jumping-slug.

Information Sources: Michal Lucid - expert opinion
Map Sources: MBI export Nov 14, 2014; Michael Lucid - expert opinion

Lyrate Mountainsnail

Oreohelix haydeni



Class: Gastropoda
Order: Stylommatophora
Family: Oreohelicidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G2G3
S-rank: S1

SGCN TIER: 2
Rationale: Endemic subspecies, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 2,600 km² (~1,000 mi²)
Key Ecological Sections: Blue Mountains, Idaho Batholith, Bear Lake, Beaverhead Mountains, Overthrust Mountains
Population Size in Idaho: Not applicable for invertebrates.
Description: The Lyrate Mountainsnail is irregularly distributed across the Rocky Mountain states, including scattered locations in Idaho. Two subspecies (O. h. hesperia and O. h. perplexa) are endemic to the state.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: This species is found in xeric habitats with exposed limestone outcrops. The subspecies hesperia occurs in open ponderosa pine forests while perplexa occurs in areas dominated by sagebrush, serviceberry, and grasses.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: In 1999, the two subspecies were believed to occupy <10% and <30% of their historical range, respectively. Current population trends for both the species and subspecies are unknown.

THREATS

Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown
Description: The primary threat to this species is thought to be habitat loss from timber harvest, livestock grazing, and agricultural development.

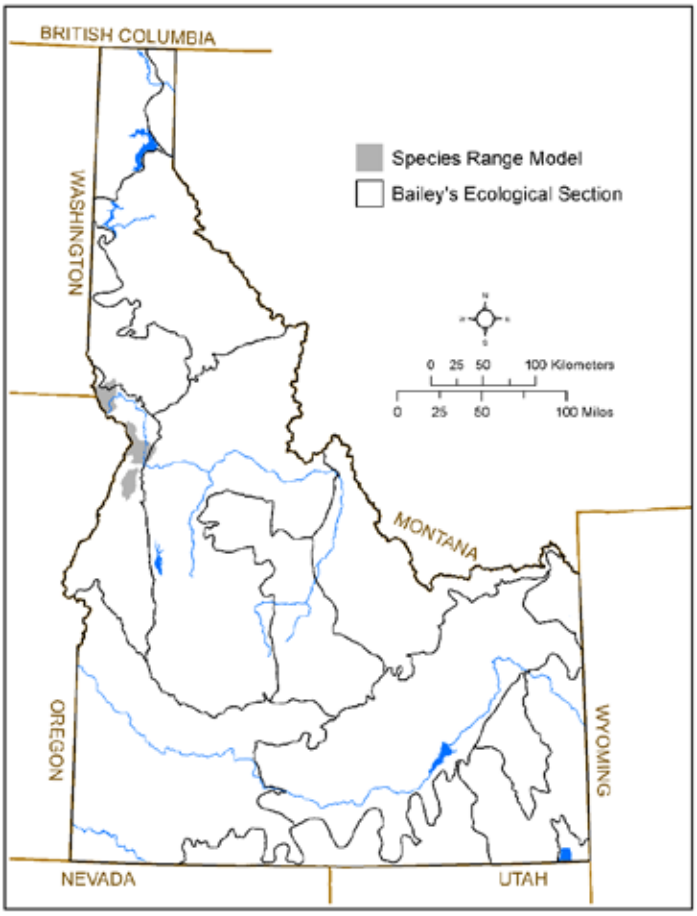
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org; Frest, T. J. and E. J. Johannes. 2000. An annotated checklist of Idaho land and freshwater mollusks. Journal of the Idaho Academy of Science 36:1-51.
Map Sources: IFWIS. July 2014 export; GBIF download 11/20/2014

Costate Mountainsnail

Oreohelix idahoensis



Class: Gastropoda
Order: Stylommatophora
Family: Oreohelicidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: Type 2
IDAPA: Unprotected Wildlife
G-rank: G1G2
S-rank: S2

SGCN TIER: 2
Rationale: Idaho endemic, data deficient, restricted range

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 4,700 km^2 (~1,800 mi^2)
Key Ecological Sections: Blue Mountains
Population Size in Idaho: Not applicable for invertebrates.
Description: The Costate Mountainsnail is an Idaho endemic, known only from a short reach along the Salmon River in Idaho County. Two subspecies (O. i. idahoensis and O. i. baileyi) are recognized, but little known regarding current status of either one.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: This species occurs in dry, open limestone or calcareous schist. The dominant vegetation includes sagebrush, netleaf hackberry, and prickly pear.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: In 1999 this species was considered to be declining both in occupied area and in the number of individuals. Current population trends are unknown.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable

Description: This species is vulnerable to habitat loss and fragmentation resulting from surface distrubance, grazing, housing development, and mining or quarrying.

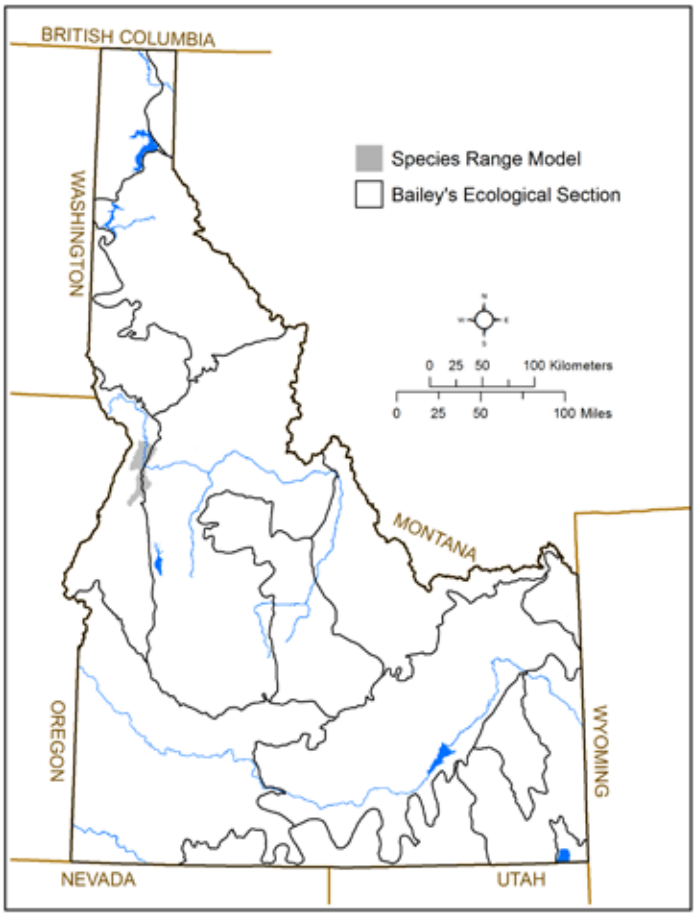
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
Taxonomy may need to be examined for the two subspecies (O. i. idahoensis and O. i. baileyi). The Costate Mountainsnail is Red listed with IUCN due to lack of information. Similarly, the subspecies O. i. idahoensis was a candidate for ESA listing, but was determined to be lacking information (1994, FR2729).

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org; Frest, T. J., E. J. Johannes. 1997. Land snails of the Lucile Caves ACEC. Idaho Bureau of Land Management Technical Bulletin 97-16.
Map Sources: IFWIS. July 2014 export; GBIF download 11/20/2014

Deep Slide Mountainsnail

Oreohelix intersum



Class: Gastropoda
Order: Stylommatophora
Family: Oreohelicidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1
S-rank: S1

SGCN TIER: 2
Rationale: Idaho endemic, data deficient, restricted range

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 800 km² (~300 mi²)
Key Ecological Sections: Blue Mountains
Population Size in Idaho: Not applicable for invertebrates.
Description: The Deep Slide Mountainsnail is an Idaho endemic known from only few sites along the Little Salmon River.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: The species occurs primarily in association with basalt talus in dry habitat. Dominant vegetation in the area includes poison ivy, netleaf hackberry, prickly pear, sagebrush, and balsamroot.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: In 1999 this species was considered to be declining both in occupied area and in the number of individuals. Current population trends are unknown.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable

Description: The primary threat to this species is thought to be habitat loss resulting from road construction, quarrying, and herbicide application.

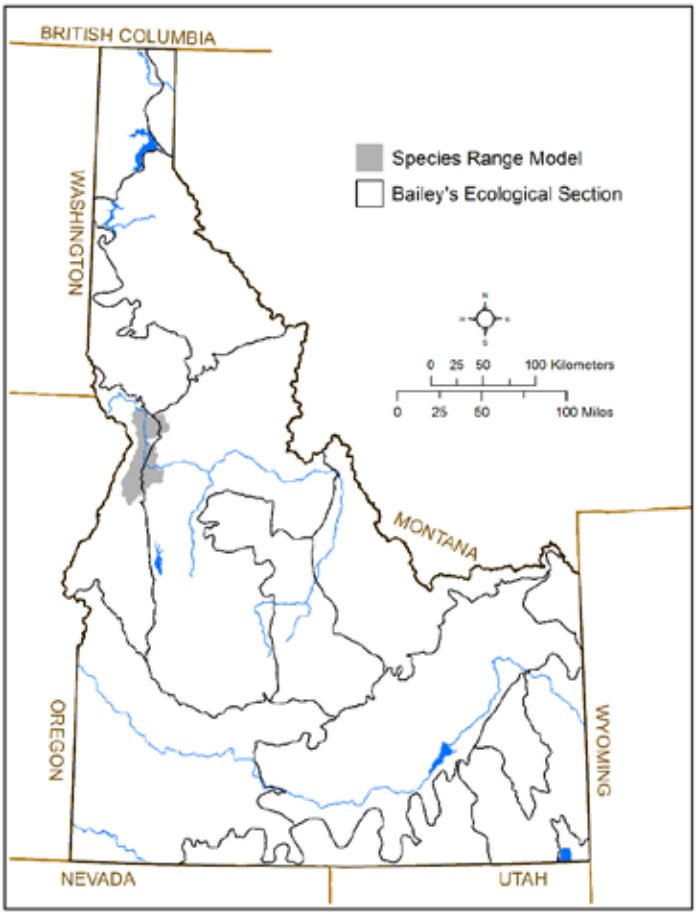
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Frest, T. J. and E. J. Johannes. 2000. An annotated checklist of Idaho land and freshwater mollusks. Journal of the Idaho Academy of Science 36:1-51.
Map Sources: IFWIS. July 2014 export

Boulder Pile Mountainsnail

Oreohelix jugalis



Class: Gastropoda
Order: Stylommatophora
Family: Oreohelicidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: Type 2
IDAPA: Unprotected Wildlife
G-rank: G1G2
S-rank: S1

SGCN TIER: 3
Rationale: Idaho endemic, data deficient, range restricted

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 5,000 km² (~1,900 mi²)
Key Ecological Sections: Blue Mountains, Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: The Boulder Pile Mountainsnail is an Idaho endemic known from the Salmon River between Hells Gate Creek and Allison Creek. In 1999, snails were reported as common at 9 of 34 sites. Current abundance is unknown.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: This species is found in varied habitats, but generally is associated with talus or boulder fields in mesic to somewhat xeric conditions. Dominant vegetation at known locations includes netleaf hackberry, willow, and various forbs and grasses.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: In 1999 this species was considered to be declining. Current population trends are unknown.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable

Description: Threats have not been documented.

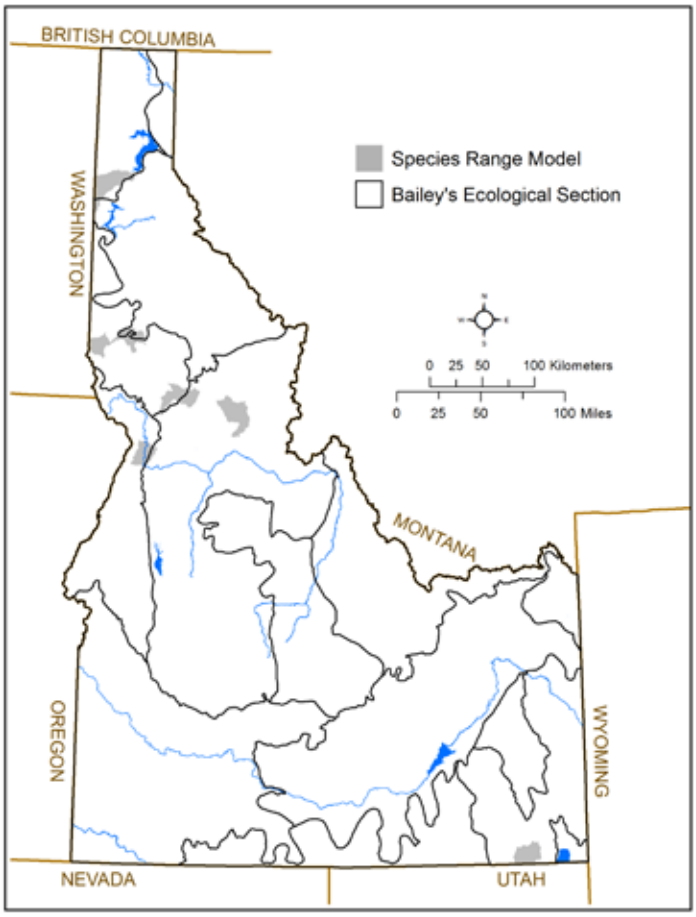
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Frest, T. J. and E. J. Johannes. 2000. An annotated checklist of Idaho land and freshwater mollusks. Journal of the Idaho Academy of Science 36:1-51.
Map Sources: IFWIS. July 2014 export; GBIF download 11/20/2014

Striate Mountainsnail

Oreohelix strigosa goniogyra



Class: Gastropoda
Order: Stylommatophora
Family: Oreohelicidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: Type 2
IDAPA: Unprotected Wildlife
G-rank: G5T1Q
S-rank: S1

SGCN TIER: 2
Rationale: Idaho endemic, data deficient, restricted range

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 3,300 km² (~1,300 mi²)
Key Ecological Sections: Blue Mountains, Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: The Striate Mountainsnail is endemic to Idaho and occurs in a limited area along the lower Salmon River drainage near Riggins, Idaho. Older records, however, indicate the species may also occur in the Selway River drainage, and even in scattered locations on the Palouse and Rathdrum prairies, but these specimens have not been confirmed and may be a different subspecies. Current status of the species is not known.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: The species is found on schist and limestone outcrops in forested, often moist, areas. Sites are often in closed or partially closed-canopy ponderosa pine forests with well-developed and diverse understory vegetation.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Frest (1999) indicated both the abundance and the number of occupied sites of this species were declining. Current trends have not been documented.

THREATS

Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable
Description: Timber harvest and fire have eliminated some habitat, and snails now occur on small remnant patches of relatively intact habitat. Other threats include livestock grazing and road construction and maintenance.

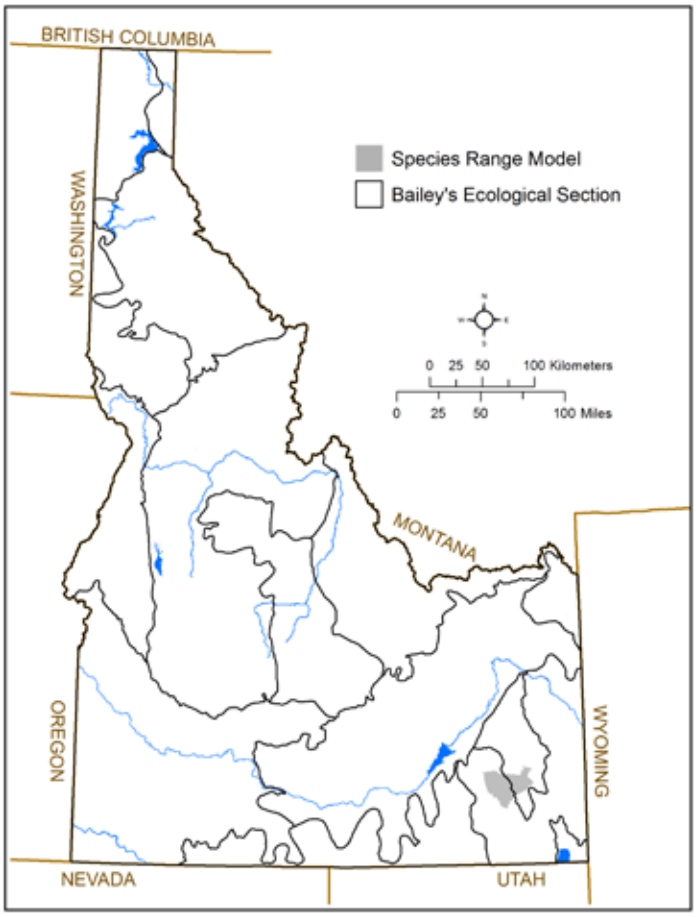
CONSERVATION ACTIONS
Priority conservation strategies for this species include surveys to determine the current abundance and trends and genetic work to determine status of the subspecies in Idaho.

ADDITIONAL COMMENTS
The taxonomic status of the subspecies is currently uncertain.

Information Sources: Frest, T. J. and E. J. Johannes. 2000. An annotated checklist of Idaho land and freshwater mollusks. Journal of the Idaho Academy of Science 36:1-51.
Map Sources: IFWIS. July 2014 export

Thin-ribbed Mountainsnail

Oreohelix tenuistriata



Class: Gastropoda
Order: Stylommatophora
Family: Oreohelicidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: GH
S-rank: SH

SGCN TIER: 1
Rationale: Idaho endemic, data deficient, range restricted

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 2,100 km^2 (~800 mi^2)
Key Ecological Sections: Overthrust Mountains
Population Size in Idaho: Not applicable for invertebrates.
Description: The Thin-ribbed Mountainsnail is known from only 8 occurrences between Lava Hot Springs and McCammon in Bannock County, and has not been relocated since 1947. Whether the species is extant is not known.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: The population was found in an area dominated by mountain mahogany, in openings among the shrubs where balsamroot grew in association with limestone.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable
Description: Threats have not been documented.

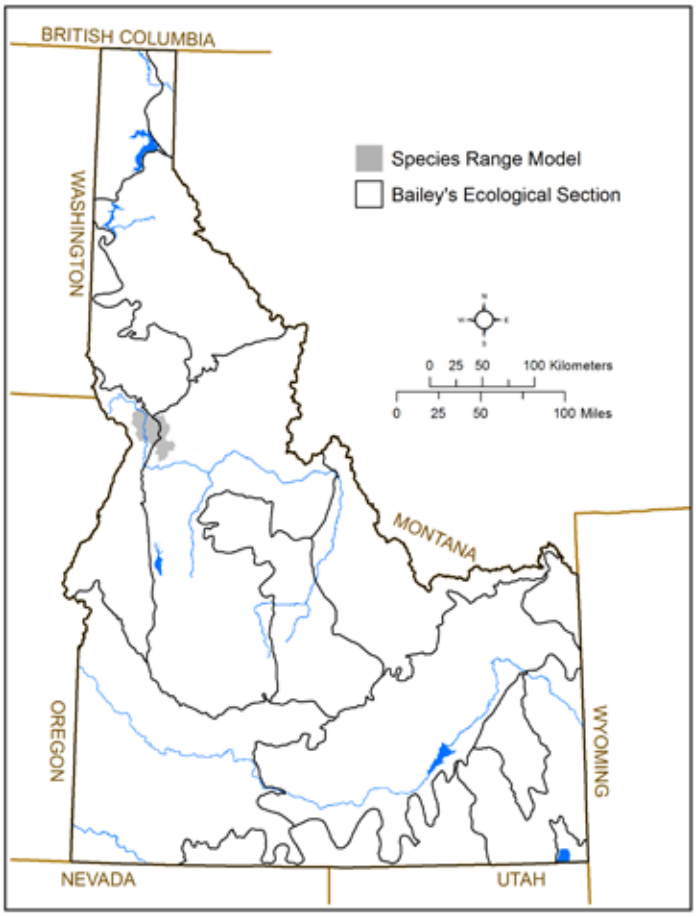
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: Frest, T. J. and E. J. Johannes. 2000. An annotated checklist of Idaho land and freshwater mollusks. Journal of the Idaho Academy of Science 36:1-51.
Map Sources: IFWIS. July 2014 export; GBIF download 11/20/2014

Whorled Mountainsnail

Oreohelix vortex



Class: Gastropoda
Order: Stylommatophora
Family: Oreohelicidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: Type 2
IDAPA: Unprotected Wildlife
G-rank: G1G2
S-rank: S1

SGCN TIER: 1
Rationale: Idaho endemic, data deficient, range restricted

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 1,100 km^2 (~400 mi^2)
Key Ecological Sections: Blue Mountains
Population Size in Idaho: Not applicable for invertebrates.
Description: The Whorled Mountainsnail is endemic to a limited stretch of the lower Salmon River and tributaries just above and below the town of Whitebird, Idaho. It was last recorded in 1994 and its current status is unknown.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: This species occurs in association with basalt boulder fields and talus in xeric habitat. Grasses and occasionally shrubs or forbs are the most common plant associates.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Frest (1999) considered this species to be declining, noting both a decrease in the extent of occupied habitat and population extirpations. Current trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable

Description: The primary threat to this species is thought to be habitat loss resulting from quarrying, road construction and maintenance, and livestock grazing.

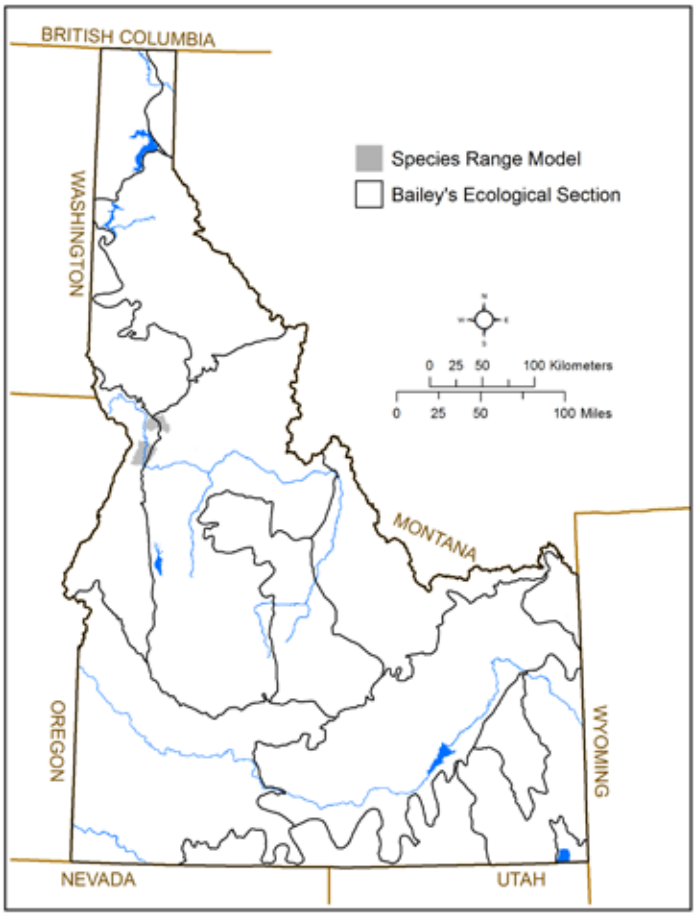
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Frest, T. J. and E. J. Johannes. 2000. An annotated checklist of Idaho land and freshwater mollusks. Journal of the Idaho Academy of Science 36:1-51.
Map Sources: IFWIS. July 2014 export

Lava Rock Mountainsnail

Oreohelix waltoni



Class: Gastropoda
Order: Stylommatophora
Family: Oreohelicidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: Type 2
IDAPA: Unprotected Wildlife
G-rank: G1G2
S-rank: S1

SGCN TIER: 1
Rationale: Idaho endemic, data deficient, range restricted

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 600 km² (~200 mi²)
Key Ecological Sections: Blue Mountains
Population Size in Idaho: Not applicable for invertebrates.
Description: The Lava Rock Mountainsnail is an Idaho endemic restricted to a few sites in the lower Salmon River Canyon. Current abundance information is unknown.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: The species occurs in xeric habitat in basalt talus and mixed schist/alluvium. Dominant plants in the areas include sagebrush, netleaf hackberry, and grasses.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: In 1999 this species was considered to be declining both in occupied area and in the number of individuals. Current population trends are unknown.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable
Description: The primary threat to this species is thought to be habitat loss and degradation resulting from livestock grazing, rocky quarrying, and road construction and maintenance.

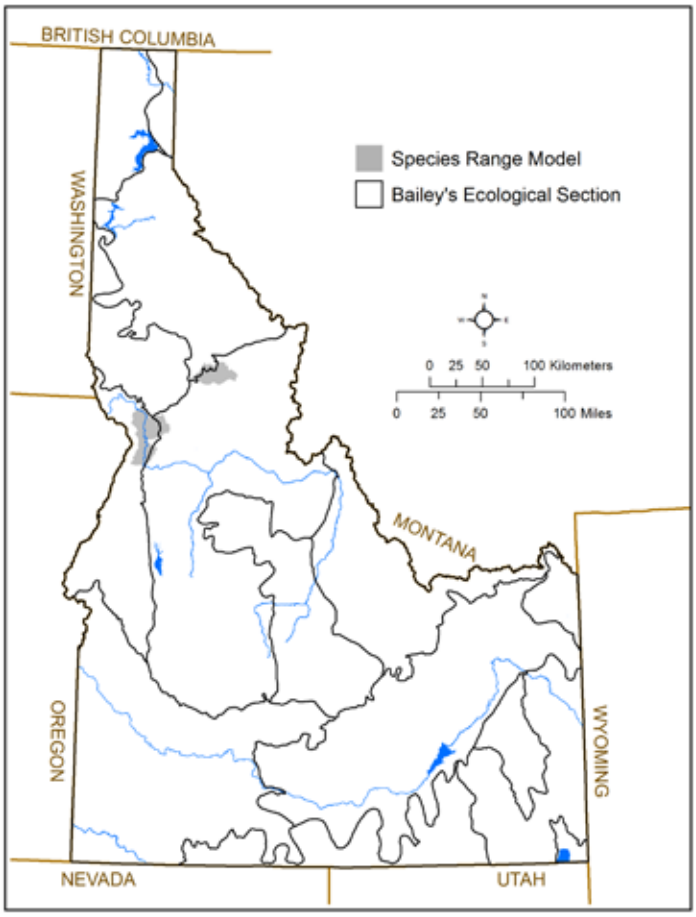
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Frest, T. J. and E. J. Johannes. 2000. An annotated checklist of Idaho land and freshwater mollusks. Journal of the Idaho Academy of Science 36:1-51.
Map Sources: IFWIS. July 2014 export

Salmon Oregonian

Cryptomastix harfordiana



Class: Gastropoda
Order: Stylommatophora
Family: Polygyridae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G3G4
S-rank: S1

SGCN TIER: 1
Rationale: Idaho endemic, data deficient, range restricted

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 1,700 km^2 (~700 mi^2)
Key Ecological Sections: Blue Mountains, Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: The Salmon Oregonian is an Idaho endemic, restricted to a limited reach in the lower Salmon River Canyon. Current abundance is unknown.

HABITAT & ECOLOGY
Environmental Specificity: Narrow: Specialist—key requirements are common.
Description: This species is found in moderately xeric to somewhat mesic habitats, and is associated with talus or boulder fields often at the base of slopes or in riparian areas. Dominant plants include netleaf hackberry, grasses, willow, and dogwood.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: In 1999 this species was considered to be declining both in occupied area and in the number of individuals. Current population trends are unknown.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable

Description: The primary threat to this species is thought to be habitat loss resulting from housing development, road construction and maintenance, mining and quarrying, and livestock grazing.

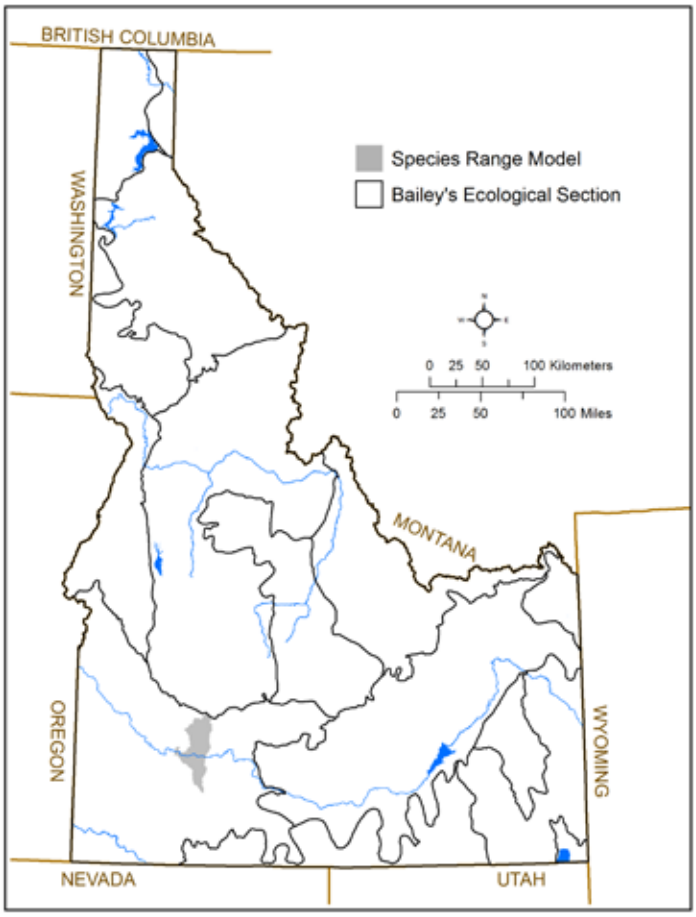
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Idaho CWCS 2005; Frest, T. J. and E. J. Johannes. 2000. An annotated checklist of Idaho land and freshwater mollusks. Journal of the Idaho Academy of Science 36:1-51.
Map Sources: IFWIS. July 2014 export

Bruneau Dune Tiger Beetle

Cicindela waynei



Class: Insecta
Order: Coleoptera
Family: Carabidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: Type 2
IDAPA: Unprotected Wildlife
G-rank: G1
S-rank: S1

SGCN TIER: 1
Rationale: Idaho endemic, range restricted, habitat specialist

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 1,300 km^2 (~500 mi^2)
Key Ecological Sections: Owyhee Uplands
Population Size in Idaho: Not applicable for invertebrates.
Description: The Bruneau Dune Tiger Beetle is found only within Bruneau Dunes State Park and a few adjacent sand-dominated blowouts.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: This species of ground beetle is a sand-obligate that requires healthy early-seral dune habitats with a mosaic of cobble and open sand. Cobble is required for larval survival and open dunes for breeding and the pursuit of prey.

POPULATION TREND
Short-term Trend: Relatively Stable (<=10% change)
Long-term Trend: Unknown
Description: Although population trend data are unavailable, the proportion of occupied habitat has declined and approximately 75% of previously occupied habitat is now unoccupied.

THREATS
Overall Threat Impact: High
Intrinsic Vulnerability: Highly vulnerable

Description: The primary threats for this species are sand stabilization as a result of nonnative vegetation encroachment and changing precipitation patterns crucial to spring emergence and reproduction. Additonal threats include human recreational activities, livestock grazing, and collectors. Threat mitigation is challenging.

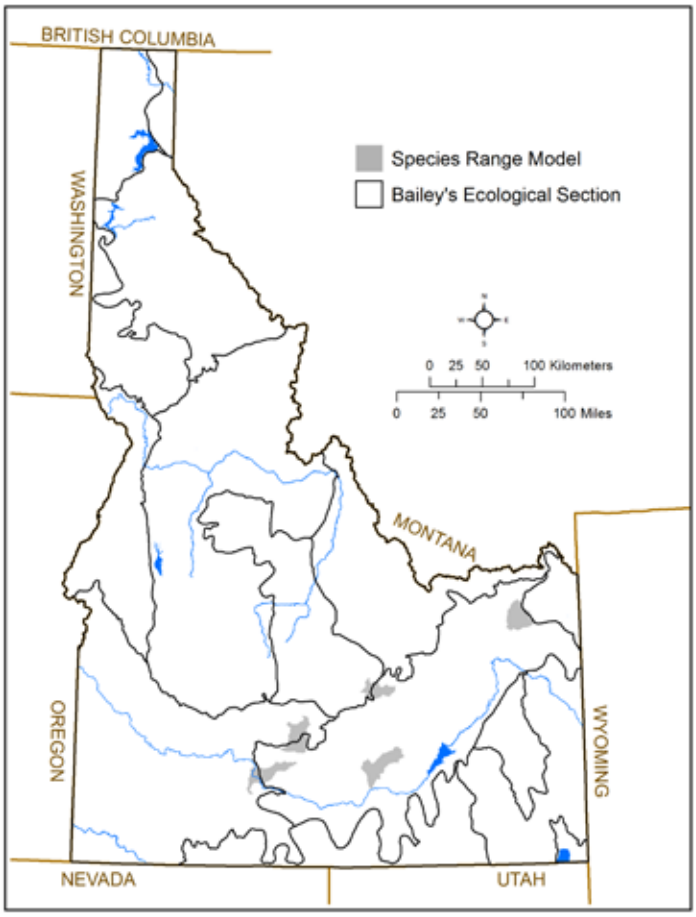
CONSERVATION ACTIONS
Conservation issues and management actions are described in the appropriate section plans. In short, recommended strategies for this species include maintenance of core habitat, potential expansion into restored areas, and assessing the exposure and potential effects of herbicides.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org; Knisley, C. B., M. Kippenhan, D. Brzoska. 2014. Conservation status of United States tiger beetles. Terrestrail Arthropod Reviews 7:93-145; Pearson, D., C. B. Knisley, C. J. Kazilek. 2005. A field guide to the tiger beetles of the United States and Canada. Oxford University Press.
Map Sources: IFWIS. July 2014 export; Integrated digitized Biocollections (iDigBio) Specimen Portal. Accessed Dec. 12, 2014. <https://www.idigbio.org/portal>

Blind Cave Leiodid Beetle

Glacicavicola bathyscioides



Class: Insecta
Order: Coleoptera
Family: Leiodidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: Type 2
IDAPA: Unprotected Wildlife
G-rank: G1G3
S-rank: S1

SGCN TIER: 1
Rationale: Regional endemic, data deficient, habitat specialist

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 2,500 km² (~1,000 mi²)
Key Ecological Sections: Snake River Basalts
Population Size in Idaho: Not applicable for invertebrates.
Description: The Blind Cave Leiodid Beetle is known only from Idaho and Wyoming. In Idaho, it occurs in widely spearated lava tube caves on the eastern Snake River Plain in Fremont, Butte, Power, and Lincoln counties. Occurrences in Idaho are primarily from pre-1975, with 3 new records added in 2007 and 1 in 2013. Most lava tube caves, however, have not been surveyed for invertebrates.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: This beetle is an obligate inhabitant of cave habitats. It is found in caves with year-round cold temperatures and moisture, and many of the caves contain perennial ice formations.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown

Intrinsic Vulnerability: Highly vulnerable
Description: The primary threat to this species is the alteration of cave habitat through climate change (affecting temperature and humidity) and human activities.

