

HawkWatch International 2018 Fall Migration Season Summary Report

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Overview

In 2018, HWI crews monitored fall migration at eight sites in western and central North America from August to November. In total teams observed for 4,420 hours and counted 384,226 migrating raptors (Table 1).

Count methods for all HWI sites:

Weather permitting; two observers conduct standardized daily counts of migrating raptors from late August through early November. Observations typically begin between 0800–0900 hrs and end near 1700 hrs local time. Observers enter data digitally on a tablet and the Dunkadoo app. (www.dunkadoo.org). Other crew members and visitors occasionally assist with the count.

Chelan Ridge HawkWatch, Washington

Watch Site History and Location

The Chelan Ridge Hawkwatch in north-central Washington is an ongoing effort to monitor long-term regional trends in raptor populations using the north Cascades migratory flyway. HawkWatch International (HWI), in partnership with the US Forest Service's Okanogan and Wenatchee National Forests, initiated standardized counts of the autumn raptor migration at Chelan Ridge in 1997, with full-season counts beginning in 1998. To date, observers have recorded 19 species of migratory diurnal raptors at the site, with counts ranging between 1500 and 2900 migrant raptors per season. The 2018 season marked the 21st consecutive, full-season count at the site.

Chelan Ridge is located approximately 21 km north–northwest of the city of Chelan, on the Chelan / Okanogan County border, and is on the border between the Okanogan and the Wenatchee National Forests. The Chelan Ridge count site is at 1729 m elevation and provides a 360-degree view of the surrounding landscape. The lookout's southwestern slope is a cliff face of 70–80 degrees that drops about 65 m into Mitchell Creek Basin. This cliff face creates excellent updrafts on days of moderate to strong south winds, which allow for extremely close looks at migrants as they fly nearby.

Crews counted 1,353 migrating raptors of 17 species in 517.7 hours of observation, 27 % below site average but 59% higher than the record low 2017 count. Notable for the year were record high counts for Turkey Vulture (84), Bald Eagle (18), and Ferruginous Hawk (1), and record low counts for Northern Goshawk (12), Merlin (17), and Prairie Falcon (2). Regression analyses of standardized annual passage rates (birds/100 hrs) show long term declines in the total number of migrants counted at Chelan Ridge, driven by declines in Sharp-shinned Hawks, Red-tailed Hawks, Golden Eagles, Northern Harriers, Northern Goshawks, and American Kestrels.

Chelan Ridge 2018 Crew: Will Britton, Lara Elmquist, Joanna Morelli, Emilie Chen, and Andrew Meiborg.

Bonney Butte HawkWatch, Oregon

Watch Site History and Location

The Bonney Butte HawkWatch in the northern Cascade Mountains of Oregon is an ongoing effort to monitor long-term regional population trends of diurnal raptors that migrate through the Cascade Mountains portion of the Pacific Coast Flyway. HawkWatch International (HWI) initiated standardized counts of the autumn raptor migration at Bonney Butte in 1994. To date, HWI observers have recorded 18 species of migratory raptors at the site, with counts typically ranging between 2,000 and 4,000 migrants per season. The 2018 season marked the 25th consecutive year of counting efforts.

Bonney Butte is located approximately 9.5 km east-southeast of Government Camp, on the east side of the White River drainage within the Mt. Hood National Forest, Hood River County, Oregon. The butte is the southern terminus of Surveyor's Ridge, which originates near Hood River, Oregon south of the Columbia River Gorge. The ridge extends southward for approximately 50 km and ends southeast of Mt. Hood. The observation site is located on the highest point of the butte.

Crews counted 3,237 migrating raptors of 16 species in 394.2 hours of observation in 2018, 13% over site average and 51% higher than the 2017 count. Notable for 2018 were record high counts for Merlin (130), Bald Eagle (147), Prairie Falcon (11), and Ferruginous Hawk (2); and a record low count for American Kestrel (7). Other species with below average counts included: Northern Goshawk (22) and Golden Eagle (59). Other species with above average counts included: Turkey Vulture, Osprey, Northern Harrier, Red-shouldered Hawk, Red-tailed Hawk, and Peregrine Falcon. Regression analyses of standardized annual passage rates (birds/100 hrs) show long-term declines for Northern Harrier, Red-tailed Hawk, Golden Eagle, and American Kestrel; and increasing trends for Turkey Vulture, Bald Eagle, and Peregrine Falcon.

