

Engaging Visitors in Bird Ecology at Crater Lake National Park: 2019 Summary Report

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Background

Klamath Bird Observatory (KBO) and Crater Lake National Park (CRLA) initiated a collaborative project to engage park visitors in bird ecology in 2017 (Frey and Stephens 2017). The objectives of this five-year project are to improve educational opportunities, public awareness, and knowledge about bird populations within the Klamath-Siskiyou Bioregion, and specifically at CRLA, through surveys and public outreach (Frey and Stephens 2017, 2018).

In particular, this project includes establishment of a bird survey station within CRLA, continued operation of an existing bird survey station adjacent to CRLA, and incorporates a bird conservation interpretive program during bird banding operations for park visitors. The two stations are operated by KBO staff and student volunteer interns and integrate multiple survey methods following an established National Park Service protocol (Stephens et al. 2010). Park Rangers led interpretive programs focused on birds and bird ecology with hikes planned to culminate at the survey stations where the visiting public can see birds up close and learn about banding, scientific methods, and bird conservation.

This report summarizes KBO's survey operations and contributions to outreach efforts in 2019 at the CRLA constant effort banding station located in Munson Valley and the Sevenmile Guard Station (hereafter, Sevenmile) within Fremont-Winema National Forest.

Constant Effort Banding Station Operations

From May through August (breeding season), monitoring at Munson Valley and Sevenmile were scheduled once every 10-day period, following the Institute for Bird Population's dates of operation protocol for Monitoring Avian Productivity and Survivorship (MAPS). Monitoring began at the onset of the landbird breeding season which varies by latitude and altitude. In southern Oregon, the recommended MAPS starting period is 10-day three. The Munson Valley site began later due to snowpack. In September through mid-October (fall migration season), stations were scheduled once per week. Operations at the Munson Valley station were conducted a total of 13 times beginning June 4 through October 2. One operation was shortened by snow. Operations at the Sevenmile station were conducted 17 times beginning May 22 through October 10. In 2019, the Sevenmile station operated 11 nets with one net lane being discontinued following habitat modification due to bridge construction in fall of 2018. The Munson Valley station operated 12 nets; a net lane created in 2018 was discontinued due to relocation of the banding table and a new net lane was created adjacent to the new location (Table 1).

During operations, mist nets were opened 15 minutes prior to local sunrise and closed five hours later. Captured birds were aged and sexed when possible using standard methods (Pyle 1997), checked for breeding condition (i.e. cloacal protuberances and brood patches), marked with individually numbered

aluminum leg bands, and released. A species checklist tally was completed during each banding operation. This tally documented every bird species encountered during the operation period by breeding status (based on observed behavior) including those observed and captured. The species checklist tally was established by KBO in 2018 in a banding programmatic transition, replacing point count and area search surveys (and incidental observations used in 2017) with a procedure more practical for field workers concurrently managing a mist netting operation. Total captures and relative abundance [birds detected (species tally or capture)/visit] are presented for each species during breeding and fall seasons (Tables 2 and 3). All data are contributed to the Avian Knowledge Northwest Data Center and have been in part previously reported in diBiccari et al (2020). At the Munson Valley station 52 species were encountered and/or captured and a total of 281 birds of 32 species were captured (Table 2). At the Sevenmile station 90 bird species were encountered and/or captured and a total of 1,000 birds of 49 species were captured (Table 3).

Several species captured and/or otherwise observed at the Munson Valley and Sevenmile stations in 2019 have elevated conservation status. These include designations by the U.S. Fish and Wildlife Service (USFWS 2008), Oregon Department of Fish and Wildlife (ODFW 2017), Partners in Flight 2016 Continental Plan (Rosenberg et al. 2016), and Oregon-Washington Partners in Flight Habitat Conservation for Landbirds in Coniferous Forests (Altman and Alexander 2012) and Conservation Strategy for Landbirds of the East-Slope of the Cascade Mountains (Altman 2000) (Tables 2 and 3).

