



Photo credit: Daphne Swope & USFWS



Amended Report:
Alder Creek Restoration Site

Wildlife Baseline Monitoring Surveys

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TABLE OF CONTENTS

List of Figures	3
Introduction.....	4
Project Overview.....	4
Survey Area	4
Statement of Work.....	5
<i>Bird Assemblages</i>	5
<i>Eagle Surveys</i>	5
<i>Mink Monitoring</i>	5
Methodology	5
Bird Assemblages.....	5
Eagle Surveys.....	6
Mink Monitoring.....	6
<i>Camera Traps</i>	6
<i>Visual Surveys</i>	6
Results.....	6
Bird Assemblages.....	6
Eagle Surveys.....	9
Mink Monitoring.....	11
<i>Camera Traps</i>	11
<i>Visual Surveys</i>	11
Conclusions & Recommendations.....	11
References.....	12
Appendix A: Data Tables	13
Point Count Data Summary Table.....	13
Eagle Data Summary Table.....	15
Mink Camera Data Summary Table.....	17
Mink Visual Survey Data Summary Table.....	18
Appendix B: Personnel Biographies.....	19



LIST OF FIGURES

Figure 1. Survey Area, including point count locations and mink camera stations.....	4
Figure 2. Species Abundance and Species Richness, by visit.....	7
Figure 3. Top species counted in point count surveys, by total overall abundance	7
Figure 4. Percentage of native and nonnative species, by visit date	8
Figure 5. Percentage of native and nonnative species over all visits.....	8
Figure 6. Estimated locations of eagle observations, May 2013 to May 2014.....	9
Figure 7. Mean bald eagle and other raptor observations May 2013-2014, by month.....	10
Figure 8. Mean bald eagle and other raptor observations May 2013-2014, by time of day	10



INTRODUCTION

Portland Harbor Holdings II, LLC. (PHH) retained the services of Turnstone Environmental Consultants, Inc. (Turnstone) to perform wildlife baseline monitoring surveys on Sauvie Island in Portland, Oregon in support of the Alder Creek Restoration Project (Project). Surveys were conducted for bird assemblages, bald eagles (*Haliaeetus leucocephalus*) and other raptors, and American mink (*Neovision vision*, "mink") located within and adjacent to the survey area.

PROJECT OVERVIEW

Survey Area

The survey area is comprised of a 64-acre sawmill complex, located at the southernmost tip of Sauvie Island at the confluence of Multnomah Channel and the Willamette River (Figure 1).

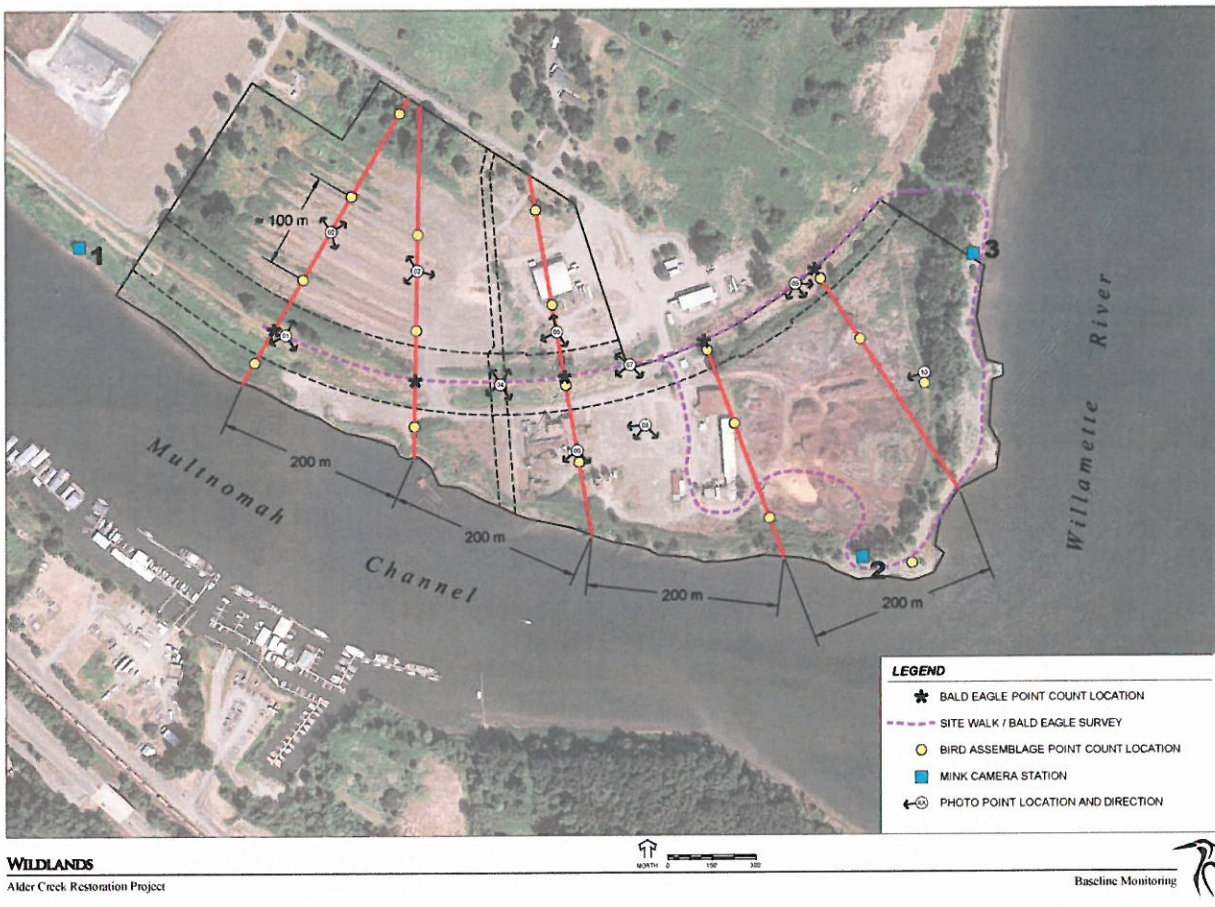
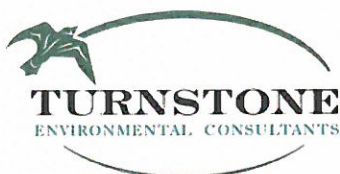


Figure 1. Survey Area, including point count locations and mink camera stations



Statement of Work

Bird Assemblages

Bird assemblage surveys were conducted as an effective way to gather information about habitat function. Turnstone conducted on-site point counts along transects in order to characterize bird species composition representative of pre-construction site conditions for comparison with post-restoration habitats on the site. The data will be used to document species occurrences, proportionate species abundances, species richness, and how bird assemblages change over time.

Eagle Surveys

Bald eagle surveys were conducted to obtain bald eagle presence/absence and behavior (if present). The objective is to document any changes in bald eagle use or behavior at the site over time.

Mink Monitoring

Scent stations with remote cameras were established to obtain mink presence/absence along the shoreline of the Site. Visual searches for tracks, scat, and den sites were also conducted in designated areas in search of potential mink use.

METHODOLOGY

Surveys were conducted from February 2013 to May 2014 by qualified personnel. Wildlands personnel and Turnstone Project Manager, Jeff Reams, worked with experienced wildlife biologists Daphne Swope, Devin Sahl, Justin Votos, and Russell Namitz to complete baseline monitoring surveys. Professional resumes for project personnel are located in Appendix A.