Bonney Butte 2018 Crew: Caleb Hansen, Ashley Santiago, Krista Fanucchi, Stephanie Bartlett, and Sydney Schick.

Bridger Mountains, Montana

Watch Site History and Location

The Bridger Mountains HawkWatch in southwestern Montana is an ongoing effort to monitor long-term population trends of raptors using this portion of the Rocky Mountain Flyway (Omland and Hoffman 1996, Hoffman and Smith 2003, Smith et al. 2008a). HawkWatch International (HWI) initiated a partial-season count at this site in 1991, with standardized, full-season annual monitoring commencing in 1992. Beginning in 2009 Montana Audubon took the lead in funding and coordinating these annual counts in continued partnership with HWI. This flyway is renowned for large numbers of migrating Golden Eagles. Annual counts range between 2,000 and 3,500 migrants of up to 18 species. The 2018 season marks the 27th consecutive full-season autumn count of migratory raptors at this site.

The Bridger Mountains is a relatively narrow range that runs primarily along a north-south axis. From Sacajawea Peak (2,950 m elevation) the range extends southward for 40 km before meeting the Gallatin Valley 5 km northeast of Bozeman, Montana. Consistent westerly winds collide with the Bridger Range and create predictable lift, attracting impressive numbers and diversity of southbound migrating raptors each fall. The observation site is a helicopter-landing platform atop the Bridger Bowl Ski Area at an elevation of 2,610 m (45° 49.022' N, 110° 55.778' W; Fig. 1). The site is situated within the Custer

Gallatin National Forest on the crest of the Bridger Ridge, about 25 km northeast of Bozeman and 3 km north of Saddle Peak. The helicopter pad is a 5m x 5m concrete platform located approximately 50m north of an avalanche cache/ski patrol hut. The site is accessed by walking along a primitive dirt road on the east-facing slope for 3 km (780m rise in elevation) to the top of the Bridger chairlift, then continuing westward a few hundred meters along a narrow footpath to the crest of the Bridger Ridge, and then north for 50m to the observation site.

The crew counted 2,048 migrating raptors in 395.5 hours of observation in 2018, 18% below site average. The crew counted above average numbers of Cooper's Hawk, Turkey Vulture, Osprey, Broad-winged Hawk, and Rough-legged Hawk in 2018; and below average numbers of Golden Eagle, Bald Eagle, Sharp-shinned Hawk, Northern Goshawk, Merlin, Prairie Falcon, and Swainson's Hawk.

Bridger Mountains 2018 Crew: Brett Davis, Adam Bradley, and Alice Morris

Goshute Mountains HawkWatch, Nevada

Watch Site History and Location

The Goshute Mountains HawkWatch in northeastern Nevada is an ongoing effort to monitor long-term population trends of raptors using the Intermountain Flyway. HawkWatch initiated standardized counts of migrating raptors at the Goshute Mountains in 1983 and counts. This is one of the longest running standardized, raptor-migration monitoring efforts in western North America, with the 2018 season marking the 36th consecutive year for the site. Annual counts range between ~12,000–25,000 migrants of up to 19 species, making this one of the largest known concentrations of migrating raptors in the western U.S. and Canada.

The Goshute Mountains form a 100-km ridge that runs north–south along the Utah–Nevada border. The study site is located in the Goshute Wilderness Study Area approximately 40 km southwest of Wendover, Nevada, on land administered by the Elko Field Office of the Bureau of Land Management (40° 25.417' N, 114° 16.276' W; Fig. 1). The HawkWatch site is located near the south end of the Goshute range and accessed via a primitive road that begins near Ferguson Springs, and then a primitive trail that ascends Christmas Tree Canyon from the east.

Crews counted 20,698 migrating raptors of 18 species in 706.8 hours of observation in 2018, 42% over site average and 98% higher than the 2017 count. Notable for 2018 were average (Golden Eagle, Bald Eagle, and American Kestrel) or above average counts for all species except Prairie Falcon (18), which was the only species with below average numbers in 2018. Regression analyses of standardized annual passage rates (birds/100 hrs) show long-term declines in counts of migrating Northern Goshawks, Golden Eagles, and American Kestrels; and increases in counts of migrating Turkey Vultures, Broad-winged Hawks, Swainson's Hawks, and Red-tailed Hawks.