Outreach

Staff from both CRLA and KBO conducted verbal, print, and digital advertising for banding operation visits. CRLA staff included visit announcements in other park outreach and interpretive programs, flyers displayed at park visitor centers, newsletters, a local newspaper, and their website. KBO included visit announcements in flyers, interpretive presentations at public outreach festival events, and regular social media and blog posts.

For outreach programs at the Munson Valley station, bird walks organized and led by CRLA Park Rangers Mimi Gorman and Linda Powell culminated with a visit to the banding operation. These occurred on 11 of the 13 scheduled operations. A visiting group was not organized for the first operation on June 4 to allow station set up and personnel training. On one occasion no visitors registered, likely due to inclement weather. Banding station operations were scheduled for Thursdays during the summer breeding season, May through August, and Fridays for the fall season, September and October, to facilitate visitation with a consistent day of week. Upcoming dates were communicated to pertinent CRLA staff several weeks in advance. A KBO Banding Interpretation Kit was loaned to CRLA for use in 2019. A total of 98 visitors were brought to banding operations at the Munson Valley station led by the Park Rangers.

Outreach programming at the Sevenmile station was organized and led by KBO staff and interns. These occurred on three of the 17 scheduled operations. Visits did not occur on the first operation, May 29, and during a KBO-hosted banding techniques workshop from August 6 to August 8 to allow for station set up and training. No visitors registered for an additional 11 operations. Visitors to the Sevenmile station totaled 31 persons and included groups from the Klamath Basin Audubon Society and an Oregon State University delegation of scholars from Sabah, Malaysia.

Acknowledgements

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Table 1. Location (UTM coordinates NAD 83, Zone 10) of Munson Valley, Crater Lake National Park and Sevenmile Guard Station, Fremont-Winema National Forest constant effort mist netting stations' central point and net locations.

Munson Valley		
	Easting	Northing
Central point	570384	4749077
Net #1	570351	4749072
Net #2	570351	4749141
Net #3	570335	4749189
Net #4	570406	4749230
Net #5	570424	4749212
Net #6	570428	4749165
Net #7	570404	4749121
Net #8	570401	4749104
Net #9	570403	4749070
Net #10	570379	4749036
Net #11	570380	4748972
Net #13	570295	4749099

Sevenmile Guard Station		
	Easting	Northing
Central point	575785	4728482
Net #2	575790	4728502
Net #3	575796	4728529
Net #4	575766	4728535
Net #5	575763	4728545
Net #6	575733	4728648
Net #7	575713	4728715
Net #8	575717	4728759
Net #9	575690	4728585
Net #10	575726	4728569
Net #11	575732	4728500
Net #12	575699	4728757

Table 2. Results from the constant effort monitoring station at Munson Valley, Crater Lake National Park in 2019 showing total mist net captures and relative abundance [birds detected (species tally or capture)/visit] during breeding (June 27 to August 22) and fall migration (September 6 to October 11) seasons with status as Species of Concern (with elevated conservation status) and Habitat Focal Species by agency and conservation plan.