Bird Assemblages

Turnstone conducted on-site point counts along transects at least once per month in May, June, and July 2013, following the habitat-based protocol outlined by Huff, et al (2000). A Turnstone biologist began audio visual surveys near sunrise and finished at approximately 10:00 am. Surveys were conducted only under favorable conditions; if high winds, heavy rain, or other conditions would result in poor bird detectability then the survey would be postponed. Point counts were conducted at each designated station, approximately every 100 meters along each transect, unless wood by-product processing made surveying a particular station infeasible. All birds detected during the five-minute survey at each station were recorded, with separate counts for adult and juvenile birds. Detections of birds were categorized according to the following specifications:

Typical detection 0 to 50 m:	birds up to top of vegetation/canopy, <50 m from the station center point
Typical detection >50 m:	birds up to top of vegetation or canopy, >50 m from the station center point
Fly-over associated:	birds above top of vegetation or canopy, but in your judgment are associated with the local habitat.
Fly-over independent:	birds above top of vegetation or canopy, and in your judgment are unassociated with the local habitat



Eagle Surveys

Turnstone and Wildlands biologists conducted raptor monitoring surveys at vantage point(s) with the best visibility for observing bald eagle use at the project site. Surveys were conducted for a total of two hours, varying between dawn and dusk and other daylight hours. Surveys were conducted along the prescribed survey route, including ten minutes at each of the five monitoring stations. Surveys were performed by Wildlands once per month in February, March, and April 2014. Turnstone performed surveys once per week from May through August 2013 and from mid-December 2013 through May 2014. Behavioral characteristics were recorded when possible for all observations. General location of eagle observations were mapped over satellite imagery by the Turnstone biologists.

Mink Monitoring

Camera Traps

Camera traps (using remote, motion-sensor cameras) and scent stations (using mink bait) were set at three separate locations along the shoreline of the survey area on April 11, 2013. Camera photos were analyzed by Wildlands personnel in May, and by Turnstone personnel in June, July, and August. Cameras were visited twice per month in order to download photos and reapply mink bait. The downloaded photos were then individually searched for captured photos of mink and other wildlife species. The numbers of individuals of each species were recorded and at least one photo of each species observed was archived.

Visual Surveys

Visual surveys for tracks, scat, and den sites were conducted along the shoreline of the survey area two times per month in May, June, July, and August 2013. Identification characteristics that were investigated are summarized below (GDNR 2013).

- Scat:** Dark brown or black, 5-6 inches long, roughly cylindrical, with occasional segmentation and bits of fur or bone; found on beaver lodges, rocks, logs, and near dens
- Den Sites:** Burrow holes in streams/riverbanks are roughly four inches in diameter
- Tracks:** Nearly round with a width of 1¼ - 1¾ inches for the front feet and 2¼ inches long for the hind feet. Stride length is 12-26 inches apart and both hind and forefeet prints almost touch.

RESULTS

Bird Assemblages

During the 2013 survey period, Turnstone conducted a total of four point counts. A summary table of the data collected is located in Appendix B. Total abundance and species richness were highest on May 28 (Figure 2). The most abundant species overall were song sparrow (*Melospiza melodia*), American goldfinch (*Spinus tristis*), brown-headed cowbird (*Molothrus ater*), European starling (*Sturnus vulgaris*), barn swallow (*Hirundo rustica*), common yellowthroat (*Geothlypis trichas*), American robin (*Turdus migratorius*), cliff swallow (*Petrochelidon pyrrhonota*), spotted towhee (*Pipilo maculatus*), and osprey (*Pandion haliaetus*). Abundance by visit for these species is detailed in Figure 3. The average percentage of nonnative individuals counted for the four visits was nine percent (Figure 5). The proportion of nonnative individuals was slightly higher for the May 28 visit (10%) and slightly lower in June (8%) and July (7%; Figure 4).



