

Final Report for Interagency Special Status Sensitive Species Program
 FY2014 Inventory & Conservation Planning

Voucher and Verify Two Priority Sensitive Plants
 and One New Moss on the Colville National Forest

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BACKGROUND

Water avens (*Geum rivale*), strict blue-eyed grass (*Sisyrinchium montanum*), and broad-nerved hump-moss (*Meesia uliginosa*) are on the Region 6 Regional Forester Special Status Species List (USDA 2011) and documented from the Colville National Forest (USDA 2015). Several of the sites revisited are in Terrestrial Restoration and Conservation Strategy Priority Watershed, TRACS-65 Sullivan Creek-Pend Oreille River (USDA FS 2012). In addition, the taxa are Priority Sensitive Species identified for the Colville National Forest. The water avens and strict blue-eyed grass occur in wetland habitats, where there is a Forest-identified need to “Determine the effects of grazing and invasive species.” Sites were revisited to assess threats and population status, and to collect vouchers. The majority of the sites are threatened by grazing and trampling. Regarding Priority Sensitive Species, information gaps exist for bryophytes with a Forest-identified need for surveys to determine distribution, habitat and abundance of taxa.

The global and Washington State status of the three taxa are displayed on Table 1 (WNHP 2013). This project occurred across the Colville National Forest.

Table 1. Sensitive Taxa Documented from the Colville National Forest.

Species	Global Rank ¹	State Rank ²	Washington State Status ³
Water avens (<i>Geum rivale</i>)	G5	S2S3	State Sensitive
Strict blue-eyed grass (<i>Sisyrinchium montanum</i>)	G5	S1	State Threatened
Broad-nerved hump-moss (<i>Meesia uliginosa</i>)	G4	S1	N/A (Washington State has no status for mosses)

¹G4 = Not rare and apparently secure.

¹G5 = Demonstrably widespread, abundant and secure.

²S1 = Critically imperiled (5 or fewer occurrences).

²S2 = Imperiled (6 to 20 occurrences), very vulnerable to extirpation.

²S3 = Rare or uncommon in the state (21 to 100 occurrences).

³Sensitive = Vulnerable or declining and could become Endangered or Threatened in the state.

³Threatened = Likely to become Endangered in Washington.

METHODS AND RESULTS

In 2014 we revisited and documented the status of eight sightings of water avens, *Geum rivale*, on the Colville National Forest last visited between 1980 and 2006. Appendix 1 includes revisit dates, threats gleaned from sighting forms, comments from the 2014 revisits and existing vouchers by site. *Geum rivale* occurs in wet meadows with seven of the eight element occurrences (EO) in range allotments.

The site of the broad-nerved hump-moss, *Meesia uliginosa*, is in a TRACS Priority Watershed. Dr. Judy Harpel collected this moss at Lime Creek Swamp about 0.62 miles southeast of Lake Crescent and Highway 31 off Forest Road 326 at 3032 feet in elevation, on a rotten log at the base of a pine tree, in part shade to full sun in the fen on October 25, 2010. The site was revisited July 10, 2014, but the moss was not relocated.

The strict blue-eyed grass, *Sisyrinchium montanum*, was added as a sensitive plant for the Colville National Forest with the update of the Region 6 Regional Forester Special Status Species List in December 2011 (R6 List). It is a wet meadow Priority Sensitive Species (USDA FS 2013) for the Forest with the one known location in a campground and cattle allotment (Appendix 2). A voucher for the 1981 sighting has not been found, and there is no documentation of the site being visited and plants seen since 1980. The location was revisited June 26, 2014, but no plants were seen. The Panhandle Campground is heavily used by recreationists and mowed every year. We will coordinate with Newport Ranger Station, regarding the mowing of this campground, and revisit the site.

With the addition of *Sisyrinchium montanum* on the R6 List, we questioned the identifications of 11 unvouched sites of *Sisyrinchium septentrionale* and revisited all, but one of them in 2014 (Appendix 2). *Sisyrinchium septentrionale* was considered sensitive in Region 6 prior to the 2011 update of the R6 List. It is easily confused with *S. idahoense*. One of the EOs for *S. septentrionale* is in a TRACS Priority Watershed (USDA FS 2012) and all are in range allotments (Appendix 2). Vouchers have been gathered for eight of the EOs on the Colville National Forest. We plan to revisit the two EOs that have not been vouchered. One location was determined to be on private land and was not vouchered.