Common Name	Scientific Name	Total Captures (breeding)	Total Captures (migration)	Relative Abundance (breeding)	Relative Abundance (migration)	Species of Concern			Habitat Focal Species	
						United States Fish & Wildlife Service Species of Concern (USFWS 2008)	Oregon Department of Fish & Wildlife Sensitive Species (ODFW 2017)	Partners in Flight Continental Plan Reverse Decline Watch List - Western Forest (Rosenberg et al. 2016)	Oregon-Washington Partners in Flight Coniferous Forests (Altman and Alexander 2012)	Oregon-Washington Partners in Flight East-slope Cascades Mtns (Altman 2000)
American Goldfinch	<i>Spinus tristis</i>	-	-	-	0.167	-	-	-	-	-
American Robin	<i>Turdus migratorius</i>	8	-	3.143	1.000	-	-	-	-	-
Bald Eagle	<i>Haliaeetus leucocephalus</i>	-	-	0.143	-	X	-	-	-	-
Black-backed Woodpecker	<i>Picoides arcticus</i>	-	-	-	0.333	-	X	-	-	-
Brown Creeper	<i>Certhia americana</i>	3	3	1.429	1.333	-	-	-	-	-
Cassin's Finch	<i>Haemorhous cassinii</i>	2	-	1.286	0.333	-	-	X	-	-
Canada Jay	<i>Perisoreus canadensis</i>	1	6	2.571	3.833	-	-	-	-	-
Canada Goose	<i>Branta canadensis</i>	-	-	-	0.333	-	-	-	-	-
Cassin's Vireo	<i>Vireo cassinii</i>	-	-	0.143	-	-	-	-	-	-
Cedar Waxwing	<i>Bombycilla cedrorum</i>	-	-	-	1.000	-	-	-	-	-
Chipping Sparrow	<i>Spizella passerina</i>	2	-	1.143	-	-	X	-	-	-
Clark's Nutcracker	<i>Nucifraga columbiana</i>	-	-	1.143	1.500	-	-	-	-	-
Common Raven	<i>Corvus corax</i>	-	-	0.143	0.500	-	-	-	-	-
Dark-eyed Junco	<i>Junco hyemalis</i>	43	44	8.429	9.667	-	-	-	-	-
Dusky Flycatcher	<i>Empidonax oberholseri</i>	1	-	0.143	-	-	-	-	-	-
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	2	-	0.286	-	-	-	X	-	-
Fox Sparrow	<i>Passerella iliaca</i>	-	5	-	1.000	-	-	-	-	-
Golden-crowned Kinglet	<i>Regulus satrapa</i>	3	2	1.714	2.500	-	-	-	-	-

Table 2 continued. Results from the constant effort monitoring station at Munson Valley, Crater Lake National Park in 2019 showing total mist net captures and relative abundance [birds detected (species tally or capture)/visit] during breeding (June 27 to August 22) and fall migration (September 6 to October 11) seasons with status as Species of Concern (with elevated conservation status) and Habitat Focal Species by agency and conservation plan.

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Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>	-	26	-	6.500	-	-	-	-	-
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	-	1	-	0.167	-	-	-	-	-
Greater White-fronted Goose	<i>Anser albifrons</i>	-	-	-	0.833	-	-	-	-	-
Hammond's Flycatcher	<i>Empidonax hammondi</i>	-	-	0.143	-	-	-	-	-	-
Hairy Woodpecker	<i>Dryobates villosus</i>	-	-	0.143	0.667	-	-	-	-	-
Hermit Thrush	<i>Catharus guttatus</i>	-	3	0.429	1.000	-	-	-	-	-
Hermit Warbler	<i>Setophaga occidentalis</i>	4	-	1.000	-	-	-	-	X	-
House Wren	<i>Troglodytes aedon</i>	1	-	0.143	-	-	-	-	-	-
Lazuli Bunting	<i>Passerina amoena</i>	-	-	0.143	-	-	-	-	X	-
Lincoln's Sparrow	<i>Melospiza lincolnii</i>	21	6	3.714	1.167	-	-	-	-	-
MacGillivray's Warbler	<i>Geothlypis tolmiei</i>	1	-	0.143	-	-	-	-	-	-
Mountain Bluebird	<i>Sialia currucoides</i>	-	-	-	0.667	-	-	-	-	-
Mountain Chickadee	<i>Poecile gambeli</i>	-	1	1.714	2.667	-	-	-	-	-
Nashville Warbler	<i>Oreothlypis ruficapilla</i>	1	-	0.429	-	-	-	-	X	X
Northern Flicker	<i>Colaptes auratus</i>	-	-	1.143	1.167	X	-	-	X	-
Orange-crowned Warbler	<i>Oreothlypis celata</i>	16	-	2.429	-	-	-	-	X	-
Pine Siskin	<i>Spinus pinus</i>	15	-	7.286	0.167	-	-	-	-	-
Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	0.143	-	-	X	-	X	-