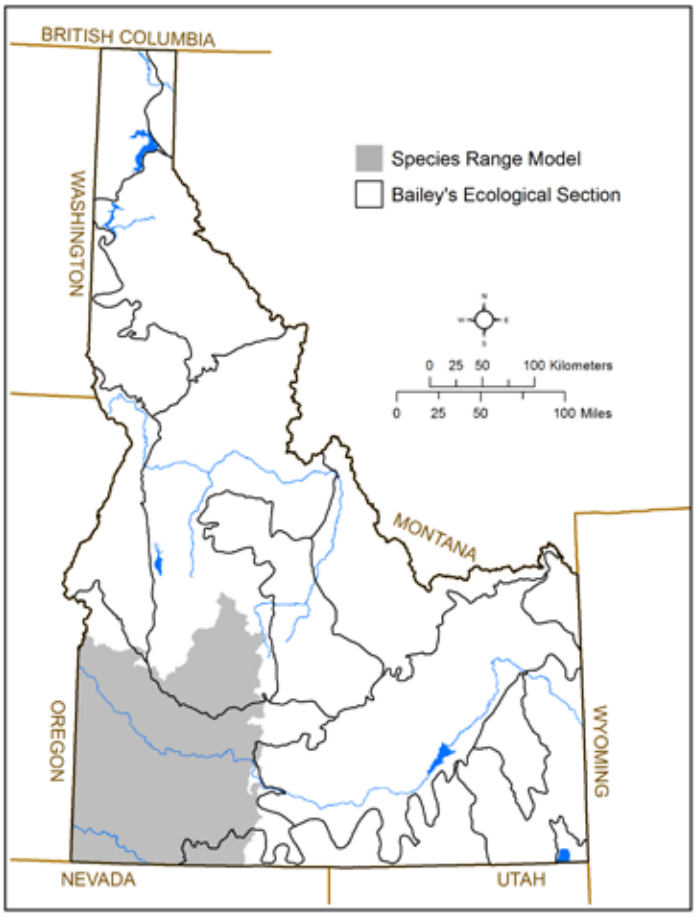
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Westcott, R. L. 1968. A new subfamily of blind beetle from Idaho ice caves with notes on its bionomics and evolution (Coleoptera: Leiodidae). Los Angeles County Museum Contributions in Science 141:1-14.
Map Sources: IFWIS. July 2014 export

Lined June Beetle

Polyphylla devestiva



Class: Insecta
Order: Coleoptera
Family: Scarabaeidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: GNR
S-rank: S2

SGCN TIER: 2
Rationale: Idaho endemic, data deficient, restricted range, habitat specialist

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 37,100 km^2 (~14,300 mi^2)
Key Ecological Sections: Owyhee Uplands
Population Size in Idaho: Not applicable for invertebrates.
Description: The Lined June Beetle is endemic to southwest Idaho. When originally described in 1966, it was associated with sand systems along the Snake River from Homedale to Bruneau. Due to habitat succession resulting from invasive species encroachment however, it is now only observed at Celebration Park and Bruneau dunes. No formal surveys have been conducted on this species and as a result, its presence at historical sites as well as its population status are unknown.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: The Lined June Beetle life cycle is closely tied to healthy early-seral dune habitats with the presence of sand-associated native perennial forbs and grasses. It is rhizophagous, feeding on the roots of a variety of sand-associate plants (primarily grasses) and, like many sand-associate scarabs, is physiologically and behaviorally adapted to sand-dominated habitats and is often unable to survive under surrounding desert conditions.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable
Description: The primary threat to this species is the loss of healthy dune habitats due primarily to nonnative vegetation encroachment.

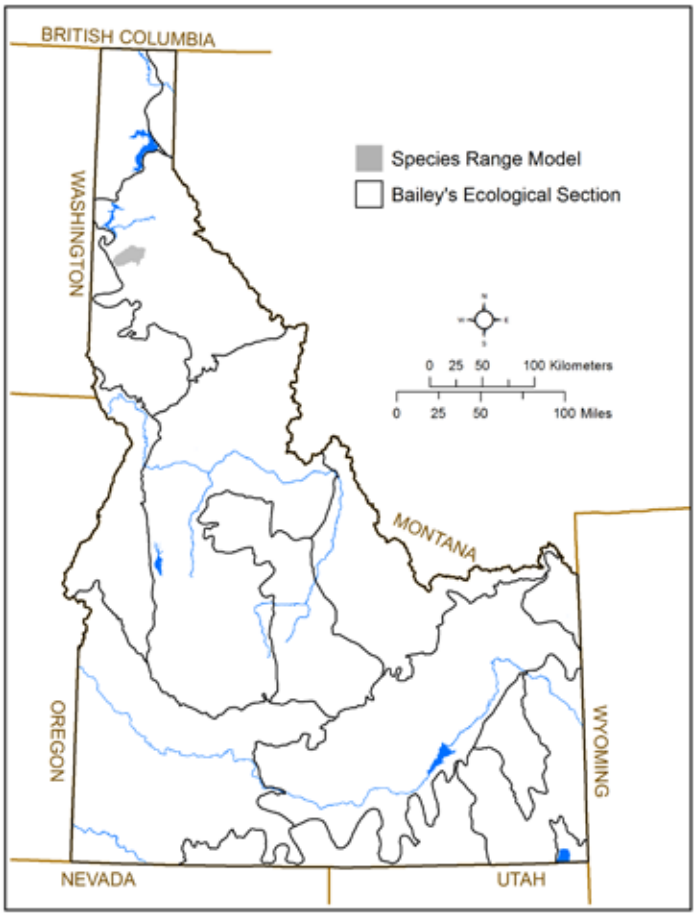
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Young, R.M. 1966. A New Species of Polyphylla and a Designation of Two Lectotypes (Coleoptera: Scarabaeidae,Melolonthinae). Journal of the Kansas Entomological Society 39:233-236.
Map Sources: Young, R.M. 1966. A New Species of Polyphylla and a Designation of Two Lectotypes (Coleoptera: Scarabaeidae,Melolonthinae). Journal of the Kansas Entomological Society 39:233-236.

A Mayfly

Ameletus tolae



Class: Insecta
Order: Ephemeroptera
Family: Ameletidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1G2
S-rank: S2

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 400 km² (~200 mi²)
Key Ecological Sections: Bitterroot Mountains
Population Size in Idaho: Not applicable for invertebrates.
Description: This mayfly is only known to occur in northeastern Oregon and Idaho. In Idaho, it was collected once in 1966 in Benewah County. Whether it is extant in the state is unknown.

HABITAT & ECOLOGY
Environmental Specificity: Narrow: Specialist—key requirements are common.
Description: Specific habitat requirements of this species have not been documented. In general, mayflies in this genus inhabit running waters in mountainous areas, from headwater springs to large rivers.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable

Description: Specific threats to this species have not been identified. In general, mayfly populations are affected by changes in aquatic habitat, such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

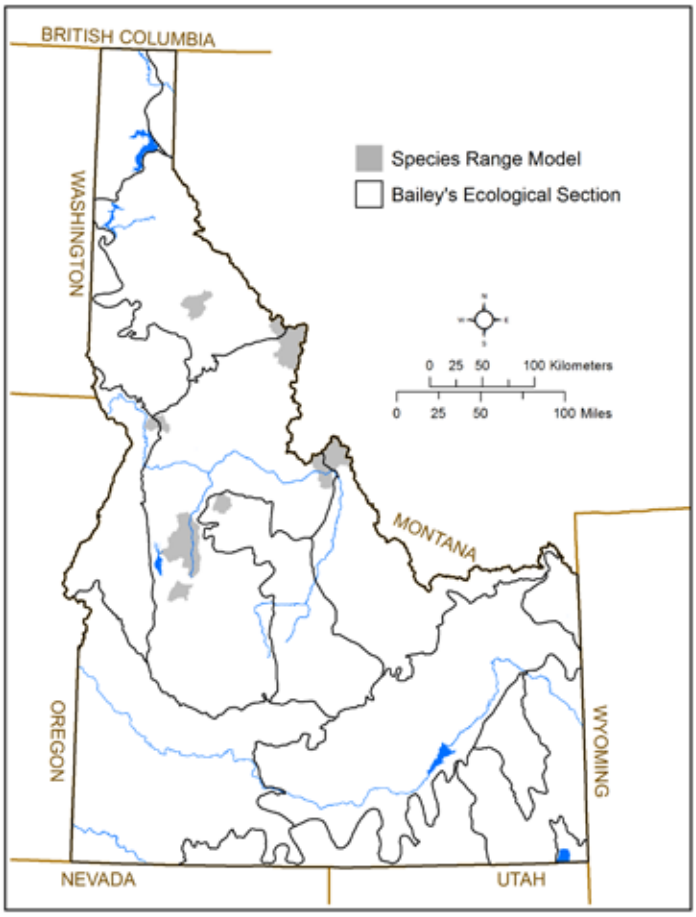
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org; Zloty, J. 1996. A revision of the Nearctic Ameletus mayflies based on adult males, with descriptions of seven new species (Ephemeroptera: Ameletidae). The Canadian Entomologist 128:293-346.
Map Sources: IFWIS. July 2014 export

Lolo Mayfly

Caurinella idahoensis



Class: Insecta
Order: Ephemeroptera
Family: Ephemerellidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G3
S-rank: S2

SGCN TIER: 2
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 7,900 km² (~3,100 mi²)
Key Ecological Sections: Beaverhead Mountains, Bitterroot Mountains, Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: The Lolo Mayfly is believed to be endemic to the Northern Rocky Mountain Refugium in Idaho and Montana. In Idaho, it has been documented in less than 20 scattered locations across Clearwater, Idaho, Valley, and Lemhi counties between 1978 and 2005. When found, it is typically in low numbers.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: This species occurs only in small, fast-flowing, high elevation streams with cobble and gravel substrates and is considered a cold water stenotherm. Larvae have typically been found clinging to rocks at the bases of blue-green algae colonies. The adult flight period is thought to be mid-July to early August.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown

Intrinsic Vulnerability: Moderately vulnerable
Description: The primary threat to this species is thought to be the loss or degradation of source headwater habitats.

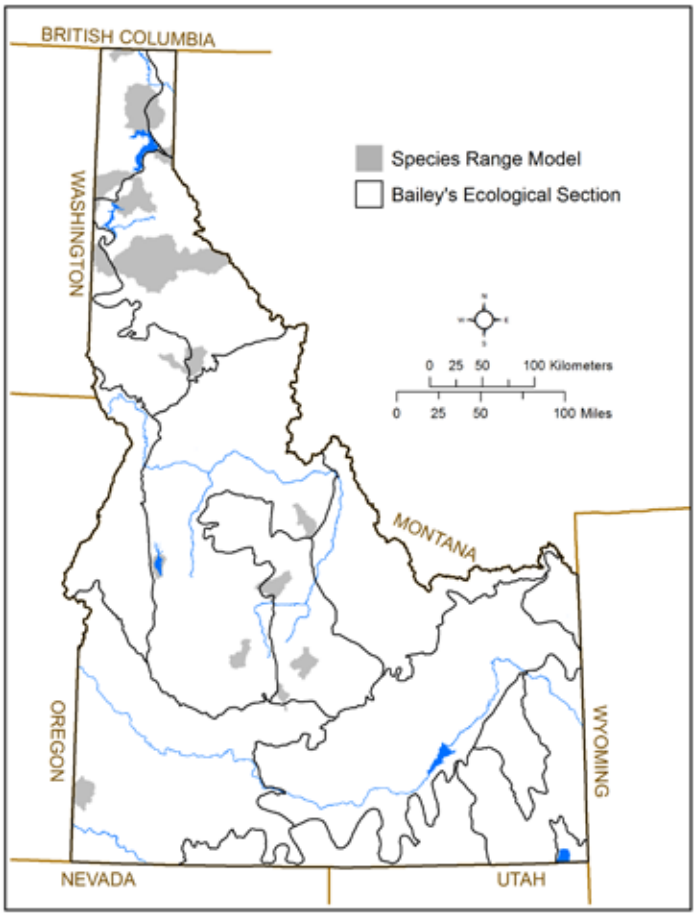
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Stagliano, D. M. and B. A. Maxell. 2010. Aquatic invertebrate species of concern: updated distributions, vital watersheds, and predicted sites within USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, Montana; Stagliano, D. M. G. M . Stephens, W. R. Bosworth. 2007. Aquatic invertebrate species of concern on USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, MT and Idaho Conservation Data Center, Boise, ID.
Map Sources: IDEQ export Feb 13, 2015; IFWIS. July 2014 export

A Mayfly

Ephemerella alleni



Class: Insecta
Order: Ephemeroptera
Family: Ephemerellidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G4
S-rank: S2

SGCN TIER: 2
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 19,300 km^2 (~7,500 mi^2)
Key Ecological Sections: Bitterroot Mountains, Challis Volcanics, Flathead Valley, Okanogan Highlands
Population Size in Idaho: Not applicable for invertebrates.
Description: This mayfly occurs in the mountainous areas of Idaho, Montana, Oregon, Washington, and Wyoming. In Idaho, occurrences are primarily in the Panhandle, with a few scattered locations in southern Idaho, and mainly from the mid-1990s. The species likely occurs in more areas of central Idaho, but survey data are lacking.

HABITAT & ECOLOGY
Environmental Specificity: Narrow: Specialist—key requirements are common.
Description: This species is found in small, headwater streams with cobble and gravel substrates.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable

Description: The primary threat to this species is thought to be the loss or degradation of source headwater habitats.

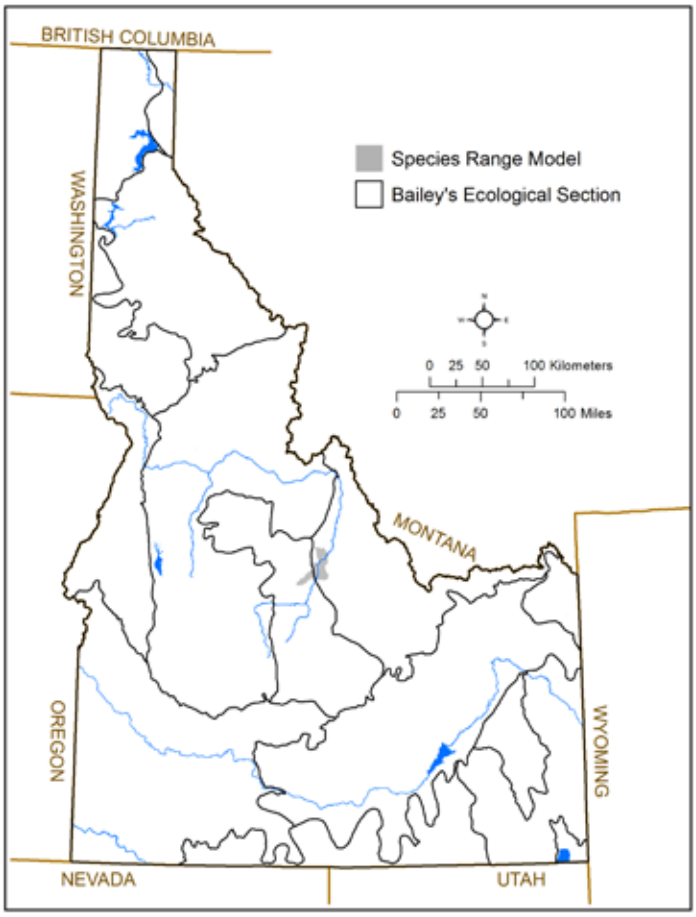
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Jacobus, L. M., B. C. Kondratieff, M. D. Meyer, W. P. McCafferty. 2003. Contribution to the biology and systematics of Ephemerella alleni (Ephemeroptera: Ephemerellidae). Pan-Pacific Entomologist 79:207-211.
Map Sources: IDEQ export Feb 13, 2015; IFWIS. July 2014 export; Jacobis, L. M., B. C. Kondratieff, M. D. Meyer, W. P. McCafferty. 2003. Contribution to the biology and systematics of Ephemerella alleni (Ephemeroptera: Ephemerellidae). Pan-Pacific Entomologist 79:207-211.

A Mayfly

Cinygma dimicki



Class: Insecta
Order: Ephemeroptera
Family: Heptageniidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G3
S-rank: S1

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 500 km² (~200 mi²)
Key Ecological Sections: Beaverhead Mountains
Population Size in Idaho: Not applicable for invertebrates.
Description: This species of mayfly is known to occur in Idaho, Montana, Oregon, and Washington. However, the only Idaho collection was in 1963 in Custer County and whether the species is extant is not known.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: Little is known of the species habitat. In general, mayflies in this genus are found in lotic-erosional habitats on wood substrate.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown

Description: Species-specific threats have not be identified. In general, mayfly populations are affected by changes to aquatic habitat including alteration of flow patterns, streambed substrates, thermal characteristics, and water quality.

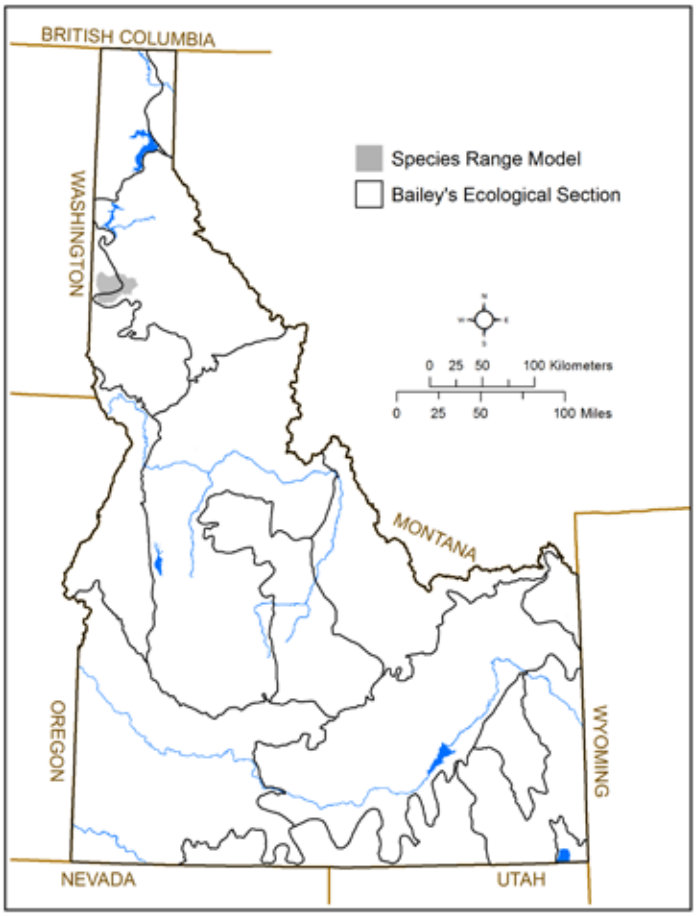
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org
Map Sources: IFWIS. July 2014 export

A Mayfly

Paraleptophlebia falcula



Class: Insecta
Order: Ephemeroptera
Family: Leptophlebiidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1G2
S-rank: SNR

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 800 km² (~300 mi²)
Key Ecological Sections: Bitterroot Mountains, Palouse Prairie
Population Size in Idaho: Not applicable for invertebrates.
Description: This species is known from very limited occurrences in Idaho, Oregon, and Washington. In Idaho, two museum records provide locality of Laird Park (assumed to be in Latah County), but no other location documentation. Whether the species is extant is not known.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: Habitat requirements for this species have not been documented. Other species in this genus seem to prefer riffles and slower moving waters or pools.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown

Description: Species-specific threats have not be identified. In general, mayfly populations are affected by changes to aquatic habitat including alteration of flow patterns, streambed substrates, thermal characteristics, and water quality.

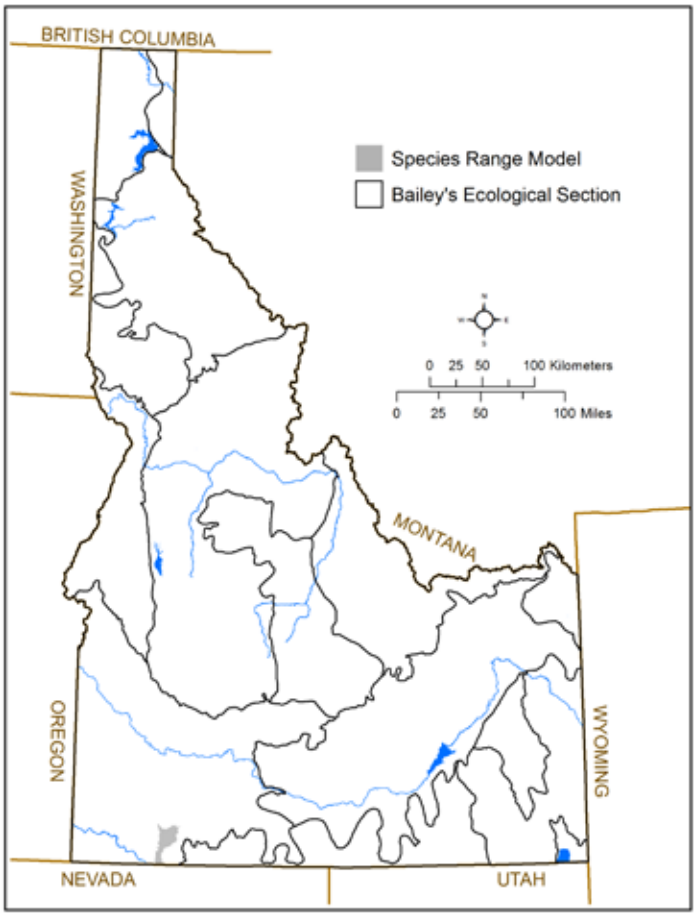
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: Harper, F. and P. P. Harper. 1986. An annotated key to the adult males of the northwestern Nearctic species of Paraleptophlebia Lestage (Ephemeroptera: Leptophlebiidae) with the description of a new species. Canadian Journal of Zoology 64:1460-1468
Map Sources: GBIF download Nov 20, 2014

A Mayfly

Paraleptophlebia jenseni



Class: Insecta
Order: Ephemeroptera
Family: Leptophlebiidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G2G4
S-rank: S1

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 400 km² (~200 mi²)
Key Ecological Sections: Owyhee Uplands
Population Size in Idaho: Not applicable for invertebrates.
Description: This species is known to occur in Idaho and Washington. In Idaho, it has only been collected in Owyhee County in 1965. Whether the species is extant is not known.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: Habitat requirements for this species have not been documented. Other species in this genus seem to prefer riffles and slower moving waters or pools.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown
Description: Species-specific threats have not be identified. In general, mayfly populations are affected by changes to aquatic habitat including alteration of flow patterns, streambed substrates, thermal characteristics, and water quality.

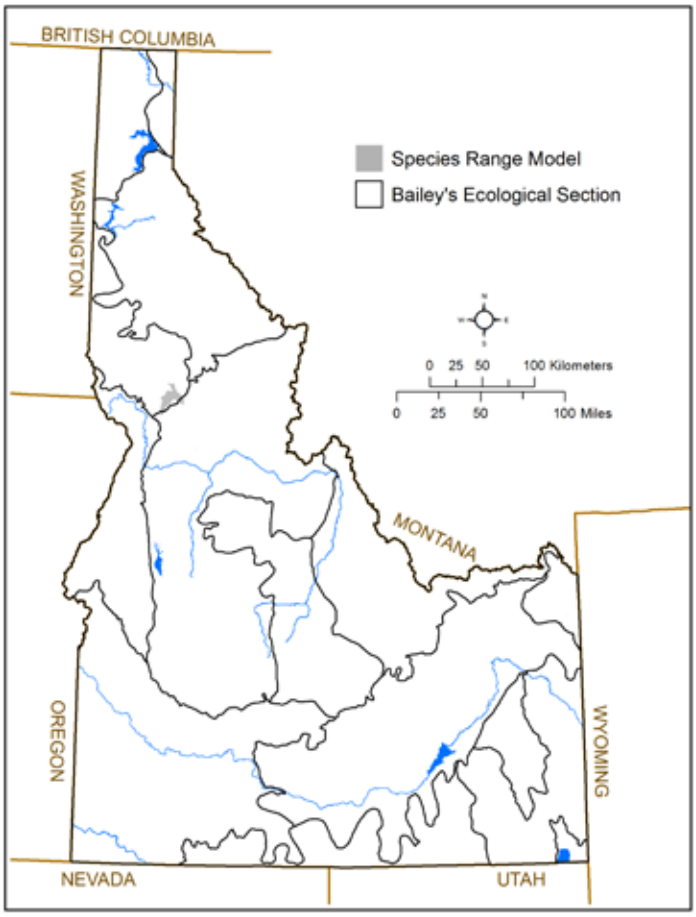
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: Stagliano, D. M. and B. A. Maxell. 2010. Aquatic invertebrate species of concern: updated distributions, vital watersheds, and predicted sites within USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, Montana.
Map Sources: IFWIS. July 2014 export

A Mayfly

Paraleptophlebia traverae



Class: Insecta
Order: Ephemeroptera
Family: Leptophlebiidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: GH
S-rank: S1

SGCN TIER: 3
Rationale: Idaho endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 300 km² (~100 mi²)
Key Ecological Sections: Palouse Prairie
Population Size in Idaho: Not applicable for invertebrates.
Description: This endemic species is known from only one specimen collected near Grangeville, ID in 1907. No recent collections of this species have been documented and whether the species is extant is not known.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: Habitat requirements for this species have not been documented. Other species in this genus seem to prefer riffles and slower moving waters or pools.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable

Description: Species-specific threats have not be identified. In general, mayfly populations are affected by changes to aquatic habitat including alteration of flow patterns, streambed substrates, thermal characteristics, and water quality.

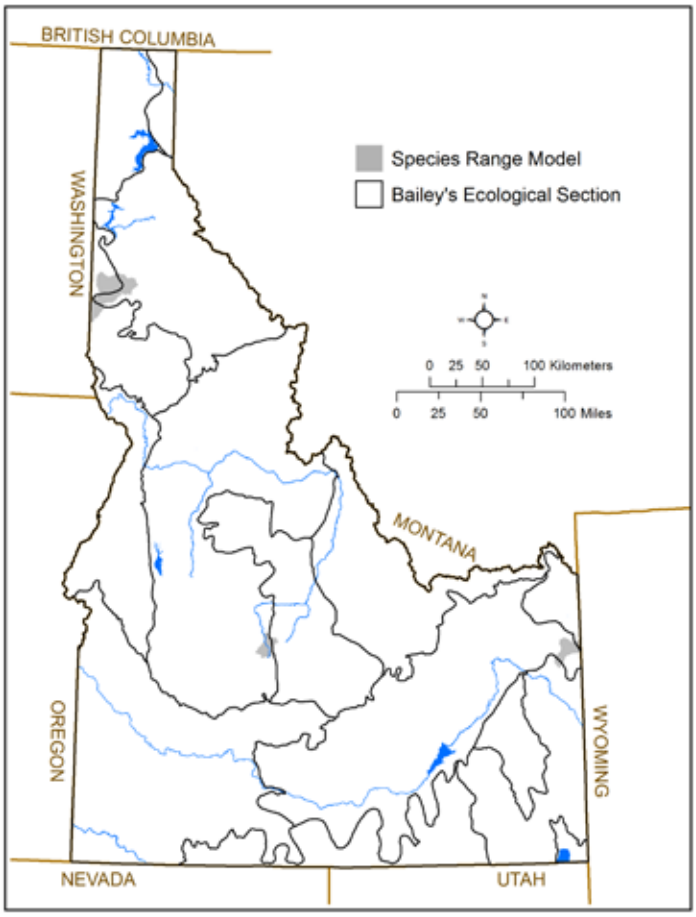
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: Stagliano, D. M. and B. A. Maxell. 2010. Aquatic invertebrate species of concern: updated distributions, vital watersheds, and predicted sites within USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, Montana.
Map Sources: IFWIS. July 2014 export

A Mayfly

Parameletus columbiae



Class: Insecta
Order: Ephemeroptera
Family: Siphlonuridae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G2
S-rank: S1

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 1,700 km^2 (~700 mi^2)
Key Ecological Sections: Bitterroot Mountains, Challis Volcanics, Palouse Prairie, Idaho Batholith, Snake River Basalts
Population Size in Idaho: Not applicable for invertebrates.
Description: This mayfly is known from Idaho, Montana, Utah, Wyoming and BC, but no longer occurs at several well documented sites in Utah and has not been collected in Idaho since 1965. The Idaho locations include 4 sites in Latah, Blaine, and Teton counties. Whether the species is extant is not known.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: This species is found in shallow, cold water ponds, or at the edges of moderately flowing rivers and streams. Eggs are laid in mid-June, remain dorman during the summer and winter, and hatch within 1 day after the snow melts (typically May).

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown

Intrinsic Vulnerability: Unknown
Description: Species-specific threats have not be identified. In general, mayfly populations are affected by changes to aquatic habitat including alteration of flow patterns, streambed substrates, thermal characteristics, and water quality.

CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

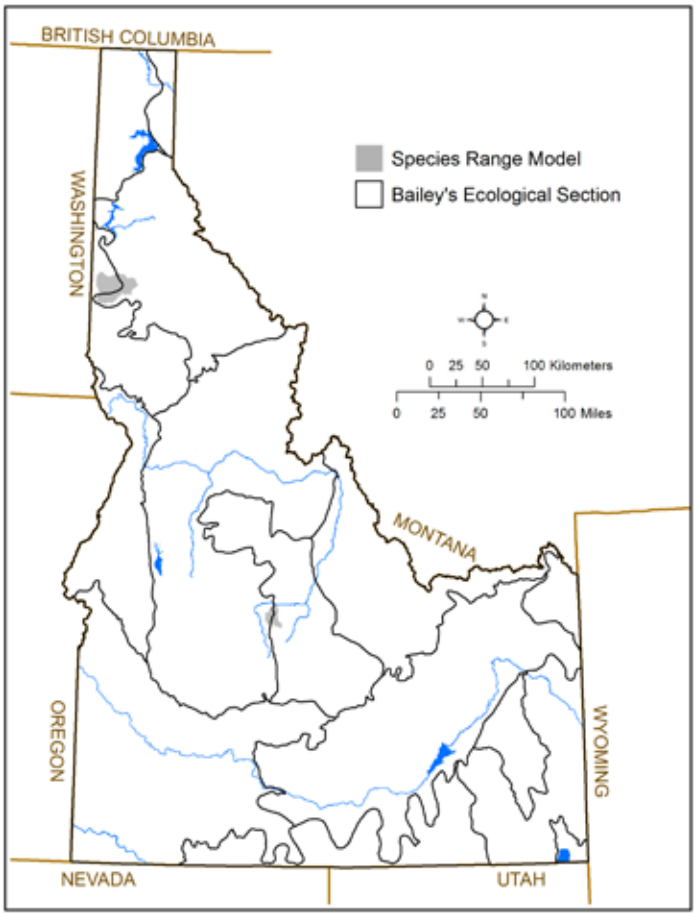
ADDITIONAL COMMENTS
None.

Information Sources: Stagliano, D. M. and B. A. Maxell. 2010. Aquatic invertebrate species of concern: updated distributions, vital watersheds, and predicted sites within USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, Montana.
Map Sources: IFWIS. July 2014 export

A Miner Bee

Andrena aculeata

Class: Insecta
Order: Hymenoptera
Family: Andrenidae



CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: GNR
S-rank: S3

SGCN TIER: 3
Rationale: Regional endemic, data deficient, important pollinator

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 1,000 km^2 (~400 mi^2)
Key Ecological Sections: Bitterroot Mountains, Challis Volcanics, Palouse Prairie
Population Size in Idaho: Not applicable for invertebrates.
Description: This miner bee is endemic to the Columbia Basin. Although not many records of this species exist, it is thought to be fairly widespread in the region.

HABITAT & ECOLOGY
Environmental Specificity: Moderate: Generalist—some key requirements are scarce.
Description: All Andrena species nest in the ground, typically in sandy soil and often near or under shrubs. This species has been recorded in two habitat types in the region, Englemann spruce-subalpine fir and agricultural lands. It has a long flight period (May to August) and is found at a wide range of elevations. Flower preferences are unknown, but are assumed to be varied.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable

Description: Species-specific threats have not be identified.

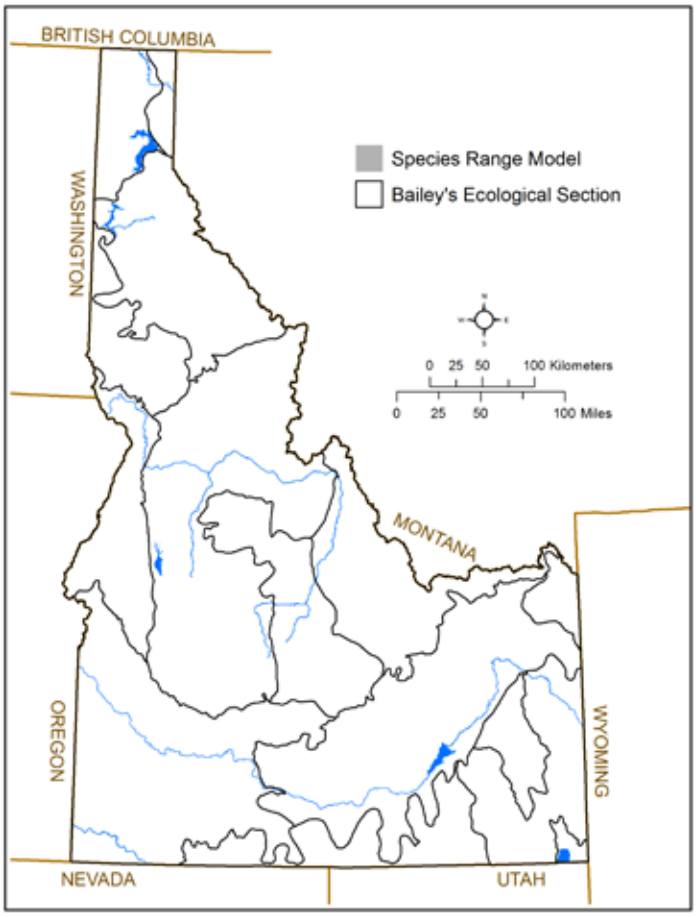
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Committee on the Status of Pollinators in North America. 2007. Status of Pollinators in North America. Natural Research Council, National Academies Press, Washington, DC; Shepherd, M. D. D. M. Vaughan, and S. H. Black (eds.) Red List of Pollinator Insects of North America, CD-ROM Vers 1 (May 2005). The Xerces Society for Invertebrate Conservation, Portland, OR.
Map Sources: Xerces Society species profile; Discover Life

A Miner Bee

Calliopsis barri



Class: Insecta
Order: Hymenoptera
Family: Andrenidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: GNR
S-rank: S1

SGCN TIER: 2
Rationale: Regional endemic, data deficient, important pollinator, habitat specialist

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 3,600 km^2 (~1,400 mi^2)
Key Ecological Sections: Snake River Basalts
Population Size in Idaho: Not applicable for invertebrates.
Description: This miner bee is a rare regional endemic known only from sand dunes in Rexburg, Idaho and Sisters, Oregon.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: This species is known to nest in sand dunes and has been recorded on small-flowered legumes, including picabo milkvetch a narrowly endemic plant in the upper Snake River Plain. Its has a short flight season (July). Little else is known of its biology.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable
Description: Species-specific threats have not be identified.

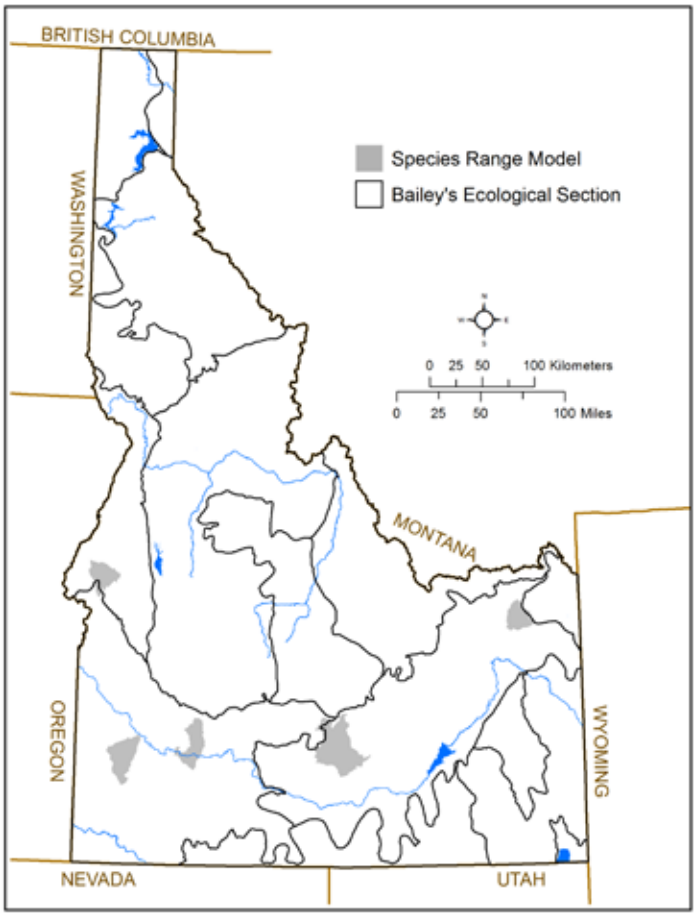
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Committee on the Status of Pollinators in North America. 2007. Status of Pollinators in North America. Natural Research Council, National Academies Press, Washington, DC; Tepedino, VJ and TL Griswold. 1995. the bees of the Columbia Basin. Final report. USDA Forest Service, Portland, OR 212p.; Shepherd, M. D. D. M. Vaughan, and S. H. Black (eds.) Red List of Pollinator Insects of North America, CD-ROM Vers 1 (May 2005). The Xerces Society for Invertebrate Conservation, Portland, OR.
Map Sources: GBIF downloaded 11/20/2014

A Miner Bee

Perdita barri



Class: Insecta
Order: Hymenoptera
Family: Andrenidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: GNR
S-rank: S1

SGCN TIER: 3
Rationale: Idaho endemic, data deficient, restricted range, important pollinator

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 600 km^2 (~200 mi^2)
Key Ecological Sections: Blue Mountains
Population Size in Idaho: Not applicable for invertebrates.
Description: This miner bee is a rare Idaho endemic that has been collected only once, near the town of Midvale. Whether the species is extant is not known.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: The flight period of this species is thought to be June to July and, like all members of the genus, it nests in the ground. Other members of the genus are specialist foragers, thus this species may be dependent on Phacelia flowers. Little else is known of the species biology, ecology, or status.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable
Description: Species-specific threats have not be identified.