All surveys and sightings for this project are documented in the Natural Resources Management database (USDA FS 2015). Appendix 3 displays known vouchers from the Colville National Forest and other northeastern Washington locations. In 2015 vouchers for the *Sisyrinchium* EO's on Appendix 3 were sent to Dr. David Giblin at the University of Washington Herbarium where they have been mounted, imaged, and added to the collections. They will be examined and identifications verified as part of the update to the Flora of the Pacific Northwest *Sisyrinchium* treatment.

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Appendix 1. Status of *Geum rivale* sites.

EO# (CNF#)	(Population Count) Date of Sighting	TRS, Allotment/ *TRACS-65	NRM Site #, Site Name & Subpopulation #	Threats	2014 Revisit Comments	Vouchers
Three Rivers District						
007	(47) 16 June 2014, (12) 9 July 1998	T41 R37 S1, 2; Meadow Creek *	062101EO007GERI2_4, Big Meadow Lake /Byers Meadow #4	Grazing, trampling	Plants mainly on higher areas around trees or bunchgrass, on south side of road, lots of standing water.	
	(145) 16 June 2014, (21) 15 June 2004	T41 R37 S2	062101EO007GERI2_5, Big Meadow Lake /Byers Meadow #5		Plants mainly on high areas around alder roots, lots of standing water.	
009	(857) 16 June 2014, (?) 18 June 1980	T38 R41 S12, Smackout *	062101EO009GERI2_1, Smackout Meadow #1	Grazing, trampling	Mostly along SW 1/3 of meadow, towards fence, stretching 1/8 mile. Many plants scattered from creek to SW fence.	
	(375) 16 June 2014, (268) 2 July 1992	T38 R41 S11	062101EO009GERI2_2, Smackout Meadow #2		About 1/5 mile from subpop #1 on south side of fenced area, scattered in two patches slightly higher than standing water in meadow	
011	(1250) 23 June 2014, (1213) 15 June 2004, (100+) 20 May 2004, (100) 12 June 1996, (100s) 9 Aug 1994, (?) 6 July 1993	T36 R41 S19, South Fork Mill	062101EO011GERI2, Hanson Springs	Grazing, trampling	Concentrated around creek, west road inside enclosure.	Kefauver s.n.

EO# (CNF#)	(Population Count) Date of Sighting	TRS, Allotment/ *TRACS-65	NRM Site #, Site Name & Subpopulation #	Threats	2014 Revisit Comments	Vouchers
012	(7500+) 9 June 2014, (598) 18 June 2012, (1500) 19 May 2004, (?) 1 June 1994	T36 R 41 S20, South Fork Mill	062101EO012GERI2_1, Bestrom Creek /Guard Station Meadow #1	Grazing, trampling, OHV	Plants throughout enclosure around stream.	Cabral 060914AC001, Cabral 060914AC002, Cabral 060914AC003
	(0) 9 June 2014, (?) 1 June 1994		062101EO012GERI2_2, Bestrom Creek /Guard Station Meadow #2		No plants in area indicated on the map. General area had signs of heavy browsing by wildlife (shrubs browsed to 6 ft. high). Area very shrubby, not a lot of open grassy/sedge areas. Relatively moist. General area also showed signs of impact by livestock, trampling, post-holing from previous season.	
013	(159) 30 June 2014, (40) 30 June 2003, (1638) 14 June 1999, (250) 19 June 1995	T37 R41 S24, Aladdin	062101EO013GERI2, North Fork Mill Creek Road	Grazing, trampling	Scattered in alders and meadow.	Larson #38 (2 sheets), Larson #320 (2 sheets)
014	(30)11 June 2014, (0) 3 June 2003, (100+) 12 June 2002, (100) 20 June 1996	T36 R41 S9,16; South Fork Mill	062101EO014GERI2, Bestrom Meadow	Grazing, trampling	Plants scattered in ditch along road. Cattle graze it annually. No signs of cattle or grazing at this time. Adjacent meadow frequently sprayed (every 3-4 years) with	