Goshute Mountains 2018 Crew: Scott Shively, Frank Simeone, Emilee Sparks, Zach Wilkison, Kara Winter.

Manzano Mountains HawkWatch, New Mexico

Watch Site History and Location

The Manzanos HawkWatch in central New Mexico is an ongoing effort to monitor long-term regional population trends of diurnal raptors that migrate through the southern portion of the Rocky Mountain

flyway. HawkWatch International initiated standardized counts of the autumn raptor migration at the Manzanos in 1985. To date, HWI observers have recorded 18 species of migratory raptors at the site, with counts typically ranging between 4,000 and 7,000 migrants per season. The 2018 season marked the 34th consecutive count.

The count site is located in the Manzano Wilderness Area of the Cibola National Forest (Mountainair Ranger District) near Capilla Peak, approximately 56 km south-southeast of Interstate 40 (34°42.25' N, 106°24.67' W). The observation point is at 2,805 m (9,195 ft) on a northwest-southeast facing outcrop of a limestone ridge. It is reached by walking up a 1.2 km trail from the main road leading up to Capilla Peak (FS 522). The vegetation on the slopes of the ridge consists of Gambel oak (*Quercus gambelli*), Douglas-fir (*Pseudotsuga menziesii*), White fir (*Abies concolor*), Ponderosa pine (*Pinus ponderosa*), Pinyon pine (*Pinus edulis*), New Mexico locust (*Robinia neomexicana*), and Bigtooth maple (*Acer grandidentatum*).

Crews counted 4,865 migrating raptors of 18 species in 528.5 hours of observation in 2018, 7% below site average and 17% lower than the 2017 count. We counted below average numbers of Cooper's Hawk, Northern Goshawk, Swainson's Hawk, and American Kestrel in 2018; and above average numbers of Turkey Vulture (773), Golden Eagle (164), Bald Eagle (7), and Zone-tailed Hawk (3). Regression analyses of standardized annual passage rates (birds/100 hrs) suggest long-term declines in counts of migrating American Kestrels and Cooper's Hawks.

Manzano Mountains 2018 Crew: Jessica Taylor, Tucker Davidson, Tori Thorpe, Cassidy Ruge, Isa Schwartz

Grand Canyon (Yaki Point) HawkWatch, Arizona

Watch Site History and Location

The Grand Canyon HawkWatch in northern Arizona is an ongoing, long-term effort to monitor population trends of migratory raptors that use the southern portion of the Intermountain Flyway. HawkWatch International (HWI) initiated standardized counts at the Yaki Point in 1997. In 2018, with support from partners at the Park, and the Grand Canyon Association, HWI monitored fall migration at Yaki Point for the 19th season.

Yaki Point is a popular canyon lookout located in Coconino County, Arizona along the south rim of the Grand Canyon. Access is from Hwy 64, about 11.2 km northeast of the south entrance of the park. The observation site elevation is 2,213 m (36° 03' 31.0" N, 112° 05' 01.7" W), and provides superb views of the canyon to the west and north, but thick vegetation obscures the view towards the east. The predominant vegetation consists of big sagebrush (*Artemisia tridentata*), cliffrose (*Cowania mexicana*), Utah juniper (*Juniperus osteosperma*), and two-needle pinyon (*Pinus edulis*).

The crew counted 3,454 migrating raptors of 16 species in 543.6 hours of observation in 2018, 31% below site average and 15% lower than the 2017 count. Notable for 2018 was a record high count for Peregrine Falcon (12) and a record low American Kestrel count (302). We counted below average numbers of Northern Harrier, Sharp-shinned Hawk, Cooper's Hawk, Red-tailed Hawk, Ferruginous Hawk, Merlin, and Peregrine Falcon; and an above average number of Northern Goshawks (13). Regression analyses of standardized annual passage rates (birds/100 hrs) suggest long-term declines in counts of migrating American Kestrels and Golden Eagles.

Yaki Point 2018 Crew: Greg Cooper, Mikayla Ockels, Kirsten Fuller.