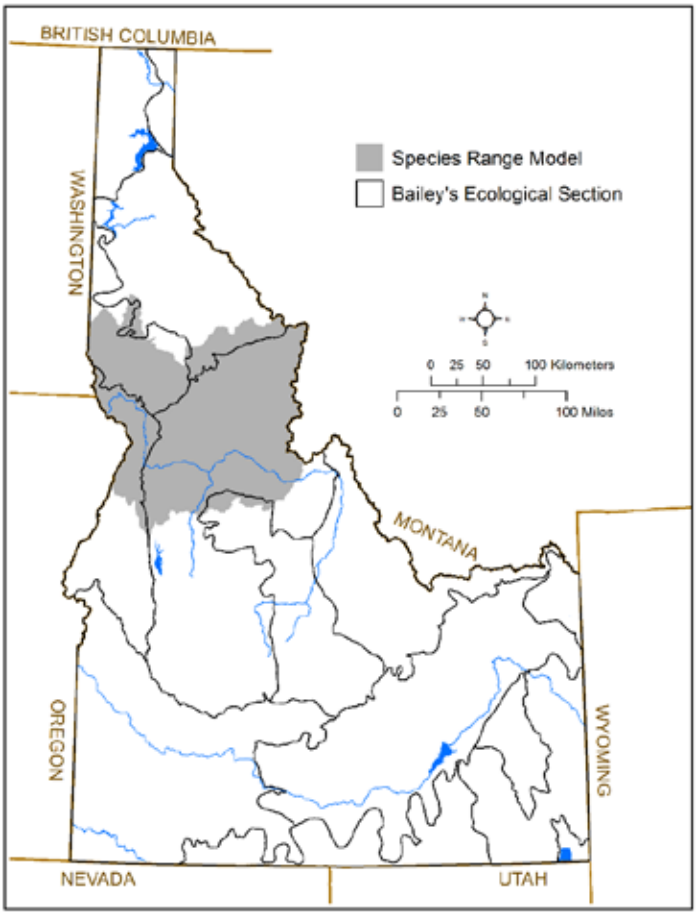
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: Committee on the Status of Pollinators in North America. 2007. Status of Pollinators in North America. Natural Research Council, National Academies Press, Washington, DC; Tepedino, VJ and TL Griswold. 1995. the bees of the Columbia Basin. Final report. USDA Forest Service, Portland, OR 212p.; Shepherd, M. D. D. M. Vaughan, and S. H. Black (eds.) Red List of Pollinator Insects of North America, CD-ROM Vers 1 (May 2005). The Xerces Society for Invertebrate Conservation, Portland, OR.
Map Sources: Xerces Society species profile

A Miner Bee

Perdita salicis euxantha



Class: Insecta
Order: Hymenoptera
Family: Andrenidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G5TNR
S-rank: S3

SGCN TIER: 3
Rationale: Regional endemic, data deficient, important pollinator

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 31,400 km^2 (~12,100 mi^2)
Key Ecological Sections: Bitterroot Mountains, Blue Mountains, Idaho Batholith, Palouse Prairie
Population Size in Idaho: Not applicable for invertebrates.
Description: This miner bee is a rare endemic to the Columbia River Basin and has been collected only from Kiger Island, Oregon and 2 sites in Idaho (in Idaho and Nez Perce counties).

HABITAT & ECOLOGY
Environmental Specificity: Narrow: Specialist—key requirements are common.
Description: The flight period of this species is thought to be June to July and, like all members of the genus, it nests in the ground. Other members of the genus are specialist foragers, and this species is assumed to be dependent on willow flowers. Little else is known of the species biology, ecology, or status.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable
Description: Species-specific threats have not be identified.

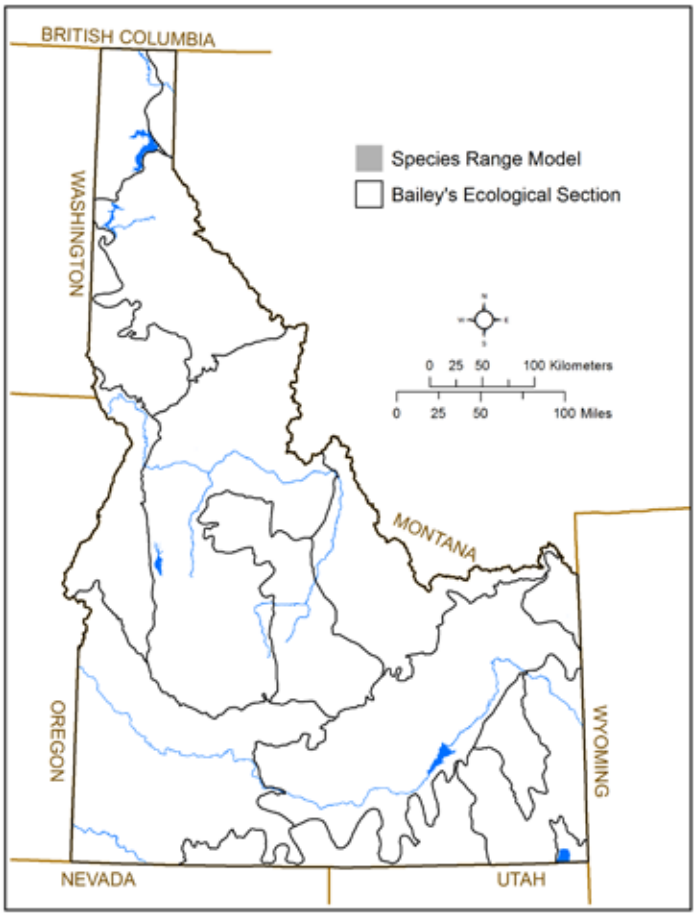
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: Committee on the Status of Pollinators in North America. 2007. Status of Pollinators in North America. Natural Research Council, National Academies Press, Washington, DC; Tepedino, VJ and TL Griswold. 1995. the bees of the Columbia Basin. Final report. USDA Forest Service, Portland, OR 212p.; Shepherd, M. D. D. M. Vaughan, and S. H. Black (eds.) Red List of Pollinator Insects of North America, CD-ROM Vers 1 (May 2005). The Xerces Society for Invertebrate Conservation, Portland, OR.
Map Sources: Xerces Society species profile

A Miner Bee

Perdita wyomingensis sculleni



Class: Insecta
Order: Hymenoptera
Family: Andrenidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: GNR
S-rank: S2

SGCN TIER: 3
Rationale: Regional endemic, data deficient, important pollinator

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 2,200 km^2 (~800 mi^2)
Key Ecological Sections: Blue Mountains, Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: This miner bee is endemic to the Columbia River Basin, but is fairly widespread in the region and appears to be relatively common.

HABITAT & ECOLOGY
Environmental Specificity: Narrow: Specialist—key requirements are common.
Description: The flight period of this species is thought to be June to July and, like all members of the genus, it nests in the ground. Other members of the genus are specialist foragers, and althought it is not known which plant this species forages at, it is thought to be mariposa lily. Little else is known of the species biology, ecology, or status.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable
Description: Species-specific threats have not be identified.

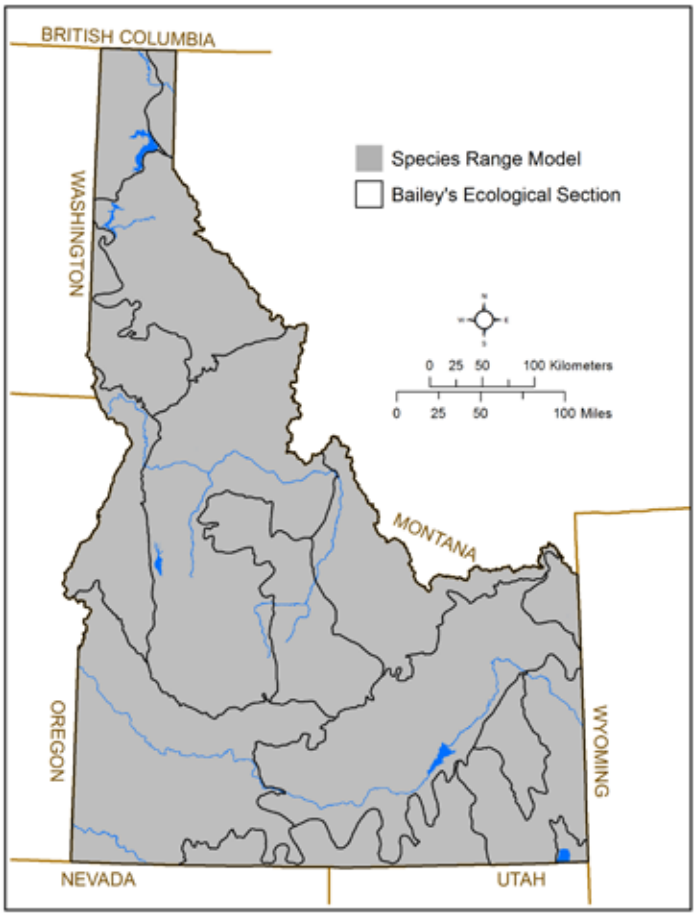
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Committee on the Status of Pollinators in North America. 2007. Status of Pollinators in North America. Natural Research Council, National Academies Press, Washington, DC; Tepedino, VJ and TL Griswold. 1995. the bees of the Columbia Basin. Final report. USDA Forest Service, Portland, OR 212p.; Shepherd, M. D. D. M. Vaughan, and S. H. Black (eds.) Red List of Pollinator Insects of North America, CD-ROM Vers 1 (May 2005). The Xerces Society for Invertebrate Conservation, Portland, OR.
Map Sources: GBIF download Nov 20, 2014; iDigBio download Dec 10, 2014; Xerces Society species profile; Discover Life

Yellow Bumble Bee

Bombus fervidus



Class: Insecta
Order: Hymenoptera
Family: Apidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G4?
S-rank: S5

SGCN TIER: 3
Rationale: IUCN Red List, rangewide declines, primary pollinator of an ESA-listed plant (Silene spaldingii)

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 223,200 km^2 (~86,200 mi^2)
Key Ecological Sections: Blue Mountains, Palouse Prairie
Population Size in Idaho: Not applicable for invertebrates.
Description: The Yellow Bumble Bee is widespread across the US and southern Canada, but is experiencing declines in several parts of its range. Although information is generally lacking in Idaho, this species has been detected in low numbers in Palouse Prairie surveys in 2002 and 2003 (Hatten et al. 2013) and in moderate numbers in two southern Idaho sagebrush steppe communities in Bear Lake and Blaine counties from 2006-2009 (Cook et al. 2011).

HABITAT & ECOLOGY
Environmental Specificity: Broad: Generalist—all key requirements are common.
Description: Like most bumble bees, the Yellow Bumble Bee is found in a variety of grasslands and shrublands where an abundance of diverse, native flowers occur. They are generalist foragers, feeding on a large variety of pollen and nectar resources. The Yellow Bumble Bee is known as a pollinator of many flowering plants, including being the only significant pollinator for Silene spaldingii, a rare plant currently listed as Threatened under the ESA. At Zumwalt Prairie in northeast Oregon, 90% of pollinators to S. spaldingii were Yellow Bumble Bee and 10% were the Mountain Bumble Bee (Bombus appositus) (Tubbesing et al. 2014). In contrast to honey bees, bumble bees are annual with only the queens living through the winter. The queens emerge from hibernation in the spring, start foraging, and begin a new nest, typically underground. New queens produced from the colony mate then leave the nest for an overwintering site. The remainder of the colony, including the original queen, die off at the end of the year.

POPULATION TREND
Short-term Trend: Decline 10–30%
Long-term Trend: Unknown
Description: Population trends in Idaho have not been documented. However, long-term rangewide declines are evident and, since 2000, more significant declines in portions of the range have been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Not intrinsically vulnerable
Description: Species-specific threats in Idaho have not be identified. However, primary threats are thought to include habitat loss and fragmentation, pesticide use, exotic pathogens, competition with honey bees, and climate change.

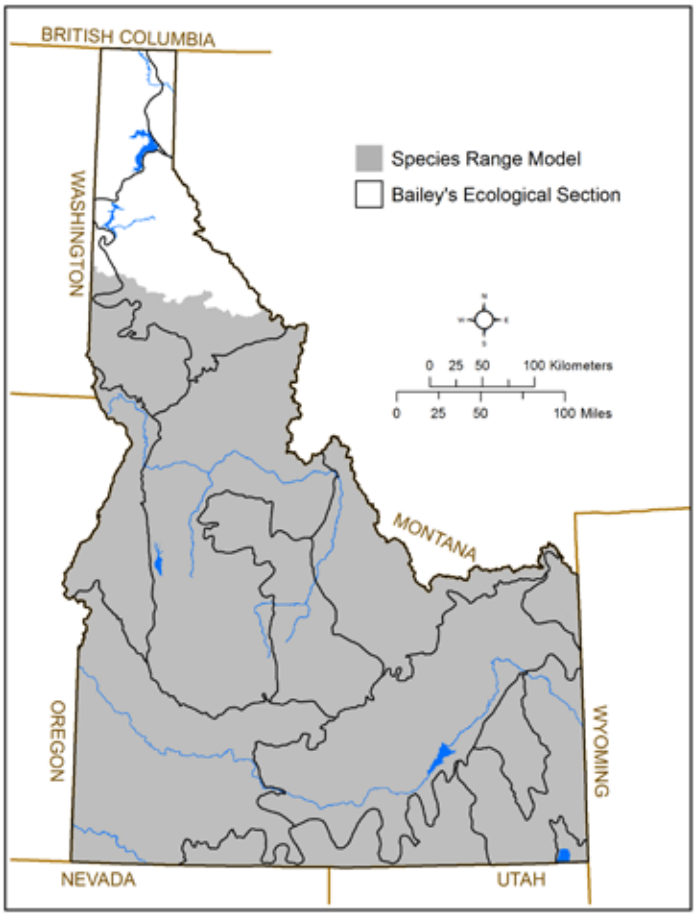
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species in Idaho. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org; Hatfield, R., S. Colla, S. Jepsen, L. Richardson, R. Thorp, and S. F. Jordan. 2015. IUCN Assessments for North American Bombus spp. Technical Report for the North American IUCN Bumble Bee Specialist Group. The Xerces Society. Available online at <http://www.researchgate.net/publication/270162301_IUCN_Assessments_for_North_American_Bombus_spp._for_the_North_American_IUCN_Bumble_Bee_Specialist_Group>; Koch, J., J. Strange, and P. Williams. 2012. Bumble Bees of the Western United States. US Forest Service and the Pollinator Partnership, USDA, Washington, DC; Hatten, T. D., C. Looney, J. P. Strange, N. A. Bosque-Perez. 2013. Bumble bee fauna of Palouse Prairie: Survey of native bee pollinators in a fragmented ecosystem. Journal of Insect Science 13:1-26; Cook, S. P., S. M. Birch, F. W. Merickel, C. C. Lowe, D. Page-Dumroese. 2011. Bumble bee (Hymenoptera: Apidae) community structure on two sagebrush steppe sites in southern Idaho. The Pan-Pacific Entomologist 87:161-171.; Kerr, JT, A Pindar, P Galpern, L Packer, SG Potts, SM Roberts, P Rasmont, O Schweiger, SR Colla, LL Richardson, DL Wagner, LF Gall, DS Sikes, and A Pantoja. 2015. Climate change impacts on bumblebees converge across continents. Science 349:177-180.; Hatfield, R, S Jepsen, E Mader, SH Black, and M Shepherd. 2012. Conserving Bumble Bees: Guidelines for creating and manageing habitat for America's declining pollinators. The Xerces Society for Invertebrate Conservation, Portland, OR.
Map Sources: GBIF download 11/20/2014; iDigBio download Dec 10, 2014; Hampton, N. 2005. Insects of the Idaho National Laboratory: A compilation and review. In: Shaw, N. L., M. Pellant, S. B. Monsen, comps. Sage-grouse habitat restoration symposium proceedings, USDA Forest Service, RMRS-P38; Koch, J., J. Strange, and P. Williams. 2012. Bumble Bees of the Western United States. US Forest Service and the Pollinator Partnership, USDA, Washington, DC; Hatten, T.D., C. Looney, J. P. Strange, N. A. Bosque-Perez. 2013. Bumble bee fauna of Palouse Prairie: Survey of native bee pollinators in a fragmented ecosystem. Journal of Insect Science 13:26. Available online:http://www.insectscience.org/13.26; Bohart, G. E. and G. F. Knowlton. 1973. The bees of Curlew Valley (Utah and Idaho). All PIRU Publications, Paper 790. http://digitalcommons.usu.edu/piru_pubs/

Hunt's Bumble Bee

Bombus huntii



Class: Insecta
Order: Hymenoptera
Family: Apidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G5
S-rank: S5

SGCN TIER: 3
Rationale: Data deficient, important pollinator

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 204,000 km^2 (~78,800 mi^2)
Key Ecological Sections: Bear Lake, Beaverhead Mountains, Bitterroot Mountains, Blue Mountains, Challis Volcanics, Northwestern Basin and Range, Overthrust Mountains, Owyhee Uplands, Palouse Prairie, Snake River Basalts
Population Size in Idaho: Not applicable for invertebrates.
Description: Hunt's Bumble Bee is widespread across the western US and Canada. Althougth Idaho-specific information are generally lacking, it has been detected in low numbers on Palouse Prairie remnants in 2003 (Hatten et al. 2013), and on Red Mountain in Bear Lake County in 2006-2009 (Cook et al. 2011). It was not detected in the Cook et al. (2011) targeted survey in Blaine County in 2006-2009.

HABITAT & ECOLOGY
Environmental Specificity: Broad: Generalist—all key requirements are common.
Description: Like most bumble bees, Hunt's Bumble Bee is found in a variety of grasslands and shrublands where an abundance of diverse, native flowers occur. They are generalist foragers, feeding on a large variety of pollen and nectar resources. In contrast to honey bees, bumble bees are annual with only the queens living through the winter. The queens emerge from hibernation in the spring, start foraging, and begin a new nest, typically underground. New queens produced from the colony mate then leave the nest for an overwintering site. The remainder of the colony, including the original queen, die off at the end of the year.

POPULATION TREND

Short-term Trend: Decline 10–30%
Long-term Trend: Unknown
Description: Population trends in Idaho have not been documented. However, long-term rangewide declines appear to be stable to slightly decreasing.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable
Description: Species-specific threats in Idaho have not be identified. However, primary threats are thought to include commercial collection of queens from the wild, habitat loss and fragmentation, pesticide use, exotic pathogens, competition with honey bees, and climate change. A recent long-term study of 67 bumblebees in Europe and North America suggests that the southern range limits are shifting northward, in some cases up to 300km (186 mi) and more southern species are shifting to higher elevations in response to climate change.

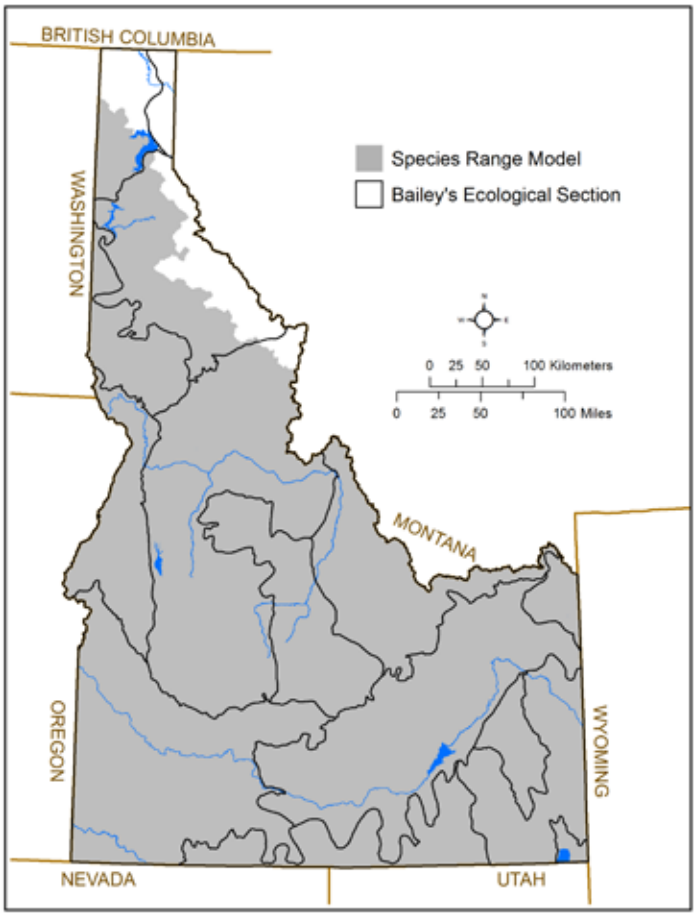
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species in Idaho. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Hatfield, R., S. Colla, S. Jepsen, L. Richardson, R. Thorp, and S. F. Jordan. 2015. IUCN Assessments for North American Bombus spp. Technical Report for the North American IUCN Bumble Bee Specialist Group. The Xerces Society. Available online at <http://www.researchgate.net/publication/270162301_IUCN_Assessments_for_North_American_Bombus_spp._for_the_North_American_IUCN_Bumble_Bee_Specialist_Group>; Koch, J., J. Strange, and P. Williams. 2012. Bumble Bees of the Western United States. US Forest Service and the Pollinator Partnership, USDA, Washington, DC; Hatten, T. D., C. Looney, J. P. Strange, N. A. Bosque-Perez. 2013. Bumble bee fauna of Palouse Prairie: Survey of native bee pollinators in a fragmented ecosystem. Journal of Insect Science 13:1-26.; Hatfield, R, S Jepsen, E Mader, SH Black, and M Shepherd. 2012. Conserving Bumble Bees: Guidelines for creating and manageing habitat for America's declining pollinators. The Xerces Society for Invertebrate Conservation, Portland, OR.; Cook, S. P., S. M. Birch, F. W. Merickel, C. C. Lowe, D. Page-Dumroese. 2011. Bumble bee (Hymenoptera: Apidae) community structure on two sagebrush steppe sites in southern Idaho. The Pan-Pacific Entomologist 87:161-171
Map Sources: GBIF download 11/20/2014; iDigBio download Dec 10, 2014; Hampton, N. 2005. Insects of the Idaho National Laboratory: A compilation and review. In: Shaw, N. L., M. Pellant, S. B. Monsen, comps. Sage-grouse habitat restoration symposium proceedings, USDA Forest Service, RMRS-P38; Koch, J., J. Strange, and P. Williams. 2012. Bumble Bees of the Western United States. US Forest Service and the Pollinator Partnership, USDA, Washington, DC; Hatten, T.D., C. Looney, J. P. Strange, N. A. Bosque-Perez. 2013. Bumble bee fauna of Palouse Prairie: Survey of native bee pollinators in a fragmented ecosystem. Journal of Insect Science 13:26. Available online:http://www.insectscience.org/13.26; Bohart, G. E. and G. F. Knowlton. 1973. The bees of Curlew Valley (Utah and Idaho). All PIRU Publications, Paper 790. http://digitalcommons.usu.edu/piru_pubs/

Morrison Bumble Bee

Bombus morrisoni



Class: Insecta
Order: Hymenoptera
Family: Apidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G4G5
S-rank: S4

SGCN TIER: 1
Rationale: IUCN Red List, significant rangewide declines, data deficient, important pollinator

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 205,400 km^2 (~79,300 mi^2)
Key Ecological Sections: Bear Lake, Beaverhead Mountains, Bitterroot Mountains, Blue Mountains, Challis Volcanics, Flathead Valley, Northwestern Basin and Range, Overthrust Mountains, Owyhee Uplands, Palouse Prairie, Snake River Basalts
Population Size in Idaho: Not applicable for invertebrates.
Description: The Morrison Bumble Bee is widespread across the western US and British Columbia. Although it used to be rather common in southern Idaho, it was not detected in 2006-2009 surveys of 2 sagebrush steppe areas in Bear Lake and Blaine counties (Cook et al. 2011) and is now considered uncommon.

HABITAT & ECOLOGY
Environmental Specificity: Broad: Generalist—all key requirements are common.
Description: This species is generally associated with arid environments, predominantly open dry shrub and scrub. Like most bumble bees, they are generalist foragers, feeding on a large variety of pollen and nectar resources. It typically nests underground, but will also use structures. In contrast to honey bees, bumble bees are annual with only the queens living through the winter. The queens emerge from hibernation in the spring, start foraging, and begin a new nest, typically underground. New queens produced from the colony mate then leave the nest for an overwintering site. The remainder of the colony, including the original queen, die off at the end of the year.

POPULATION TREND

Short-term Trend: Decline 50–70%
Long-term Trend: Unknown
Description: Population trends in Idaho have not been documented and few surveys have been conducted for the species in the state. Rangewide, this species has declined in relative abundance over the past 10 years. Although most declines appear to have been in the interior of the species range (e.g., western Nevada, Four Corners area) other areas seem to be maintaining numbers (e.g., Utah).

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable
Description: Species-specific threats in Idaho have not be identified. However, primary threats are thought to include habitat loss and fragmentation, pesticide use, exotic pathogens, competition with honey bees, and climate change. A recent long-term study of 67 bumblebees in Europe and North America suggests that the southern range limits are shifting northward, in some cases up to 300km (186 mi) and more southern species are shifting to higher elevations in response to climate change.

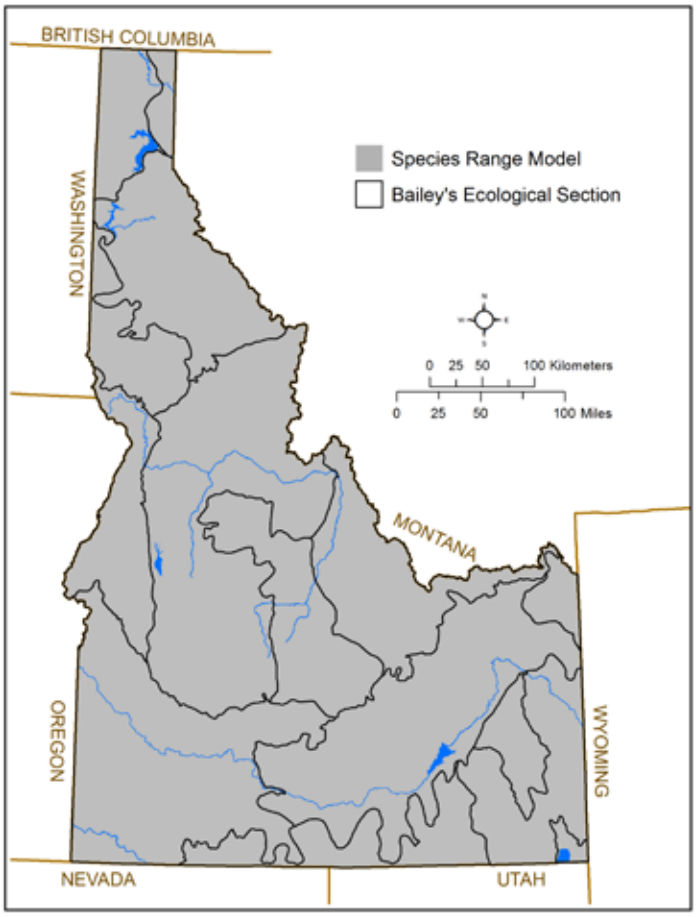
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species in Idaho. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org; Hatfield, R., S. Colla, S. Jepsen, L. Richardson, R. Thorp, and S. F. Jordan. 2015. IUCN Assessments for North American Bombus spp. Technical Report for the North American IUCN Bumble Bee Specialist Group. The Xerces Society. Available online at <http://www.researchgate.net/publication/270162301_IUCN_Assessments_for_North_American_Bombus_spp._for_the_North_American_IUCN_Bumble_Bee_Specialist_Group>; Koch, J., J. Strange, and P. Williams. 2012. Bumble Bees of the Western United States. US Forest Service and the Pollinator Partnership, USDA, Washington, DC.; Hatfield, R, S Jepsen, E Mader, SH Black, and M Shepherd. 2012. Conserving Bumble Bees: Guidelines for creating and manageing habitat for America's declining pollinators. The Xerces Society for Invertebrate Conservation, Portland, OR.; Cook, S. P., S. M. Birch, F. W. Merickel, C. C. Lowe, D. Page-Dumroese. 2011. Bumble bee (Hymenoptera: Apidae) community structure on two sagebrush steppe sites in southern Idaho. The Pan-Pacific Entomologist 87:161-171
Map Sources: GBIF download Nov 20, 2014; iDigBio download Dec 10, 2014; Koch, J., J. Strange, and P. Williams. 2012. Bumble Bees of the Western United States. US Forest Service and the Pollinator Partnership, USDA, Washington, DC.

Western Bumble Bee

Bombus occidentalis



Class: Insecta
Order: Hymenoptera
Family: Apidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G4
S-rank: S3

SGCN TIER: 1
Rationale: IUCN Red List, significant rangewide declines, data deficient, important pollinator

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 216,900 km^2 (~83,700 mi^2)
Key Ecological Sections: Bear Lake, Beaverhead Mountains, Bitterroot Mountains, Blue Mountains, Challis Volcanics, Flathead Valley, Idaho Batholith, Northwestern Basin and Range, Okanogan Highlands, Overthrust Mountains, Palouse Prairie, Yellowstone Highlands
Population Size in Idaho: Not applicable for invertebrates.
Description: The Western Bumble Bee was once widespread across the western US and Canada. It is now, however, rarely recorded in habitats where it was formerly common, particularly on the western edge of its range from southern British Columbia to central California. In Idaho, Western Bumble Bees were historically documented in many areas of the state. Surveys on the Palouse Prairie in north-central Idaho in 2002-2003 however failed to detect the species as did 2006-2009 surveys in Blaine County. Only 7 were collected in 2006-2009 surveys in Bear Lake County and 3 were documented in the Idaho Panhandle in 2014.

HABITAT & ECOLOGY
Environmental Specificity: Broad: Generalist—all key requirements are common.
Description: Like most bumble bees, the Western Bumble Bee is found in a variety of grasslands and shrublands where an abundance of diverse, native flowers occur. They are generalist foragers, feeding on a large variety of pollen and nectar resources and are an important pollinator of agricultural plants (e.g., alfalfa, apples, cherries). In contrast to honey bees, bumble bees are annual with only the queens living through the winter. The queens emerge from hibernation in the spring, start foraging, and begin a new nest, typically underground. New

queens produced from the colony mate then leave the nest for an overwintering site. The remainder of the colony, including the original queen, die off at the end of the year.

POPULATION TREND
Short-term Trend: Decline 30–50%
Long-term Trend: Unknown
Description: Prior to 1998, the Western Bumble Bee was common and widespread across its range. Since that time, this species has undergone a drastic decline, particularly in southern British Columbia, Oregon, Washington, and central California. Once common populations in these areas have largely disappeared. Viable populations appear to still persist east of the Cascade Mountains and in the Rocky Mountains. Population trends in Idaho have not been documented.

THREATS
Overall Threat Impact: Very High–High
Intrinsic Vulnerability: Highly vulnerable
Description: Species-specific threats in Idaho have not be identified. However, primary threats are thought to include habitat loss and fragmentation, pesticide use, exotic pathogens, competition with honey bees, and climate change. A recent long-term study of 67 bumblebees in Europe and North America suggests that the southern range limits are shifting northward, in some cases up to 300km (186 mi) and more southern species are shifting to higher elevations in response to climate change.

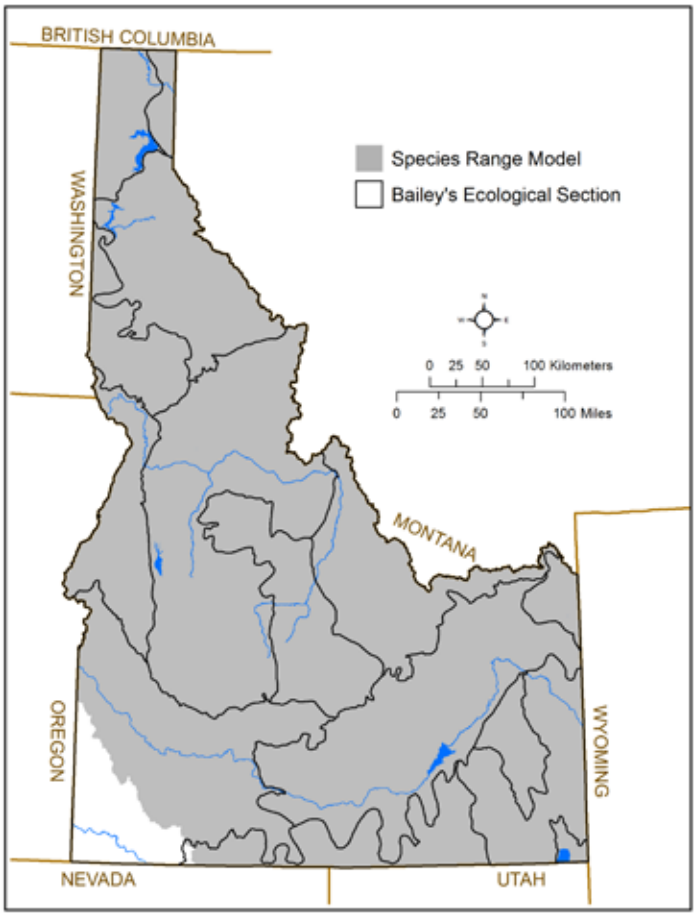
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species in Idaho. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
Several subspecies of Western Bumble Bee have been suggested and sometimes this species is considered a subspecies of the Yellow-banded Bumble Bee (Bombus terricola) and vice-versa.

Information Sources: Committee on the Status of Pollinators in North America. 2007. Status of Pollinators in North America. Natural Research Council, National Academies Press, Washington, DC; NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina; Hatfield, R., S. Colla, S. Jepsen, L. Richardson, R. Thorp, and S. F. Jordan. 2015. IUCN Assessments for North American Bombus spp. Technical Report for the North American IUCN Bumble Bee Specialist Group. The Xerces Society; Koch, J., J. Strange, and P. Williams. 2012. Bumble Bees of the Western United States. US Forest Service and the Pollinator Partnership, USDA, Washington, DC; Cameron, S. A., J. D. Lozier, J. P. Strange, J. B. Koch, N. Cordes, L. F. Solter, T. L. Griswold. 2011. Patterns of widespread decline in North American bumble bees. PNAS 108:662-667; Evans, E., R. Thorp, S. Jepsen, S. H. Black. 2008. Status review of three formerly common species of bumble bee in the subgenus Bombus. The Xerces Society, Portland, OR; Hatten, T. D., C. Looney, J. P. Strange, N. A. Bosque-Perez. 2013. Bumble bee fauna of Palouse Prairie: Survey of native bee pollinators in a fragmented ecosystem. Journal of Insect Science 13:1-26.; Hatfield, R, S Jepsen, E Mader, SH Black, and M Shepherd. 2012. Conserving Bumble Bees: Guidelines for creating and manageing habitat for America's declining pollinators. The Xerces Society for Invertebrate Conservation, Portland, OR.; Koch, JB. 2011. The decline and conservation status of North American bumble bees. Masters Thesis, Utah State University, Logan, UT.
Map Sources: GBIF download Nov 20, 2014; iDigBio download Dec 10, 2014; Koch, J., J. Strange, and P. Williams. 2012. Bumble Bees of the Western United States. US Forest Service and the Pollinator Partnership, USDA, Washington, DC; Bohart, G. E. and G. F. Knowlton. 1973. The bees of Curlew Valley (Utah and Idaho). All PIRU Publications, Paper 790. http://digitalcommons.usu.edu/piru_pubs/

Suckley Cuckoo Bumble Bee

Bombus suckleyi



Class: Insecta
Order: Hymenoptera
Family: Apidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: GU
S-rank: S2

SGCN TIER: 1
Rationale: IUCN Red List, significant rangewide declines, data deficient, important pollinator

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 210,500 km^2 (~81,300 mi^2)
Key Ecological Sections: Bear Lake, Beaverhead Mountains, Bitterroot Mountains, Blue Mountains, Challis Volcanics, Flathead Valley, Idaho Batholith, Northwestern Basin and Range, Okanogan Highlands, Overthrust Mountains, Palouse Prairie, Yellowstone Highlands
Population Size in Idaho: Not applicable for invertebrates.
Description: The Suckley Cuckoo Bumble Bee is or recently was widespread in the western US and Canada. Few records document its distribution in Idaho.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: This species is a cuckoo bee, a term used for a specialized group of bumble bees that have lost the ability to collect pollen and to rear their brood. Thus, these species do not build their own nests, but instead usurp the colonies of other bumble bees. To do this, a mated female enters the nest of another bumble bee, kills or subdues the queen of the colony, and forcibly enslaves (using pheromones and/or physical attacks) the worker bees to feed her and her young. Although Suckley Cuckoo Bumble Bees have been recorded in the nests of several different bumble bees, the only successful host (i.e., produced adults) is the Western Bumble Bee.