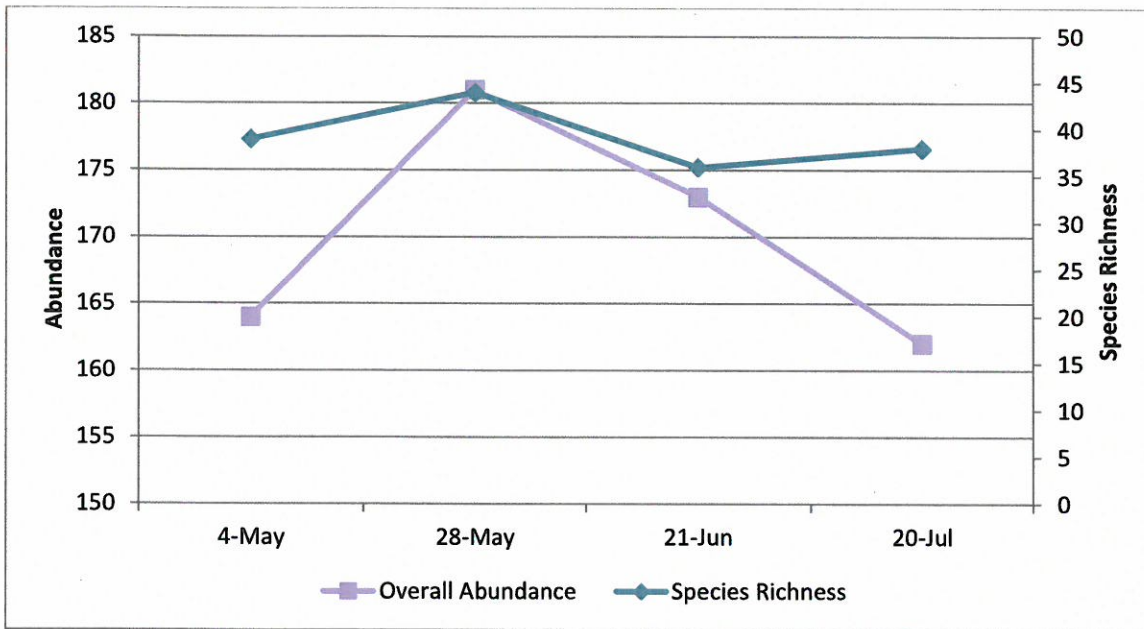


Figure 2. Species Abundance and Species Richness, by visit

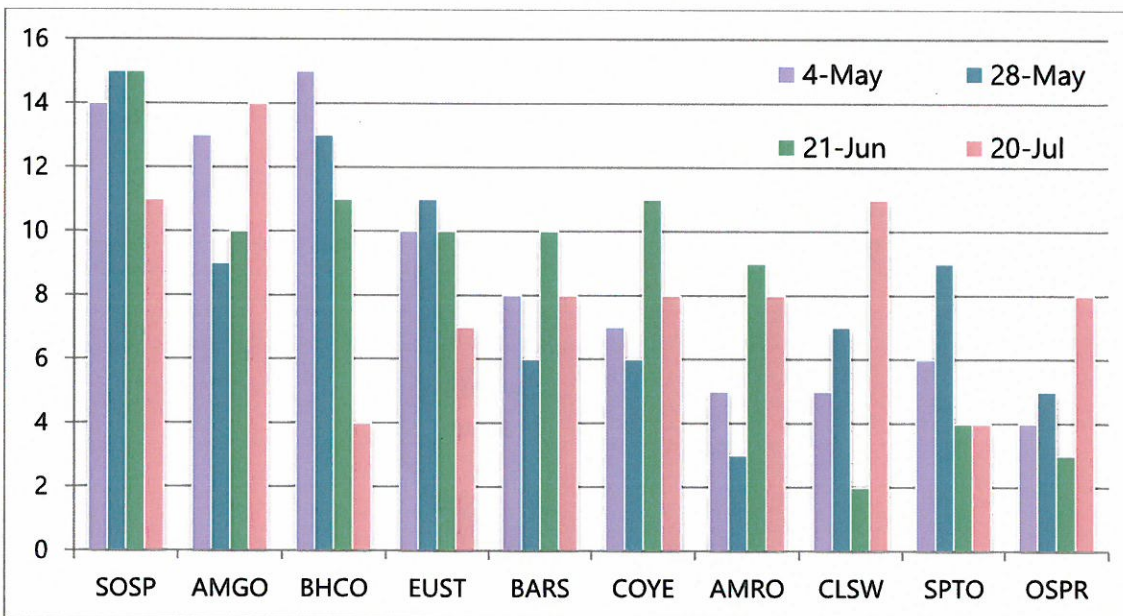


Figure 3. Top species counted in point count surveys, by total overall abundance



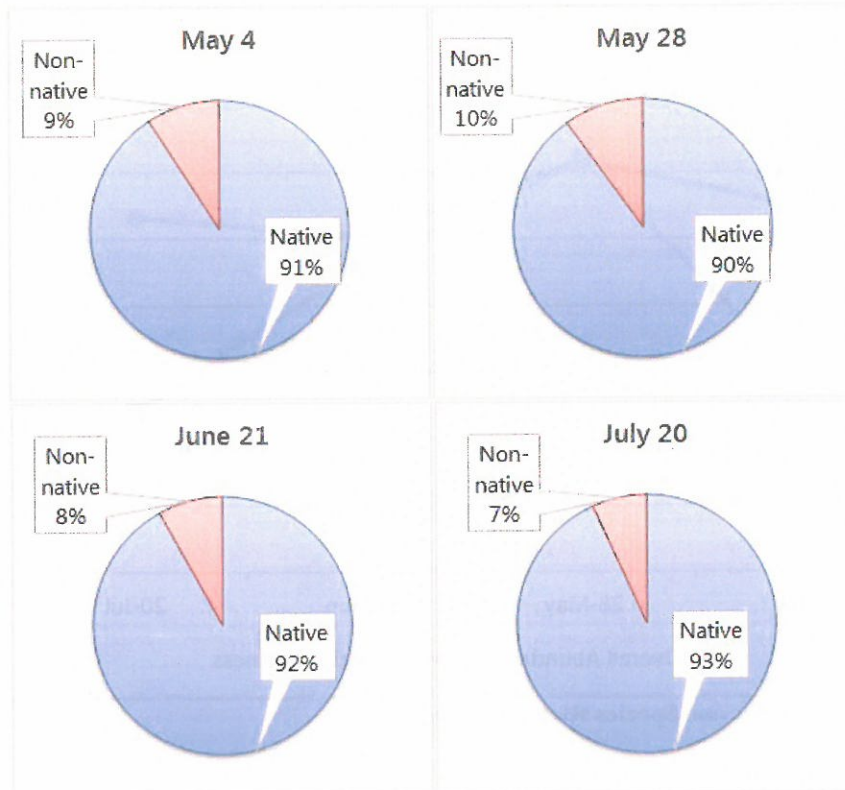


Figure 4. Percentage of native and nonnative species, by visit date

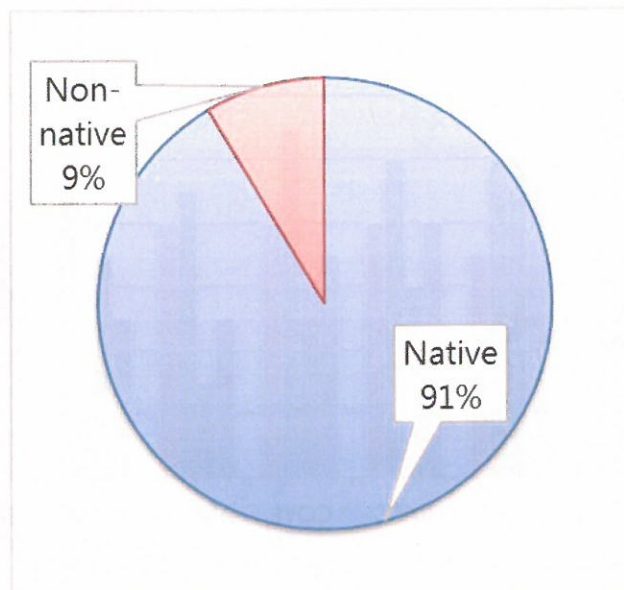


Figure 5. Percentage of native and nonnative species over all visits

Eagle Surveys

During the 2013/2014 survey period, 37 total eagle surveys were conducted between May and August 2013, and mid-December 2013 through April 2014. Biologists recorded a total of 52 bald eagle detections and 226 raptor detections, including both on-site and off-site. Of the total eagle detections, 20 (51%) were on-site (observed within and/or directly above the site, but not just flying over) and 12 (31%) were on-site direct flyovers; the remaining consisted of off-site detections. The spatial distribution of eagle observations recorded during the surveys is displayed in Figure 6. Raptor species observed included osprey, turkey vulture (*Cathartes aura*), red-tailed hawk (*Buteo jamaicensis*), peregrine falcon (*Falco peregrinus*), barn owl (*Tyto alba*), Cooper's hawk (*Accipiter cooperi*), and unidentified Accipiter individuals (*Accipiter spp.*). Eagle activity was highest in February through April and lowest in July and August. Raptor activity was highest in April through June and lowest in January through March. (Figure 7). Eagle and raptor activity was also highest during surveys that took place midday. (Figure 8).

Additionally, Wildlands personnel conducted four surveys between February and April 2013. Of these four surveys, one (conducted on April 11) was excluded from the discussion of this report, as it did not follow the standardized survey protocol. Of the three remaining surveys, a total of five eagle detections and six raptor detections were recorded.

