

2021 Grant PUD / BPA Avian Monitoring Weekly Report 06/14 – 06/20

WEEKLY ACTIVITIES & UPCOMING EVENTS

ACTIVITIES	DATE
Boat and drone surveys of Astoria-Megler Bridge	06/14 – 06/15
Survey of Island 20	06/16
Survey of Potholes Reservoir: Goose Island and North Potholes	06/17
Survey of Blalocks Islands	06/18
Survey of McNary Pool: Badger, Crescent and Foundation Islands	06/18
UPCOMING EVENTS	
Survey of Potholes Reservoir: Goose Island and North Potholes	06/21 – 06/27
Survey of Lenore Lake: North Rock and Shoal Islands	06/21 – 06/27
Survey of Banks Lake: Twinning and Goose Islands	06/21 – 06/27
Survey of Sprague Lake: Harper Island	06/21 – 06/27
Survey of McNary Pool: Badger, Crescent and Foundation Islands	06/21 – 06/27
Survey of Blalock Islands	06/21 – 06/27
Survey of Priest Rapids Pool: Goose and Mud Islands	06/21 – 06/27
Aerial and Drone Imagery Counts	06/21 – 06/27

COLONY MONITORING & WATERBIRD SURVEYS

Astoria-Megler Bridge: Astoria-Megler Bridge was visited on June 14 and 15.

Astoria-Megler (Boat Survey):

We conducted our third and final boat survey of the Astoria-Megler Bridge for nesting double-crested cormorants, Brandt’s cormorants, and pelagic cormorants this season. For reference, we provide a key to individual bridge sections (see *Figure 1* below) and report nest counts observed by species and section (see *Table 1* below). Due to weather and tide conditions, the survey was conducted over two consecutive days.

Nest counts, specifically for double-crested cormorants, during the June 14th and 15th boat survey were approximately half the number of nests from the peak count in 2020. Counts presented in *Table 1* represent provisional, average nest counts from two observers. Another observer conducted counts of individual cormorants for each bridge section, although only nest counts are presented in this week’s report. Validation of our nest counts will be provided following review of aerial and drone imagery in subsequent reports.

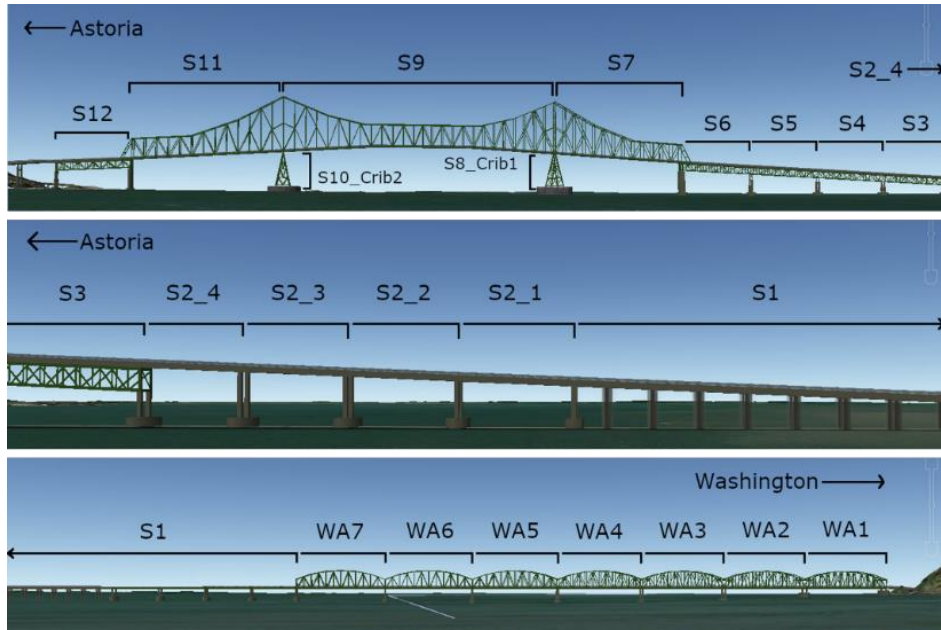


Figure 1. Survey sections for cormorant counts courtesy of James Lawonn (ODFW).