EO# (CNF#)	(Population Count) Date of Sighting	TRS, Allotment/ *TRACS-65	NRM Site #, Site Name & Subpopulation #	Threats	2014 Revisit Comments	Vouchers
					herbicide to control meadow hawkweed. Herbicide has 3-year residual effect. Drift and leaching may be a problem.	
Republic District						
008	(19) 18 June 2014, (207) 12 July 2006, (?) 8 July 1994, (?) 9 June 1992	T38 R32 S2, Tonata	062104EO008GERI2_1, Goodrich Creek/ Meadow #1	Meadow fenced	Plants doing well in enclosure.	
	(23) 18 June 2014, (203) 24 July 2004, (?) 8 July 1994, (?) 9 June 1992	T38 R32 S2	062104EO008GERI2_2, Goodrich Creek/ Meadow #2	Meadow fenced	Scattered in two areas.	
	(11) 18 June 2014, (?) 8 July 1994, (?) 9 June 1992	T39 R32 S34	062104EO008GERI2_3, Goodrich Creek/ Meadow #3	Grazing, trampling	A few plants have signs of wildlife grazing.	
	(10+) 18 June 2014, (?) 9 June 1992	T39 R32 S34	062104EO008GERI2_4, Goodrich Creek/ Meadow #4	Meadow fenced		
Newport-Sullivan Lake District						
017	(156) 10 July 2014, (3) 28 July 2008, (100) 9 July 1997	T40 R44 S7, None *	062105EO017GERI2, Lime Creek Swamp		Plants doing well on north west side of swamp area.	Ahlenslager #312

Appendix 2. Status of *Sisyrinchium* Sites.

EO# (CNF#)	(Population Count) Date of Sighting	TRS, Allotment/ *TRACS-65	NRM Site #, Site Name & Subpopulation #	Threats	2014 Revisit Comments	Voucher Status
S. montanum						
(001)	(0) 26 June 2014, 5 June 1981	T35 R44 S29, Ruby	Panhandle Campground	Camping, mowing	Area heavily used and mowed every season for campers.	Coordinate with the Ranger District regarding mowing, revisit in 2015 and collect vouchers.
S. septentrionale/S. idahoense						
Three Rivers District						
016	(131) 11 June 2014, (71) 21 June 2005, (200) 20 June 1996, (200) 15 June 1995	T36 R41 S16, South Fork Mill	062101EO016SISE4_1, Bestrom Meadow #1	Grazing, trampling	Site damaged by ORVs. Grazing, invasive weed spraying.	Ahlenslager 633, Cabral 061114AC008, Swartz 125
	(108) 11 June 2014, (200) 15 June 1995	T36 R41 S9,	062101EO016SISE4_2, Bestrom Meadow #2			Cabral 061114AC009, Swartz 126
	(23) 11 June 2014, (?) 9 June 2008, (1000+) 29 June 2004, (1000+) 12 June 2002, (835) 30 June 1997	T36 R41 S16	062101EO016SISE4_3, Bestrom Meadow #3	OHV damage to subpop. Grazing, trampling		Ahlenslager 294, Ahlenslager 300, Ahlenslager 774, Ahlenslager 775, Cabral 061114AC010, Larson 217
	(105) 11 June 2014	T36 R41 S16	062101EO016SISE4_4, Bestrom Meadows #4	Grazing, trampling		
015	(63) 23 June 2014, (500+) 14 Sep 2009, (500) 19 June 2006, (57) 11 Aug 2003, (8) 30 May 1995	T33 R41 S14, Chewelah	062101EO015SISE4_1, Dahlstrom Meadow #1	Grazing, trampling	Site is north of newer fence, 200 ft. south of large aspen grove. Plants setting seed.	Revisit in 2015 and collect vouchers.
	(302) 23 June 2014, (500+) 14 Sep 2009,	T33 R41 S14	062101EO015SISE4_2, Dahlstrom Meadow #2			

EO# (CNF#)	(Population Count) Date of Sighting	TRS, Allotment/ *TRACS-65	NRM Site #, Site Name & Subpopulation #	Threats	2014 Revisit Comments	Voucher Status
	(500) 19 June 2006 (59) 11Aug 2003				power lines. Large concentration on west side of meadow directly under power lines. Northern concentration spreading along fence east to west.	
036	(113) 2 July 2014, (?) 12 June 2008, (40) 12 June 2006	T33 R40 S2, Cliff Ridge	062101EO036SISE4, Leslie Creek Meadow	Grazing, trampling, OHV	Heavily ORV use and aggressively grazed. Lots of trash and campers fire pits.	Cabral 061206AC001, Cabral 070214AC017
028	(6) 23 June 2014, (139) 10 July 2008, (1235) 16 June 1999, (100) 23 June 1998	T37 R41 S19, Aladdin/ *	062101EO028SISE4, Rabbit Creek Meadow	Grazing, trampling	Hawkweed and ox-eye daisy.	Cabral 062314AC013; Larson 304, Larson 305, Swartz 499
029	(5) 23 June 2014, (31) 15 June 1999	T37 R40 S24, Aladdin	062101EO029SISE4_1, North Fork Mill/ Albie Road #1	Grazing, trampling	Site is grassy, 500 ft. from junction of road, hawkweed and St. John's-wort.	
	(39) 23 June 2014, (88) 16 June 1999	T37 R40 S24	062101EO029SISE4_2, North Fork Mill/ Albie Road #2		Hawkweed and St. John's-wort.	Cabral 062314AC014
No EO #	17 June 1998, 21June 1995	T37 R41 S1 Aladdin	Byer's Meadow & Meadow Creek Road	Grazing, trampling		Swartz, 498, 2 Swartz s.n.