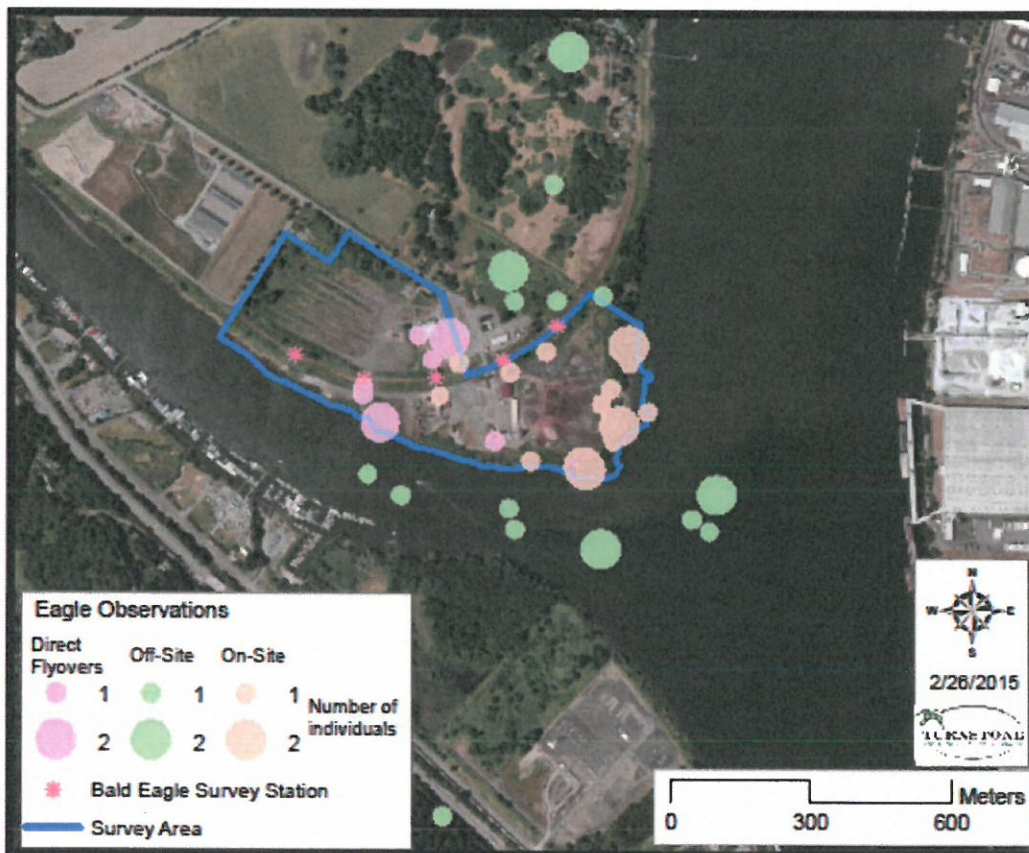


Figure 6. Estimated locations of eagle observations, May 2013 to May 2014

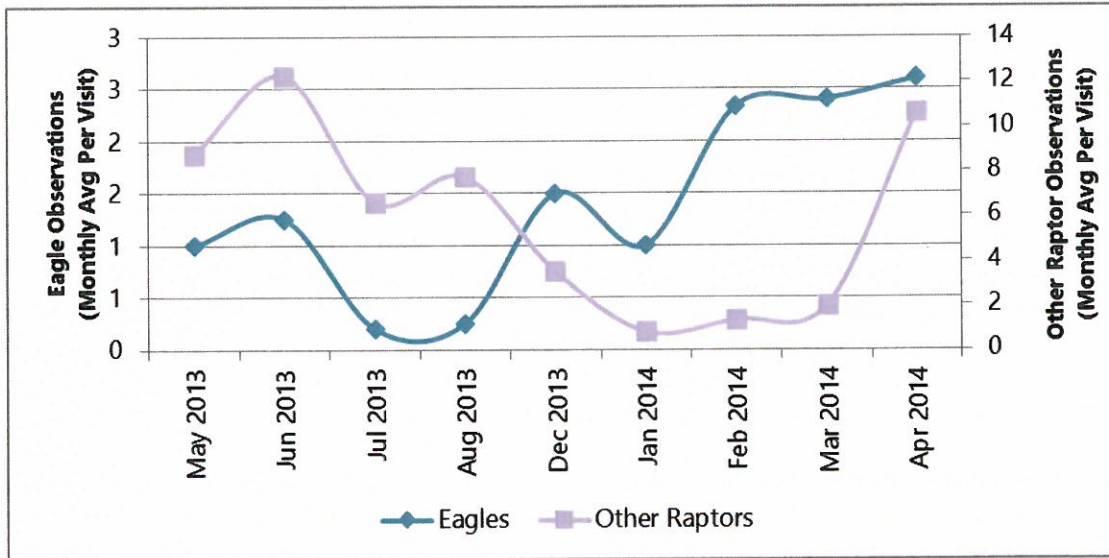


Figure 7. Mean bald eagle and other raptor observations May 2013-2014, by month

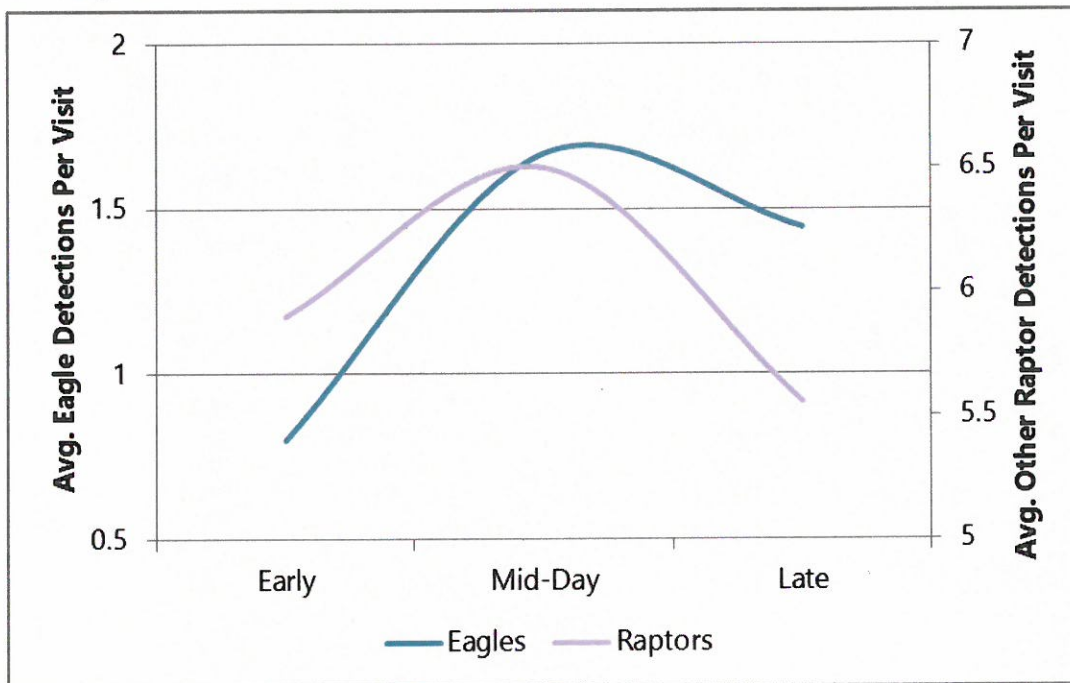


Figure 8. Mean bald eagle and other raptor observations May 2013-2014, by time of day¹

¹ Early = start time before 10 am; Mid-Day = start time between 10am-2:59pm; Late = start time 3 pm or later



Mink Monitoring

Camera Traps

During the 2013 survey period, Turnstone conducted six camera visits. No mink were observed on any camera photos. Other wildlife species noted included black-tailed deer (*Odocoileus hemionus*), Canada goose (*Branta canadensis*), nutria (*Myocastor coypus*), coyote (*Canis latrans*), and various passerines. Species observed in the photos analyzed by Wildlands personnel in May included black-tailed deer, coyote, Canada goose, and great blue heron.

Visual Surveys

During the 2013 survey period, Turnstone conducted eight mink sign surveys. No mink tracks, scat, or den sites were found during field sign investigation surveys. Other wildlife signs noted included goose, nutria, coyote, and river otter (*Lutra canadensis*).