POPULATION TREND
Short-term Trend: Decline 70–80%
Long-term Trend: Unknown

Description: Population trends in Idaho have not been documented. However, in many parts of its range, a gradual decline in relative abundance in the 1940s has become a much steeper, and significant, decline since the 1970s. These declines are presumably linked to declines of its hosts.

THREATS
Overall Threat Impact: Very High–High
Intrinsic Vulnerability: Highly vulnerable
Description: Given its dependence on Western Bumble Bees, the primary threats for this species are likely due to indirect threats (e.g., disease, habitat loss) resulting in the loss of its hosts.

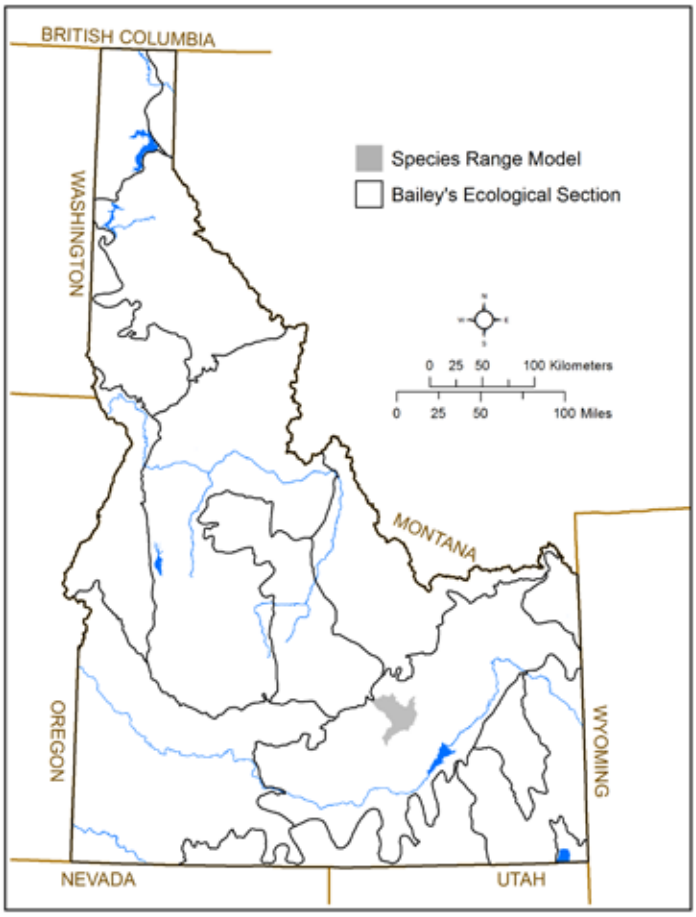
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species in Idaho. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org; Hatfield, R., S. Colla, S. Jepsen, L. Richardson, R. Thorp, and S. F. Jordan. 2015. IUCN Assessments for North American Bombus spp. Technical Report for the North American IUCN Bumble Bee Specialist Group. The Xerces Society. Available online at <http://www.researchgate.net/publication/270162301_IUCN_Assessments_for_North_American_Bombus_spp._for_the_North_American_IUCN_Bumble_Bee_Specialist_Group>; Koch, J., J. Strange, and P. Williams. 2012. Bumble Bees of the Western United States. US Forest Service and the Pollinator Partnership, USDA, Washington, DC.; Hatfield, R, S Jepsen, E Mader, SH Black, and M Shepherd. 2012. Conserving Bumble Bees: Guidelines for creating and manageing habitat for America's declining pollinators. The Xerces Society for Invertebrate Conservation, Portland, OR.
Map Sources: GBIF download Nov 20, 2014; iDigBio download Dec 10, 2014; Koch, J., J. Strange, and P. Williams. 2012. Bumble Bees of the Western United States. US Forest Service and the Pollinator Partnership, USDA, Washington, DC.

A Yellow-masked Bee

Hylaeus lunicraterius



Class: Insecta
Order: Hymenoptera
Family: Colletidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: GNR
S-rank: S3

SGCN TIER: 3
Rationale: Idaho endemic, data deficient, important pollinator

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 1,000 km^2 (~400 mi^2)
Key Ecological Sections: Snake River Basalts
Population Size in Idaho: Not applicable for invertebrates.
Description: This Yellow-masked Bee is only known from the Craters of the Moon National Monument and Preserve.

HABITAT & ECOLOGY
Environmental Specificity: Broad: Generalist—all key requirements are common.
Description: Little is known of this species biology, but it appears to be a generalist forager and may nest in snags or rock crevices.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable
Description: Species-specific threats have not been identified.

CONSERVATION ACTIONS

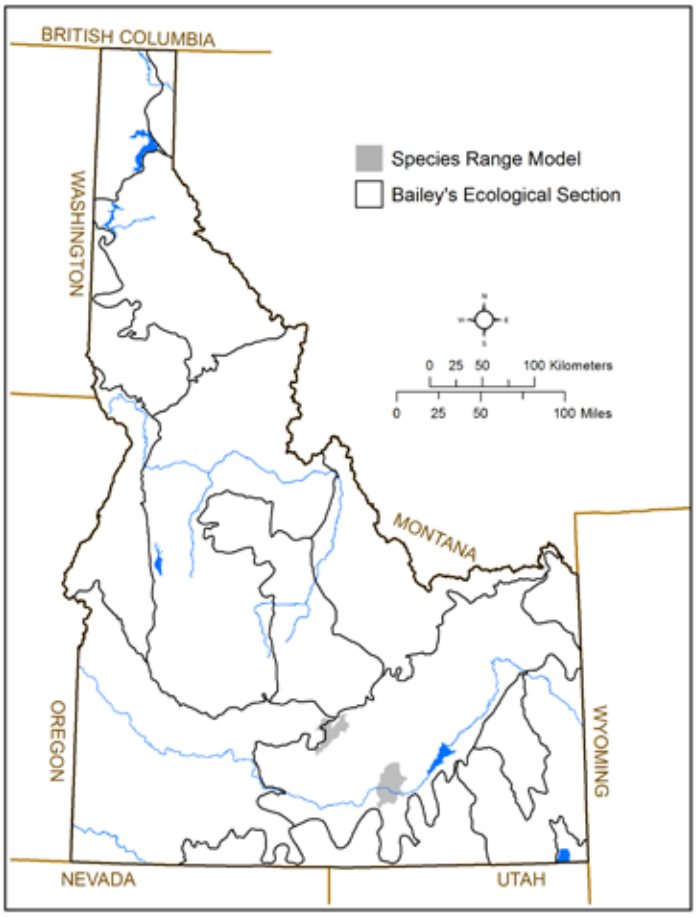
We have an inadequate understanding of the current population status for this species in Idaho. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Committee on the Status of Pollinators in North America. 2007. Status of Pollinators in North America. Natural Research Council, National Academies Press, Washington, DC; Shepherd, M. D., D. M. Vaughan, and S. H. Black (Eds). 2005. Red List of Pollinator Insects of North America, Portland, OR. The Xerces Society for Invertebrate Conservation.
Map Sources: GBIF download Nov 20, 2014

A Leafcutting Bee

Ashmeadiella sculleni



Class: Insecta
Order: Hymenoptera
Family: Megachilidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: GNR
S-rank: S2

SGCN TIER: 3
Rationale: Regional endemic, data deficient, important pollinator

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 1,300 km^2 (~500 mi^2)
Key Ecological Sections: Snake River Basalts
Population Size in Idaho: Not applicable for invertebrates.
Description: This leafcutting bee is known from only a few locations in Oregon, Nevada, and Idaho (2 observations in Lincoln and Blaine counties). Given the distance between occurrences, it is possilbe that this bee is more widely distributed.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: Little is known of this species biology but, bees in this genus tend to prefer dry desert environments and this species appears to be a specialist forager on flowers in the genus Penstemon. Nesting is thought to occur in snags and stumps.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable
Description: Species-specific threats have not been identified.

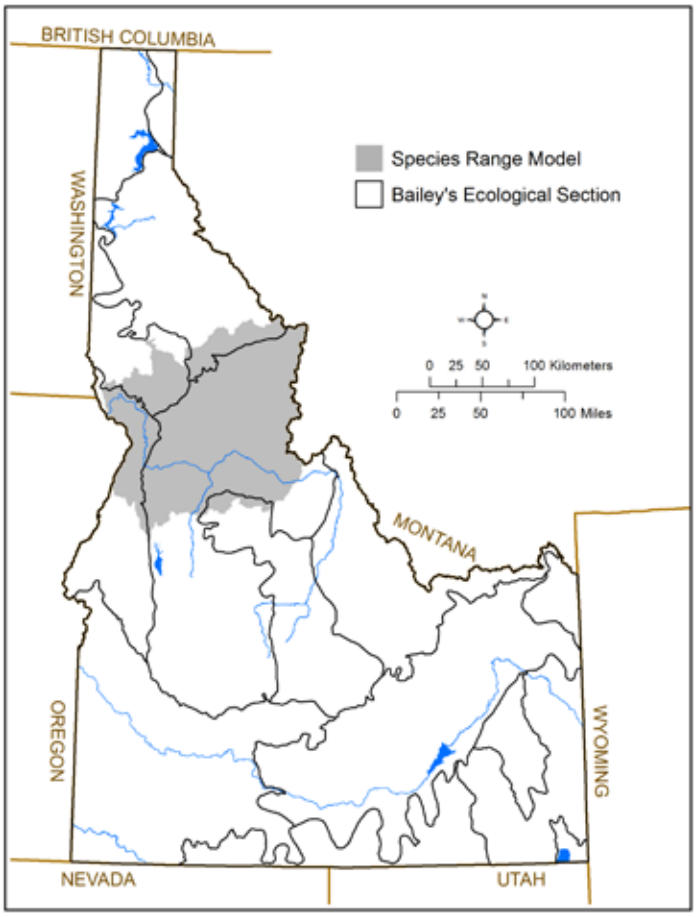
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species in Idaho. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Committee on the Status of Pollinators in North America. 2007. Status of Pollinators in North America. Natural Research Council, National Academies Press, Washington, DC; Shepherd, M. D. D. M. Vaughan, and S. H. Black (eds.) Red List of Pollinator Insects of North America, CD-ROM Vers 1 (May 2005). The Xerces Society for Invertebrate Conservation, Portland, OR.
Map Sources: GBIF download Nov 20, 2014

A Mason Bee

Hoplitis orthognathus



Class: Insecta
Order: Hymenoptera
Family: Megachilidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: GNR
S-rank: S4

SGCN TIER: 3
Rationale: Regional endemic, data deficient, important pollinator

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 27,700 km^2 (~10,700 mi^2)
Key Ecological Sections: Bitterroot Mountains, Blue Mountains, Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: This Mason bee is endemic to the Columbia River Basin and has been found in only 3 locations (Baker County, Oregon, Asotin County, Washington, and Idaho County, Idaho).

HABITAT & ECOLOGY
Environmental Specificity: Broad: Generalist—all key requirements are common.
Description: This species has been found in ponderosa pine and Idaho fescue grasslands. Although little is known of its nesting and foraging needs, other members of this genus are generalists and it is likely that this species forages on a range of plants. Records indicate its flight period is June-July.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable
Description: Species-specific threats have not been identified.

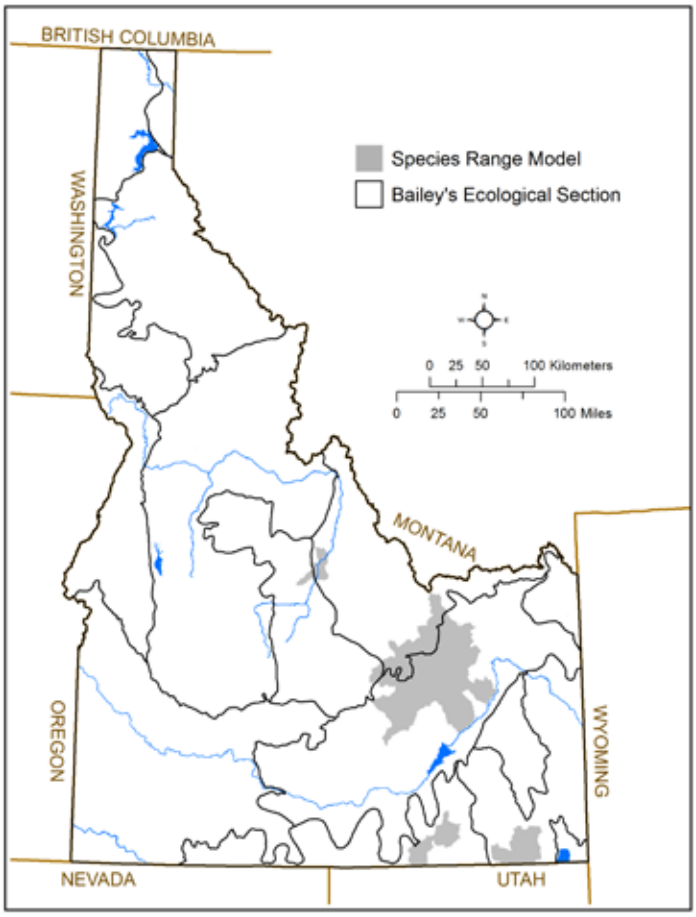
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species in Idaho. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Committee on the Status of Pollinators in North America. 2007. Status of Pollinators in North America. Natural Research Council, National Academies Press, Washington, DC; Shepherd, M. D., D. M. Vaughan, and S. H. Black (Eds). 2005. Red List of Pollinator Insects of North America, Portland, OR. The Xerces Society for Invertebrate Conservation.
Map Sources: Xerces Society species profile

A Mason Bee

Hoplitis producta subgracilis



Class: Insecta
Order: Hymenoptera
Family: Megachilidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: GNR
S-rank: S4

SGCN TIER: 3
Rationale: Regional endemic, data deficient, important pollinator

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 11,000 km^2 (~4,200 mi^2)
Key Ecological Sections: Beaverhead Mountains, Northwestern Basin and Range, Overthrust Mountains, Snake River Basalts
Population Size in Idaho: Not applicable for invertebrates.
Description: This subspecies of Mason bee is endemic to the Columbia Basin, but appears to be fairly widespread in the region.

HABITAT & ECOLOGY
Environmental Specificity: Broad: Generalist—all key requirements are common.
Description: This subspecies has been found in a range of habitats including ponderosa pine, Englemann spruce, Idaho fescue, and agriculture. Although little is known of its nesting and foraging needs, other members of this genus are generalists and it is likely that this subspecies forages on a range of plants. Based on records, it appears the flight season is July to August.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented. Based on the number of sites and range of habitats this species has been documented in, it is probably more secure than many of the other endemic bees in the region.

THREATS

Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable
Description: Species-specific threats have not been identified.

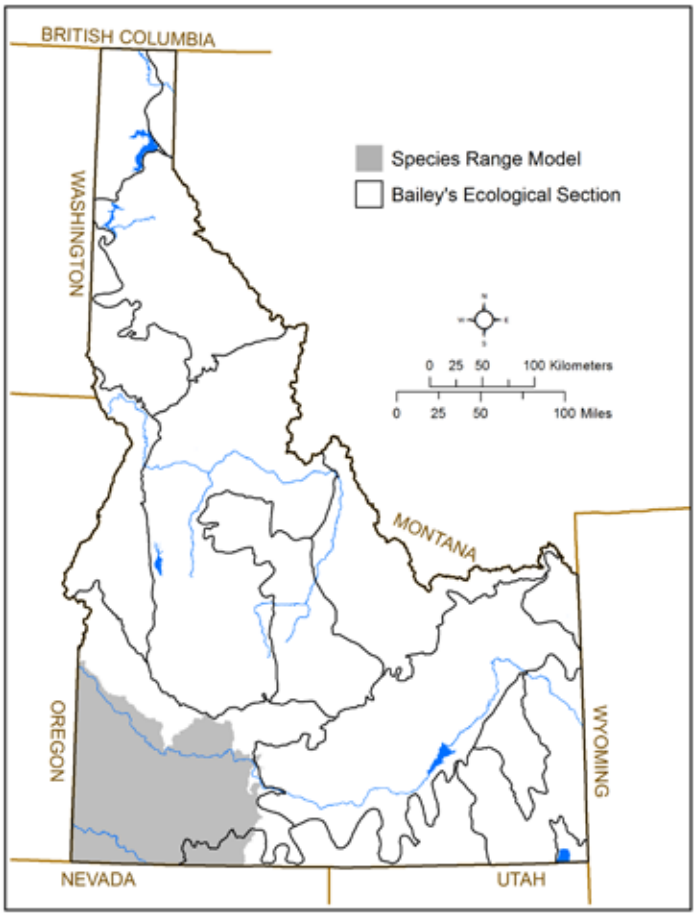
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species in Idaho. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Committee on the Status of Pollinators in North America. 2007. Status of Pollinators in North America. Natural Research Council, National Academies Press, Washington, DC; Shepherd, M. D., D. M. Vaughan, and S. H. Black (Eds). 2005. Red List of Pollinator Insects of North America, Portland, OR. The Xerces Society for Invertebrate Conservation.
Map Sources: GBIF download 11/20/2014; Hampton, N. 2005. Insects of the Idaho National Laboratory: A compilation and review. In: Shaw, N. L., M. Pellant, S. B. Monsen, comps. Sage-grouse habitat restoration symposium proceedings, USDA Forest Service, RMRS-P38.

A Miner Bee

Hesperapis kayella



Class: Insecta
Order: Hymenoptera
Family: Melittidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: GNR
S-rank: S2

SGCN TIER: 3
Rationale: Regional endemic, data deficient, important pollinator, habitat specialist

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 24,700 km^2 (~9,500 mi^2)
Key Ecological Sections: Northwestern Basin and Range, Owyhee Uplands
Population Size in Idaho: Not applicable for invertebrates.
Description: This Miner bee is endemic to the Columbia River Basin and is known from only 4 locations (1 in Owyhee County, Idaho, and 3 in Washoe County, Nevada).

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: Little is known of this species biology, however it appears to be a foodplant specialist on plants in the genus Tiquilia, is thought to nest in the ground in sandy river-bottom soils, and has a short flight season (June).

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable
Description: Species-specific threats have not been identified.

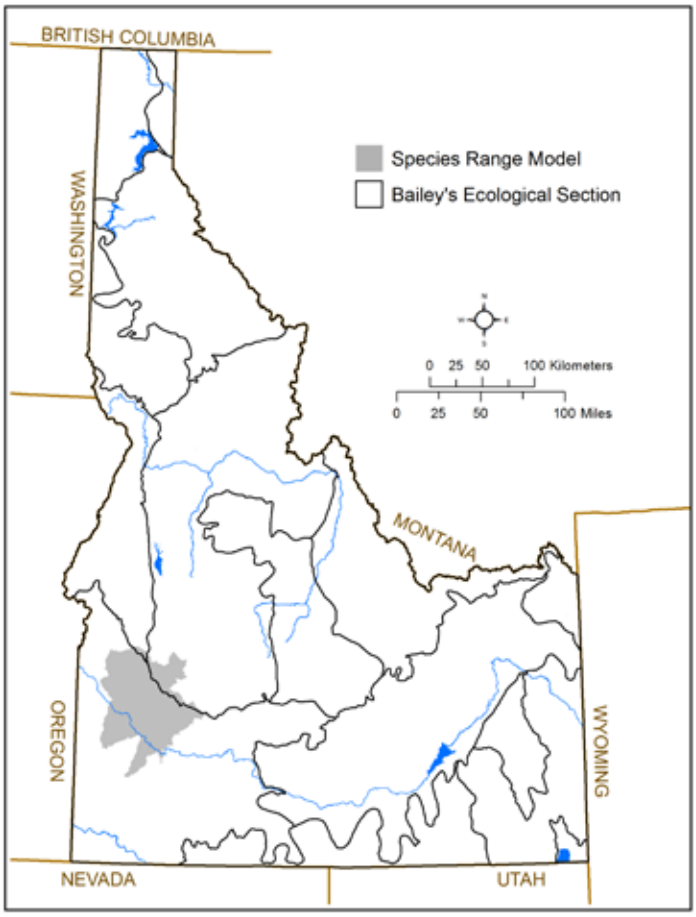
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species in Idaho. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Committee on the Status of Pollinators in North America. 2007. Status of Pollinators in North America. Natural Research Council, National Academies Press, Washington, DC; Shepherd, M. D., D. M. Vaughan, and S. H. Black (Eds). 2005. Red List of Pollinator Insects of North America, Portland, OR. The Xerces Society for Invertebrate Conservation.
Map Sources: Xerces Society species profile

A Moth

Grammia eureka



Class: Insecta
Order: Lepidoptera
Family: Erebidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: GNR
S-rank: SNR

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 7,000 km² (~2,700 mi²)
Key Ecological Sections: Blue Mountains
Population Size in Idaho: Not applicable for invertebrates.
Description: This recently described (2007) moth is known only from two historical locations, one in central Utah and one in southwestern Idaho (Ada County). No occurrences of the species have been recorded since the type material was collected in the early 1900s and the Idaho location is somewhat uncertain. Whether the species is extant in the state is not known.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: Little is known of this species biology. Collection dates indicate it has an early flight period (April - May) and may be diurnal. Habitat is unknown.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown
Description: Species-specific threats have not been identified.

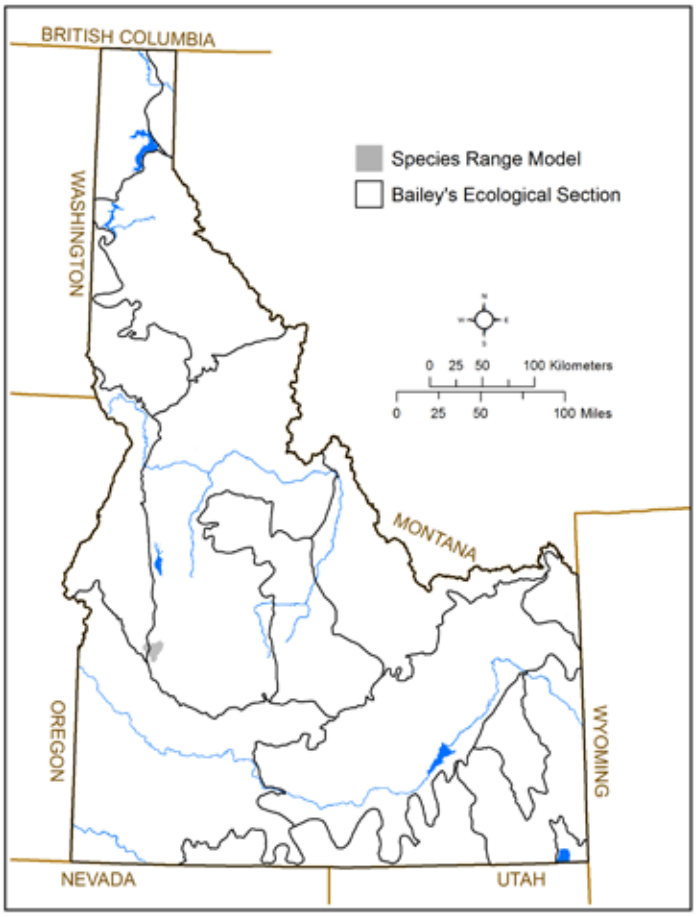
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: Pacific Northwest Moth Database. 2014. [Accessed Oct-Dec, 2014] <pnwmoths.biol.wwu.edu/>; Schmidt, B. C. 2009. Taxonomic revision of the genus Grammia Rambur (Lepidoptera: Noctuidae: Arctiinae). Zoological Journal of the Linnean Society 156:507-597
Map Sources: Schmidt, B. C. 2009. Taxonomic revision of the genus Grammia Rambur (Lepidoptera: Noctuidae: Arctiinae). Zoological Journal of the Linnean Society 156:507-597; PNW Moths database, Nov 2014 export from Merrill Peterson.

Johnson's Hairstreak

Callophrys johnsoni



Class: Insecta
Order: Lepidoptera
Family: Lycaenidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G3G4
S-rank: S1

SGCN TIER: 3
Rationale: Regional endemic, data deficient, rangewide declines, habitat specialist

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 500 km^2 (~200 mi^2)
Key Ecological Sections: Blue Mountains, Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: The historic range of Johnson's Hairstreak included much of the western US, from southern British Columbia to central California. It's current range however, is uncertain and is thought to be very localized and scarce. In Idaho, there is one known disjunct population along Hells Canyon in eastern Oregon and Adams County, Idaho, and another population near the town of Horseshoe Bend, Boise County. Another population in Whitman County, Washington is thought to extend north and east into Idaho, but no observations in this area of Idaho have yet been recorded. Abundances tend to be highly variable between years with few adults recorded most years.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: This species depends on coniferous forests that contain dwarf mistletoes (genus Arceuthobium), typically old-growth and late successional second growth western hemlock and firs (but the eastern Washington population has been found in ponderosa pine). It spends much of its time in the forest canopy, thus likely contributing to the rarity of sightings.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown

Description: Although population trends have not been documented, the range of the species appears be declining. Prior to 1900, this butterfly was thought to occur throughout much of the old-growth coniferous forests in the Pacific Northwest. Most records of the species are from before the 1970s and 1980s.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable
Description: Although species-specific threats in Idaho have not been identified, the primary threats to this species are thought to include logging of old growth forests, hybridization with the Thicket Hairstreak, and use of insecticides, predominantly Btk, a Lepidoptera-specific pesticide used to treat defoliators (Btk).

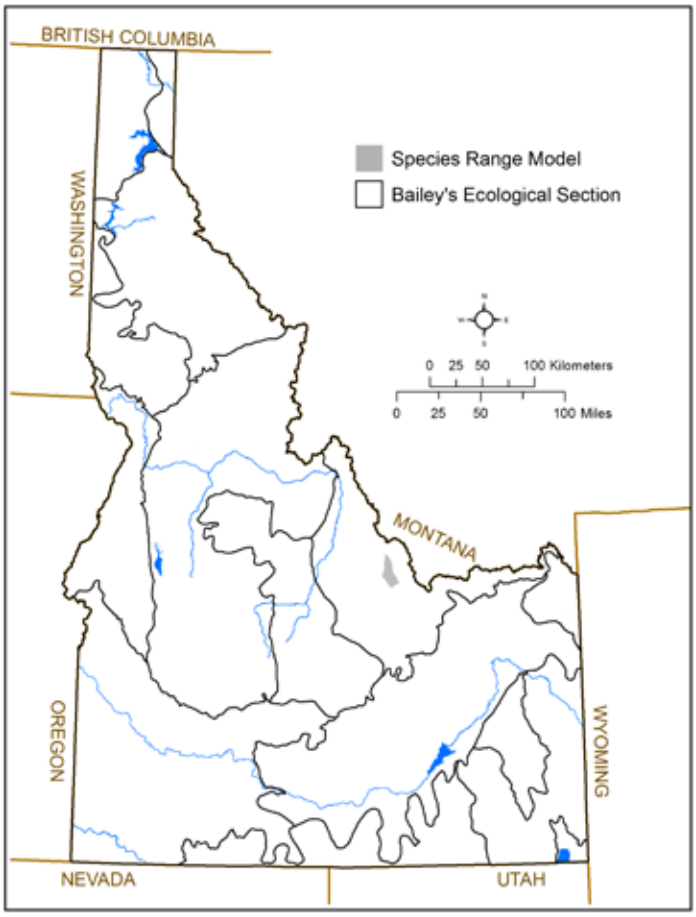
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species in Idaho. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Miller, J. C. and P. C. Hammond. 2007. Butterflies and Moths of Pacific Northwest Forests and Woodlands: Rare, endangered, and management sensitive species. Forest Health Technology Enterprise Team, USDA Forest Service, Washington, DC; Hammond, P. C. 1994. Rare butterfly assessment for the Columbia River Basin in the Pacific Northwest. Eastside Ecosystems Management Strategy Project, part of the Interior Columbia Basin Ecosystem Management Project. <www.icbemp.gov/science/hammond2.pdf> [Accessed Feb 13, 2015]; Xerces Society. 2005. Fact sheet for the Johnson's Hairstreak (Callophrys johnsoni). < www.xerces.org/johnsons-hairstreak/> [Accessed Feb 19, 2015]; Pacific Northwest Moth Database. 2014. [Accessed Oct-Dec, 2014] <pnwmoths.biol.wwu.edu/>
Map Sources: Lepidopterists' Society Season Summary database, downloaded March 18, 2015; Butterflies and Moths of North America species profile

Beartooth Copper

Lycaena phlaeas arctodon



Class: Insecta
Order: Lepidoptera
Family: Lycaenidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G5T3T5
S-rank: S1

SGCN TIER: 3
Rationale: Regional endemic, data deficient, habitat specialist

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 300 km² (~100 mi²)
Key Ecological Sections: Beaverhead Mountains
Population Size in Idaho: Not applicable for invertebrates.
Description: The Beartooth Copper is endemic to the northern Rocky Mountains and is currently known from several scattered areas in Montana, Wyoming, and Idaho. In Idaho, it has only been recorded at Meadow Creek Lake, approximately 6 km (4 mi) west of Gilmore, but it likely occurs elsewhere in contiguous areas of appropriate habitat. Generally considered rare, it can be moderately common once the correct habitat has been located.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: A high-elevation species, the Beartooth Copper is found in open alpine meadows and rocky slopes at or above treeline. It is a foodplant specialist on sorrel (Rumex spp.) and adults do not stray more than 4.5–9 m (15-30 ft) from the host plant. In known localities, the plant grows in depressions in open meadows where moisture remains after spring snow melt.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS

Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable
Description: Species-specific threats in Idaho have not been identified. However, given its habitat preferences, the Beartooth Copper is considered to be sensitive to climate change.

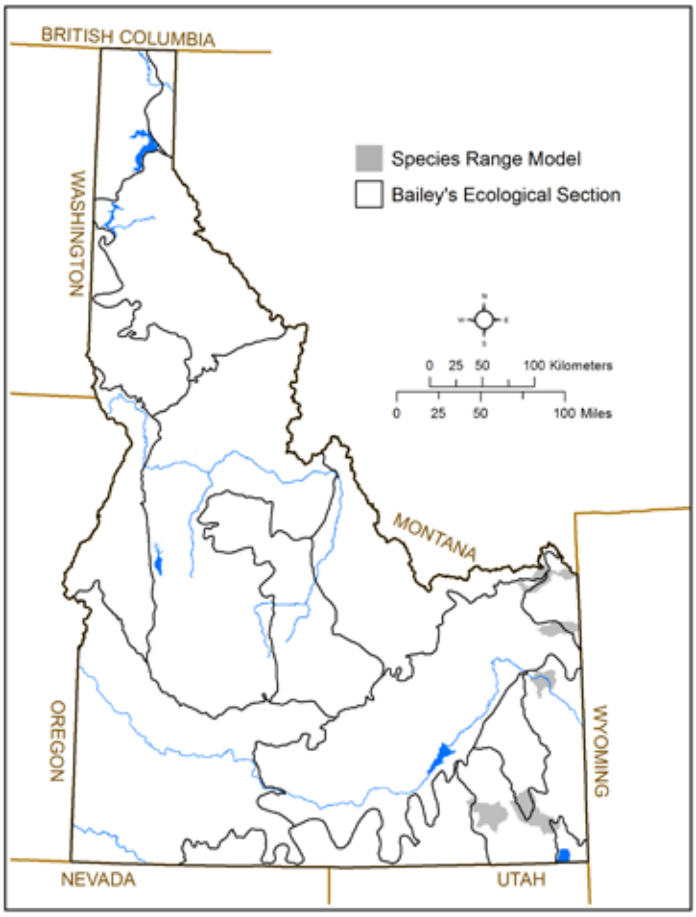
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species in Idaho. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Ferris, C. D. 1974. Distribution of arctic-alpine Lycaena phlaeas L. (Lycaenidae) in North America with designation of a new subspecies. Bulletin of the Allyn Museum 18:1-14.; Miller, J. C. and P. C. Hammond. 2007. Butterflies and Moths of Pacific Northwest Forests and Woodlands: Rare, endangered, and management sensitive species. Forest Health Technology Enterprise Team, USDA Forest Service, Washington, DC; Kohler, S. 2007. A description of a new subspecies of Lycaena phlaeas (Lycaenidae: Lycaeninae) from Montana, United States, with a comparative study of Old and New World populations. The Taxonomic Report 7:1-20.
Map Sources: Ferris, C. D. 1974. Distribution of arctic-alpine Lycaena phlaeas L. (Lycaenidae) in North America with designation of a new subspecies. Bulletin of the Allyn Museum 18:1-14.

Kriemhild Fritillary

Boloria kriemhild



Class: Insecta
Order: Lepidoptera
Family: Nymphalidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G3G4
S-rank: S2

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 3,000 km² (~1,200 mi²)
Key Ecological Sections: Bear Lake, Northwestern Basin and Range, Overthrust Mountains, Yellowstone Highlands
Population Size in Idaho: Not applicable for invertebrates.
Description: Endemic to the northern Rocky Mountains, the Kriemhild Fritillary (also known as Relict Fritillary) occurs in Montana, Idaho, Wyoming, and Utah. In Idaho, its range is restricted to a narrow region that extends along the length of the Idaho/Wyoming border. Within this restricted range and appropriate habitats, it can be moderately common. Idaho populations are considered to be globally important.

HABITAT & ECOLOGY
Environmental Specificity: Narrow: Specialist—key requirements are common.
Description: This butterfly occurs in mountain meadows and moist forest openings and edges where its host plant (Violets) can be found. Adults fly from mid-June to early August, depending on elevation and annual variability.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS

Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable
Description: Species-specific threats in Idaho have not been identified. However, it is likely affected by intensive use of national forests and is considered climate sensitive due to is preferred habitat.

CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species in Idaho. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

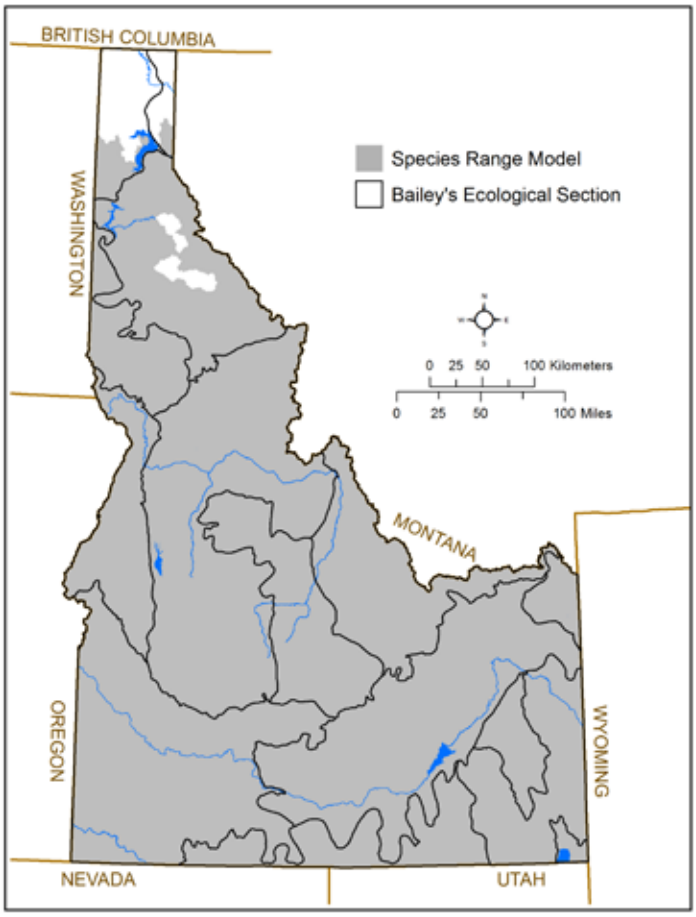
ADDITIONAL COMMENTS
None.