EO# (CNF#)	(Population Count) Date of Sighting	TRS, Allotment/ *TRACS-65	NRM Site #, Site Name & Subpopulation #	Threats	2014 Revisit Comments	Voucher Status
014	(11+) 30 June 2014, (187) 4 June 2007, (225) 16 June 1995	T38 R36 S13, Renner Lake	062102EO014SISE4, Limestone Quarry Creek- Downstream	Grazing, trampling, OHV	Hydrologic changes, erosion	Ahlenslager193, Cabral 060407AC001, Cabral 063014AC016, Larson 150
Newport District						
033	(1500+) 26 June 2014, (1521+) 16 June 2003, (200+) 6 Aug 2002	T35 R43 S14, 23; Ruby Creek	062103EO033SISE4, Squirrel Meadow	Grazing, trampling	Plants found close to private fence. No browsing signs. Plants fruiting. Very moist meadow.	Cabral 062614AC016
Republic District						
023	(400+) 18 June 2014, (300+) 21 June 2006, (5000+) 1&2July 2002, (1000) 9 July 1996	T38 R32 S32, Trout Creek	602104EO023SISE4_1, West Fork Trout /Bowe Ranch #1	Grazing, trampling		Cabral 061814AC015, Jensen s.n.
	(100+) 18 June 20014, (?) 2 July 2002, (?) 9 July 1996	T38 R32 S32	602104EO023SISE4_2, West Fork Trout /Bowe Ranch #2			
	(150+) 18 June 2014, (?) 2 July 2002, (?) 9 July 1996	T38 R32 S32	602104EO023SISE4_3, West Fork Trout Creek/Bowe Ranch #3			
022	(40) 19 June 2014, (1000) 2 July 1996	T36 R32 S20, Swan Lake	062104EO022SISE4_1, Trout Nick Meadow #1	Grazing, trampling, mowing of county road	Private, not on FS, near FS fence, flowers not open, small patch roughly 100 x 100 ft.	
	(250+) 19 June 2014,	T36 R32 S20	062104EO022SISE4_2,			

EO# (CNF#)	(Population Count) Date of Sighting	TRS, Allotment/ *TRACS-65	NRM Site #, Site Name & Subpopulation #	Threats	2014 Revisit Comments	Voucher Status
	(1000) 2 July 1996		Trout Nick Meadow #2		of stream, subpop. #2 drops off after marsh, remains spotty until reaching subpop. # 1, flowers not open.	
(017)	(0) 19 June 2014, (50+) 29 June 2005	T36 R34 S20, Quartz Mountain	062104FO017SISE4_1, California Mine #1	Grazing, trampling	Area seemed much drier, searched beyond mapped extent.	Revisit in 2015 and collect vouchers.
		T36 R34 S20	062104FO017SISE4_2, California Mine #2		Plants not in flower.	

Appendix 3. *Sisyrinchium* Collections.