Table 2 continued. Results from the constant effort monitoring station at Munson Valley, Crater Lake National Park in 2019 showing total mist net captures and relative abundance [birds detected (species tally or capture)/visit] during breeding (June 27 to August 22) and fall migration (September 6 to October 11) seasons with status as Species of Concern (with elevated conservation status) and Habitat Focal Species by agency and conservation plan.

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Pacific-slope Flycatcher	<i>Empidonax difficilis</i>	-	-	0.143	-	-	-	-	X	-
Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	2	1.714	2.833	-	-	-	-	-
Red-breasted Sapsucker	<i>Sphyrapicus ruber</i>	-	-	-	0.167	-	-	-	-	-
Ruby-crowned Kinglet	<i>Regulus calendula</i>	-	2	-	0.833	-	-	-	-	-
Red Crossbill	<i>Loxia curvirostra</i>	-	-	0.429	1.667	X	-	-	-	-
Red-tailed Hawk	<i>Buteo jamaicensis</i>	-	1	0.429	0.500	-	-	-	-	-
Rufous Hummingbird	<i>Selasphorus rufus</i>	6	-	1.000	-	X	-	X	X	-
Savannah Sparrow	<i>Passerculus sandwichensis</i>	-	1	-	0.167	-	-	-	-	-
Spotted Sandpiper	<i>Actitis macularius</i>	4	-	1.429	-	-	-	-	-	-
Steller's Jay	<i>Cyanocitta stelleri</i>	-	1	2.857	1.667	-	-	-	-	-
Townsend's Solitaire	<i>Myadestes townsendi</i>	-	1	-	0.167	-	-	-	-	-
Turkey Vulture	<i>Cathartes aura</i>	-	-	0.143	-	-	-	-	-	-
Varied Thrush	<i>Ixoreus naevius</i>	-	-	-	0.167	-	-	-	X	-
Western Screech-Owl	<i>Megascops kennicottii</i>	-	-	0.143	-	-	-	-	-	-
Western Tanager	<i>Piranga ludoviciana</i>	2	-	1.000	-	-	-	-	X	-
Western Wood-Pewee	<i>Contopus sordidulus</i>	-	-	0.143	-	-	-	-	-	-
Yellow-rumped Warbler	<i>Setophaga coronata</i>	37	2	5.857	1.833	-	-	-	-	-

Table 3. Results from the constant effort monitoring station at Sevenmile Guard Station, Fremont-Winema National Forest in 2019 showing total mist net captures and relative abundance [birds detected (species tally or capture)/visit] during breeding (May 22 to August 23) and fall migration (August 27 to October 10) seasons with status as Species of Concern (with elevated conservation status) and Habitat Focal Species by agency and conservation plan.