Information Sources: Clark, T. W., A. H. Harvey, R. D. Dorn, D. L. Genter, and C. Groves, eds. 1989. Rare, sensitive and threatened species of the Greater Yellowstone Ecosystem. Northern Rockies Conservation Cooperative, Montana Natural Heritage Program, The Nature Conservancy, and Montain West Environmental Services. 153 pp.; Butterflies and Moths of North America species profile
Map Sources: IFWIS. July 2014 export; Lepidopterists' Society Season Summary database, downloaded March 18, 2015

Monarch

Danaus plexippus

Class: Insecta
Order: Lepidoptera
Family: Nymphalidae



CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G4
S-rank: S2

SGCN TIER: 3
Rationale: Data deficient, significant rangewide declines

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 224,500 km^2 (~86,700 mi^2)
Key Ecological Sections: Bear Lake, Beaverhead Mountains, Bitterroot Mountains, Blue Mountains, Challis Volcanics, Flathead Valley, Idaho Batholith, Northwestern Basin and Range, Okanogan Highlands, Overthrust Mountains, Palouse Prairie, Snake River Basalts, Yellowstone Highlands
Population Size in Idaho: Not applicable for invertebrates.
Description: Monarch butterflies are widespread in North America, but appear to be experiencing large rangewide declines. In Idaho, the species is assumed to be migratory or non-resident, breeding here during the summer with the resulting adults heading south to coastal California and Mexico for winter. Breeding records in Idaho are few in number and scattered in distribution (Kootenai, Canyon, Jerome, and Bonneville counties). A recent survey by IDFG also documented breeding populations in Lemhi County. However, other targeted surveys over the last 10 years in southern Idaho have not detected the species (Leavitt, pers comm).

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: During the breeding season, Monarchs rely on native milkweeds as their larval host plant. Thus, they can be found in any open habitats such as grasslands, meadows, fields, and along roads where milkweed is present. This species has a complex lifecycle that results in two different generations; the summer (or breeding) generation that lives 2-5 weeks and the migratory (or wintering) generation that lives 5-9 months. Immature Monarchs produced in late summer and early fall react to environmental triggers (e.g., shorter day length, declining

temperatures) to emerge as longer-lived migratory butterflies. Wintering Monarchs begin mating in mid-January then disperse to breeding grounds where females lay their eggs on emerging milkweed. These are the first of several summer generations.

POPULATION TREND
Short-term Trend: Decline 50–70%
Long-term Trend: Unknown
Description: Although monitoring of the western population began in the 1980s, large-scale yearly assessments did not begin until 1997. In 1997, there were more than 1.2 million Monarchs overwintering in California, but by 2014 only about 234,000 were counted. Assessment of 15 overwintering locations monitored during the Western Monarch Thanksgiving Count every year since 1997 indicate that the steepest decline occurred prior to 2002 and numbers have remained low, but steady, since 2010. Population trends in Idaho have not been documented.

THREATS
Overall Threat Impact: Medium
Intrinsic Vulnerability: Moderately vulnerable
Description: The primary threat to this species is the loss and degradation of native milkweed habitat due to several factors including urban development, broad-scale use of post-emergent herbicides, and intensive management of roadside vegetation (e.g., herbicide application, mowing). In addition, changing temperature and precipitation patterns will also likely affect Monarch reproduction, larval development, and migration.

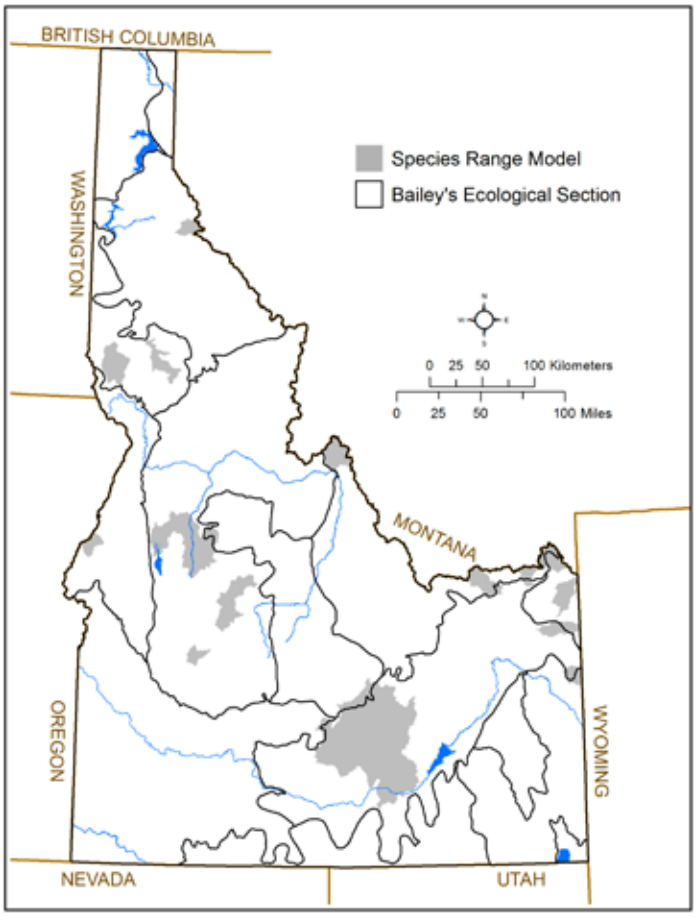
CONSERVATION ACTIONS
Conservation issues and management actions are described in the appropriate section plans. Recommended strategies for this species include working with partners to protect, create, and enhance milkweed habitats, increasing public awareness of Monarchs and their host plants, and continuing to document and monitor breeding populations.

ADDITIONAL COMMENTS
In 2014, the Monarch was petitioned for listing under the ESA. The USFWS is currently conducting a 12-month status review to determine if listing is warranted.

Information Sources: Hollie Leavitt, expert opinion; Butterflies and Moths of North America species profile; Stevens, S. R. and D. F. Frey. 2010. Host plant pattern and variation in climate predict the location of natal grounds for migratory monarch butterflies in western North America. Journal of Insect Conservation 14:731-744; Jepsen, S., D. F. Schweitzer, B. Young, N. Sears, M. Ormes, and S. H. Black. 2015. Conservation status and ecology of the monarch butterfly in the United States. NatureServe, Arlington, VA. and The Xerces Society, Portland, OR.; Waterbury and Ruth 2015; Commission for Environmental Cooperation 2008; Monroe, M., C. Fallon, D. frey, S. Stevens. 2015. Western Monarch Thanksgiving Count Data from 1997-2014. <http://www.xerces.org/western-monarch-thanksgiving-count/
Map Sources: Lepidopterists' Society Season Summary database, downloaded March 18, 2015; USGS. 2002. Butterfly Occurrence Database. National Atlas of the United States, Reston, VA. http://nationalatlas.gov/atlasftp.html?openChapters=chpbio#chpbio [Accessed 9/29/2014]; Stephens, G. M. and C. D. Ferris. 2002. Butterflies (Lepidoptera: Rhopalocera) of Cecil D. Andrus Wildlife Management Area, Washington C, Idaho. Journal of the Idaho Academy of Science 38:7-11; Stephens, G. M. and C. D. Ferris. 2002. Butterflies (Lepidoptera: Rhopalocera) of the Mud Flat Road, Owyhee C, Idaho, with comments on the discovery of Thessalia leanira (C. & R. felder) (Lepidoptera: Nymphalidae) in Idaho. Journal of the Idaho Academy of Science 38:1-5; Digital Atlas of Idaho, http://imnh.isu.edu/digitalatlas/bio/insects/butrfly/btrfrm.htm [Accessed 12/09/2014]; Stefanic, T. 2014. Butterflies and moths (Lepidoptera) of CRMO. Craters of the Moon National Monument and Preserve, National Park Service, US Dept of Interior.

Gillette's Checkerspot

Euphydryas gillettii



Class: Insecta
Order: Lepidoptera
Family: Nymphalidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G3
S-rank: S2

SGCN TIER: 3
Rationale: Regional endemic, data deficient, important pollinator, habitat specialist

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 14,700 km^2 (~5,700 mi^2)
Key Ecological Sections: Beaverhead Mountains, Bitterroot Mountains, Blue Mountains, Flathead Valley, Idaho Batholith, Okanogan Highlands, Yellowstone Highlands
Population Size in Idaho: Not applicable for invertebrates.
Description: Gillette's Checkerspot is endemic to the northern Rocky Mountains, ranging from northwestern Wyoming to southern Alberta, in widely separated and isolated colonies. Although rare and restricted, it can be abundant once a colony has been located (C. Ferris, expert opinion). Idaho populations are globally important, but information on the current status is lacking.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: This butterfly is restricted to moist, open, sunny, mostly montane meadows that support the primary larval host, twinberry. Caterpillars can only complete their development on host plants that are growing in direct sunlight. This species is extremely sedentary and is an important pollinator for several montane flowering plant species.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown

Description: In 1988, Williams (1988) noted several populations in the Greater Yellowstone Ecosystem and along the Idaho-Montana border that had not been recorded since 1960. However, current population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable
Description: Relying on sufficient habitats in appropriate successional condition, Gillette's Checkerspot is sensitive to forest management and can benefit from infrequent, controlled ground fires and prescribed forest thinning to maintain open meadow habitats. Conversely, fire suppression can be detrimental. Given its local and sedentary nature, it is highly vulnerable to herbicide and pesticide spraying.

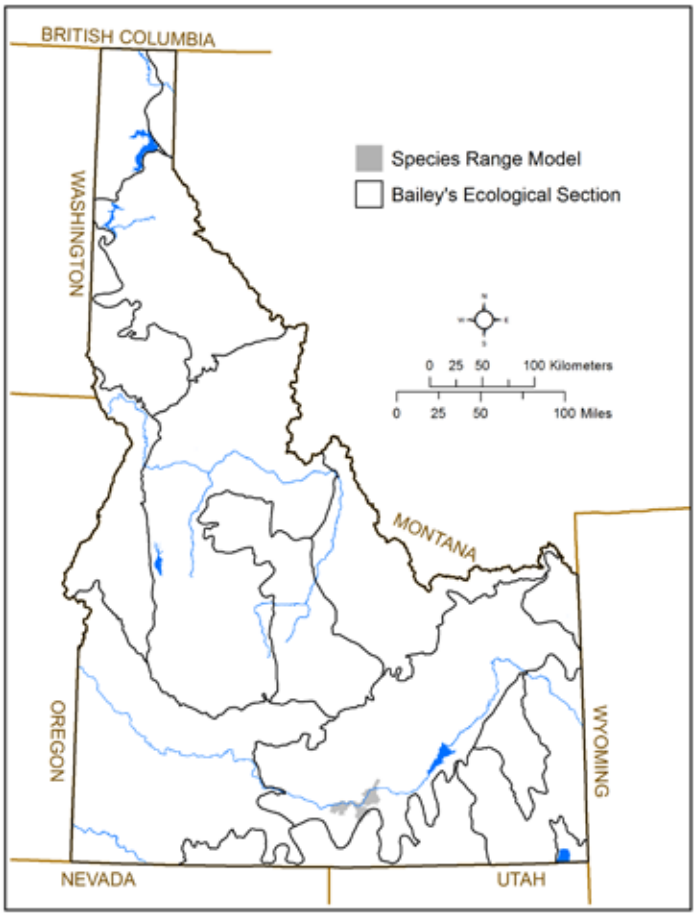
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species in Idaho. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Miller, J. C. and P. C. Hammond. 2007. Butterflies and Moths of Pacific Northwest Forests and Woodlands: Rare, endangered, and management sensitive species. Forest Health Technology Enterprise Team, USDA Forest Service, Washington, DC; Committee on the Status of Pollinators in North America. 2007. Status of Pollinators in North America. Natural Research Council, National Academies Press, Washington, DC; Clark, T. W., A. H. Harvey, R. D. Dorn, D. L. Genter, and C. Groves, eds. 1989. Rare, sensitive and threatened species of the Greater Yellowstone Ecosystem. Northern Rockies Conservation Cooperative, Montana Natural Heritage Program, The Nature Conservancy, and Montain West Environmental Services. 153 pp.; Williams, E. H. 1988. Habitat and range of Euphydryas gillettii (Nymphalidae). Journal of the Lepidopterists' Society 42:37-45.
Map Sources: IFWIS. July 2014 export; Lepidopterists' Society Season Summary database, downloaded March 18, 2015; Stefanic, T. 2014. Butterflies and moths (Lepidoptera) of CRMO. Craters of the Moon National Monument and Preserve, National Park Service, US Dept of Interior.

Wiest's Primrose Sphinx

Euproserpinus wiesti



Class: Insecta
Order: Lepidoptera
Family: Sphingidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G3G4
S-rank: S1

SGCN TIER: 3
Rationale: IUCN Red List, data deficient, habitat specialist

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 600 km² (~200 mi²)
Key Ecological Sections: Snake River Basalts
Population Size in Idaho: Not applicable for invertebrates.
Description: Wiest's Primrose Sphinx has been recorded from less than about 20 localities across the western US. In Idaho, it is known from a single site near Rupert. Although it is rarely collected, it may be more common than records indicate.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: A sand dunes specialist, this moth is restricted to sandy wash areas where its larval host plant (Evening-primrose) grows. Adults are diurnal and fly in sunshine. Records suggest the flight period is April-May.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable

Description: Species-specific threats in Idaho have not been documented. However, the most likely threats are loss of sand dune habitat and larval host plants.

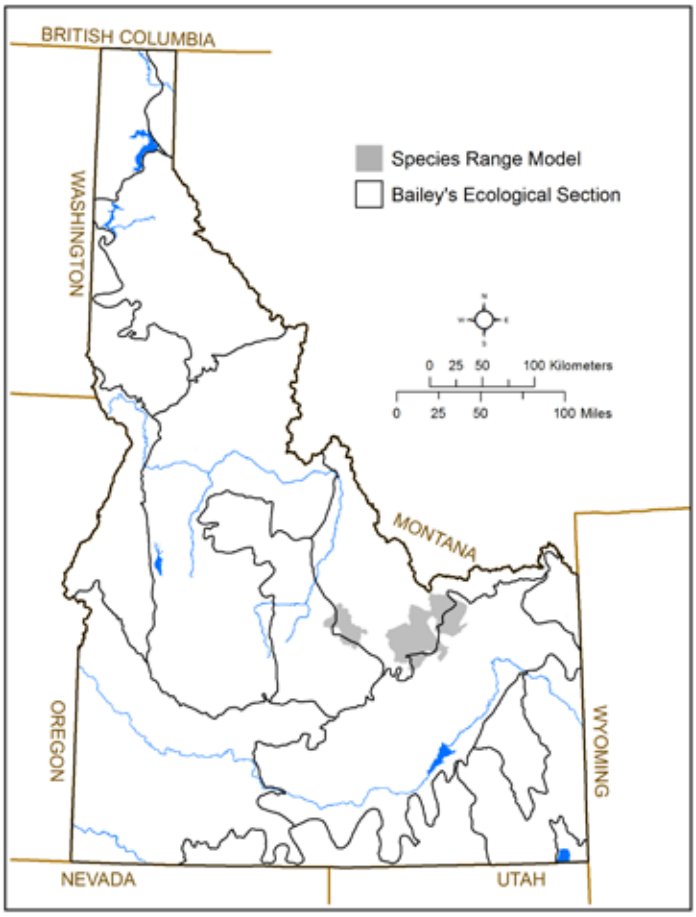
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species in Idaho. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Pacific Northwest Moth Database. 2014. [Accessed Oct-Dec, 2014] <pnwmoths.biol.wwu.edu/>
Map Sources: PNW Moths database. Nov 2014 export from Merrill Peterson.

Idaho Point-headed Grasshopper

Acrolophitus pulchellus



Class: Insecta
Order: Orthoptera
Family: Acrididae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: Type 2
IDAPA: Unprotected Wildlife
G-rank: G1G3
S-rank: S2

SGCN TIER: 2
Rationale: Idaho endemic, IUCN Red List, restricted range

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 3,800 km² (~1,500 mi²)
Key Ecological Sections: Beaverhead Mountains, Snake River Basalts
Population Size in Idaho: Not applicable for invertebrates.
Description: The Idaho Point-headed Grasshopper is a rare Idaho endemic found in the Birch Creek and Big Lost River drainages. Prior to 2010, the species was known from only 17 records dating from 1883 to 1993. Surveys in 2010 confirmed its persistence at historical localities.

HABITAT & ECOLOGY
Environmental Specificity: Moderate: Generalist—some key requirements are scarce.
Description: This grasshopper is found in dwarf-shrubland and steppe habitats on alluvial fan and stream terrace landforms characterized by sparse vegetation, surface gravels, vagrant lichens, and intact biological soil crusts. The species is thought to be ground-dwelling and a specialist feeder on stemless mock goldenweed, a cushion-form forb common to the area.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable

Description: Threats to these populations are widespread, but low in magnitude, and include invasive plants, OHV use, conversion to agriculture, and improper livestock grazing. The species is also thought to be negatively influenced by drought.

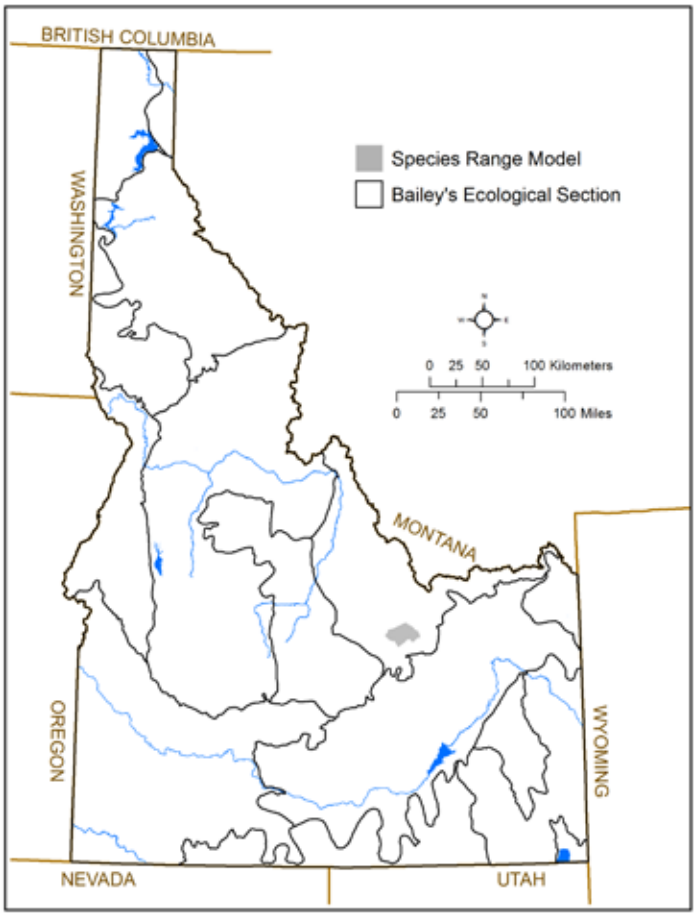
CONSERVATION ACTIONS
Conservation issues and management actions are described in the Beaverhead Mountains Ecological Section Plan. In short, recommended strategies for this species include continuing to investigate the ecology of the species and encouraging land management that promotes proper livestock grazing management, restricts OHV travel to designated routes, controls noxious weeds, and uses native species for range restoration.

ADDITIONAL COMMENTS
None.

Information Sources: Waterbury, B. A. 2014. Rediscovered populations of the Idaho Point-Headed Grasshopper, Acrolophitus pulchellus (Bruner), 1890 (Orthoptera: Acrididae). Western North American Naturalist 74:349-355.
Map Sources: IFWIS. July 2014 export; Waterbury, B. A. 2014. Rediscovered populations of the Idaho Point-Headed Grasshopper, Acrolophitus pulchellus (Bruner), 1890 (Orthoptera: Acrididae). Western North American Naturalist 74:349-355.

A Grasshopper

Argiacris amissuli



Class: Insecta
Order: Orthoptera
Family: Acrididae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1G3
S-rank: S1

SGCN TIER: 3
Rationale: Idaho endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 400 km² (~200 mi²)
Key Ecological Sections: Beaverhead Mountains
Population Size in Idaho: Not applicable for invertebrates.
Description: An Idaho endemic, this grasshopper has not been collected since 1965 when the type specimen was found at a single location in Butte County. Whether the species is extant is not known.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: Species-specific habitat requirements have not been documented. However, the specimen was collected at about 1500m elevation in xeric habitat sparsely vegetated with sagebrush.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown

Description: Species-specific threats have not been documented. However, in general, threats to grasshoppers include pesticides, habitat modification, and drought.

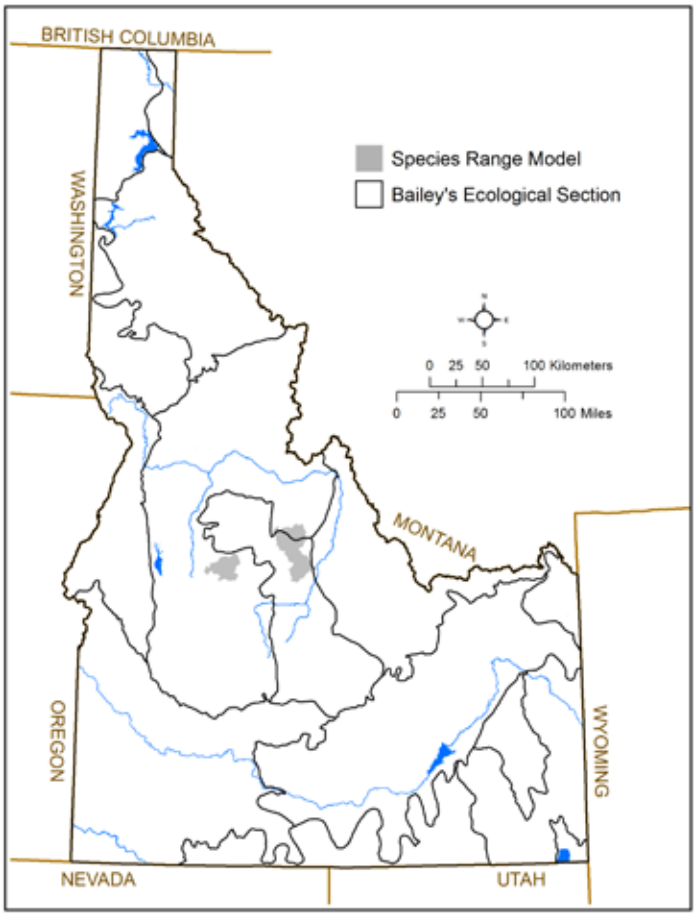
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: Gurney, A. B. 1971. North American grasshoppers of the genus Argiacris, including two new species from Idaho (Orthoptera: Acrididae: Catantopinae). Proceedings of the Entomological Society of Washington 73:292-303.
Map Sources: IFWIS. July 2014 export

A Grasshopper

Argiacris keithi



Class: Insecta
Order: Orthoptera
Family: Acrididae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1G3
S-rank: S1

SGCN TIER: 3
Rationale: Idaho endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 1,700 km^2 (~700 mi^2)
Key Ecological Sections: Challis Volcanics, Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: An Idaho endemic, this grasshopper has not been collected since 1970 in Custer and Lemhi Counties. Whether the species is extant is not known.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: This species has been found in rugged, mountainous terrain at approximately 2500-3000m elevation. Little is known of species current status, ecology, or conservation needs.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown
Description: Species-specific threats have not been documented. However, in general, threats to grasshoppers include pesticides, habitat modification, and drought.

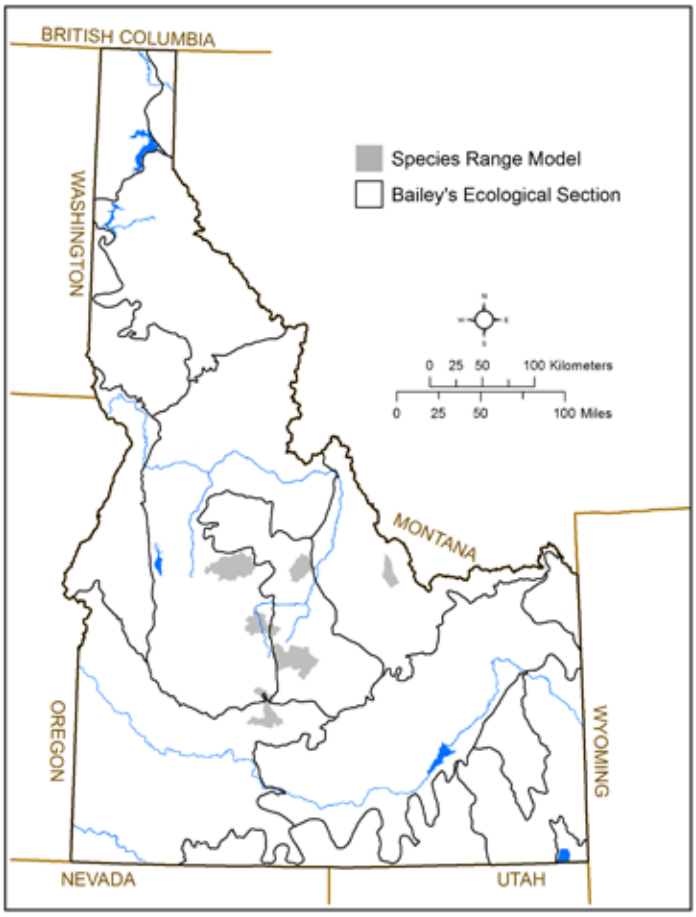
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: Idaho CWCS 2005; Gurney, A. B. 1971. North American grasshoppers of the genus Argiacris, including two new species from Idaho (Orthoptera: Acrididae: Catantopinae). Proceedings of the Entomological Society of Washington 73:292-303.
Map Sources: IFWIS. July 2014 export

A Grasshopper

Argiacris militaris



Class: Insecta
Order: Orthoptera
Family: Acrididae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G3G4
S-rank: S2

SGCN TIER: 3
Rationale: Idaho endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 3,800 km² (~1,500 mi²)
Key Ecological Sections: Beaverhead Mountains, Challis Volcanics, Idaho Batholith, Owyhee Uplands
Population Size in Idaho: Not applicable for invertebrates.
Description: This grasshopper is an Idaho endemic occurring in Camas, Blaine, Lemhi, and Custer counties but has not been collected since 1970. Whether the species is extant is not known.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: This species has typically been found in rocky, sparsely vegetated areas between 2500 and 2800m elevation. Little is known of species current status, ecology, or conservation needs.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown

Description: Species-specific threats have not been documented. However, in general, threats to grasshoppers include pesticides, habitat modification, and drought.

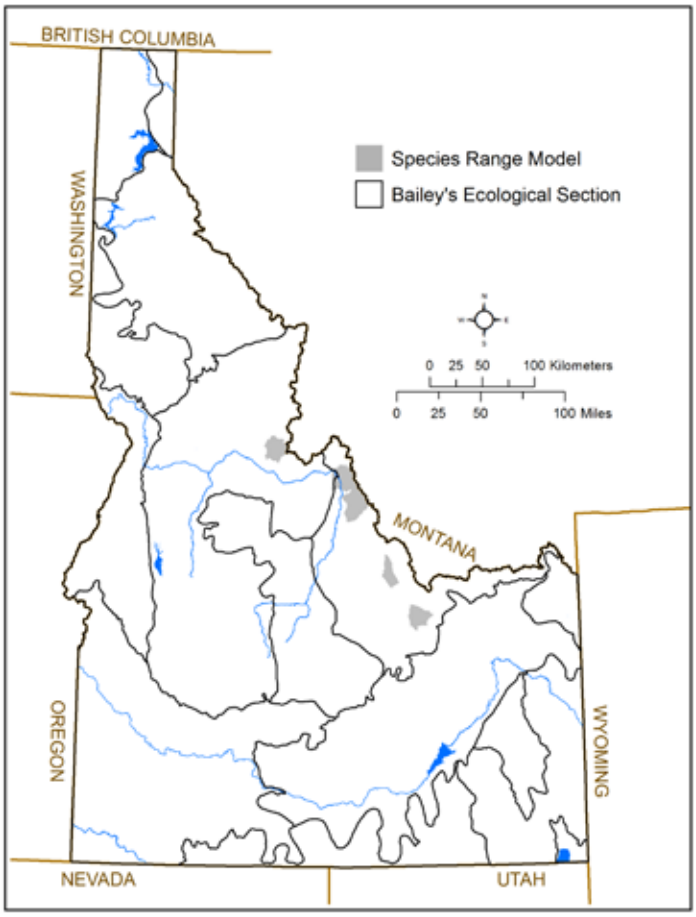
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: Idaho CWCS 2005
Map Sources: IFWIS. July 2014 export; iDigBio download Dec 10, 2014

A Grasshopper

Barracris petraea



Class: Insecta
Order: Orthoptera
Family: Acrididae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G3?
S-rank: S2

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 2,000 km^2 (~800 mi^2)
Key Ecological Sections: Beaverhead Mountains, Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: This grasshopper occurs in Idaho and Montana. In Idaho, it has been found in Lemhi County, Clark County, and southeast Idaho County. Current status of the species is unknown.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: The species has been found above timberline in bare rock, talus, and scree. However specific habitat requirements have not been documented.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown
Description: Specific threats to this species are not known. However, given the association with alpine habitats, changes in climatic conditions is a potential threat.

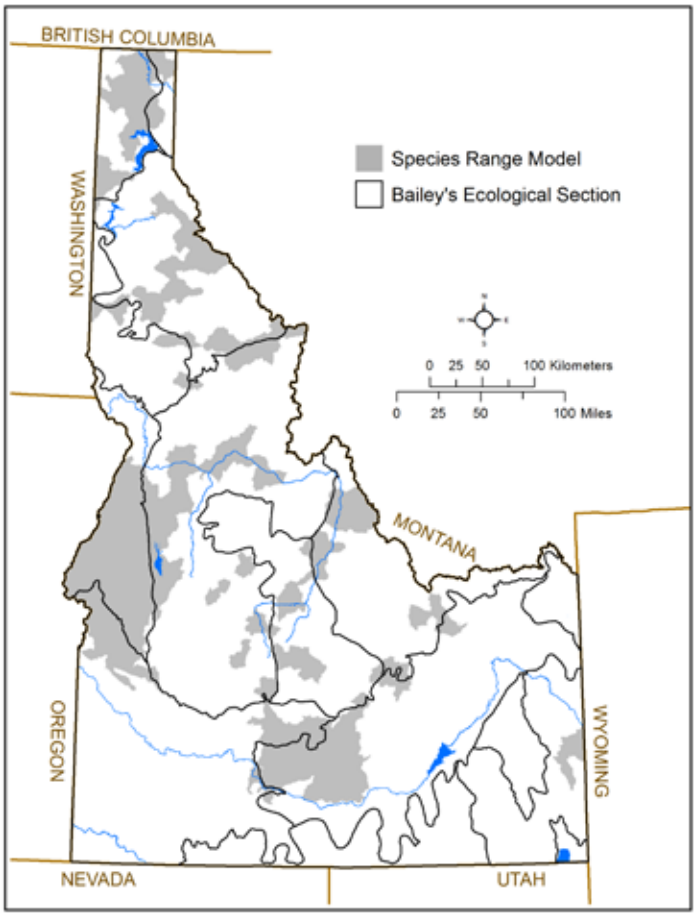
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org
Map Sources: IFWIS. July 2014 export

Spur-throated Grasshopper Species Group

Melanoplus Species Group



Class: Insecta
Order: Orthoptera
Family: Acrididae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: GNR
S-rank: S2

SGCN TIER: 3
Rationale: Idaho endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 83,800 km^2 (~32,400 mi^2)
Key Ecological Sections: Beaverhead Mountains, Bitterroot Mountains, Blue Mountains, Challis Volcanics, Flathead Valley, Idaho Batholith, Okanogan Highlands, Overthrust Mountains, Owyhee Uplands, Palouse Prairie, Snake River Basalts
Population Size in Idaho: Not applicable for invertebrates.
Description: This species group consists of 32 Spur-throated Grasshoppers in the genus Melanoplus. All of these species are currently thought to be either Idaho or regional endemics. Many of the species are known from very few localities and have not been observed for decades. Nothing is known of these species current status, ecology, or conservation needs. The species include: M. aix, M. alector, M. artemesiae, M. baldi, M. daemon, M. digitifer, M. idaho, M. illash, M. indigens, M. ixalus, M. latah, M. lemhiensis, M. lemurus, M. lolo, M. militaris, M. obex, M. ohadi, M. papoosense, M. papyraedus, M. payettei, M. phobetico, M. pyro, M. salmonis, M. shoshoni, M. sol, M. stipes, M. tendoyense, M. tincupense, M. trigeminus, M. washingtonius, M. xenus, and M. zeus.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: Most grasshoppers are generalists, but some have narrow habitat requirements. While many of the species in this group have limited ranges, it cannot be assumed that they are specialists.

POPULATION TREND

Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable
Description: Species-specific threats have not been documented. However, in general, threats to grasshoppers include pesticides, habitat modification, and drought.

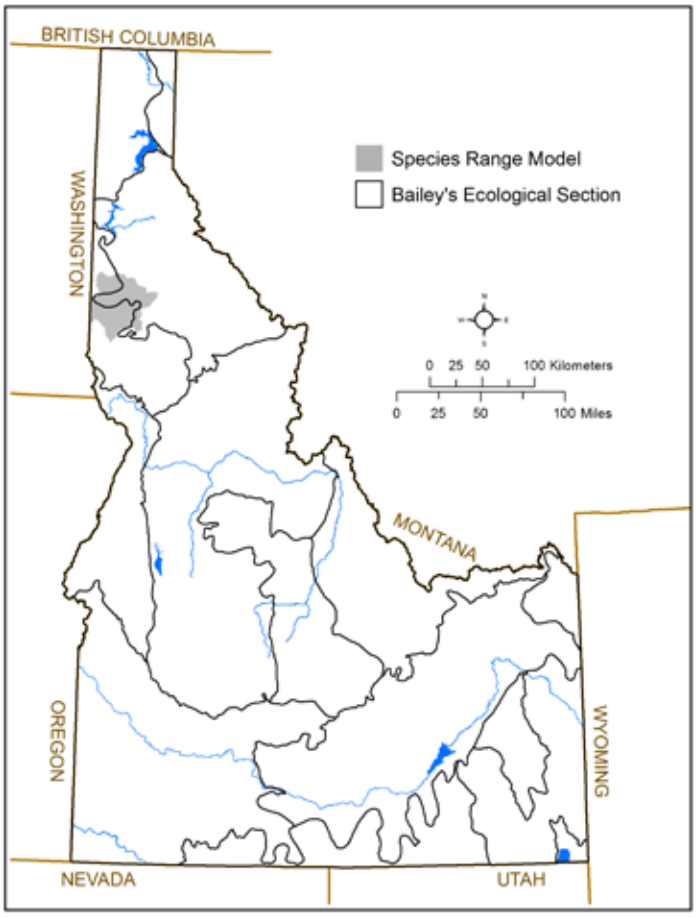
CONSERVATION ACTIONS
Priority conservation strategies for this genus includes surveys to determine if many of these species are extant in Idaho and genetic work needed to determine taxonomic uniqueness of these species.

ADDITIONAL COMMENTS
While the taxonomy of this genus has been recently revised with several new species added (Otte 2012), it is incredibly difficult to understand and distinction among species is often based on locality and male genitilia. Extensive examination of the group and collaboration with Dan Otte is needed to determine the status.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org; Idaho CWCS 2005; Otte, D. 2012. Eighty New Melanoplus Species from the United States (Acrididae: Melanoplinae). Transactions of the American Entomological Society 138:73-167.
Map Sources: IFWIS. July 2014 export; Discover Life; Biodiversity Information Serving Our Nation (BISON); Integrated digitized Biocollections (iDigBio) Specimen Portal. Accessed Dec. 12, 2014. <https://www.idigbio.org/portal>; Otte, D. 2012. Eighty new Melanoplus species from the United States (Acrididae: Melanoplinae). Transactions of the American Entomological Society 138:73-167.