Attended double-crested cormorant nests were observed across most sections of the Astoria-Megler Bridge. The highest count (619 nests) was observed on the north crib (Section 8; see [Figure 1](#)). The north crib was where we established five plots to measure PIT tag detection efficiency prior to the breeding season. Most cormorants were attending nests with chicks with age ranges from 2 to 5 weeks old. Certain sections of the bridge (Section 3; see [Table 1](#)) had substantially higher nest counts compared to the June 2nd boat survey, indicating that some cormorants began nesting late. In total, 3,031 attended double-crested cormorant nests were observed during the June 14th and 15th surveys compared to 1,421 and 2,944 nests during the April 20th and June 2nd surveys respectively (see [Table 1](#) below). Total nest counts are provisional.

Attended Brandt's cormorant nests were observed in the most northern and southern sections of the Astoria-Megler Bridge and absent in sections 2.1 – 6. The highest numbers were observed on the bridge sections near the Washington shore (see [Figure 1](#) and [Table 1](#)). We observed chicks that were estimated to be 1 to 3 weeks old. In total, 812 attended Brandt's cormorant nests were observed during the June 14th and 15th surveys compared to 170 and 955 nests during the April 20th and June 2nd surveys, respectively (see [Table 1](#) below). Total nest counts are provisional.

Attended pelagic cormorant nests were only observed in sections 2.1 – 2.4. Chicks were observed and estimated to be 2 to 4 weeks old. In total, 82 attended pelagic cormorant nests were observed during the June 14th survey compared to 32 and 74 nests during the April 20th and June 2nd surveys, respectively (see [Table 1](#) below). We are confident that most all pelagic cormorant nests on the bridge were included in our counts as there were no obstructions of sections 2.1 – 2.4 from our vantage on the boat.

Table 1. Provisional attended nest counts by cormorant species and bridge section from the North (Section WA 1) to South (Section 12) during three boat surveys (April 20th, June 2nd, and June 14th-15th). The average nest count from two observers is reported. [DCCO: double-crested cormorant; BRAC: Brandt’s cormorant; PECO: pelagic cormorant].

SECTION	Cormorant spp. nesting on Astoria-Megler Bridge								
	4/20			6/2			6/14-6/15		
	DCCO	BRAC	PECO	DCCO	BRAC	PECO	DCCO	BRAC	PECO
WA 1	1	0	0	31	0	0	23	0	0
WA 2	2	14	0	58	108	0	63	82	0
WA 3	3	7	0	60	106	0	59	84	0
WA 4	2	0	0	59	103	0	61	81	0
WA 5	0	1	0	59	82	0	65	67	0
WA 6	14	12	0	133	105	0	137	81	0
WA 7	33	32	0	153	104	0	167	78	0
1	50	89	0	203	308	0	185	303	0
2.1	23	0	13	126	0	21	134	0	23
2.2	31	0	5	90	0	8	103	0	8
2.3	48	0	9	118	0	28	115	0	31
2.4	66	0	5	162	0	17	190	0	20
3	132	0	0	268	0	0	369	0	0
4	81	0	0	190	0	0	205	0	0
5	79	0	0	199	0	0	201	0	0
6	88	0	0	175	0	0	170	0	0
7	69	0	0	74	2	0	65	5	0
8	685 ¹	8 ¹	0	615 ¹	1 ¹	0	619 ¹	0 ¹	0
9	0	0	0	0	0	0	0	0	0
10	17 ¹	8 ¹	0	175 ¹	37 ¹	0	105 ¹	34 ¹	0
11	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0
Total	1,421²	170²	32	2,944²	955²	74	3,031²	812²	82

¹Counts of nesting cormorants on the north and south cribs will be validated using counts from drone imagery in the coming weeks. Obstructions of cribs are present during boat counts.

² Total counts of BRAC and DCCO from all boat surveys will be validated during processing of drone and fixed-wing imagery.