* = Voucher at UW Herbarium, LPO = Little Pend Oreille National Wildlife Refuge

EO#_Subpopulation #	Collector #	Date	Location	TRS	District, County, or LPO
Annotated as <i>S. idahoense</i> by Doug Henderson 1992.					
	Unknown	5.28.1992	Homestead Homeland Meadow	35 43 34	Newport
016_2	Swartz 126*	6.15.1995	Bestrom Meadow	36 41 17	Colville
016_1	Swartz 125*	6.15.1995	Bestrom Meadow	36 41 16	Colville
014	Ahlenslager 193*	6.20.1995	Renner Lake Road	38 36 24	Kettle Falls
	Ahlenslager 185*	6.20.1995	McDowell Meadow, LPO	34 41 6	LPO
	Ahlenslager 186*	6.22.1995	Private, Myer's Creek, Chesaw	40 30 16	Okanogan Co.
	Ahlenslager 191*	6.22.1995	Okanogan NF, Havillah	39 30 21	Okanogan Co.
Collected near locations above.					
016_3	Ahlenslager 774	6.12.2002	Bestrom Meadow	36 41 16	Colville
016_3	Ahlenslager 775	6.28.2006	Bestrom Meadow	36 41 16	Colville
016_2	Cabral 061114AC009	6.11.2014	Bestrom Meadow	36 41 17	Colville
016_3	Ahlenslager 294	6.30.1997	Bestrom Meadow	36 41 16	Colville
016_3	Larson 217* 3 sheets	7.3.1997	Bestrom Meadow	36 41 16	Colville
016_3	Ahlenslager 300 2 sheets	7.4.1997	Bestrom Meadow	36 41 16	Colville
016_1	Ahlenslager 633	6.21.2001	Bestrom Meadow	36 41 16	Colville
016_3	Cabral 061114AC010	6.11.2014	Bestrom Meadow	36 41 16	Colville
016_	Cabral 061114AC008	6.11.2014	Bestrom Meadow	36 41 16	Colville
F0 011	Sawyer 062314PS001/002/003	6.23.2014	Hansen Creek Road, near Bestrom	36 41 19	Colville
029_2	Cabral 062314AC014	6.23.2014	North Fork Mill Creek/Albie Road, near Bestrom	37 40 24	Colville
014	Cabral 060407AC001	6.4.2007	Renner Lake Road	38 36 13	Kettle Falls
014	Larson 150 3sheets	6.26.1995	Renner Lake Road	38 36 13	Kettle Falls
014	Cabral 063014AC016	6.30.2014	Limestone Quarry Creek/Renner	38 36 13	Kettle Falls
	Wood 286*	5.23.1995	LPO River, north of McDowell Lake	34 41 6	LPO
	Lemcke 3	5.31.1998	Wauconda, near Havillah		Okanogan Co.
	Ahlenslager 776	7.1.1999	Wauconda, near Havillah		Okanogan Co.

<i>S. idahoense/S. septentrionale?</i>					
036	Cabral 061206AC001	6.12.2006	Leslie Creek Meadow	33 40 2	Colville
036	Cabral 070214AC017	6.26.2014	Leslie Creek Meadow	33 40 2	Colville
030_1	Ahlenslager 772	6.15.1998	Tiger Meadow	37 42 35	Colville
030_3	Cabral 070312AC005	7.3.2012	Tiger Meadow	37 42 35	Colville
028	Cabral 062314AC013	6.23.2014	Rabbit Creek Meadow	37 41 19	Colville
028	Swartz 499	6.23.1998	Rabbit Meadow	37 41 19	Colville
028	Larson 304, 305	6.17.1999	Rabbit Creek Meadow	37 41 19	Colville
	Martin	7.19.1999	Hanlon Exclosure		Newport
FO 012	Van Mason	2002	Lost Granite Squirrel	35 42 3	Newport
033	Cabral 062614AC016	6.26.2014	Squirrel Meadow	35 43 14	Newport
023_1	Cabral 061814AC015	6.18.2014	Bowe Ranch	38 32 32	Republic
023_1	Jensen s.n.	7.9.1996	Bowe Ranch	38 32 32	Republic
024	Wood 5491*	30.6.1996	White Creek	40 34 32	Republic
	Swartz (Bill) 12-8	7.22.2012	Big Meadow Lake	37 41 12	Colville
<i>S. montanum?</i>					
	Baldwin		Lower Bunchgrass Pasture, Hanlon		Newport
	Swartz	6.15.1995	Meadow Creek	37 41	Colville
	Swartz	6.21.1995	Junction Byer's Creek	37 41 27?	Colville
	Swartz 498	6.17.1998	Junction Byer's Creek	37 41 1?	Colville
011?	Cabral 062314AC012	6.23.2014	Byer's Meadow	37 41 1	Colville
	Swartz	6.20.1995	McInnis Meadow	37 42 12	Colville
	Larson 307	6.23.2007	Christensen Meadow, near Bestrom	36 41 21	Private land
035	Ahlenslager 773	6.29.2002	Bartlett Meadow		Newport
032	Kefauver	7.20.2002	Delaney Meadow		Newport