Straight Snowfly

Capnia lineata



Class: Insecta
Order: Plecoptera
Family: Capniidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G2
S-rank: S1

SGCN TIER: 3
Rationale: Idaho endemic, data deficient, range restricted

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 3,400 km² (~1,300 mi²)
Key Ecological Sections: Bitterroot Mountains, Palouse Prairie
Population Size in Idaho: Not applicable for invertebrates.
Description: The Straight Snowfly is endemic to Idaho (Latah County), a previous report of a specimen in California was shown to be erroneous. It has been collected from several creeks near the small towns of Troy and Deary and was last recorded in 1989. Current status of the population is not known, however it has been described as "rare" in the past.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: Life history and ecology requirements for many Capnia species, including this species, are poorly known. It is known that Capnia nymphs require cool water temperatures for development. After hatching in early spring, the nymphs move into the hyporheic zone and undergo diapause, remaining inactive until the water cools in late fall and winter, at which time they feed (probably by shredding detritus) and rapidly grow to maturity. Adults emerge in late February to June and are usually univoltine.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable
Description: Threats to this species have not been specifically identified, but could include any changes to the water quality and quantity of occupied creeks primarily sedimentation and increasing water temperatures.

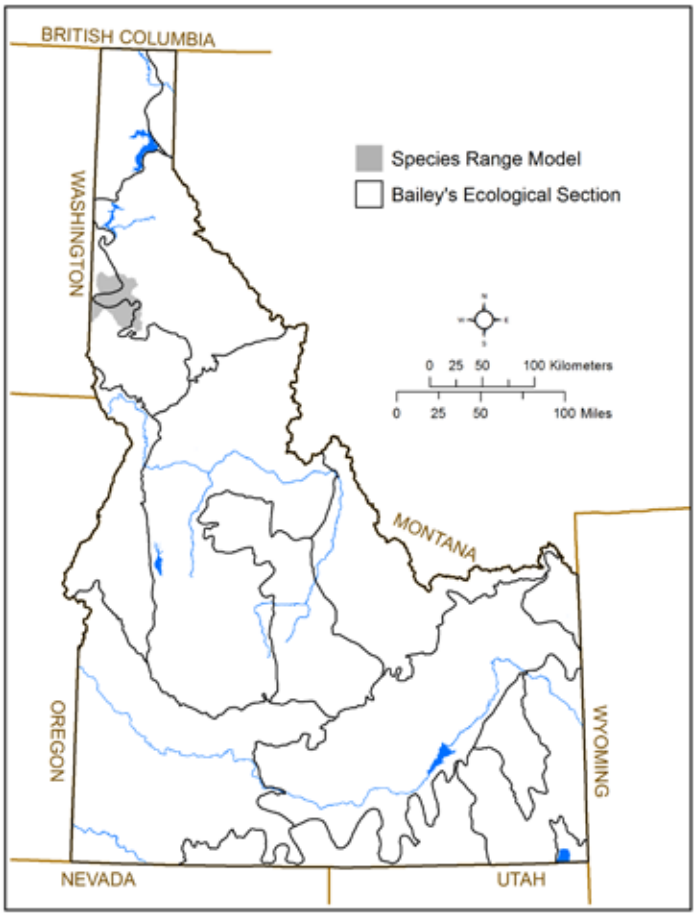
CONSERVATION ACTIONS
Surveys are needed to determine the true distribution of this species, status and size of existing populations, and potential presence of additional populations. Known locations in Latah County overlap with areas surveyed by Potlatch watershed fish crews, therefore multi-species survey collaborations may be possible.

ADDITIONAL COMMENTS
The Straight Snowfly was petitioned for listing under the ESA in 2010, but was declined due to a lack of information.

Information Sources: Xerces Society species account; Stagliano, D. M. and B. A. Maxell. 2010. Aquatic invertebrate species of concern: updated distributions, vital watersheds, and predicted sites within USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, Montana; Jordan, S. F., C. Mazzacano, S. Jepsen, S. H. Black. 2010. Petition to list the Straight Snowfly (Capnia lineata Hanson, 1943) and the Idaho Snowfly (Capnia zukeli Hanson, 1943) as endangered species under the U.S. Endangered Species Act.
Map Sources: IFWIS. July 2014 export; GBIF download 11/20/2014; iDigBio download Dec 10, 2014

Idaho Snowfly

Capnia zukeli



Class: Insecta
Order: Plecoptera
Family: Capniidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G2
S-rank: S1

SGCN TIER: 3
Rationale: Idaho endemic, data deficient, range restricted

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 1,900 km^2 (~700 mi^2)
Key Ecological Sections: Bitterroot Mountains, Palouse Prairie
Population Size in Idaho: Not applicable for invertebrates.
Description: The Idaho Snowfly is endemic to Idaho (Latah county). It has been collected from several creeks near the small town of Troy and was last recorded in 1986. Current status of the population is not known, however it has been described as "rare" in the past.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: Life history and ecology requirements for many Capnia species, including this species are poorly known. It is known that Capnia nymphs require cool water temperatures for development. After hatching in early spring, the nymphs move into the hyporheic zone and undergo diapause, remaining inactive until the water cools in late fall and winter, at which time they feed (probably by shredding detritus) and rapidly grow to maturity. Adults emerge in late February to June and are usually univoltine.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS

Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable
Description: Threats to this species have not been specifically identified, but could include any changes to the water quality and quantity of occupied creeks primarily sedimentation and increasing water temperatures.

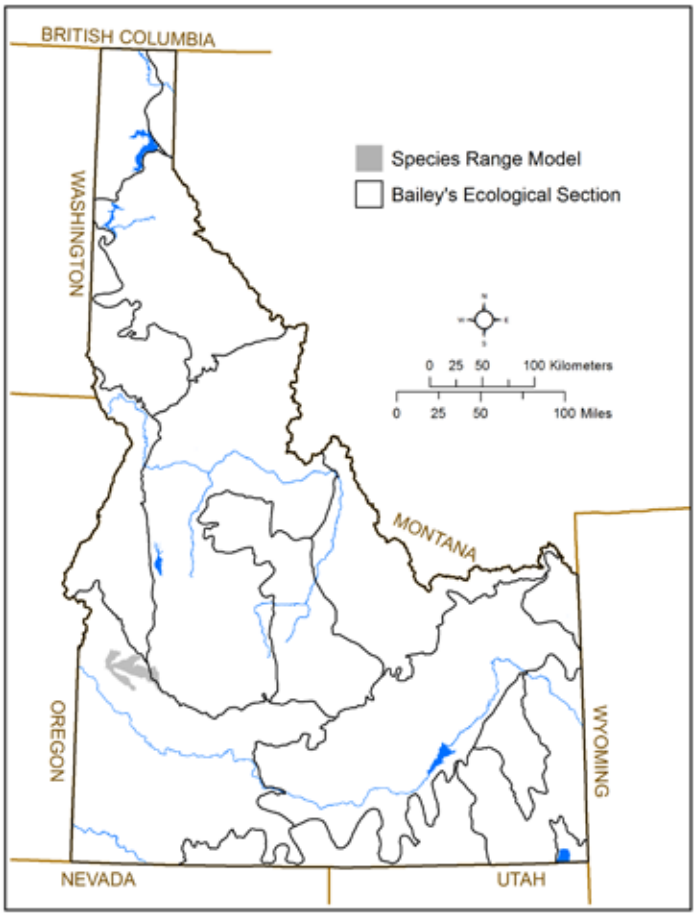
CONSERVATION ACTIONS
Surveys are needed to determine the true distribution of this species, status and size of existing populations, and potential presence of additional populations. Known locations in Latah County overlap with areas surveyed by Potlatch watershed fish crews, therefore multi-species survey collaborations may be possible.

ADDITIONAL COMMENTS
The Idaho Snowfly was petitioned for listing under the ESA in 2010, but was declined due to a lack of information.

Information Sources: Stagliano, D. M. and B. A. Maxell. 2010. Aquatic invertebrate species of concern: updated distributions, vital watersheds, and predicted sites within USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, Montana; Jordan, S. F., C. Mazzacano, S. Jepsen, S. H. Black. 2010. Petition to list the Straight Snowfly (Capnia lineata Hanson, 1943) and the Idaho Snowfly (Capnia zukeli Hanson, 1943) as endangered species under the U.S. Endangered Species Act; Mazzacano, C. 2008. Capnia zukeli (Hanson 1943) Species Profile. The Xerces Society for Invertebrates Conservation. Available online at <http://www.xerces.org/wp-content/uploads/2008/09/capnia_zukeli.pdf>
Map Sources: IFWIS. July 2014 export

Duckhead Snowfly

Capnura anas



Class: Insecta
Order: Plecoptera
Family: Capniidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1
S-rank: SNR

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 900 km² (~300 mi²)
Key Ecological Sections: Owyhee Uplands
Population Size in Idaho: Not applicable for invertebrates.
Description: The Duckhead Snowfly is known from only a few locations in Oregon and Idaho. The Idaho locality is recent (2004) and near Boise.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: Specific habitat requirements have not been documented, however, the species is generally found in small intermittent streams, some of apparent low water quality.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown
Description: Specific threats to this species are not known. However, stonefly populations are generally affected by changes to aquatic habitat such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

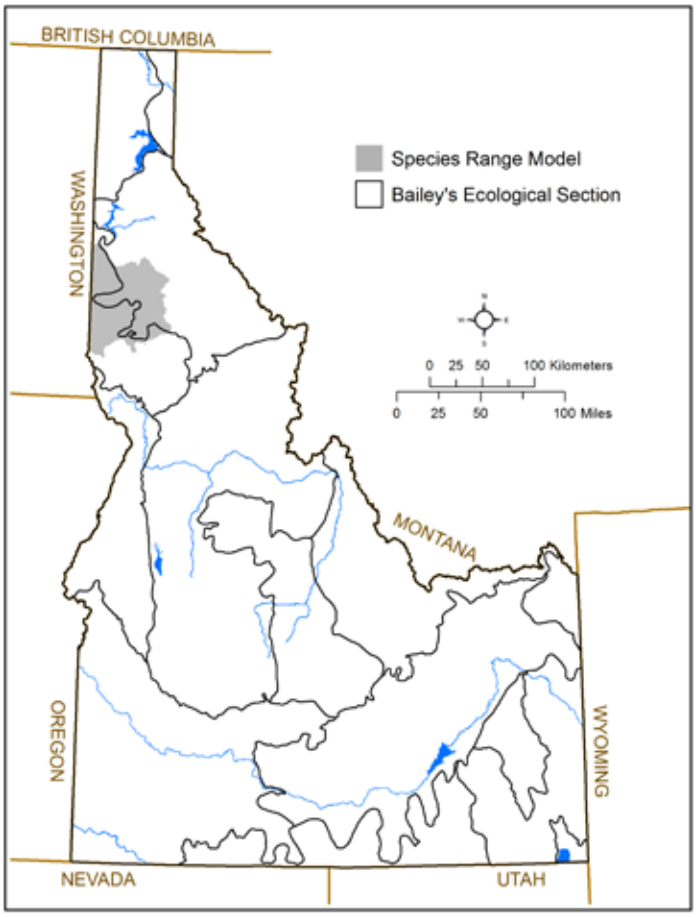
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Nelson, C. R. and R. W. Baumann. 1987. The winter stonefly genus Capnura (Plecoptera: Capniida) in North America: Systematics, phylogeny, and zoogeography. Transactions of the American Entomological Society 113:1-28.
Map Sources: IFWIS. July 2014 export

Palouse Snowfly

Isocapnia palousa



Class: Insecta
Order: Plecoptera
Family: Capniidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G3
S-rank: S3

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 5,800 km² (~2,200 mi²)
Key Ecological Sections: Bitterroot Mountains, Palouse Prairie
Population Size in Idaho: Not applicable for invertebrates.
Description: The Palouse Snowfly is a newly described species of stonefly that is restricted to southeast Washington, northeast Oregon, and northwest Idaho. In Idaho, the species has been found in several tributaries of the Potlatch River in the southern portion of Latah County. Althougth described in 2004, collections of this species in Idaho are from 1969 and 1984.

HABITAT & ECOLOGY
Environmental Specificity: Narrow: Specialist—key requirements are common.
Description: Species-specific habitat requirements have not been documented. However, this genus is generally associated with relatively pristine, gravel-based streams and rivers.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable

Description: Specific threats to this species are not known. However, stonefly populations are generally affected by changes to aquatic habitat such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

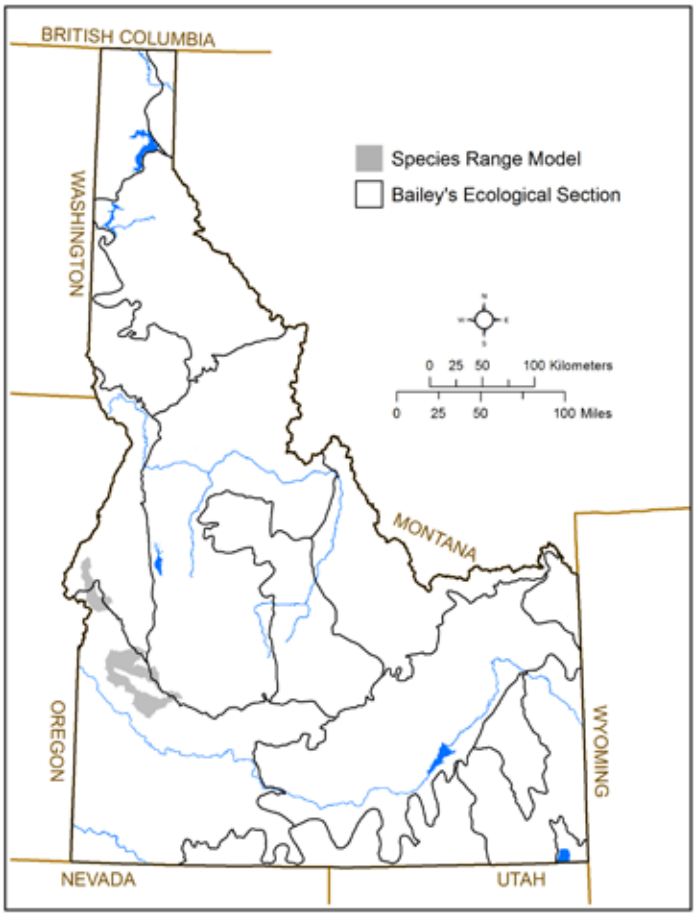
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org; Zenger, J. T. and R. W. Baumann. 2004. The Holarctic winter stonefly genus Isocapnia, with an emphasis on the North American fauna (Plecoptera: Capniidae). Monographs of the Western North American Naturalist 2:65-95.
Map Sources: Zenger, J. T. and R. W. Baumann. 2004. The Holarctic winter stonefly genus Isocapnia, with an emphasis on the North American fauna (Plecoptera: Capniidae). Monographs of the Western North American Naturalist 2:65-95.

Boise Snowfly

Utacapnia nedia



Class: Insecta
Order: Plecoptera
Family: Capniidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G3
S-rank: S1

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 2,500 km² (~1,000 mi²)
Key Ecological Sections: Blue Mountains, Owyhee Uplands
Population Size in Idaho: Not applicable for invertebrates.
Description: The Boise Snowfly occurs in southeast Oregon and southwest Idaho, with the Idaho distribution including Ada and Washington counties. Current status of the population is unknown, but it is considered to be "rare".

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: This stonefly has been found in small mountain streams, but details of habitat requirements have not been documented.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown

Description: Specific threats to this species are not known. However, stonefly populations are generally affected by changes to aquatic habitat such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

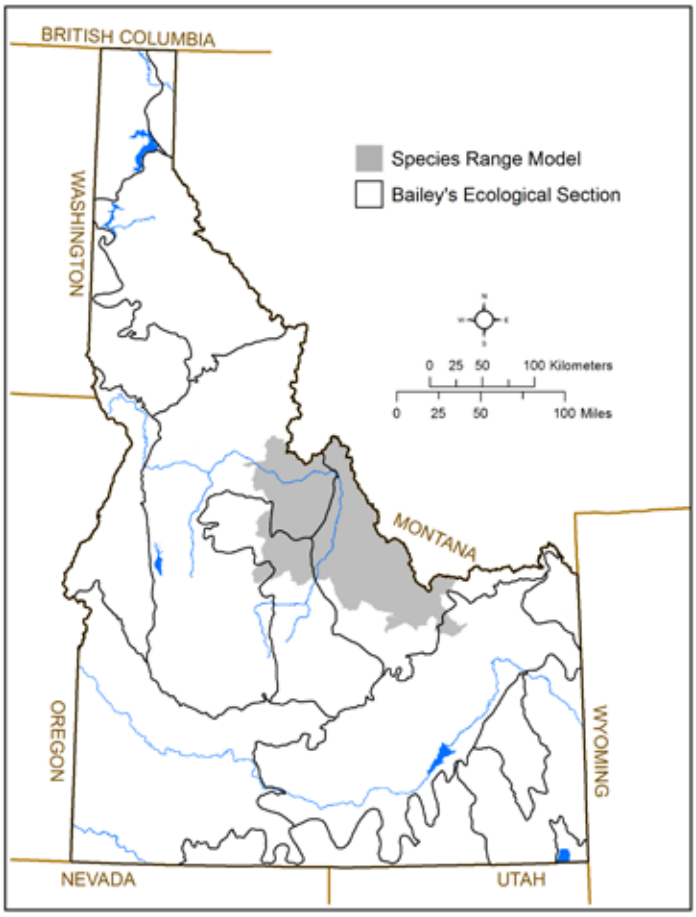
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org
Map Sources: IFWIS. July 2014 export

Lolo Sawfly

Sweltsa durfeei



Class: Insecta
Order: Plecoptera
Family: Chloroperlidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G2
S-rank: SNR

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 18,200 km^2 (~7,000 mi^2)
Key Ecological Sections: Beaverhead Mountains, Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: The Lolo Sawfly is a recently described species known only from Idaho (Lemhi County) and Montana (Mineral and Ravalli counties) and is likely endemic to the Northern Rocky Mountain Refugium. Although described in 2009, the Montana collections are dated from 1995-2008 and the Idaho collection is from 1979.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: This stonefly has been found in small mountain streams, but details of habitat requirements have not been documented.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown

Description: Specific threats to this species are not known. However, stonefly populations are generally affected by changes to aquatic habitat such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

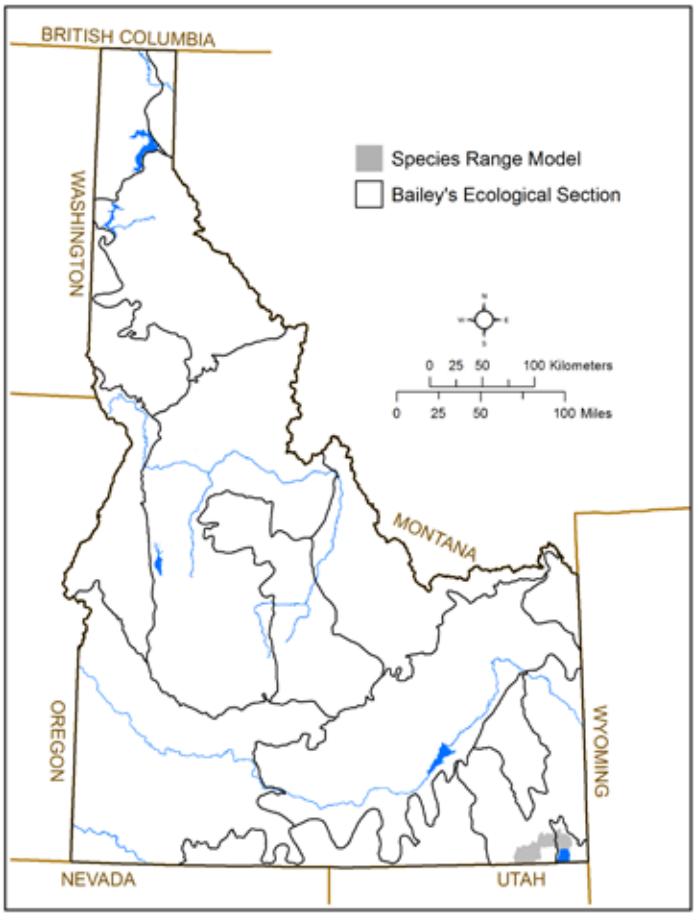
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org; Kondratieff, B. C. and R. W. Baumann. 2009. A contribution to the knowledge of Sweltsa exquisita (Frison) and S. occidens (Frison) and description of a new species of Sweltsa from the northern Rocky Mountains, USA (Plecoptera: Chloroperlidae). Illiesia 5:20-29.
Map Sources: Kondratieff, B. C. and R. W. Baumann. 2009. A contribution to the knowledge of Sweltsa exquisita (Frison) and S. occidens (Frison) and description of a new species of Sweltsa from the northern Rocky Mountains, USA (Plecoptera: Chloroperlidae). Illiesia 5:20-29.

Utah Sallfly

Sweltsa gaufini



Class: Insecta
Order: Plecoptera
Family: Chloroperlidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G3
S-rank: S1

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 900 km² (~300 mi²)
Key Ecological Sections: Bear Lake, Overthrust Mountains
Population Size in Idaho: Not applicable for invertebrates.
Description: The Utah Sallfly is restricted to the Bear River area of southeast Idaho and northern Utah. In Idaho, it can be locally abundant, but is possibly extirpated from Utah.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: This stonefly has been found in small mountain streams, but details of habitat requirements have not been documented.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown
Description: Specific threats to this species are not known. However, stonefly populations are generally affected by changes to aquatic habitat such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

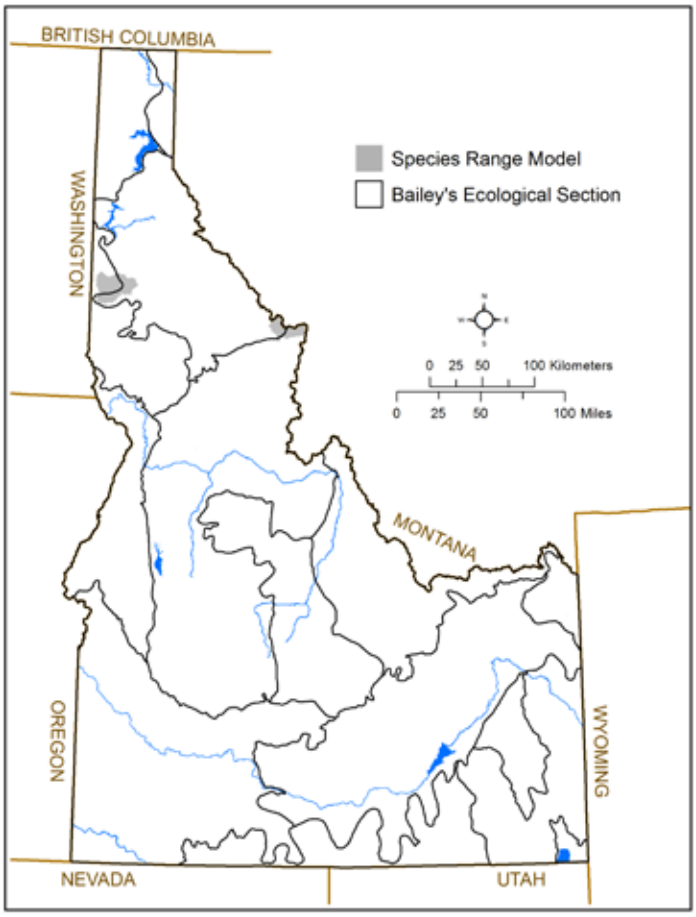
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org
Map Sources: IFWIS. July 2014 export

Cascades Needlefly

Megaleuctra kincaidi



Class: Insecta
Order: Plecoptera
Family: Leuctridae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G3
S-rank: S1

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 1,300 km² (~500 mi²)
Key Ecological Sections: Bitterroot Mountains, Idaho Batholith, Palouse Prairie
Population Size in Idaho: Not applicable for invertebrates.
Description: The Cascades Needlefly is known from a small number of locations in Idaho (Clearwater and Latah counties), Oregon, Washington, and Montana. Occurrences in Idaho and Montana are likely due to the area being a Pacific Coast refugium. It is known to co-occur with the Giant Needlefly (M. stigmata) in Idaho and Montana and, although species-specific abundances are unknown, Megaleuctra is considered to be one of the rarest of stonefly genera (Baumann and Stark 2013).

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: This stonefly is generally associated with seeps and springs with cold, clean water.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable

Description: Specific threats to this species are not known. However, stonefly populations are generally affected by changes to aquatic habitat such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

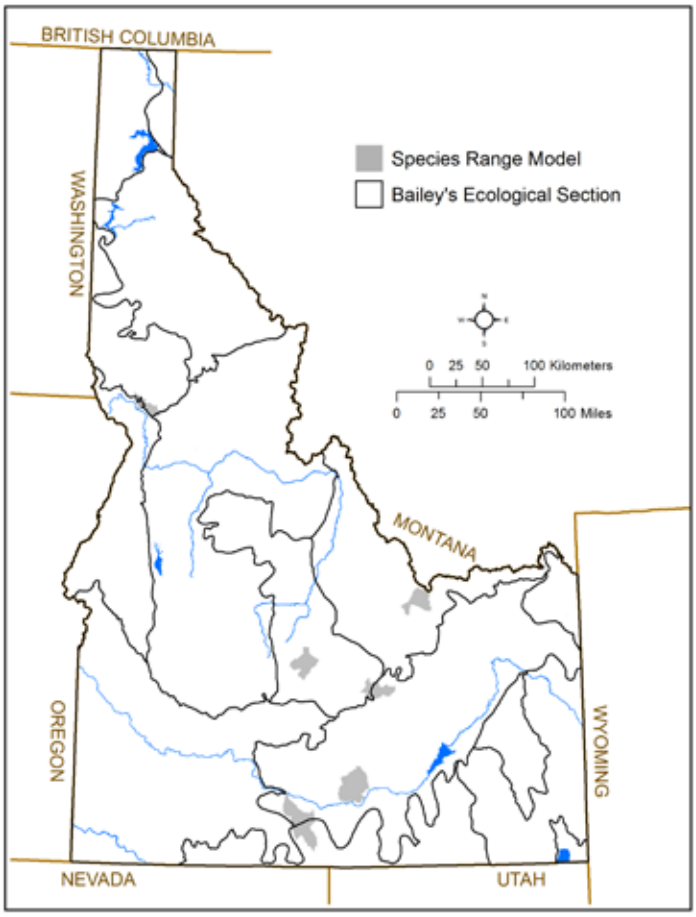
CONSERVATION ACTIONS
Generally speaking, we have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org; Stagliano, D. M. and B. A. Maxell. 2010. Aquatic invertebrate species of concern: updated distributions, vital watersheds, and predicted sites within USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, Montana; Stagliano, D.M., G.M. Stephens, and W.R. Bosworth. 2007. Aquatic invertebrate species of concern on USFS Northern Region lands. Report prepared for USDA Forest Service, Northern Region, Missoula, Montana. Montana Natural Heritage Program, Helena, Montana and Idaho Conservation Data Center, Boise, Idaho; Baumann, R. W. and B. P. Stark. 2013. The genus Megaleuctra Neave (Plecoptera: Leuctridae) in North America. Illiesia 9:65-93.
Map Sources: IFWIS. July 2014 export; Baumann, R. W. and B. P. Stark. 2013. The genus Megaleuctra Neave (Plecoptera: Leuctridae) in North America. Illiesia 9:65-93.

Tiny Forestfly

Malenka tina



Class: Insecta
Order: Plecoptera
Family: Nemouridae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G3
S-rank: S2

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 2,900 km² (~1,100 mi²)
Key Ecological Sections: Beaverhead Mountains, Challis Volcanics
Population Size in Idaho: Not applicable for invertebrates.
Description: The Tiny Forestfly is widespread, but rare, with occurrences from Washington, Idaho, Oregon, Utah, Montana, and Nevada. In Idaho, the species has been recorded from Blaine, Butte, Custer, Idaho, Lemhi, Minidoka, and Twin Falls counties, but all are from pre-1970s. Current information on the species status are lacking.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: This stonefly has been found in small mountain streams, but details of habitat requirements have not been documented.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown

Description: Specific threats to Idaho populations have not been identified. In general, stonefly populatins are affected by changes to aquatic habitat, such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

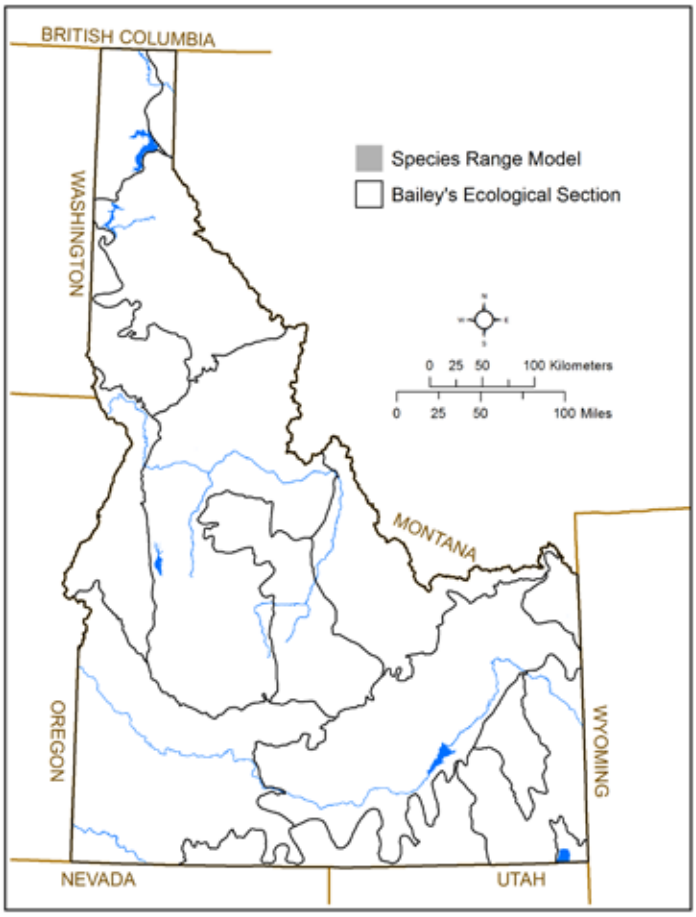
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org; Stagliano, D. M. and B. A. Maxell. 2010. Aquatic invertebrate species of concern: updated distributions, vital watersheds, and predicted sites within USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, Montana.
Map Sources: IFWIS. July 2014 export; Newell, R. L. and G. W. Minshall. 1976. An annotated list of the aquatic insects of Southeastern Idaho. Part I. Plecoptera. Great Basin Naturalist. 36:501-504.

Idaho Forestfly

Soyedina potteri



Class: Insecta
Order: Plecoptera
Family: Nemouridae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G2
S-rank: S1

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 1,200 km^2 (~500 mi^2)
Key Ecological Sections: Bitterroot Mountains, Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: The Idaho Forestfly is known from very few locations in Idaho (Clearwater and Idaho counties), Montana, and Alberta. It is always reported in very low abundance.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: This stonefly is generally associated with headwater springs and seeps. The adults emerge from April to July.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown
Description: The primary threats to this species are the loss of source headwater habitats and degradation of aquatic habitats.

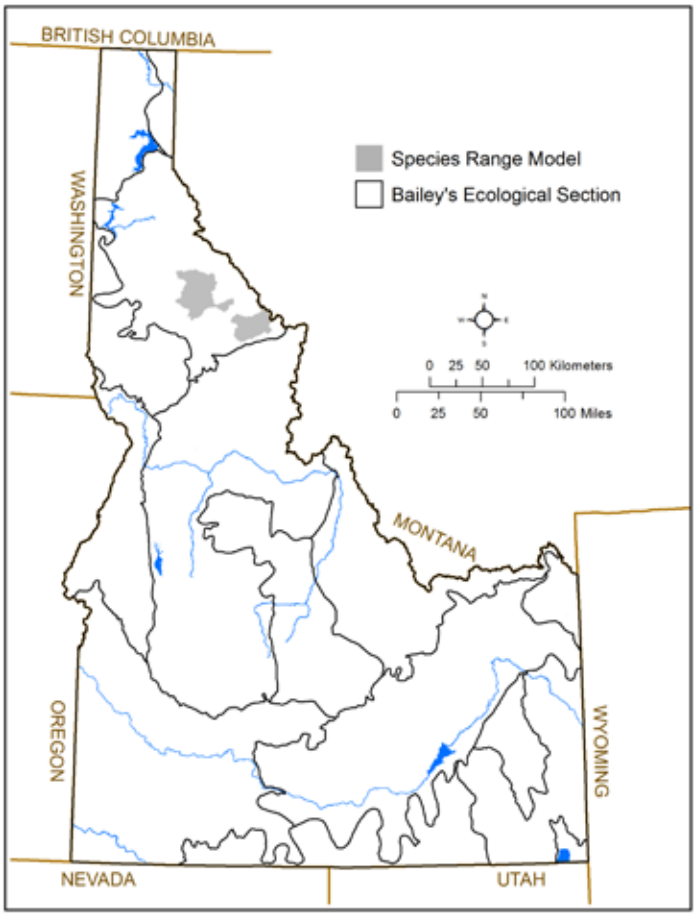
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org; Stagliano, D. M. and B. A. Maxell. 2010. Aquatic invertebrate species of concern: updated distributions, vital watersheds, and predicted sites within USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, Montana.
Map Sources: IFWIS. July 2014 export

Clearwater Roachfly

Soliperla salish



Class: Insecta
Order: Plecoptera
Family: Peltoperlidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G2
S-rank: S1

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 2,200 km² (~800 mi²)
Key Ecological Sections: Bitterroot Mountains
Population Size in Idaho: Not applicable for invertebrates.
Description: The Clearwater Roachfly is a recently described species endemic to the Northern Rocky Mountains Refugium in north-central Idaho and western Montana. It appears to be narrowly distributed in the headwaters of the North Fork Clearwater River in Idaho (Shoshone and Clearwater counties) and adjacent areas of the Clark Fork River in Montana (Mineral County). Collections are from 2002-2003.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: This stonefly occurs in seeps and splash zones of small, high elevation streams near their headwater sources. It is probably cold-water adapted. Forest conditions vary at the collection sites but western red cedar and dense deciduous brush were consistently present. Collection of full-grown and half-grown nymphs together at several sites suggests that more than one year is needed to complete the life cycle.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable
Description: Primary threats to this species are loss of source headwater habitats and stream sedimentation (both suspended and bedload) due to forest practices, mining, roads, and other human disturbances.