Astoria-Megler (Drone Survey):

We conducted our third and final drone survey of the Astoria-Megler Bridge north crib for nesting double-crested and Brandt’s cormorants. No disturbances to nesting/loafing cormorants from the drone flight or boat were observed. One flight around the entire crib was performed in addition to one manual flight to obtain imagery specific to our detection efficiency plots (see *Figure 2* below). Nest counts from drone and fixed-wing aerial imagery are ongoing and expected to provide more accurate counts to bridge sections (e.g., Sections 8 and 10). We will report these updated numbers as they become available.



Figure 2. Double-crested cormorants nesting on the north crib on June 15th.

East Sand Island: OSU took aerial photos from a fixed-wing survey of East Sand Island on June 16. Counts will be conducted in subsequent weeks.

Island 20: Island 20 was visited on June 16.

~3,030 nesting gulls were observed on the island from a shore-based survey. The colony was split into two distinct breeding areas on the south-central end of the island (~2,080 gulls) and the north end of the island (~950 gulls). ~55% of adult gulls on the northern colony and ~45% of adult gulls on the southern colony attended chicks. Age estimates of chicks ranged from 1 to 4 weeks old. ~25% of the gulls in the southern colony were observed in incubating posture. We estimated that approximately 90% of the colony was visible from our vantage.

25 American white pelicans were also observed loafing on the island's southern end.

Potholes Reservoir: Potholes Reservoir was visited on June 17.

Goose Island:

Caspian terns were counted in 11 different locations on Goose Island and its surrounding islets (see [Table 2](#) below). The main colony area continues to be obstructed from our vantage on the water, although we provided counts conducted from aerial imagery on May 4 and May 25 (see [Table 2](#)). Additional counts will be conducted from drone imagery in subsequent reports. 9 Caspian terns were counted in a bare sand area along the southwestern shoreline of the island (i.e. Southwest Main), the lowest count in this section in the past 7 weeks. 23 Caspian terns were observed loafing on the land bridge between Northwest Main and Northwest Rocks ([Figure 3](#)), the first Caspian terns observed in this section this year ([Table 2](#)). No nesting was observed where Caspian terns were visible during this week's survey.

Table 2. Caspian tern counts by location at Goose Island from 05/04 – 6/17. [NA: Not Available]

Caspian terns							
LOCATION	05/04	05/10	05/17	05/25	06/01	06/09	06/17
Northwest Main	0	0	0	0	0	0	0
Northeast Main	0	0	0	0	0	0	0
Southeast Main	0	0	0	0	0	0	0
South Spit	0	0	0	0	0	0	0
South Beach	0	0	0	0	0	0	0
Colony Area ¹	23 ³	NA	NA	33 ³	NA	NA	NA
Southwest Main	40	21 ⁴	109	19	90	18	9
West Main ²	0	0	0	0	0	0	0
North Beach	0	0	0	0	0	0	0
East Rocks	0	0	0	0	0	0	0
Northeast Rocks	0	0	0	0	0	0	23
Northwest Rocks	0	0	0	0	0	0	0
Total	63	NA	NA	52	NA	NA	NA

¹ Complete obstruction from boat vantage.

² Partial obstruction from boat vantage.

³ Counts conducted from fixed-wing aerial imagery.

⁴ Nest dissuasion activities occurred during counts.



Figure 3. Caspian terns and gulls loafing on the land bridge between NW Main and NW Rocks.

1 American white pelican was observed loafing.

~3,378 nesting gulls were observed. There were approximately equal numbers of California and ring-billed gulls. Attended nest counts were unavailable. ~40 percent of adult gulls had chicks present. Gull chicks from early nesting pairs have fledged. Age estimates of chicks in attended nests ranged from 3 to 4 weeks old.

Northeastern Potholes (Historic Caspian Tern Colony):

1 Caspian tern was observed loafing. No nesting was observed.

3 ring-billed gulls and 1 California gull were also observed loafing.

2016 Colony Site (Historic Caspian Tern Colony):

7 Caspian terns were observed loafing. No nesting was observed. Due to lower reservoir levels, new sandy habitat has become available.

10 gulls were observed loafing.