CONCLUSIONS & RECOMMENDATIONS

Between February 2013 and May 2014, biologists conducted four bird assemblage surveys, 40 eagle surveys, eight mink visual surveys, and six mink camera visits. A total of 57 bald eagle sightings were recorded and no mink photos or mink sign was recorded.

Turnstone suggests that any post-restoration monitoring be conducted in the same manner described in the Methodology section above in order to be able to compare baseline data to post-restoration data to obtain insight on how the restoration effort has influenced wildlife use in the Project area.

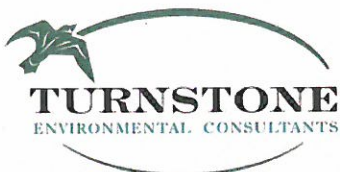


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<http://www.georgiawildlife.com/node/898>. Last accessed on September 20, 2013.

Huff, Mark H.; Bettinger, Kelly A.; Ferguson, Howard L.; Brown, Martin J.; Altman, Bob. 2000. A habitat-based point-count protocol for terrestrial birds, emphasizing Washington and Oregon. Gen. Tech. Rep. PNW- GTR-501. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 39 p.



APPENDIX A: DATA TABLES

Point Count Data Summary Table

Species	Common Name	Native/ Non native	4-May	28-May	21-Jun	20-Jul	Total
<i>Phalacrocorax auritus</i>	Double-crested Cormorant	N	0	1	0	0	1
<i>Ardea herodias</i>	Great Blue Heron	N	1	0	2	1	4
<i>Ardea alba</i>	Great Egret	N	1	1	0	0	2
<i>Cathartes aura</i>	Turkey Vulture	N	6	1	0	0	7
<i>Branta canadensis</i>	Canada Goose	N	3	4	1	2	10
<i>Anas platyrhynchos</i>	Mallard	N	1	0	0	0	1
<i>Pandion haliaetus</i>	Osprey	N	4	5	3	8	20
<i>Haliaeetus leucocephalus</i>	Bald Eagle	N	2	4	3	1	10
<i>Buteo jamaicensis</i>	Red-tailed Hawk	N	0	0	2	0	2
<i>Falco peregrinus</i>	Peregrine Falcon	N	0	0	1	0	1
<i>Callipepla californica</i>	California Quail	NN	4	6	4	4	18
<i>Charadrius vociferus</i>	Killdeer	N	2	1	0	0	3
<i>Actitis macularia</i>	Spotted Sandpiper	N	0	0	0	1	1
<i>Calidris minutilla</i>	Least Sandpiper	N	0	0	0	0	0
<i>Larus californicus</i>	California Gull	N	0	0	3	2	5
<i>Columba fasciata</i>	Band-tailed Pigeon	N	0	1	0	0	1
<i>Streptopelia decaocto</i>	Eurasian Collared-Dove	NN	1	1	0	0	2
<i>Zenaida macroura</i>	Mourning Dove	N	0	5	0	1	6
<i>Chaetura vauxi</i>	Vaux's Swift	N	1	1	2	0	4
<i>Calypte anna</i>	Anna's Hummingbird	N	0	0	2	0	2
<i>Picoides pubescens</i>	Downy Woodpecker	N	0	0	0	1	1
<i>Picoides villosus</i>	Hairy Woodpecker	N	1	0	0	0	1
<i>Colaptes auratus</i>	Northern Flicker	N	0	3	3	6	12
<i>Contopus sordidulus</i>	Western Wood-Pewee	N	0	6	9	4	19
<i>Empidonax trailii</i>	Willow Flycatcher	N	0	4	9	1	14
<i>Aphelocoma californica</i>	Western Scrub-Jay	N	2	2	7	4	15
<i>Corvus brachyrhynchos</i>	American Crow	N	1	0	0	1	2
<i>Progne subis</i>	Purple Martin	N	3	1	5	6	15



Species	Common Name	Native/ Non native	4-May	28-May	21-Jun	20-Jul	Total
<i>Tachycineta bicolor</i>	Tree Swallow	N	5	2	3	1	11
<i>Tachycineta thalassina</i>	Violet-green Swallow	N	2	4	2	12	20
<i>Stelgidopteryx serripennis</i>	Northern Rough-winged Swallow	N	2	0	0	1	3
<i>Petrochelidon pyrrhonota</i>	Cliff Swallow	N	5	7	2	11	25
<i>Hirundo rustica</i>	Barn Swallow	N	8	6	10	8	32
<i>Poecile atricapillus</i>	Black-capped Chickadee	N	0	2	2	2	6
<i>Sitta canadensis</i>	Red-breasted Nuthatch	N	0	0	0	1	1
<i>Thryomanes bewickii</i>	Bewick's Wren	N	1	5	6	3	15
<i>Troglodytes aedon</i>	House Wren	N	1	0	1	0	2
<i>Catharus guttatus</i>	Hermit Thrush	N	0	1	0	0	1
<i>Turdus migratorius</i>	American Robin	N	5	3	9	8	25
<i>Sturnus vulgaris</i>	European Starling	NN	10	11	10	7	38
<i>Bombycilla cedrorum</i>	Cedar Waxwing	N	0	6	3	6	15
<i>Vermivora celata</i>	Orange-crowned Warbler	N	14	0	0	0	14
<i>Dendroica petechia</i>	Yellow Warbler	N	0	5	0	0	5
<i>Oporornis tolmiei</i>	MacGillivray's Warbler	N	0	1	0	0	1
<i>Geothlypis trichas</i>	Common Yellowthroat	N	7	6	11	8	32
<i>Wilsonia pusilla</i>	Wilson's Warbler	N	0	0	1	0	1
<i>Icteria virens</i>	Yellow-breasted Chat	N	0	4	0	0	4
<i>Piranga ludoviciana</i>	Western Tanager	N	0	5	0	0	5
<i>Pipilo maculatus</i>	Spotted Towhee	N	6	9	4	4	23
<i>Passerculus sandwichensis</i>	Savannah Sparrow	N	1	3	0	0	4
<i>Melospiza melodia</i>	Song Sparrow	N	14	15	15	11	55
<i>Zonotrichia leucophrys</i>	White-crowned Sparrow	N	3	0	0	3	6
<i>Zonotrichia atricapilla</i>	Golden-crowned Sparrow	N	3	0	0	0	3
<i>Pheucticus melanocephalus</i>	Black-headed Grosbeak	N	4	5	4	1	14
<i>Passerina amoena</i>	Lazuli Bunting	N	1	0	0	0	1
<i>Agelaius phoeniceus</i>	Red-winged Blackbird	N	3	3	4	1	11



Species	Common Name	Native/ Non native	4-May	28-May	21-Jun	20-Jul	Total
<i>Molothrus ater</i>	Brown-headed Cowbird	N	15	13	11	4	43
<i>Icterus bullockii</i>	Bullock's Oriole	N	1	0	6	6	13
<i>Carpodacus purpureus</i>	Purple Finch	N	0	3	0	1	4
<i>Carpodacus mexicanus</i>	House Finch	N	5	2	2	3	12
<i>Loxia curvirostra</i>	Red Crossbill	N	0	2	0	0	2
<i>Carduelis pinus</i>	Pine Siskin	N	2	1	0	0	3
<i>Carduelis psaltria</i>	Lesser Goldfinch	N	0	1	1	3	5
<i>Carduelis tristis</i>	American Goldfinch	N	13	9	10	14	46
Total			164	181	173	162	680