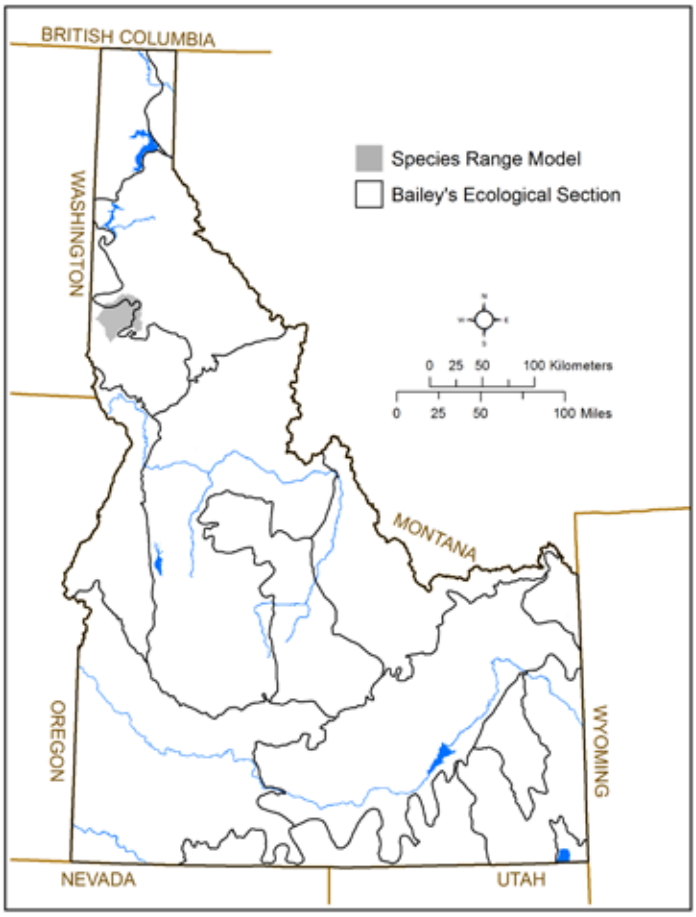
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Stagliano, D. M. and B. A. Maxell. 2010. Aquatic invertebrate species of concern: updated distributions, vital watersheds, and predicted sites within USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, Montana; Stark, B. P. and D. L. Gustafson. 2004. New species and records of Soliperla Ricker, 1952 from western North America (Insecta, Plecoptera, Peltoperlidae). Spixiana 27:97-105.
Map Sources: Stagliano, D. M. G. M . Stephens, W. R. Bosworth. 2007. Aquatic invertebrate species of concern on USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, MT and Idaho Conservation Data Center, Boise, ID; Stark, B. P and D. L. Gustafson. 2004. New species and records of Soliperla Ricker, 1952 from western North America (Insecta, Plecoptera, Peltoperlidae). Spixiana 27:97-105

Umatilla Willowfly

Taenionema umatilla



Class: Insecta
Order: Plecoptera
Family: Taeniopterygidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G3
S-rank: S1

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 1,200 km^2 (~500 mi^2)
Key Ecological Sections: Bitterroot Mountains, Palouse Prairie
Population Size in Idaho: Not applicable for invertebrates.
Description: The Umatilla Willowfly is known only from Idaho (Latah County) and eastern Oregon. It is a rarely collected species that has not been recorded in Idaho since 1986. Whether the species is extant is not known.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: The species is known to occur in creeks and small rivers. Adults tend to emerge in spring and early summer (April-May) and are often found on willows along stream banks when the willow buds begin to open. It is considered an important food source for trout and other fish.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown

Description: Species-specific threats have not been identified. In general, stonefly populations are affected by changes to aquatic habitat, such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

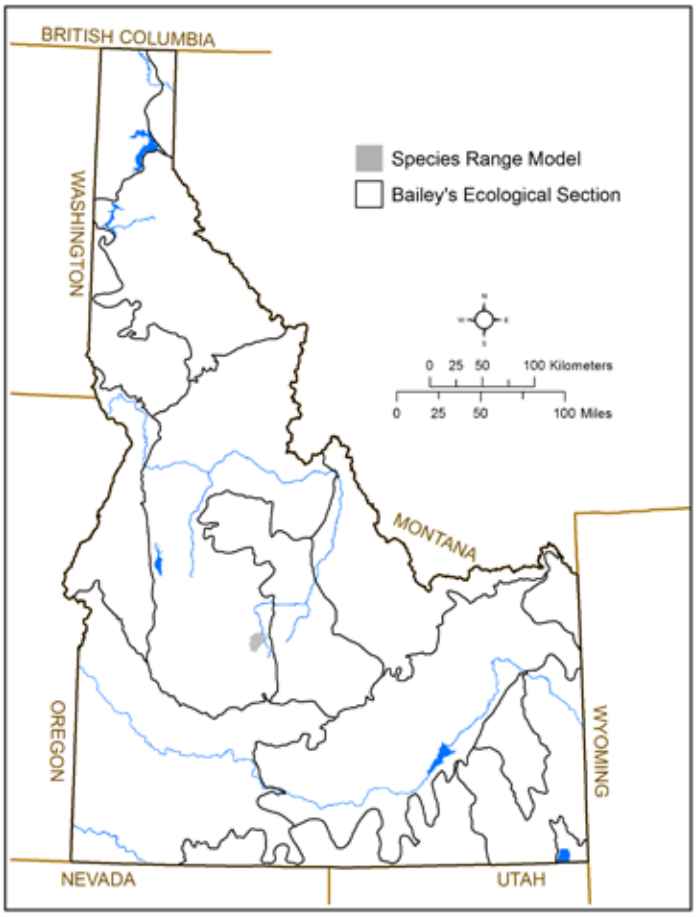
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org; Furniss, R. L. and V. M. Carolin. 1977. Western Forest Insects. Miscellaneous Publication No. 1339. US Forest Service, USDA, Washington, DC; Stanger, J. A. and R. W. Baumann. 1993. A revision of the stonefly genus Taenionema (Plecoptera: Taeniopterygidae). Transactions of the American Entomolgical Society 119:171-229.
Map Sources: IFWIS. July 2014 export; Stanger, J. A. and R. W. Baumann. 1993. A revision of the stonefly genus Taenionema (Plecoptera: Taeniopterygidae). Transactions of the American Entomolgical Society 119:171-229.

A Caddisfly

Apatania barri



Class: Insecta
Order: Trichoptera
Family: Apataniidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: GU
S-rank: SNR

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 200 km² (~100 mi²)
Key Ecological Sections: Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: This caddisfly is known to occur in Idaho (Alturas Lake, Blaine County) and Montana. In Idaho, it was last collected in 1965 and whether the species is extant is not known.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: Details of habitat requirements have not been documented.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown
Description: Species-specific threats have not been identified. In general, caddisfly populations are affected by changes to aquatic habitat, such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

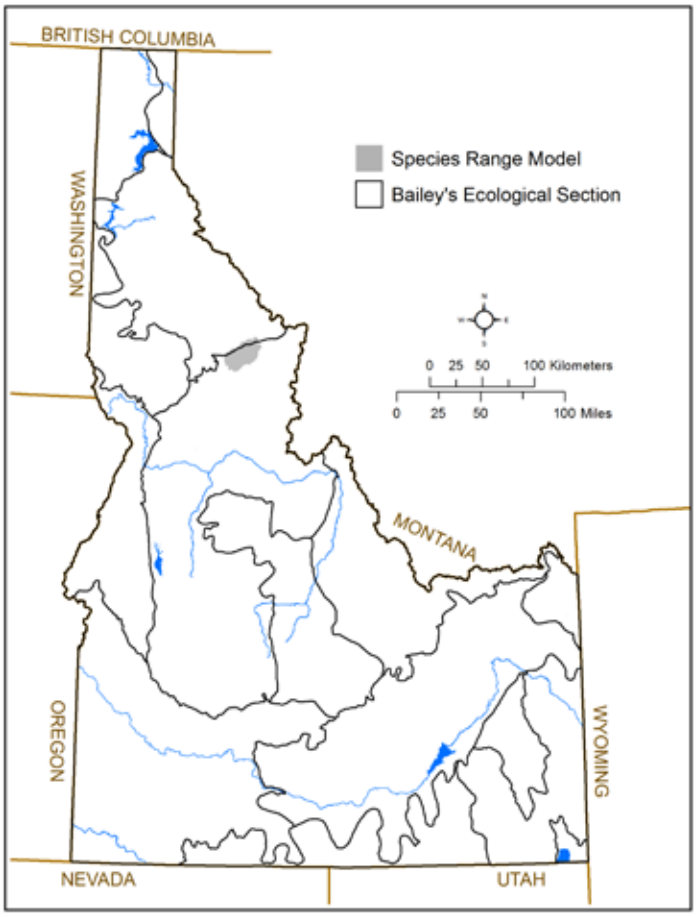
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: Smith, S. D. 1969. Two new species of Idaho Trichoptera with distributional and taxonomic notes on other species. Journal of Kansas Entomological Society 42:46-53.
Map Sources: Smith, S. D. 1969. Two new species of Idaho Trichoptera with distributional and taxonomic notes on other species. Journal of the Kansas Entomological Society 42:46-53.

A Caddisfly

Manophylax annulatus



Class: Insecta
Order: Trichoptera
Family: Apataniidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1G3
S-rank: S1

SGCN TIER: 3
Rationale: Idaho endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 700 km² (~300 mi²)
Key Ecological Sections: Bitterroot Mountains, Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: This caddisfly is an Idaho endemic, incredibly localized and rare (thus, the genus name "mano"). It is only known from one location in Idaho County, northeast of Lowell, and was collected in 1968. Whether the species is extant is not known.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: Details of habitat requirements have not been documented. However, the species was collected in a small, fast-flowing, high-elevation stream. The larvae were found on flat rocks in a thin film of flowing water.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable

Description: Species-specific threats have not been identified. In general, caddisfly populations are affected by changes to aquatic habitat, such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

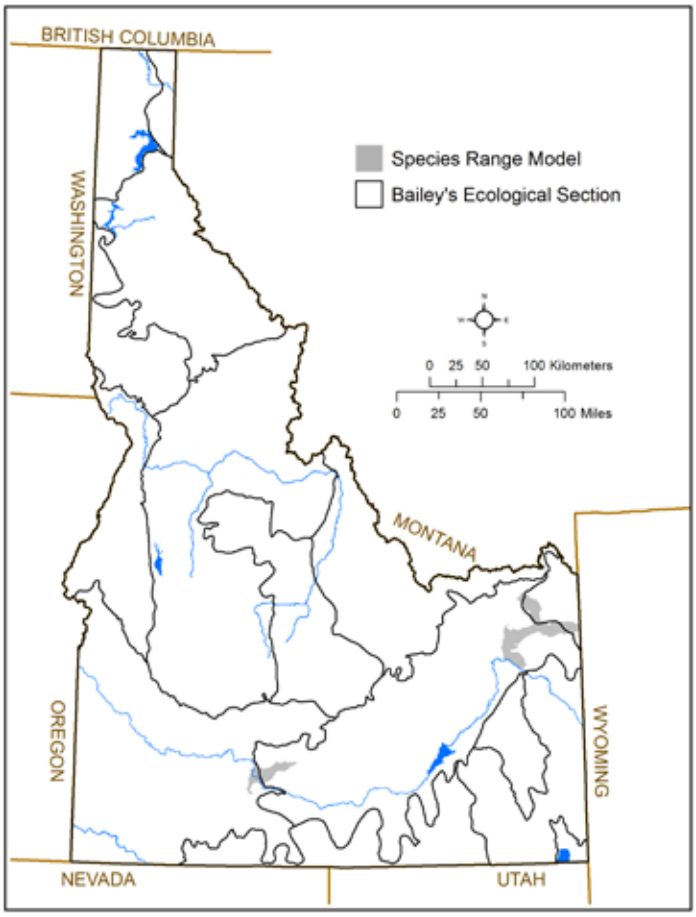
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: Wiggins, G. B. 1973. Contributions to the systematics of the caddisfly family Limnephilidae (Trichoptera). I. Life Sciences Contributions, Royal Ontario Museum, Number 94.; Wiggins, G.B. 2015. Larvae of the North American caddisfly genera (trichoptera) second edition. University of Toronto Press; Chuluunbat, S., J. C. Morse, J. L. Lessard, M. E. Benbow, M. D. Wesener, J. Hudson. 2010. Evolution of terrestrial habitat in Manophylax species (Trichoptera: Apataniidae), with a new species from Alaska. Journal of the North American Benthological Society 29:413-430.
Map Sources: Wiggins, G. B. 1973. Contributions to the systematics of the caddisfly family Limnephilidae (Trichoptera). I. Life Sciences contribution Royal Ontario Museum 94, Toronto, Canada.

A Caddisfly

Glossosoma idaho



Class: Insecta
Order: Trichoptera
Family: Glossosomatidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G2G3
S-rank: S2

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 2,500 km^2 (~1,000 mi^2)
Key Ecological Sections: Snake River Basalts, Yellowstone Highlands
Population Size in Idaho: Not applicable for invertebrates.
Description: This caddisfly occurs in Idaho and Montana. In Idaho, it has been recorded from Niagara Springs (Gooding County) and Falls River (Fremont County). It is reported as rare and infrequently collected. Whether the species is extant is not known.

HABITAT & ECOLOGY
Environmental Specificity: Narrow: Specialist—key requirements are common.
Description: Details of this species habitat requirements have not been documented however, it appears to occur mainly in larger, open canopied mountain streams.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown

Description: Species-specific threats have not been identified. In general, caddisfly populations are affected by changes to aquatic habitat, such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

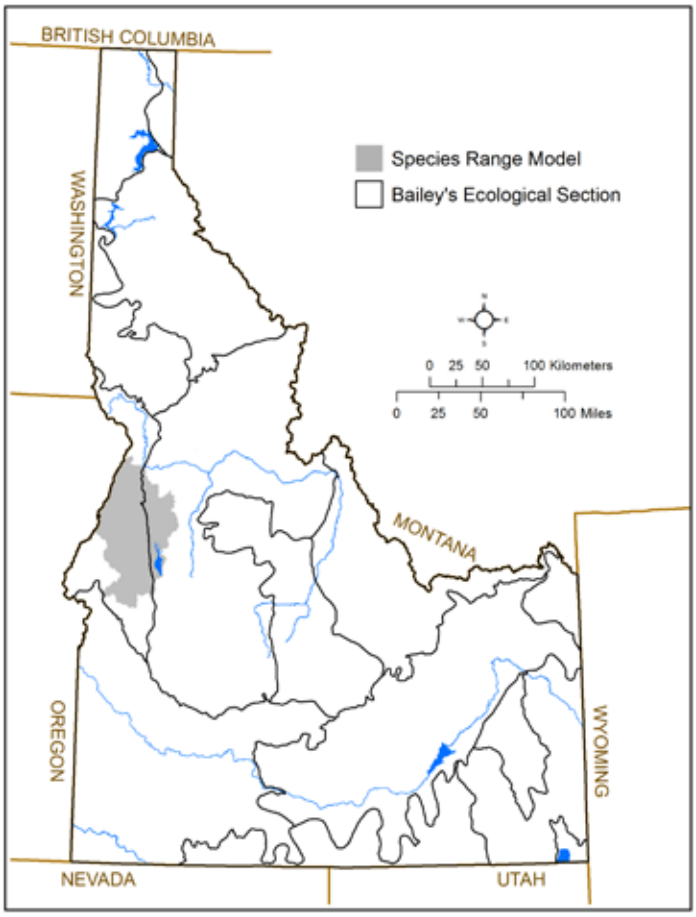
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org; Stagliano, D. M. and B. A. Maxell. 2010. Aquatic invertebrate species of concern: updated distributions, vital watersheds, and predicted sites within USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, Montana; Newell, R. L. and G. W. Minshall. 1979. Aquatic invertebrates of southeastern Idaho II. Trichoptera (Caddisflies). Journal of the Idaho Academy of Science 15:33-51; Roemhild, G. 1982. The Trichoptera of Montana with distributional and ecology notes. Northwest Science 56: 8-13., G. 1982. The Trichoptera of Montana with distributional and ecology notes. Northwest Science 56: 8-13.
Map Sources: GBIF downloaded 11/20/2014; iDigBio download Dec 10, 2014; Newell, R. L. and G. W. Minshall. 1977. An annotated list of the aquatic insects of Southeastern Idaho, Part II: Trichoptera. Great Basin Naturalist 37:253-257

A Caddisfly

Cheumatopsyche logani



Class: Insecta
Order: Trichoptera
Family: Hydropsychidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G3G5
S-rank: SNR

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 7,000 km² (~2,700 mi²)
Key Ecological Sections: Blue Mountains, Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: This caddisfly is known only from Washington, Montana, and Idaho. In Idaho, the type specimen was collected in 1965 on the Little Salmon River in Adams County. Whether the species is extant is not known.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: Details of this species habitat requirements have not been documented.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown
Description: Species-specific threats have not been identified. In general, caddisfly populations are affected by changes to aquatic habitat, such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

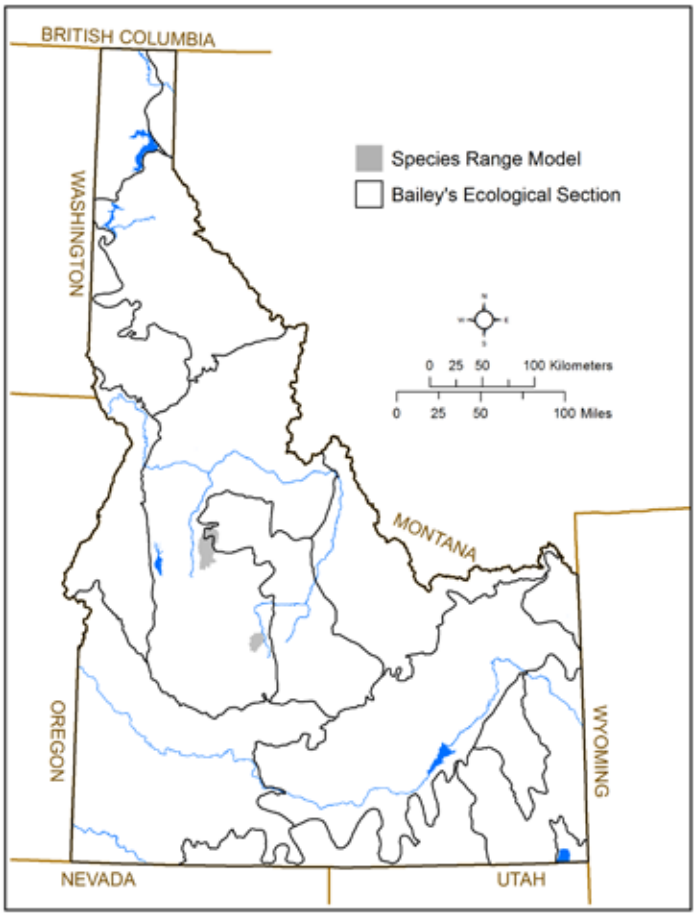
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org; Nimmo, A. P. 1987. The adult Arctopsychidae and Hydropsychidae (Trichoptera) of Canada and adjacent United States. Quaestiones Entomologicae 23:1-189; Roemhild, G. 1982. The Trichoptera of Montana with distributional and ecology notes. Northwest Science 56: 8-13.
Map Sources: Discover Life; Biodiversity Information Serving Our Nation (BISON); Gordon, A. E. and S. D. Smith. 1974. A new species of Cheumatopsyche (Trichoptera, Hydropsychidae) from the northwestern United States. Notulae Naturae 450:1-2.

A Caddisfly

Arctopora salmon



Class: Insecta
Order: Trichoptera
Family: Limnephilidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1G3
S-rank: S3

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 700 km² (~300 mi²)
Key Ecological Sections: Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: Originally thought to be endemic to Idaho, this caddisfly is now known to occur in northwest Montana as well. In Idaho, the species is known from the type specimen collected in 1965 near Landmark in Valley County as well as a 1985 collection in Alturas Lake (Blaine county). Surveys in 2010 in Glacier County, Montana, identified two additional collections. The lack of collections suggests low densities, but also highlights the need for additional sampling.

HABITAT & ECOLOGY
Environmental Specificity: Moderate: Generalist—some key requirements are scarce.
Description: Details of this species habitat requirements have not been documented however, the species has been collected in wet meadows and small wetlands.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable

Description: Species-specific threats have not been identified. In general, caddisfly populations are affected by changes to aquatic habitat, such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

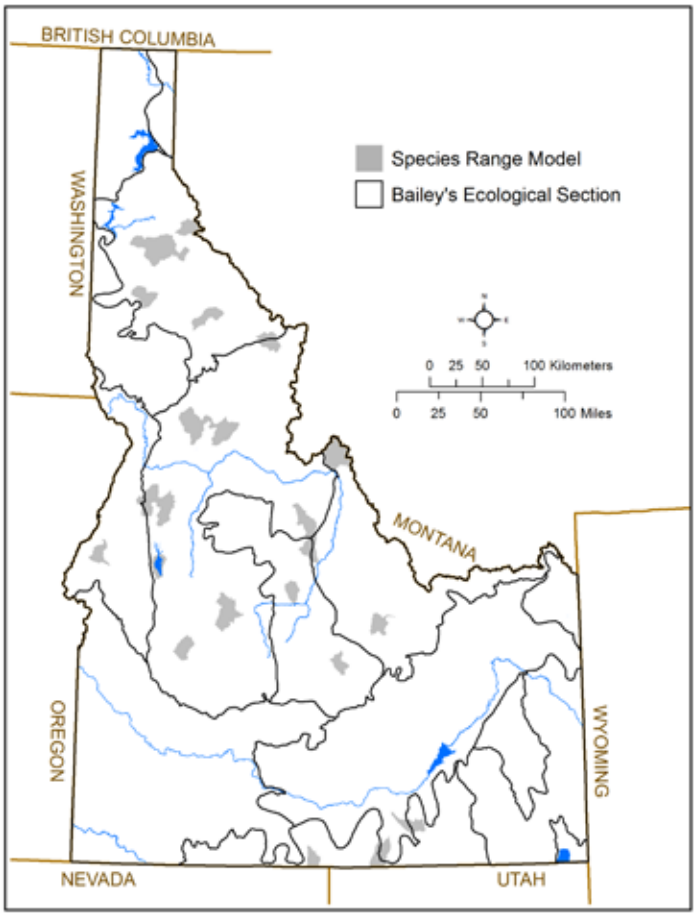
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
Given the recent sampling, expert D. Ruiter suspects that this species is a synonym but additional work comparing all Arctopora types needs to be done to be sure how many species there really are.

Information Sources: Hossack, B. R., R. L. Newell, D. E. Ruiter. 2011. New collection records and range extension for the caddisfly Arctopora salmon (Smith, 1969) (Trichoptera: Limnephilidae). Pan-Pacific Entemologist 87:206-208.
Map Sources: Hossack, B. R., R. L. Newell, D. E. Ruiter. 2011. New collection records and range extension for the caddisfly Arctopora salmon (Smith, 1969) (Trichoptera: Limnephilidae). Pan-Pacific Entemologist 87:206-208; Discover Life; Biodiversity Information Serving Our Nation (BISON); Smith, S. D. 1969. Two new species of Idaho Trichoptera with distributional and taxonomic notes on other species. Journal of the Kansas Entomological Society 42:46-53.

A Caddisfly

Eocosmoecus schmidi



Class: Insecta
Order: Trichoptera
Family: Limnephilidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G4
S-rank: S2

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 7,600 km² (~2,900 mi²)
Key Ecological Sections: Beaverhead Mountains, Bitterroot Mountains, Blue Mountains, Challis Volcanics, Idaho Batholith, Northwestern Basin and Range
Population Size in Idaho: Not applicable for invertebrates.
Description: This caddisfly occurs in British Columbia, Washington, Idaho, and Montana. In Idaho, it has been recorded in several areas of the state, mainly in the mid-1990s. The most recent observation (2008) was in Lemhi County. It appears to be relatively uncommon and infrequently collected, but may be more common and simply under-collected.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: The species is found in small, cold streams in subalpine habitat. It feeds on plant detritus and is thought to require two years to complete its life cycle. This species is considered a good surrogate indicator for other species of subalpine small, cold streams.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown

Intrinsic Vulnerability: Moderately vulnerable
Description: Specific threats to populations have not been documented, however the primary threat is thought to be the loss and/or degradation of source headwater habitats. In addition, the species may be vulnerable to climate change due to its habitat preferences.

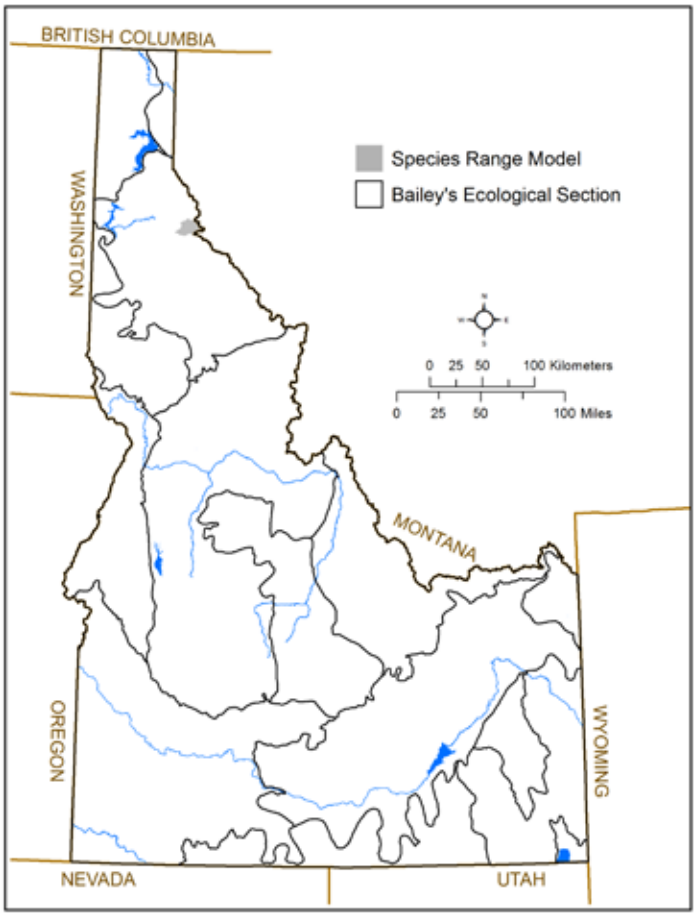
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Robert Wisseman, expert opinion; Wiggins, G. B. and J. S. Richardson. 1989. Biosystematics of Eocosmoecus, a new Nearctic caddisfly genus (Trichoptera: Limnephilidae, Dicosmoecinae). Journal of the North American Benthological Society 8:355-369; Wiggins, G. B. 1975. Contributions to the systematics of the caddisfly family Limnephilidae (Trichoptera). II. Canadian Entomologist 107:325-336.
Map Sources: IDEQ export Feb 13, 2015; Wiggins, G. B. and J. S. Richardson. 1989. Biosystematics of Eocosmoecus, a new Nearctic caddisfly genus (Trichoptera: Limnephilidae, Dicosmoecinae). Journal of the North American Benthological Society 8:355-369; Robert Wisseman and Dave Ruiter, unpublished data.

A Caddisfly

Homophylax acutus



Class: Insecta
Order: Trichoptera
Family: Limnephilidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G3G5
S-rank: SNR

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 300 km² (~100 mi²)
Key Ecological Sections: Bitterroot Mountains
Population Size in Idaho: Not applicable for invertebrates.
Description: This caddisfly is known to occur in Idaho, Montana, Alberta, and British Columbia. The only known location in Idaho is from Wallace. Most known species in this genus are localized in distribution and rarely collected. Whether the species is extant is not known.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: Details of this species habitat requirements have not been documented however, it appears to be a subalpine-alpine species and has been found in small high-elevation creeks and pools.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown

Description: Species-specific threats have not been identified. In general, caddisfly populations are affected by changes to aquatic habitat, such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

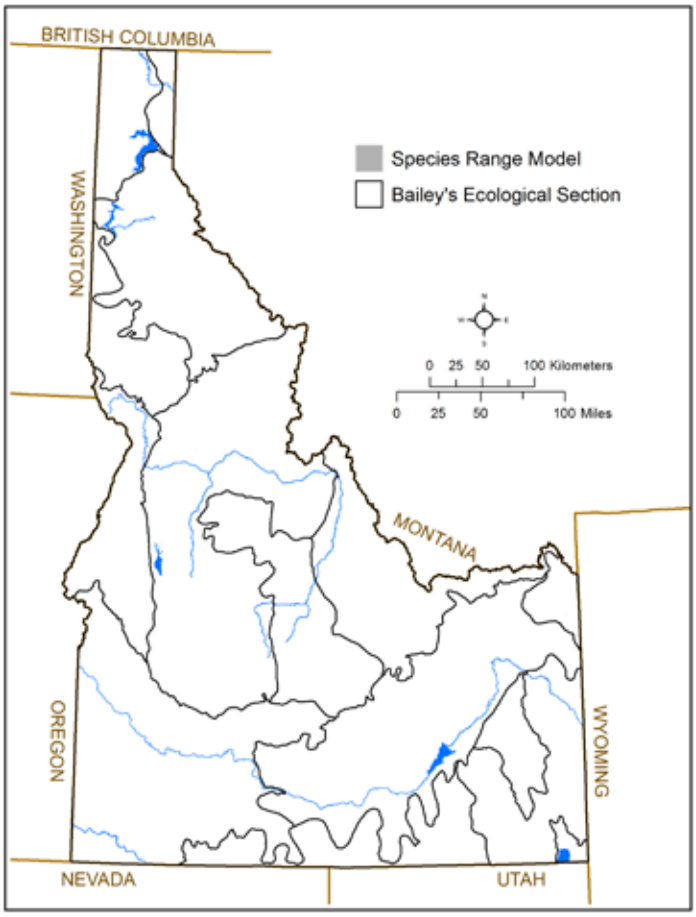
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org; Dave Ruiter and Robert Wisseman, expert opinion; Denning, D. G. 1964. The genus Homophylax (Trichoptera: Limnephilidae). Annals of the Entomological Society of America 57: 253-260; Roemhild, G. 1982. The Trichoptera of Montana with distributional and ecology notes. Northwest Science 56: 8-13.
Map Sources: Denning, D. G. 1964. The genus Homophylax (Trichoptera: Limnephilidae). Annals of the Entomological Society of America 57: 253-260.

A Caddisfly

Homophylax auricularis



Class: Insecta
Order: Trichoptera
Family: Limnephilidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1G3
S-rank: SNR

SGCN TIER: 3
Rationale: Idaho endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 500 km² (~200 mi²)
Key Ecological Sections: Blue Mountains
Population Size in Idaho: Not applicable for invertebrates.
Description: This caddisfly is an Idaho endemic that was described from specimens collected near the town of Bear in Adams County in 1951. Most known species in this genus are localized in distribution and rarely collected. Whether the species is extant is not known.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: Details of this species habitat requirements have not been documented however, it has been found in mountain streams and lakes.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown

Description: Species-specific threats have not been identified. In general, caddisfly populations are affected by changes to aquatic habitat, such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

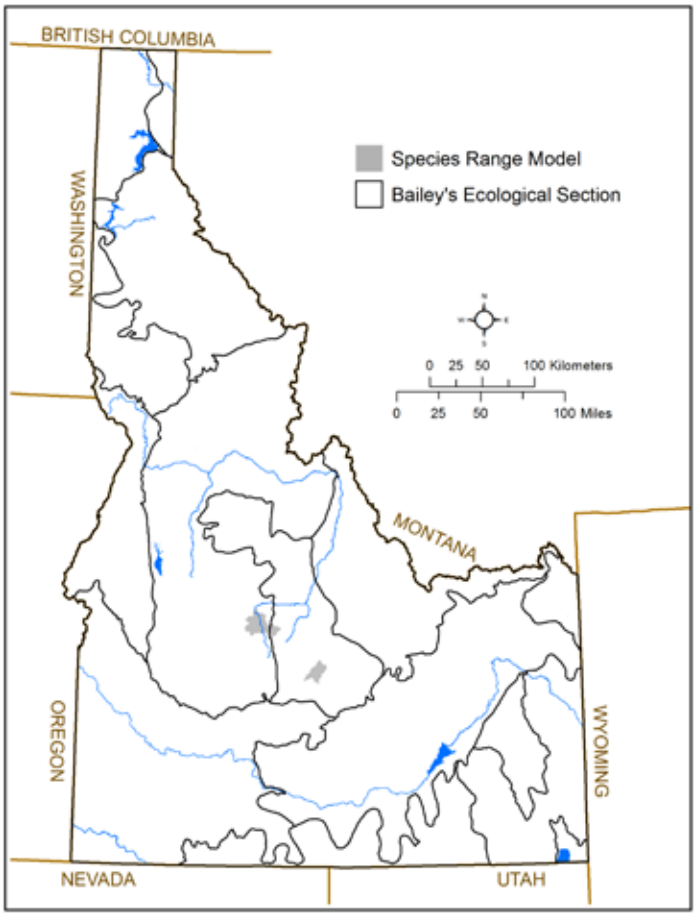
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org; Denning, D. G. 1964. The genus Homophylax (Trichoptera: Limnephilidae). Annals of the Entomological Society of America 57: 253-260; Smith, S. D. 1971. Notes and new species of Limnephilid caddisflies from Idaho (Trichoptera: Limnephilidae). The Pan-Pacific Entomologist 47:184-188.
Map Sources: Denning, D. G. 1964. The genus Homophylax (Trichoptera: Limnephilidae). Annals of the Entomological Society of America 57: 253-260.

A Caddisfly

Limnephilus challisa



Class: Insecta
Order: Trichoptera
Family: Limnephilidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1G2
S-rank: SNR

SGCN TIER: 3
Rationale: Idaho endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 700 km^2 (~300 mi^2)
Key Ecological Sections: Challis Volcanics, Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: This caddisfly is an Idaho endemic, known only from Hyndman Creek (Blaine County, 1952) and the Salmon River near Stanley (Custer County, 1965). Whether the species is extant is not known.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: Details of this species habitat requirements have not been documented.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown
Description: Species-specific threats have not been identified. In general, caddisfly populations are affected by changes to aquatic habitat, such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

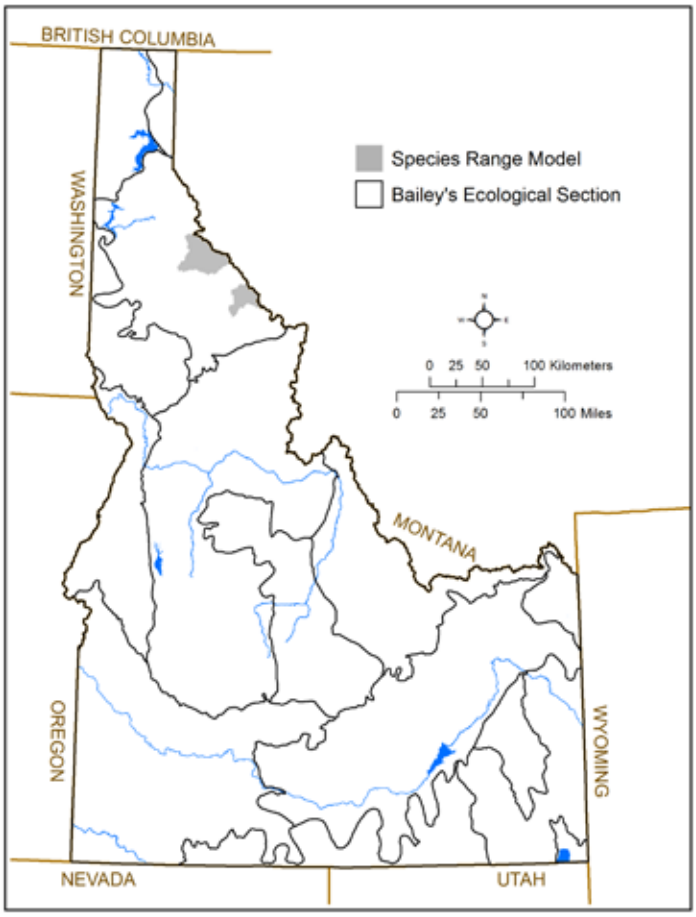
CONSERVATION ACTIONS
Surveys are needed to determine if this species is extant in Idaho.

ADDITIONAL COMMENTS
None.

Information Sources: Ruiter, D. E. 1995. The adult Limnephilus Leach (Trichoptera: Limnephilidae) of the New World. Ohio Biological Survey Bulletin Vol 11, No 1, 206pp; Newell, R. L. and G. W. Minshall. 1979. Aquatic invertebrates of southeastern Idaho II. Trichoptera (Caddisflies). Journal of the Idaho Academy of Science 15:33-51.
Map Sources: Dave Ruiter, unpublished data; Ruiter, D. E. 1995. The adult Limnephilus Leach (Trichoptera: Limnephilidae) of the New World. Ohio Biological Survey Bulletin Vol 11, No 1, 206pp.; Smith, S. D. 1969. Two new species of Idaho Trichoptera with distributional and taxonomic notes on other species. Journal of the Kansas Entomological Society 42:46-53.

A Caddisfly

Philocasca antennata



Class: Insecta
Order: Trichoptera
Family: Limnephilidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1G3
S-rank: S1

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 1,600 km^2 (~600 mi^2)
Key Ecological Sections: Bitterroot Mountains
Population Size in Idaho: Not applicable for invertebrates.
Description: This caddisfly is known to occur in Idaho, Montana, and Washington. In Idaho, it is known from only 1 collection near Wallace. It appears to be rare and is infrequently collected.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: Details of this species habitat requirements have not been documented however, it appears to be more highly habitat specific than other species in the region. Adults have been collected from small, cold, low-gradient, conifer-forested streams with loose gravel in the stream bed. Larvae of this species have not been described. Larvae of other species in the genus have been known to spend part of their life cycle terrestrially, leaving the stream channel during cool, wet seasons and returning to the stream when the forest floor dries out.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown

Intrinsic Vulnerability: Unknown
Description: Specific threats to populations have not been documented, however the primary threat is thought to be the loss and/or degradation of source headwater habitats.