DCCO Northeast Arm (Historic double-crested cormorant colony):

Land based surveys on June 1 and June 10 suggested these colonies were abandoned. A boat-based survey on June 17 confirmed colony abandonment that may have been due to pressures from bald eagles that are nesting nearby. This eagle nest was located in a different, former cormorant nesting colony in Northeast Potholes. There have been no confirmed successful double-crested cormorant colonies in North Potholes this year.

McNary Pool: McNary Pool was visited on June 18.

Badger Island:

57 Caspian terns, 27 attended nests, 4 downy chicks, 4 mid-size chicks, and 1 black-cap chick were observed on sandy shoreline on the northeast side of Badger Island (see *Figure 4* and *Figure 5* below). Nest and chick counts were an underestimate due to obstructions from our vantage on the water. This was the first black-cap tern chick observed this year. 82 Caspian terns were also observed loafing on the island's north spit and eastern shoreline. In summary, 139 adult Caspian terns and 9 chicks were visible during our survey.



Figure 4. Caspian terns attending nests and chicks on the northeast shoreline of Badger Island alongside loafing pelicans on June 18th.

The interior Caspian tern nesting colony was obstructed by vegetation from our vantage on the water. The black-cap chick observed on the shoreline (*Figure 5*) was expected to be from the interior nesting colony which initiated nesting earlier. Additional counts of terns at the interior nesting colonies will be conducted from drone imagery in subsequent weeks.



Figure 5. Black-capped Caspian tern chick (left) and downy tern chick (right) observed with adults on shoreline of Badger Island during a June 18th survey.

~18 loafing double-crested cormorants were observed on Badger Island. The cormorants appeared to be of juvenile size and plumage.

~263 American white pelicans were also observed nesting and loafing. Most interior pelican nesting colonies were obstructed by vegetation from our vantage on the water. We confirmed that seven interior nesting colonies were active from Civil Air Patrol imagery taken on June 6. Counts from aerial and drone imagery will be conducted in subsequent weeks.

~690 gulls were observed along the island's west shoreline. ~15% of gulls had visible chicks and chicks were nearly the same size as adults (4 to 5 weeks old). ~95% of gulls observed were California gulls, while the remaining 5% were ring-billed gulls. Gulls were also observed in the island's interior. Counts of the number of interior nesting gulls on Badger Island will be conducted in subsequent weeks.

Crescent Island:

1 Caspian tern was observed flying above Crescent Island. Our vantage on the water obstructed our view of additional Caspian terns and the only confirmed attended nest on the historical colony. Nest counts were unavailable and will be counted from aerial and drone imagery in subsequent weeks.

~345 gulls were observed on the island's shoreline and ~10% had visible chicks. ~70% of gulls were California gulls and ~30% were ring-billed gulls. Most gulls and attended gull nests were obstructed by vegetation from our vantage on the water. Nest counts were unavailable and will be counted from aerial and drone imagery in subsequent weeks.

Foundation Island:

175 double-crested cormorants, 61 attended nests, and 51 chicks were observed with age estimates of 5-6 weeks old (see *Figure 6* below). Individual and nest counts were much lower compared to the last survey on June 7 when 396 individuals and 145 attended nests were observed. Chicks from early nesting cormorant pairs have fledged.



Figure 6. Fewer attended double-crested cormorant nests and chicks near fledging on Foundation Island during a June 18th survey.

2 Caspian terns, 25 double-crested cormorants, and 80 gulls were also observed loafing on the island's southern spit.

PIT TAGGING OF STEELHEAD AT ROCK ISLAND DAM

Steelhead smolt tagging commenced at Rock Island Dam on 04/09 and ended on 06/13. In total, 5,583 hatchery and 1,655 wild steelhead smolts were tagged, totaling 7,238 steelhead smolts, reaching our target goal of ~ 7,000. Steelhead were selected for tagging at random, regardless of fish size, condition, or rear-type (hatchery, wild) and smolts were tagged in proportion to and in concert with the run at-large (tagged and untagged) passing Rock Island Dam in 2021. We will start to scan bird colonies for smolt PIT tags starting in August of 2021 or as soon as birds abandon their breeding sites.