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Allen's Hummingbird	<i>Selasphorus sasin</i>	1	-	0.100	-	-	-	X	-	-
American Crow	<i>Corvus brachyrhynchos</i>	-	-	0.100	-	-	-	-	-	-
American Dipper	<i>Cinclus mexicanus</i>	-	-	0.100	0.286	-	-	-	-	-
American Goldfinch	<i>Spinus tristis</i>	2	2	0.300	0.286	-	-	-	-	-
American Robin	<i>Turdus migratorius</i>	4	-	2.500	2.143	-	-	-	-	-
Bald Eagle	<i>Haliaeetus leucocephalus</i>	-	-	0.300	-	X	-	-	-	-
Barn Swallow	<i>Hirundo rustica</i>	-	-	0.700	-	-	-	-	-	-
Black-billed Magpie	<i>Pica hudsonia</i>	-	-	-	1.000	-	-	-	-	-
Black-capped Chickadee	<i>Poecile atricapillus</i>	-	-	-	0.714	X	-	-	-	-
Belted Kingfisher	<i>Megasceryle alcyon</i>	-	-	1.200	1.429	-	-	-	-	-
Brown-headed Cowbird	<i>Molothrus ater</i>	-	-	0.800	-	-	-	-	-	-
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>	12	-	2.700	0.143	-	-	-	-	-
Brown Creeper	<i>Certhia americana</i>	2	3	1.300	1.857	-	-	-	-	-
Black-throated Gray Warbler	<i>Setophaga nigrescens</i>	1	-	0.100	-	X	-	-	-	-
Bullock's Oriole	<i>Icterus bullockii</i>	-	-	0.700	-	-	-	-	-	-
Bushtit	<i>Psaltiriparus minimus</i>	-	-	-	1.429	-	-	-	-	-
Cassin's Finch	<i>Haemorhous cassinii</i>	3	-	0.600	0.714	-	-	X	-	-
Canada Goose	<i>Branta canadensis</i>	-	-	1.000	5.143	-	-	-	-	-
Cassin's Vireo	<i>Vireo cassinii</i>	4	-	1.800	0.286	-	-	-	-	-
Chestnut-backed Chickadee	<i>Poecile rufescens</i>	4	1	0.700	2.286	-	-	-	-	-
Cedar Waxwing	<i>Bombycilla cedrorum</i>	-	-	4.500	2.143	-	-	-	-	-
Chipping Sparrow	<i>Spizella passerina</i>	-	1	0.200	0.143	-	X	-	-	-
Clark's Nutcracker	<i>Nucifraga columbiana</i>	-	-	-	0.857	-	-	-	-	-

Table 3 continued. Results from the constant effort monitoring station at Sevenmile Guard Station, Fremont-Winema National Forest in 2019 showing total mist net captures and relative abundance [birds detected (species tally or capture)/visit] during breeding (May 22 to August 23) and fall migration (August 27 to October 10) seasons with status as Species of Concern (with elevated conservation status) and Habitat Focal Species by agency and conservation plan.

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Common Merganser	<i>Mergus merganser</i>	-	-	0.600	0.286	-	-	-	-	-
Common Nighthawk	<i>Chordeiles minor</i>	-	-	0.400	-	-	-	-	-	-
Common Raven	<i>Corvus corax</i>	-	-	1.100	1.714	-	-	-	-	-
Dark-eyed Junco	<i>Junco hyemalis</i>	145	98	11.000	34.286	-	-	-	-	-
Downy Woodpecker	<i>Dryobates pubescens</i>	1	-	0.800	0.286	-	-	-	-	-
Dusky Flycatcher	<i>Empidonax oberholseri</i>	6	-	0.500	0.143	-	-	-	-	-
European Starling	<i>Sturnus vulgaris</i>	-	-	-	0.857	-	-	-	-	-
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	-	-	1.400	2.714	-	-	X	-	-
Fox Sparrow	<i>Passerella iliaca</i>	-	1	-	0.429	-	-	-	-	-
Great Blue Heron	<i>Ardea herodias</i>	-	-	0.100	0.143	-	-	-	-	-
Golden-crowned Kinglet	<i>Regulus satrapa</i>	4	2	1.300	0.571	-	-	-	-	-
Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>	-	30	-	8.000	-	-	-	-	-
Canada Jay	<i>Perisoreus canadensis</i>	-	-	0.300	0.857	-	-	-	-	-
Gray Flycatcher	<i>Empidonax wrightii</i>	1	-	0.100	-	-	-	-	-	-
Hammond's Flycatcher	<i>Empidonax hammondii</i>	6	3	0.400	0.429	-	-	-	-	-
Hairy Woodpecker	<i>Dryobates villosus</i>	2	1	0.400	0.571	-	-	-	-	-
Hermit Thrush	<i>Catharus guttatus</i>	3	8	0.500	1.286	-	-	-	-	-
Hermit Warbler	<i>Setophaga occidentalis</i>	23	-	2.600	-	-	-	-	X	-
House Wren	<i>Troglodytes aedon</i>	3	-	2.200	0.429	-	-	-	-	-
Hutton's Vireo	<i>Vireo huttoni</i>	1	-	0.100	-	-	-	-	-	-
Lazuli Bunting	<i>Passerina amoena</i>	12	1	1.900	0.571	-	-	-	X	-
Lincoln's Sparrow	<i>Melospiza lincolnii</i>	5	3	0.300	1.000	-	-	-	-	-
Mallard	<i>Anas platyrhynchos</i>	-	-	0.200	-	-	-	-	-	-