Eagle Data Summary Table

Date	Start Time	End Time	Eagle Count	Raptor Count	Raptor Species
1/27/2013	7:00	9:00	2	2	RTHA
1/29/2013	17:05	19:05	3	2	OSPR, UNRA
4/11/2013 ²	14:00	17:00	0	2	RTHA
4/26/2013	16:30	18:30	1	2	RTHA
5/9/2013	15:40	17:40	2	8	TUVU, RTHA, OSPR
5/16/2013	14:25	16:25	0	11	RTHA, TUVU, OSPR
5/22/2013	13:00	15:00	0	5	OSPR, TUVU
5/30/2013	12:14	14:14	2	11	OSPR, TUVU
6/6/2013	10:22	12:22	2	12	OSPR, RTHA, TUVU
6/15/2013	9:32	11:32	0	13	OSPR, TUVU
6/20/2013	15:55	17:55	3	6	OSPR, TUVU
6/28/2013	9:25	11:25	0	18	OSPR, TUVU
7/3/2013	10:35	12:35	0	10	OSPR, TUVU
7/12/2013	7:50	9:50	0	10	OSPR, TUVU
7/19/2013	8:40	10:40	1	2	OSPR
7/23/2013	6:06	8:06	0	5	OSPR, RTHA
7/31/2013	10:50	12:50	0	6	TUVU, OSPR
8/9/2013	14:00	16:00	0	7	TUVU, OSPR
8/15/2013	15:08	17:08	1	11	TUVU, OSPR
8/23/2013	7:30	9:30	0	6	OSPR, RTHA, PEFA
8/28/2013	14:17	16:17	0	7	OSPR, TUVU, UNRA

² This survey was excluded from the report as it did not follow protocol.



Date	Start Time	End Time	Eagle Count	Raptor Count	Raptor Species
12/18/2013	10:25	12:25	1	3	RTHA
12/27/2013	10:00	12:00	2	4	RTHA, COHA
1/3/2014	14:28	16:28	2	1	COHA
1/10/2014	14:10	16:10	1	0	
1/17/2014	15:30	17:30	0	1	UNRA
1/24/2014	8:50	10:50	0	1	RTHA
1/31/2014	15:15	17:15	2	1	UNRA
2/10/2014	11:00	13:25	3	4	RTHA, BANO
2/14/2014	8:00	10:30	2	0	
2/18/2014	9:40	11:45	2	0	
3/1/2014	12:30	14:30	6	2	UNRA
3/7/2014	13:13	15:25	2	2	RTHA, UNRA
3/13/2014	16:48	18:48	2	0	
3/21/2014	11:22	13:22	2	4	RTHA, TUVU
3/24/2014	17:25	19:25	0	2	RTHA
4/3/2014	17:33	19:33	2	12	OSPR, TUVU, RTHA
4/12/2014	11:35	13:35	2	14	OSPR, TUVU, RTHA
4/18/2014	7:10	9:10	3	4	OSPR, RTHA
4/26/2014	14:30	16:30	6	14	RTHA, OSPR, TUVU, UNAC
5/2/2014	19:05	21:05	1	9	RTHA, OSPR, TUVU



Mink Camera Data Summary Table

Camera	Visit Date	Start Date	End Date	Mink Y/N	Other SP 1	SP1 Count	Other SP 2	SP2 Count	Other SP 3	SP3 Count	Other SP 4	SP4 Count	Notes
2	05/03/13	04/11/13	05/03/13	N	ODHE		ARHE						Cameras installed on 4/11/13
3	05/03/13	04/11/13	05/03/13	N	ODHE		CALA		BRCA				Cameras installed on 4/11/13
1	05/07/13	04/11/13	05/07/13	N									Cameras installed on 4/11/13
1	05/31/13	05/07/13	05/31/13	N	MYCO		CALA		BRCA				
2	05/31/13	05/03/13	05/31/13	N	APCA		ODHE						
3	05/31/13	05/03/13	05/31/13	N	ODHE		ARHE						
1	06/15/13	05/31/13	06/15/13	N	CAGO	14	ODHE	1	CALA	1			Camera contained no photos – battery was dead – replaced on 6/17
2	06/15/13	05/31/13	06/15/13	N									
3	06/15/13	05/31/13	06/15/13	N	ODHE	10							
1	06/28/13	06/15/13	06/28/13	N	ODHE	2							
2	06/28/13	06/17/13	06/28/13	N	ODHE	8							
3	06/28/13	06/15/13	06/28/13	N	ODHE	5	CAQU	2	BCCH	1			
1	07/17/13	06/28/13	07/17/13	N	CAGO	1	ODHE	2					
2	07/17/13	06/28/13	07/17/13	N	ODHE	18							
3	07/17/13	06/28/13	07/17/13	N	ODHE	10	SYBA	1	MYCO	1	AMRO	4	
1	07/31/13	07/17/13	07/31/13	N	ODHE	2							



Camera	Visit Date	Start Date	End Date	Mink Y/N	Other SP 1	SP1 Count	Other SP 2	SP2 Count	Other SP 3	SP3 Count	Other SP 4	SP4 Count	Notes
2	07/31/13	07/17/13	07/31/13	N	ODHE	3							
3	07/31/13	07/17/13	07/31/13	N	ODHE	1	SWTH	2					
1	08/13/13	07/31/13	08/13/13	N	NONE								
2	08/13/13	07/31/13	08/13/13	N	ODHE	7							
3	08/13/13	07/31/13	08/13/13	N	ODHE	6	CAQU	4	SCNI	1	AMCR	2	Cameras removed 8/30/13
1	08/30/13	08/13/13	08/30/13	N	ODHE	1							Cameras removed 8/30/13
2	08/30/13	08/13/13	08/30/13	N	ODHE	8							Cameras removed 8/30/13
3	08/30/13	08/13/13	08/30/13	N	NONE								Cameras removed 8/30/13

Mink Visual Survey Data Summary Table

Visit Date	Mink Observations		
	Tracks	Scat	Den
16-May	0	0	0
30-May	0	0	0
14-Jun	0	0	0
28-Jun	0	0	0
17-Jul	0	0	0
31-Jul	0	0	0
13-Aug	0	0	0
30-Aug	0	0	0



APPENDIX B: PERSONNEL BIOGRAPHIES



Jeff Reams



Project Manager, CEO & Co-founder of Turnstone

Jeff has over 20 years of experience as an environmental professional in the western United States. His experience includes project management on a wide variety of complex, multi-year projects involving ecosystem and natural resource management approaches to ensure regulatory compliance and environmental permitting, including state and federal Endangered Species Acts, a wide variety of aquatic and terrestrial ecological survey and inventory projects, habitat delineation, assessment and mitigation projects, wetland delineation and mitigation, biological assessments and evaluations, serving as liaison with regulatory agencies, and compiling and writing final reports. Jeff leads Turnstone's northern spotted owl program and has extensive experience working with the logistics for large-scale and linear projects. He is well-versed in ensuring that protocol-scheduling parameters are met within the framework of environmental variability, working to communicate with all parties and establish several layers of quality control, resulting in the highest quality deliverables.