Commissary Ridge HawkWatch, Wyoming

Watch Site History and Location

The Commissary Ridge HawkWatch in southwest Wyoming is an ongoing effort to monitor long-term regional population trends of diurnal raptors that migrate along the Rocky Mountain Flyway. HawkWatch International initiated standardized counts at Commissary Ridge, the first long-term raptor migration site Wyoming in 2002. To date HWI observers have recorded 17 species of migratory raptors at the site, with counts typically ranging between 3,000 and 4,300 migrants per season. The 2018 season marks the 17th consecutive season of counting at Commissary Ridge.

The study site is located atop the southern end of Commissary Ridge on the southwestern tip of South Fork Mountain about 37 km north of Kemmerer, Wyoming, on land managed by the Bureau of Land Management, Kemmerer Field Office. The site is accessed from Hwy 233 just northeast of Lake Viva Naughton, and is located on the western edge of a broad ridgetop overlooking the Ham's Fork River Valley and Lake Viva Naughton to the west (42°01'29"N 110°35'22"W; T24 R116 S28 SESW; elevation ~2,700 m). The location provides an unobstructed 360° view of the surrounding landscape. The ridgetop and immediate landscape consists of rocky substrates and low growing desert shrubs and grasses, with scattered stands of mixed-conifer and aspen in sheltered pockets and ravines.

The crew counted 4,745 migrating raptors of 17 species during 501.8 hours of observation in 2018, 31% above site average and 59% higher than the 2017 count. Notable in 2018 was a record low Prairie Falcon count (1), and a record high count for Cooper's Hawk (760). We counted above average numbers of Turkey Vulture, Northern Harrier, Broad-winged Hawk, Swainson's Hawk, Bald Eagle, and Peregrine Falcon; and below average numbers of Northern Goshawk. Regression analyses of standardized annual passage rates (birds/100 hrs) suggest long-term declines in counts of migrating American Kestrels.

Commissary Ridge 2018 Crew: Kaitlin McGee, James Petersen, Cody Allen, Jordan Anderson, Clare Stanfield.

Corpus Christi HawkWatch, Texas

Watch Site History and Location

The Corpus Christi HawkWatch in southern Texas is an ongoing effort to monitor long-term regional trends in raptor populations using the Gulf Coast migratory flyway (Smith et al. 2001, 2008a). HawkWatch International (HWI), in partnership with Nueces County Parks and Recreation, Texas Parks and Wildlife Department, and local volunteers began standardized annual counts of the fall raptor migration at Hazel Bazemore County Park (HBCP) near Corpus Christi in 1997. Since then, we have documented 30 species of raptors migrating through the project area with annual counts ranging between 445,000 to more than 1,000,000 migrants each fall. The spectacular Broad-winged Hawk flight comprises 88–98% of the total count annually. Other species of note seen at the Corpus Christi HawkWatch each year include sizeable flights of Mississippi and Swallow-tailed Kites, and an occasional Aplomado Falcon. In 2018, with support from local partners and a dedicated team of volunteers, HWI monitored the raptor flight at this important migration site for the 22nd straight season.

The Corpus Christi HawkWatch sits at 28 m above mean sea level, the highest elevation along the coast in a four-county area. The park is located on the southern bank of the Nueces River at a horseshoe bend where the river changes from a southeast to north–northwest flow. Fall 2018 marked the eleventh season for the viewing platform centered atop the grassy area that previously served as the central viewshed. The deck can hold up to 150 people, affords a sweeping 180° viewscape, and includes a backside ramada for shade. Visibility is clear to the west, north, and east, but trees and topography at a similar elevation restrict the southern view. The Nueces River bottomlands feature a transitional riparian forest. Characteristic plants include hackberry (*Celtis* spp.), Mexican ash (*Fraxinus berlandieriana*), anacua (*Ehretia anacua*), black persimmon (*Diospyros texana*), chittimwood (*Bumelia lanuginosa*), and cedar elm (*Ulmus crassifolia*). Many species of raptors use this forested area for nocturnal roosting during migration (Rappole and Blacklock 1985). Open farmland predominates to the north and south, open ranchland to the west. Corpus Christi Bay, which is an industrial and urbanized area, lies to the east.