Table 3 continued. Results from the constant effort monitoring station at Sevenmile Guard Station, Fremont-Winema National Forest in 2019 showing total mist net captures and relative abundance [birds detected (species tally or capture)/visit] during breeding (May 22 to August 23) and fall migration (August 27 to October 10) seasons with status as Species of Concern (with elevated conservation status) and Habitat Focal Species by agency and conservation plan.

Common Name	Scientific Name	Total Captures (breeding)	Total Captures (migration)	Relative Abundance (breeding)	Relative Abundance (migration)	Species of Concern			Habitat Focal Species	
						United States Fish & Wildlife Service Species of Concern (USFWS 2008)	Oregon Department of Fish & Wildlife Sensitive Species (ODFW 2017)	Partners in Flight Continental Plan Reverse Decline Watch List - Western Forest (Rosenberg et al. 2016)	Oregon-Washington Partners in Flight Coniferous Forests (Altman and Alexander 2012)	Oregon-Washington Partners in Flight East-slope Cascades Mtns (Altman 2000)
MacGillivray's Warbler	<i>Geothlypis tolmiei</i>	60	1	4.600	1.143	-	-	-	-	-
Mountain Chickadee	<i>Poecile gambeli</i>	5	2	2.600	2.714	-	-	-	-	-
Nashville Warbler	<i>Oreothlypis ruficapilla</i>	101	1	10.000	0.143	-	-	-	X	X
Northern Flicker	<i>Colaptes auratus</i>	-	-	1.000	1.571	X	-	-	X	-
Northern Pygmy-Owl	<i>Glaucidium gnoma</i>	-	-	-	0.286	-	-	-	-	-
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	-	-	1.900	-	-	-	-	-	-
Orange-crowned Warbler	<i>Oreothlypis celata</i>	161	-	15.000	0.857	-	-	-	X	-
Olive-sided Flycatcher	<i>Contopus cooperi</i>	1	-	0.200	0.143	X	-	X	X	X
Pacific Wren	<i>Troglodytes pacificus</i>	-	-	-	0.286	-	-	-	X	-
Pine Siskin	<i>Spinus pinus</i>	-	2	0.400	3.429	-	-	-	-	-
Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	0.600	1.143	-	X	-	X	-
Pacific-slope Flycatcher	<i>Empidonax difficilis</i>	-	-	1.200	0.286	-	-	-	X	-
Purple Finch	<i>Haemorhous purpureus</i>	2	3	0.200	0.429	X	-	-	X	-
Red-breasted Nuthatch	<i>Sitta canadensis</i>	10	7	2.700	2.714	-	-	-	-	-
Red-breasted Sapsucker	<i>Sphyrapicus ruber</i>	9	1	1.800	0.714	-	-	-	-	-
Ruby-crowned Kinglet	<i>Regulus calendula</i>	-	5	-	1.714	-	-	-	-	-
Red Crossbill	<i>Loxia curvirostra</i>	-	-	7.100	6.286	X	-	-	-	-
Red-tailed Hawk	<i>Buteo jamaicensis</i>	-	-	0.200	0.286	-	-	-	-	-
Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	0.200	-	-	-	-	-	-
Rufous Hummingbird	<i>Selasphorus rufus</i>	27	-	2.700	-	X	-	X	X	-
Sandhill Crane	<i>Antigone canadensis</i>	-	-	0.600	0.429	-	-	-	-	X
Savannah Sparrow	<i>Passerculus sandwichensis</i>	-	-	-	0.143	-	-	-	-	-