Education

BS, College of Agricultural Sciences, Oregon State University, 1990

Certification & Licensure

- Northern Spotted Owl, Great Gray Owl, Marbled Murrelet, and other survey protocols
- Foliar Distress Identification "Interior West Forest Inventory and Analysis Forest Survey Field Procedures"
- Certified Trainer for Marbled Murrelet Survey Protocol Western Pond Turtle Survey Protocol
- Delineate Wetlands (COE),
- CPR and First Aid (American Red Cross)

Professional Memberships

- Past Board Member (The Wildlife Society, Oregon Chapter)
- The Wildlife Society (Oregon and National Chapter)
- Marbled Murrelet Technical Committee (PSG)
- Pacific Seabird Group

Project Experience Overview

- Northern Spotted Owl Surveys and Habitat Assessments in Oregon and Washington for multiple clients, including Bureau of Land Management, Center for Natural Lands Management, The Campbell Group, Hancock Forest Management, Pacific Forest Trust, Forest Capital Partners, Miami Corporation, Eugene Water and Electric Board, CH2M Hill, Weyerhaeuser Corp., and USDA Forest Service (1999-present)
- PGE Cascade Crossing Northern Spotted Owl and Great Gray Owl Habitat Delineation and Surveys, Tetra Tech (2010-2012)
- Marbled Murrelet Surveys in Oregon and Washington for multiple clients such as Trout Mountain Forestry, Washington Department of Natural Resources, BLM, Weyerhaeuser, The Campbell Group, Oregon Department of Forestry, Forest Capital Partners, City of Corvallis, City of Cannon Beach, West Inc., CH2M Hill, Shapiro, Inc., Miami Corporation, and Bonneville Power Administration (1997-2013)
- Bonneville Power Administration Transmission Line Rebuild Projects: Keeler-Tillamook Rebuild Project, AECOM (2012-2014); Salem-Albany, Cardno-Enrix (2013-present); Bandon-Rogue, Bonneville Power Administration (2011)
- Various Terrestrial Wildlife and Avian Surveys, including Survey & Manage and special-status species such as red tree voles and Washington ground squirrels, and raptors and neotropical migrants for multiple clients including Army Corps of Engineers, WEST, Inc., Symbiotics, LLC./Riverbank Power, Wildlands, Inc., Oregon Eagle Foundation, Eugene Water and Electric Board, and Umatilla Power Company (1996-2013)
- Special Status Species Surveys and Habitat Delineation for the Whistling Ridge Wind Project, CH2M Hill, PPM Energy, and SDS Lumber (2003-2004, 2008-2010)
- Bureau of Land Management Northeast Lands Data Project – wildlife and botanical surveys (2002-2004)
- Botanical Survey Projects, including many large-scale and linear projects, for clients including USDA Forest Service, BPA, City of Albany, City of Salem, Parsons-Brinckerhoff, & various private landowners (2006-2013)
- Wetland Delineation/Permitting for multiple clients, including Bonneville Power Administration (2011-2015), Walnut Creek, LLC. Willamette Neighborhood Housing Services (ongoing), Ashwood Preserve (2013-2014), DEVCO Engineering, Inc. (2013-ongoing), City of Salem (2009-2013), Benton County PWD (ongoing), Solar City (2012), Port of Astoria (2011), CH2M Hill (2011), Oregon Museum of Science and Industry (2011), Alaska Natural Gas Development Authority (2008)
- Mitigation & Restoration Services: Claremont Road Mitigation Bank (2008-2015), Warrenton Fiber; Muddy Creek Bank (ongoing); Sauvie Island Mitigation, ESCO Corp.; Youngs Bay Mitigation, PacificCorps (2011); Calapooia Restoration, Northwest Natural (2010)

Daphne Swope

Wildlife Biologist



Daphne has five years of experience in the natural resources field, with a focus on avian research, primarily in the Pacific Northwest. Daphne joined Turnstone as the crew leader for the ODF marbled murrelet survey project in 2012; her work since then includes conducting surveys for various projects, including northern spotted owl, terrestrial mollusk, eagle/raptor, mink, marbled murrelet, streaked horned lark, amphibian, , and ground squirrel surveys. She regularly conducts surveys along linear projects and is experienced in wildlife identification, monitoring protocols and techniques, as well as the terrain and logistical considerations indigenous to the western landscape. Additionally, she specializes in technical writing and editing, working with senior staff members to prepare biological assessments and other technical reports, as well as GIS analysis and map preparation.

Education

B.S., Environmental Biology/Zoology, Michigan State University, 2009

Certification & Training

- Northern Spotted Owl & Barred Owl Survey Protocol
- Terrestrial Mollusk Survey Protocol
- Marbled Murrelet Pacific Seabird Survey Protocol
- Portland State University Environmental Professional Program NEPA course
- North American Banding Council Trainer and Passerine Bander
- Avian Point Count Training Workshop, Klamath Bird Observatory
- Orienteering Training Workshop, Klamath Bird Observatory

Project Experience Overview

- Wildlife Biologist, Terrestrial Mollusk and Amphibian, Northern Spotted Owl, and Osprey Surveys in the Willamette National Forest, Whitewater Green Energy LLC. (2014)
- Wildlife Biologist, Joint-Base Lewis McChord Northern Spotted Owl & Barred Owl Surveys, Center for Natural Lands Management (2014)
- Lead Field Biologist; Raptor, Avian & Mustelid Surveys/Water Quality Monitoring for the Alder Creek Restoration Project & Miller Creek Restoration Project, Wildlands, Inc. (2013-2014)
- Wildlife Biologist, Northern Spotted Owl Surveys and Habitat Assessment for the Bonneville-Hood River Transmission Line Rebuild Project, Bonneville Power Administration/AECOM (2014)
- Wildlife Biologist, Streaked Horned Lark Surveys for the Salem-Albany Transmission Line Rebuild Project, Bonneville Power Administration/Cardno-ENTRIX (2014)
- Wildlife Biologist, Northern Spotted Owl & Marbled Murrelet Surveys for the Keeler-Tillamook Rebuild Project, Bonneville Power Administration (2013-2014)
- Wildlife Biologist/Crew Lead, Marbled Murrelet Surveys, Oregon Department of Forestry (2012-2014)
- Wildlife Biologist, Washington Ground Squirrel Surveys, Umatilla Power Company (2013)
- Technical Writer for various Bonneville Power Administration Transmission Line Projects, Parsons Brinckerhoff (2013-present), Oregon LNG Northern Spotted Owl & Marbled Murrelet Habitat Assessment, CH2M Hill (2012-2014), and the Mt. Hood Energy Project Northern Spotted Owl Habitat Assessment and Surveys, Cardno-ENTRIX (2013)
- Wildlife Biologist/Technical Writer, Private Timber Northern Spotted Owl and Marbled Murrelet Habitat Assessment and Surveys, The Campbell Group (2012-2013)
- Avian Field Technician, Wet Forest Birds Long-Term Demographic Study, USGS Pacific Islands Ecosystem Research Center (2012)
- Avian Field Assistant, Avian-Agriculture Conflict Research, Columbia University and the American Museum of Natural History (2010)
- Field Crew Leader, Passerine Long-Term Demographic Study, Klamath Bird Observatory, OR (2010)
- Biological/Field Technician, various projects, Klamath Bird Observatory (2009-2010)

Devin Sahl

Wildlife Biologist/ GIS Specialist



Devin Sahl has eleven years of broad experience as a wildlife biologist and GIS Specialist, specializing in sensitive and endangered species, primarily in the Pacific Northwest. He has an exceptional understanding of wildlife science, is able to identify many wildlife species and their associated habitats and is well-versed in survey, inventory and delineation protocols and techniques. Devin has conducted surveys for a wide variety of wildlife species throughout the Pacific Northwest. He has also conducted numerous natural resource assessments as part of the development permitting process required by local agencies and participated in several landscape-level inventories in the Pacific Northwest. Devin is a member in the Pacific Seabird Group and the Society for Conservation Biology.