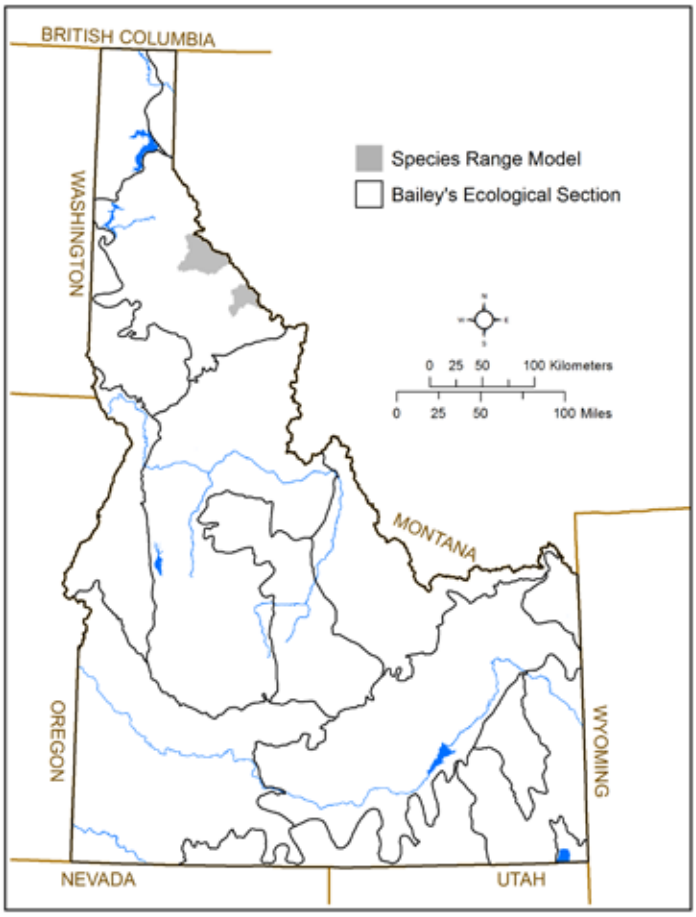
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Stagliano, D. M. and B. A. Maxell. 2010. Aquatic invertebrate species of concern: updated distributions, vital watersheds, and predicted sites within USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, Montana.
Map Sources: Stagliano, D. M. and B. A. Maxell. 2010. Aquatic invertebrate species of concern: updated distributions, vital watersheds, and predicted sites within USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, Montana; Wiggins, G. B. and N. H. Anderson. 1968. Contributions to the systematics of the caddisfly genera Pseudostenophylax and Philocasca with special reference to the immature stages (Trichoptera: Limnephilidae). Canadian Journal of Zoology 46:61-75.

A Caddisfly

Philocasca banksi



Class: Insecta
Order: Trichoptera
Family: Limnephilidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1G3
S-rank: S1

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 1,600 km^2 (~600 mi^2)
Key Ecological Sections: Bitterroot Mountains
Population Size in Idaho: Not applicable for invertebrates.
Description: This caddisfly occurs in Idaho and Montana and is endemic to the Northern Rocky Mountain Refugium. It appears to be rare and is infrequently collected with only a few known localities. The holotype was collected near Wallace in 1941.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: Details of this species habitat requirements have not been documented however, it appears to be more highly habitat specific than other species in the region. Adults have been collected from small, cold, low-gradient, conifer-forested streams with loose gravel in the stream bed. Larvae of this species have not been described. Larvae of other species in the genus have been known to spend part of their life cycle terrestrially, leaving the stream channel during cool, wet seasons and returning to the stream when the forest floor dries out.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS

Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown
Description: Specific threats to populations have not been documented, however the primary threat is thought to be the loss and/or degradation of source headwater habitats.

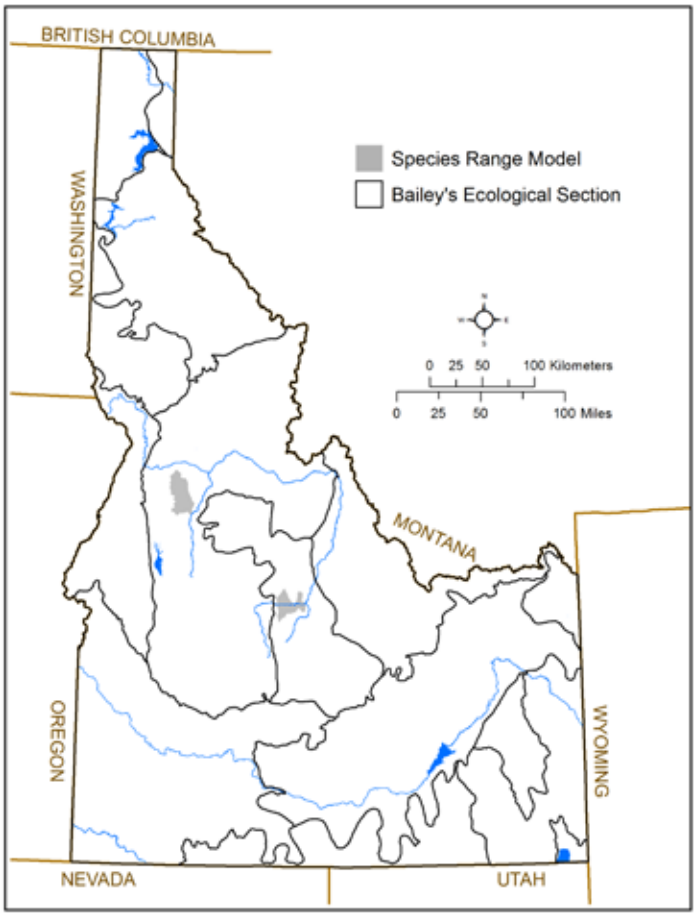
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Stagliano, D. M. and B. A. Maxell. 2010. Aquatic invertebrate species of concern: updated distributions, vital watersheds, and predicted sites within USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, Montana.
Map Sources: Stagliano, D. M. and B. A. Maxell. 2010. Aquatic invertebrate species of concern: updated distributions, vital watersheds, and predicted sites within USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, Montana; Wiggins, G. B. and N. H. Anderson. 1968. Contributions to the systematics of the caddisfly genera Pseudostenophylax and Philocasca with special reference to the immature stages (Trichoptera: Limnephilidae). Canadian Journal of Zoology 46:61-75.

A Caddisfly

Psychoglypha smithi



Class: Insecta
Order: Trichoptera
Family: Limnephilidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1G3
S-rank: S2

SGCN TIER: 3
Rationale: Idaho endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 1,100 km^2 (~400 mi^2)
Key Ecological Sections: Challis Volcanics, Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: This caddisfly is an Idaho endemic, known from only 2 locations in Custer and Idaho counties. It is one of the smallest species in the genus.

HABITAT & ECOLOGY
Environmental Specificity: Moderate: Generalist—some key requirements are scarce.
Description: Details of this species habitat requirements have not been documented however, it has been found in small, fast-flowing, cold streams. Most species in this genus are cold-adapted and are frequently found in the late fall, winter or early spring, often on snow.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable

Description: Species-specific threats have not been identified. In general, caddisfly populations are affected by changes to aquatic habitat, such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

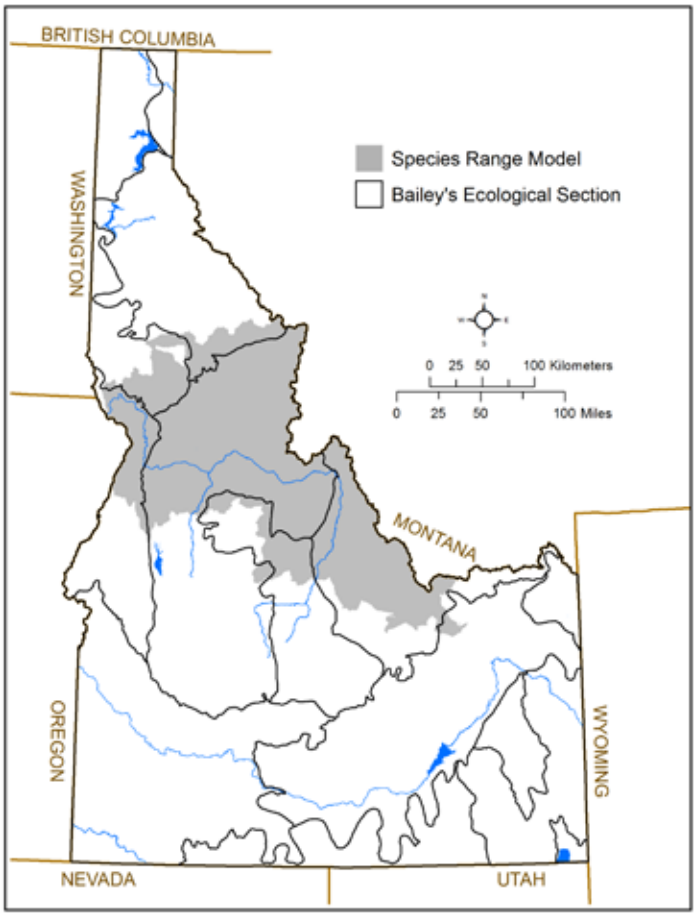
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Dave Ruiter, unpublished data; Denning, D. G. 1970. The genus Psychoglypha (Trichoptera: Limnephildae). The Canadian Entomologist 102:15-30.
Map Sources: Dave Ruiter, unpublished data; Denning, D. G. 1970. The genus Psychoglypha (Trichoptera: Limnephilidae). The Canadian Entomologist 102:15-30

A Caddisfly

Rhyacophila oreia



Class: Insecta
Order: Trichoptera
Family: Rhyacophilidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1G3
S-rank: SNR

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 44,500 km^2 (~17,200 mi^2)
Key Ecological Sections: Beaverhead Mountains, Bitterroot Mountains, Blue Mountains, Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: This caddisfly is known to occur in Montana, Wyoming, and Idaho. In Idaho, it has been recorded in the South Fork area of the Salmon River drainage in Valley County, near Gibbonsville in Lemhi County and at Lolo Pass in Idaho County. All collections are from before 1970. It is a small, uncommon species.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: Details of this species habitat requirements have not been documented. However, it tends to be found in small, fast-flowing, cold streams typically in forested habitats. Most species in this genus are predators feeding on aquatic insects, especially midges and blackflies.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown

Intrinsic Vulnerability: Unknown
Description: Species-specific threats have not been identified. In general, caddisfly populations are affected by changes to aquatic habitat, such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

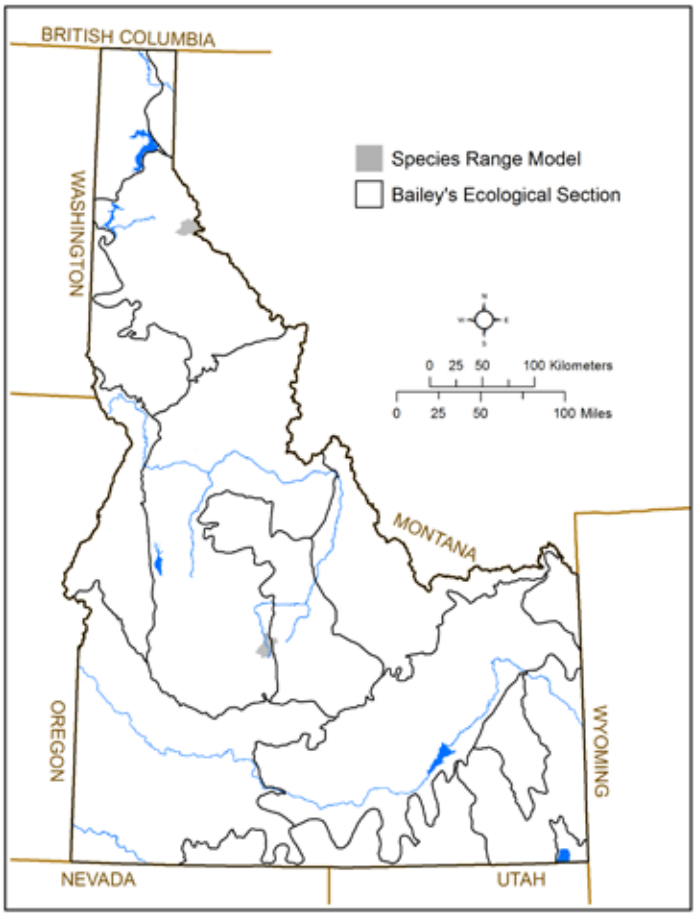
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Wold, J. L. 1974. Systematics of the Genus Rhyacophila (Trichoptera: Rhyacophilidae) in Western North America with special reference to the immature stages. Thesis, Oregon State University, Corvallis, OR; Smith, S. D. 1968. The Rhyacophila of the Salmon River drainage of Idaho with special reference to larvae. Annals of the Entomological Society of America 61:655-674.
Map Sources: Wold, J. L. 1974. Systematics of the Genus Rhyacophila (Trichoptera: Rhyacophilidae) in Western North America with special reference to the immature stages. Thesis, Oregon State University, Corvallis, OR

A Caddisfly

Rhyacophila robusta



Class: Insecta
Order: Trichoptera
Family: Rhyacophilidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G2G3
S-rank: SNR

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 500 km² (~200 mi²)
Key Ecological Sections: Bitterroot Mountains, Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: This caddisfly is known from Montana, Idaho, British Columbia, and Alberta. In Idaho, it was documented in Shoshone and Blaine counties in 1996.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: Details of this species habitat requirements have not been documented. However, it tends to be found in small, fast-flowing, cold streams typically in forested habitats. Most species in this genus are predators feeding on aquatic insects, especially midges and blackflies.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown

Description: Species-specific threats have not been identified. In general, caddisfly populations are affected by changes to aquatic habitat, such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

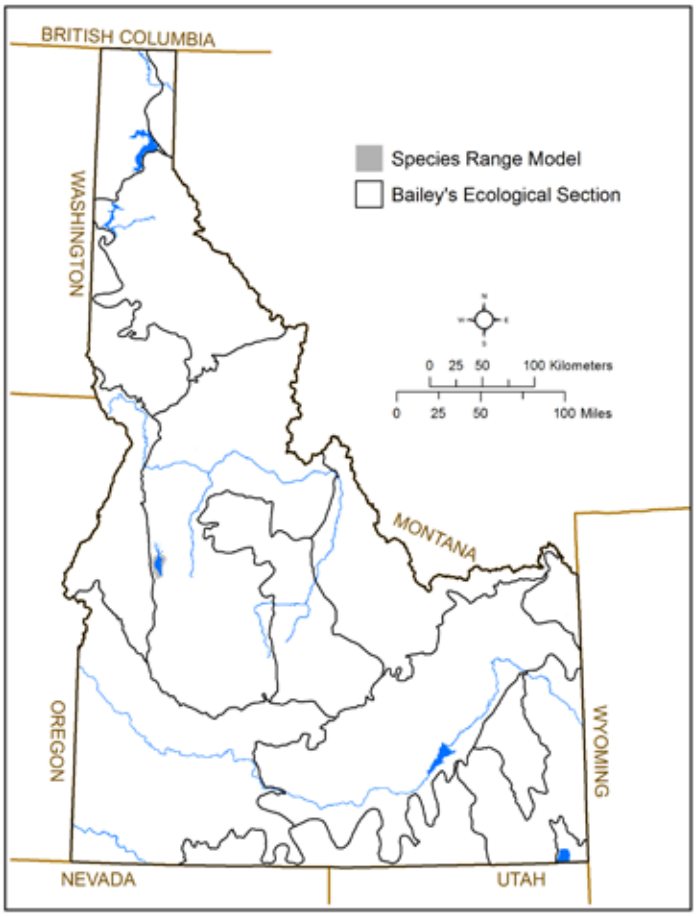
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org; Roemhild, G. 1982. The Trichoptera of Montana with distributional and ecology notes. Northwest Science 56: 8-13.
Map Sources: IDEQ export Feb 13, 2015

A Caddisfly

Rhyacophila velora



Class: Insecta
Order: Trichoptera
Family: Rhyacophilidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1G2
S-rank: SNR

SGCN TIER: 3
Rationale: Data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 200 km^2 (~100 mi^2)
Key Ecological Sections: Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: This caddisfly was previously known from only a few sites in California and Oregon, but has been collected by the Idaho Department of Environmental Quality at Campbell Creek, Valley County, in 1995.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: Details of this species habitat requirements have not been documented. However, it tends to be found in small, fast-flowing, cold streams typically in forested habitats. Most species in this genus are predators feeding on aquatic insects, especially midges and blackflies.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown

Description: Species-specific threats have not been identified. In general, caddisfly populations are affected by changes to aquatic habitat, such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

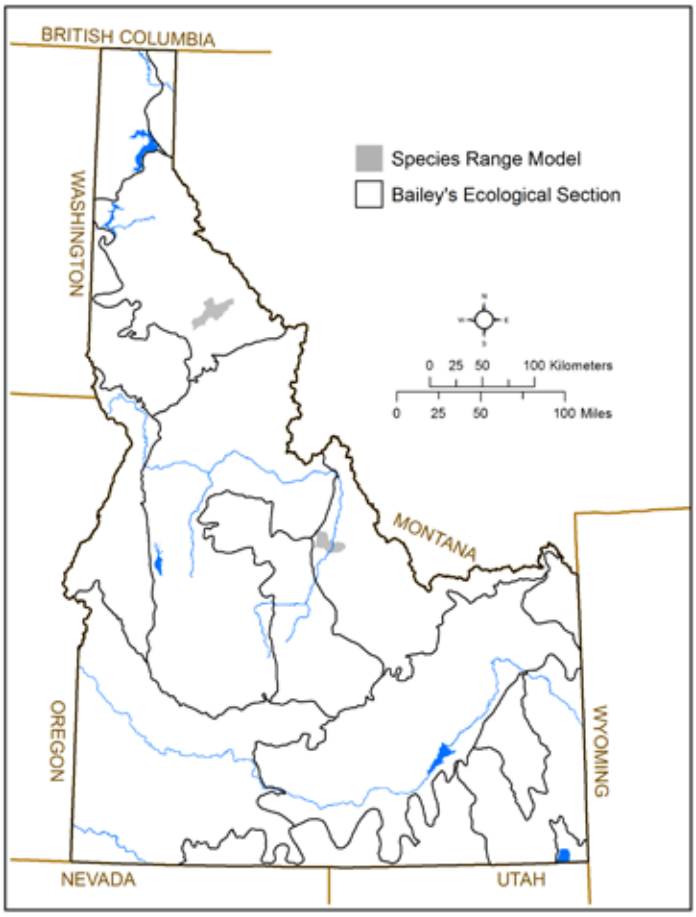
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: NatureServe. 2015. NatureServe Explorer: An online encyclopedia of life. Version 7.1. NatureServe, Arlington, Virgina. Available http://explorer.natureserve.org; Wold, J. L. 1974. Systematics of the Genus Rhyacophila (Trichoptera: Rhyacophilidae) in Western North America with special reference to the immature stages. Thesis, Oregon State University, Corvallis, OR
Map Sources: IDEQ export Feb 13, 2015

A Caddisfly

Goereilla baumanni



Class: Insecta
Order: Trichoptera
Family: Rossianidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G2
S-rank: S1

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 800 km² (~300 mi²)
Key Ecological Sections: Beaverhead Mountains, Bitterroot Mountains
Population Size in Idaho: Not applicable for invertebrates.
Description: This caddisfly is endemic to the Northern Rocky Mountain Refugium in north-central Idaho and western Montana. In 2007, it was known from only 6 occurrences, 5 in Montana and 1 in Idaho (Clearwater County). When found, it is always reported in very low abundance.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: Little is known of this species' biology and ecology, however it has been found in headwater springs and seeps.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable
Description: Specific threats to populations have not been documented, however the primary threat is thought to be the loss and/or degradation of source headwater habitats.

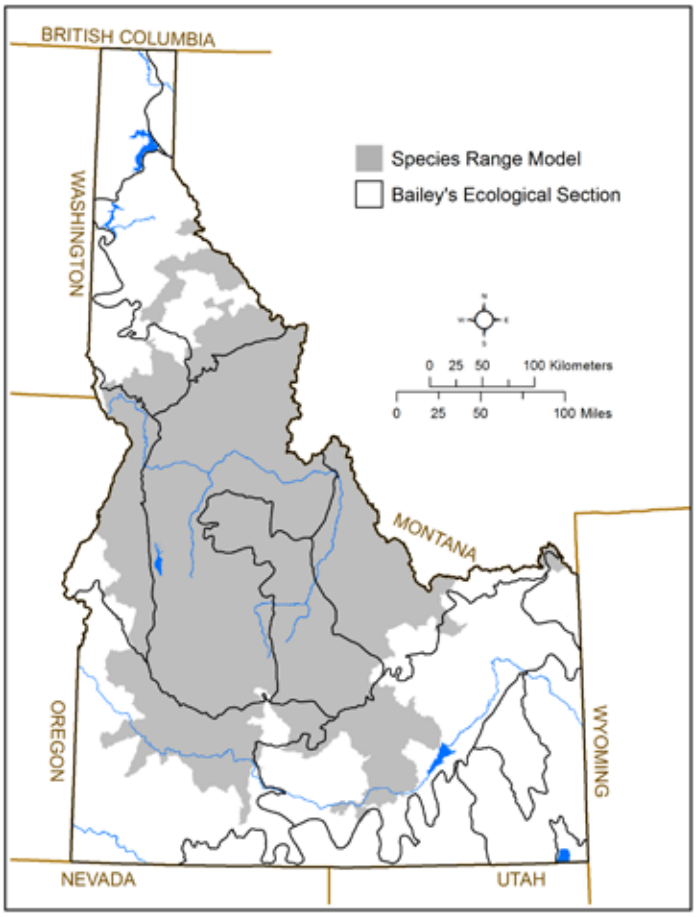
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Stagliano, D. M. and B. A. Maxell. 2010. Aquatic invertebrate species of concern: updated distributions, vital watersheds, and predicted sites within USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, Montana.
Map Sources: Robert Wisseman and Dave Ruiter, unpublished data; Northern Rocky Mountain Refugium Caddisfly - Goereilla baumanni. Montana Field Guide. Montana natural Heritage Program <http://FieldGuide.mt.gov/> [Accessed Jan 12, 2015]; Stagliano, D. M., G. M. Stephens, W. R. Bosworth. 2007. Aquatic Invertebrate Species of Concern on USFS Northern Region Lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, MT and Idaho Conservation Data Center, Boise, ID.

A Caddisfly

Sericostriata surdickae



Class: Insecta
Order: Trichoptera
Family: Uenoidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G3
S-rank: S3

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 121,600 km^2 (~47,000 mi^2)
Key Ecological Sections: Beaverhead Mountains, Bitterroot Mountains, Blue Mountains, Challis Volcanics
Population Size in Idaho: Not applicable for invertebrates.
Description: This caddisfly is endemic to northern and central Idaho and western Montana, but is patchily distributed across this area. It has been documented in several Idaho counties. Recent sampling efforts have found new locations in Montana and modeling suggests a high likelihood of finding occurrences in previously undocumented sites.

HABITAT & ECOLOGY
Environmental Specificity: Narrow: Specialist—key requirements are common.
Description: This species is found in cold, fast-flowing streams, typically in mid-elevation and subalpine forested habitats. The larvae occur on the upper surfaces of rocks, especially in the splash zones, and are often found in aggregates. They are very distinctive and diagnostic making them hard to miss or misidentify. Adults emerge mid-July to mid-August. The species is thought to require at least 2 years to complete its life cycle.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Moderately vulnerable
Description: Specific threats to populations have not been documented, however the primary threat is thought to be the loss and/or degradation of source headwater habitats.

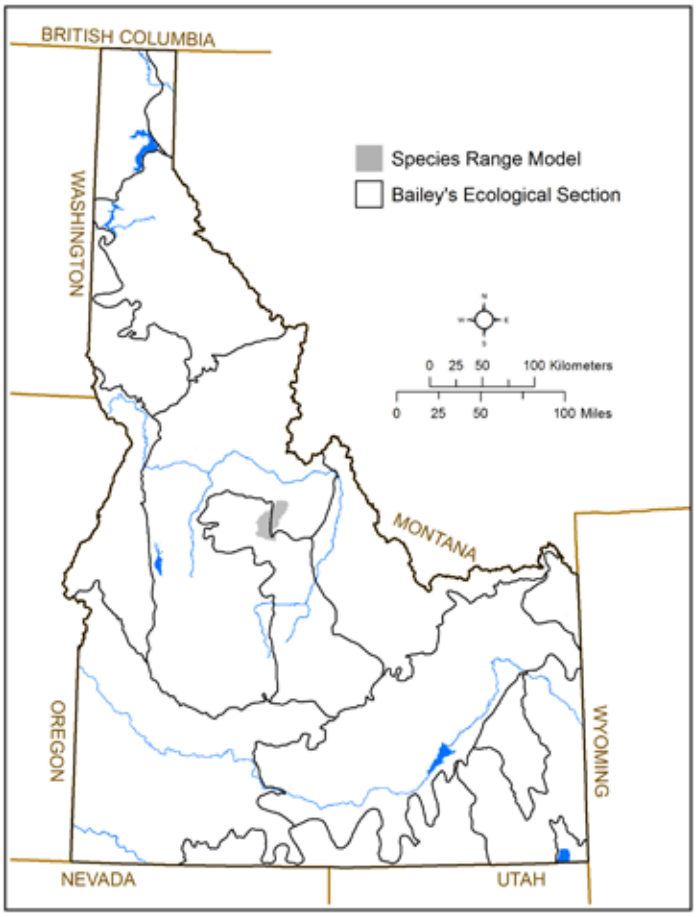
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Stagliano, D. M. and B. A. Maxell. 2010. Aquatic invertebrate species of concern: updated distributions, vital watersheds, and predicted sites within USFS Northern Region lands. Report to USDA Forest Service, Northern Region. Montana Natural Heritage Program, Helena, Montana; Mazzacano, C. 2008. Sericostriata surdickae (Wiggins, Weaver and Unzicker 1995) A northern Rocky Mountain Refugium caddisfly Trichoptera: Uenoidae. Xerces Society Species profile online <www.xerces.org/wp-content/uploads/2008/09/sericostriata_surdickae.pdf> [Accessed Jan 12, 2015]; Wiggins, G. B., J. S. Weaver III, J. D. Unzicker. 1985. Revision of the caddisfly family Uenoidae (Trichoptera). The Canadian Entomologist 117:763-800.
Map Sources: Robert Wisseman and Dave Ruiter, unpublished data; IDEQ export Feb 13, 2015; Mazzacano, C. 2008. Sericostriata surdickae (Wiggins, Weaver and Unzicker 1995) A northern Rocky Mountain Refugium caddisfly Trichoptera: Uenoidae. Xerces Society Species profile online <www.xerces.org/wp-content/uploads/2008/09/sericostriata_surdickae.pdf> [Accessed Jan 12, 2015]

Idaho Amphipod

Stygobromus idahoensis



Class: Malacostraca
Order: Amphipoda
Family: Crangonyctidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1G2
S-rank: S1

SGCN TIER: 3
Rationale: Idaho endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 600 km² (~200 mi²)
Key Ecological Sections: Idaho Batholith
Population Size in Idaho: Not applicable for invertebrates.
Description: The Idaho Amphipod is an Idaho endemic, known only from the mouth of a tributary to the Middle Fork Salmon River, Lemhi County. It was last collected in 1986 and whether the species is extant is not known.

HABITAT & ECOLOGY
Environmental Specificity: Very narrow: Specialist—key requirements are scarce.
Description: Little is known of this species' biology and ecology, however it has been found in shallow water habitat.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented for this species.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Highly vulnerable

Description: Species-specific threats have not been identified but likely include any changes to its aquatic habitat, such as alteration of flow patterns, streambed substrate, thermal characteristics, and water quality.

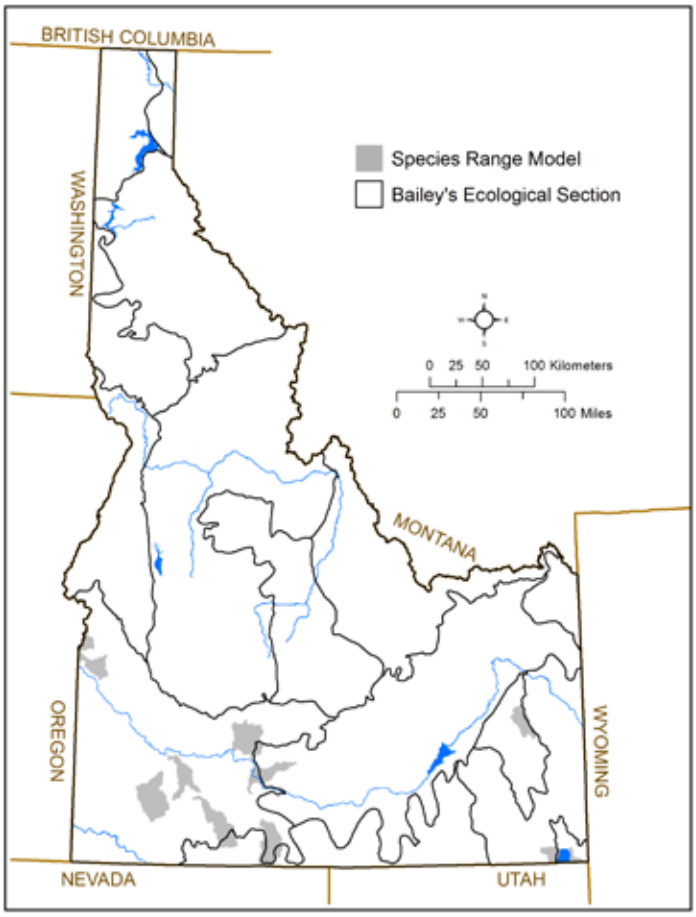
CONSERVATION ACTIONS
We have an inadequate understanding of the current population status for this species. Conservation actions should therefore focus on improving our knowledge of distribution and abundance, and clarifying the nature and extent of threats where appropriate. Additional detail may be provided pending the completion of ecological section plans.

ADDITIONAL COMMENTS
None.

Information Sources: Wang, D. & Holsinger, J. R. 2001. Systematics of the subterranean amphipod genus Stygobromus (Crangonyctidae) in Western North America, with emphasis on species of the hubbsi group. Amphipacifica. 3 (2): 39-147. Holsinger, personal communications with RCW March 2015.
Map Sources: IFWIS. July 2014 export

Snake River Pilose Crayfish

Pacifastacus connectens



Class: Malacostraca
Order: Decapoda
Family: Astacidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Game Fish
G-rank: G3G4
S-rank: SNR

SGCN TIER: 3
Rationale: Regional endemic, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho: 5,400 km^2 (~2,100 mi^2)
Key Ecological Sections: Northwestern Basin and Range, Owyhee Uplands, Snake River Basalts
Population Size in Idaho: Not applicable for invertebrates.
Description: Historically, the range of the Snake River Pilose Crayfish extended from southeastern Oregon, across the Snake River plain of southern Idaho and into northern Nevada. Little is known of its contemporary distribution or conservation status.

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: This species is found in lotic habitats and is sensitive to water quality, however, little else is known of the ecology and life history of the species.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown

Description: Threats to the population are not specifically identified but could include land use change and/or habitat loss or degradation affecting water quality. The introduction of invasive crayfish species in southern Idaho have also likely affected the species.

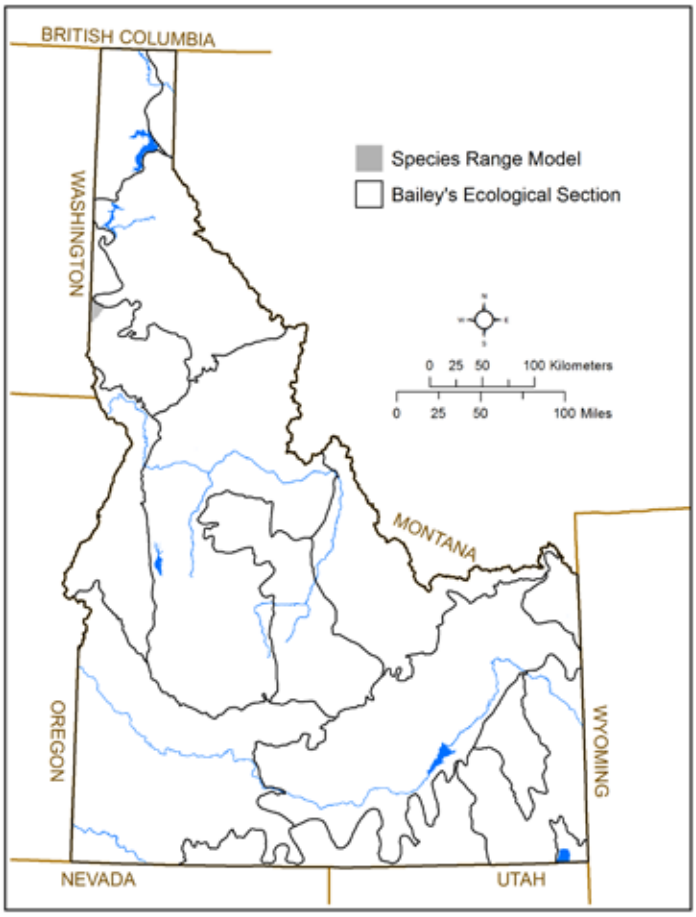
CONSERVATION ACTIONS
Recent studies indicate that the Snake River Pilose Crayfish and Pilose Crayfish (P. gambelii) might be the same species. Additional genetic research is needed to determine the taxonomic uniqueness of this species.

ADDITIONAL COMMENTS
None.

Information Sources: Larson, E. R. and J. D. Olden. 2011. The state of crayfish in the Pacific Northwest. Fisheries 36:60-73.
Map Sources: IDEQ export Feb 13, 2015; Larson, E. R. and J. D. Olden. 2011. The state of crayfish in the Pacific Northwest. Fisheries 36:60-73.

Giant Palouse Earthworm

Driloleirus americanus



Class: Oligochaeta
Order: Haplotaxida
Family: Megascolecidae

CONSERVATION STATUS & CLASSIFICATION
ESA: No status
USFS:
Region1: No status
Region 4: No status
BLM: No status
IDAPA: Unprotected Wildlife
G-rank: G1
S-rank: SNR

SGCN TIER: 2
Rationale: Regional endemic, IUCN Red List, data deficient

DISTRIBUTION & ABUNDANCE
Range Extent in Idaho:
Key Ecological Sections: Palouse Prairie
Population Size in Idaho: Not applicable for invertebrates.
Description: The Giant Palouse Earthworm, once thought to be endemic to the Palouse grasslands in Washington and northern Idaho, has recently been documented to occur across a broader area of Washington (Whitman, Kittitas, and Chelan counties), but in Idaho, is still only known from Latah County. Althougth reported as "very abundant" in 1897, very few records of the species existed until the last 10 years. Recent Idaho records include specimens from Moscow Mountain (1988), Paradise Ridge (2008, 2010, 2012), and East of Moscow (2010).

HABITAT & ECOLOGY
Environmental Specificity: Unknown
Description: Habitat requirements for this species are not well understood. Generally it is associated with Palouse Prairie vegetation, but it has also been found in relatively open canopy forested systems. It is thought to be capable of burrowing up to 15 ft deep, making it difficult to detect in surveys.

POPULATION TREND
Short-term Trend: Unknown
Long-term Trend: Unknown
Description: Population trends have not been documented.

THREATS
Overall Threat Impact: Unknown
Intrinsic Vulnerability: Unknown
Description: Threats are thought to include land-use change, habitat fragmentation, and competition with nonnative earthworms.

CONSERVATION ACTIONS
Conservation issues and management actions are described in the Palouse Prairie Ecological Section plan. In short, recommended strategies for the Giant Palouse Earthworm include preservation of native grassland remnants, minimizing conversion of grazing pastures to crop fields, early detection and response to invasive plants, using integrated pest management strategies, and minimizing impacts of rural development.

ADDITIONAL COMMENTS
The species was proposed for listing under the ESA in 2006 and 2009, but deemed not warranted by USFWS in 2011 due to recent collections over a broader geographical and ecological range and the lack of data about known direct threats.

Information Sources: Xu, S., J. L. Johnson-Maynard, T. S. Prather. 2013. Earthworm density and biomass in relation to plant diversity and soil properties in a Plaouse Prairie remnant. Applied Soil Ecology 72:119-127.; Johnson-Maynard, J. 2012. Giant Palouse Earthworm Survey Protocol Final Performance Report; Sanchez-de Leon, Y. and J. Johnson-Maynard. 2009. Dominance of an invasive earthworm in native and non-native grassland ecosystems. Biological Invasions 11:1393-1401.
Map Sources: Xu, S., J. L. Johnson-Maynard, T. S. Prather. 2013. Earthworm density and biomass in relation to plant diversity and soil properties in a Plaouse Prairie remnant. Applied Soil Ecology 72:119-127.; Johnson-Maynard, J. 2012. Giant Palouse Earthworm Survey Protocol Final Performance Report; Sanchez-de Leon, Y. and J. Johnson-Maynard. 2009. Dominance of an invasive earthworm in native and non-native grassland ecosystems. Biological Invasions 11:1393-1401.