The crew counted 343,826 migrant raptors of 24 different species in 2018, making this a below average year for the site compared to the long-term average (Table 1). Notable for 2018 was another record high year for Peregrine Falcons (393--up 50 from the record 343 of 2017), a site record 124 Merlins, a record 17 Bald Eagles, and record 376 migrating Red-tailed Hawks. We also counted above average numbers of Black Vulture, Turkey Vulture, Northern Harrier, Sharp-shinned Hawk, Cooper's Hawk, Zone-tailed Hawk, American Kestrel, and Swallow-tailed Kite. We logged below average counts of Red-shouldered Hawk, Broad-winged Hawk, Swainson's Hawk, Prairie Falcon, and Golden Eagle. Regression analyses of standardized annual passage rates (birds/100 hrs) suggest long-term declines in counts of migrating Broad-winged Hawks and Red-shouldered Hawks, and increasing numbers of migrating American Kestrels, Merlins, Peregrine Falcons, Sharp-shinned Hawks, Cooper's Hawks, and Turkey Vultures at Corpus Christi.

Corpus Christi 2018 Crew: Dane Ferrell, Casey Weissburg, Daniel Horton, RJ Baltierra, and Libby Even.

Table 1. Summary of the 2018 fall flight of migrating raptors across HWI's monitoring network. Values are counts ; green indicates a count significantly higher (outside the 95% confidence interval) than the historic site average, red indicates a count significantly lower than average, and black indicates a count that does not differ from the site average. Asterisks denote a record high or low count. In 2018 HWI monitored fall migration for 4,420 hrs and counted 384,226 birds.

	Bonney Butte, OR	Chelan Ridge, WA	Bridger Mtn, MT	Commissary Ridge, WY	Goshute Mts, NV	Yaki Pt, AZ	Manzano Mts, NM	Corpus Christi, TX
	<i>Hours Counted in 2018</i>							
Species	394.2	517.7	395.5	501.8	706.8	543.6	528.5	831.5
Black Vulture								638
Turkey Vulture	491	*84*	10	137	*1286*		773	94166
Osprey	87	36	12	33	142	42	26	187
Northern Harrier	35	77	58	40	285	33	60	504
Crested Caracara								7
Common Black Hawk								0
Harris' Hawk								16
Accipiters								
Sharp-shinned Hawk	1089	525	242	1152	5682	1083	1511	2513
Cooper's Hawk	377	170	216	*760*	4077	691	777	1516
Northern Goshawk	22	*12*	12	23	112	13	8	0
Unidentified accipiter	36	13	28	*118*	447	308	168	69
TOTAL ACCIPITERS	1524	720	498	2053	10318	2095	2464	4098
Buteos								
Red-shouldered Hawk	2	0			1	0		25
Broad-winged Hawk	0	10	21	46	136	13	7	224318
Short-tailed Hawk								2
Swainson's Hawk	1	34	2	666	1176	43	231	4112
White-tailed Hawk								18
Zone-tailed Hawk							3	12
Red-tailed Hawk	682	180	115	810	4851	860	630	*376*
Ferruginous Hawk	*2*	*1*	2	7	20	2	11	0
Rough-legged Hawk	11	49	55	14	37	1	1	0
Unidentified buteo	7	18	16	124	207	12	73	16
TOTAL BUTEOS	705	292	211	1667	6428	931	956	228879
Eagles								
Golden Eagle	59	63	1004	293	257	6	164	1
Bald Eagle	*147*	*18*	59	208	14	14	7	*17*
Unknown eagles	1	0	11	30	0	0	0	0
TOTAL EAGLES	207	81	1074	531	271	20	171	18
Falcons								
American Kestrel	*7*	29	87	187	1811	*302*	237	1195
Merlin	*130*	*17*	9	17	54	7	28	*124*
Prairie Falcon	*11*	*2*	12	*1*	18	*12*	9	3
Peregrine Falcon	17	11	16	18	40	5	59	*393*
Aplomado Falcon								0
Unidentified falcon	10	1	8	*29*	16	2	5	21
TOTAL FALCONS	175	60	132	252	1939	*328*	338	1736
Kites								
Hook-billed Kite								0
Swallow-tailed Kite								178
White-tailed Kite								5
Mississippi Kite								13276
Unidentified Kites								0
TOTAL KITES								13459
Unidentified Raptor	13	3	53	32	29	5	77	117
GRAND TOTAL	3,237	1,353	2,048	4,745	20,698	3,454	4,865	343,826
% Change from 2017	51	59	-24	59	92	-15	-17	25
% Change from Site Average	13	-27	-18	31	42	-31	-7	-43