Education

B.S., Natural Resources, Oregon State University, 2000

Certification & Training

- Northern Spotted Owl Survey & Habitat Delineation Protocol (USFS)
- Marbled Murrelet Pacific Seabird Survey & Habitat Delineation Protocol
- Threatened & Endangered Species Survey Protocols
- Known Site Survey Protocol (USFS)
- Northern Goshawk Survey Protocol (USFS)
- Survey and Manage Fungi Survey Protocol (USFS)
- Mollusk Survey Protocol (USFS)
- Foliar Distress Identification "Interior West Forest Inventory and Analysis Forest Survey Field Procedures", (PNW,USFS)
- Stream Inventory, Level I & II, (2007) USFS
- Wilderness First Aid (WMI)
- PADI Open Water Diver
- Oregon ATV Safety Card

Project Experience Overview

- Assistant Project Manager, Marbled Murrelet Surveys, Oregon Department of Forestry (2003-present)
- Wildlife Biologist, Northern Spotted Owl and Marbled Murrelet Habitat Assessment and Surveys for the Oregon LNG Biological Assessment Project, CH2M Hill (2007-present)
- Wildlife Biologist, Northern Spotted Owl and Marbled Murrelet Habitat Assessment and Surveys, The Campbell Group (ongoing)
- Wildlife Biologist, Habitat Assessment and Surveys for Western Gray Squirrel, Northern Spotted Owl and Northern Goshawk, SDS Lumber Co. (2003-2004, 2007-2010)
- Wildlife Biologist, Northern Spotted Owl Surveys, Miami Corporation (2005-present)
- GIS Specialist, Danger Tree Removal Biological Assessment, Bonneville Power Administration (2008-2009)
- Wildlife Biologist, Mollusk Surveys, USFS Willamette National Forest, Middle Fork District (2010-present)
- Wildlife Biologist, Northern Spotted Owl Long-Term Habitat and Species Management, Forest Capital Partners (2005-2012)
- Wildlife Biologist, Comprehensive Avian & Bat Use Study, W.E.S.T (2005, 2007-2009)
- Natural Resources Biologist, Foliar Distress Identification for the Ozone Bio-Monitoring Project, EPA/USFS (2004, 2006-2011)

Justin Votos

Wildlife Biologist



Justin has eight years of wildlife and forested areas experience, with five seasons of northern spotted owl survey experience and three seasons of great gray owl survey experience. He also has a strong background in energy and linear project experience and expertise in forest ecology. His diligent adherence to protocols and his ability to absorb new information have contributed to his reputation as a reliable field biologist on a variety of projects. He has an extraordinary level of fitness and skill in the woods which enables him to handle the most difficult terrain and conditions, and is adept using a compass, GPS, topographic maps and has excellent leadership skills.

Education

BS, Forestry, University of Vermont, Burlington, VA, 2007

Certification & Training

- Northern Spotted Owl & Great Gray Owl Survey Training
- Marbled Murrelet PSG Survey Protocol
- Threatened & Endangered Species Survey Protocols
- Botanical & Wetland Sampling Protocols
- Wilderness First Aid

Project Experience Overview

- Northern Spotted Owl & Great Gray Owl Surveys for the Bonneville Power Administration Hills Creek-Lookout Point Transmission Line Rebuild Project, Parsons-Brinckerhoff (2014-2015)
- Spotted Owl Surveys and Habitat Assessments in Oregon and Washington for multiple clients including Bonneville Power Administration, Center for Natural Lands Management, Bureau of Land Management, Whitewater Green Energy LLC., and CH2M Hill. (2010-2014)
- Wildlife Biologist, Northern Spotted Owl & Great Gray Owl Habitat Assessment & Surveys for the Cascade Crossing Transmission Line Project, Tetra Tech (2010-2012)
- Wildlife Biologist, Marbled Murrelet Surveys and Habitat Assessments for multiple clients in Oregon and Washington including Bonneville Power Administration, Bureau of Land Management, Oregon Department of Forestry, Trout Mountain Forestry, CH2M Hill, The Campbell Group, David Evans and Associates, and Confederated Tribes of the Grande Ronde (2008-2014)
- Field Technician, Wetland and Botanical Surveys for Bonneville Power Administration Transmission Line Projects throughout Oregon, for multiple clients including AECOM and Cardno-ENTRIX (2013-2014)
- Wildlife Biologist, Red Tree Vole Surveys in the Willamette National Forest, Eugene Water and Electric Board (2013)
- Lead Wildlife Biologist, Spotted Owl Surveys and Habitat Assessment for Cardno-ENTRIX (2013)
- Wildlife Biologist, Goshawk and Raptor Surveys in southwest Washington, WEST, Inc. (2008-2009)
- Wildlife Biologist, Raptor, Passerine, Herptile, and Plant Surveys in eastern Oregon, WEST, Inc. (2009)
- Forestry Biologist, Forest Stand Surveys in Malheur National Forest, Burlington, Vermont, and Vergennes, Vermont (2004-2005, 2006, 2009) and Stand-Level Inventories in Astoria and Forest Grove Districts, Oregon Department of Forestry (2014)

Russ Namitz

Wildlife Biologist



Russell joined the Turnstone team in 2012 and has brought an exceptional level of knowledge to our field staff. He has 17 years of broad experience as a wildlife biologist and naturalist, with a strong background in avian work. Russell, an avid birder, is able to identify all Pacific Northwestern species by sight and sound, and his life birding list includes over 2000 species. He has surveyed for passerines and raptors, along with a multitude of special-status species, including the marbled murrelet, spotted owls, and northern goshawks. He holds a Bachelor of Science in Biology from Pacific University in Forest Grove, Oregon.

Education

Master of Arts, Education/Curriculum Instruction, University of Phoenix, 2010

Secondary Education Credential Program: Life science, Humboldt State University, 2002

Bachelor of Science, Biology, Pacific University, 1996

Certification & Training

- Northern Spotted Owl Survey & Habitat Delineation Protocol (USFS)
- Marbled Murrelet Pacific Seabird Survey & Habitat Delineation Protocol
- Threatened & Endangered Species Survey Protocols
- Northern Goshawk Survey Protocol (USFS)

Project Experience Overview

- Wildlife Biologist, Marbled Murrelet Surveys (2012-2013)
- Wildlife Biologist, Northern Spotted Owl Surveys, Hancock Forest Management (2013-2014)
- Wildlife Biologist, Northern Spotted Owl Surveys, Bureau of Land Management (2013)
- Field Technician, Avifauna Demographic Study, Humboldt State University (2002)
- Field Technician, Raptor Migration Project, Hawkwatch International, Inc. (1997-1998, 1999)
- Field Technician, Northern Goshawk Demographic Study, USDA Forest Service (1998)