Table 3 continued. Results from the constant effort monitoring station at Sevenmile Guard Station, Fremont-Winema National Forest in 2019 showing total mist net captures and relative abundance [birds detected (species tally or capture)/visit] during breeding (May 22 to August 23) and fall migration (August 27 to October 10) seasons with status as Species of Concern (with elevated conservation status) and Habitat Focal Species by agency and conservation plan.

Common Name	Scientific Name	Total Captures (breeding)	Total Captures (migration)	Relative Abundance (breeding)	Relative Abundance (migration)	Species of Concern			Habitat Focal Species	
						United States Fish & Wildlife Service Species of Concern (USFWS 2008)	Oregon Department of Fish & Wildlife Sensitive Species (ODFW 2017)	Partners in Flight Continental Plan Reverse Decline Watch List - Western Forest (Rosenberg et al. 2016)	Oregon-Washington Partners in Flight Coniferous Forests (Altman and Alexander 2012)	Oregon-Washington Partners in Flight East-slope Cascades Mtns (Altman 2000)
Song Sparrow	<i>Melospiza melodia</i>	47	8	3.600	2.000	X	-	-	-	-
Spotted Sandpiper	<i>Actitis macularius</i>	-	-	0.100	-	-	-	-	-	-
Spotted Towhee	<i>Pipilo maculatus</i>	-	2	-	1.143	X	-	-	-	-
Sharp-shinned Hawk	<i>Accipiter striatus</i>	-	-	0.100	0.286	-	-	-	-	-
Steller's Jay	<i>Cyanocitta stelleri</i>	-	-	1.800	2.571	-	-	-	-	-
Swainson's Thrush	<i>Catharus ustulatus</i>	17	-	1.500	0.286	-	-	-	-	-
Townsend's Warbler	<i>Setophaga townsendi</i>	-	2	-	0.286	-	-	-	X	-
Tree Swallow	<i>Tachycineta bicolor</i>	-	-	1.300	0.429	-	-	-	-	-
Turkey Vulture	<i>Cathartes aura</i>	-	-	0.800	0.571	-	-	-	-	-
Vaux's Swift	<i>Chaetura vauxi</i>	-	-	0.200	-	-	-	-	-	-
Varied Thrush	<i>Ixoreus naevius</i>	-	-	-	0.429	-	-	-	X	-
Warbling Vireo	<i>Vireo gilvus</i>	9	2	1.400	0.571	-	-	-	-	-
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	-	11	-	2.571	-	-	-	-	-
Western Tanager	<i>Piranga ludoviciana</i>	13	-	2.000	0.714	-	-	-	X	-
Western Wood-Pewee	<i>Contopus sordidulus</i>	10	-	2.700	0.714	-	-	-	-	-
White-headed Woodpecker	<i>Dryobates albolarvatus</i>	-	-	-	0.143	X	X	-	-	X
Willow Flycatcher	<i>Empidonax traillii</i>	12	-	1.100	-	X	X	-	-	-
Wilson's Warbler	<i>Cardellina pusilla</i>	21	5	2.300	1.000	-	-	-	-	-
Wood Duck	<i>Aix sponsa</i>	-	-	0.100	-	-	-	-	-	-
White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	0.100	-	-	-	-	-	-
Yellow Warbler	<i>Setophaga petechia</i>	13	-	1.100	-	X	-	-	-	-
Yellow-rumped Warbler	<i>Setophaga coronata</i>	20	4	2.300	2.714	-	-	-	-	-