

Moult Count Surveys of Canada Geese
(*Branta canadensis*)

July, 2017

Guardians of Mid-Island Estuaries Society

guardiansmie.org



Prepared by Tim Clermont and Garreth Ashley

Introduction:

On the 7th of July, 2017, an aerial moult count survey of Canada Geese (*Branta canadensis*) was conducted along the south-eastern Vancouver Island coast and included the larger nearby lakes. Surveyors were Tim Clermont, Garreth Ashley (Guardians of Mid-Island Estuaries) and Graeme Fowler (Agriculture/Wildlife Specialist). Ground based surveys of moulting geese were also conducted by Guardians staff during the period of July 3 to 13, 2017 from Nanoose Bay to Campbell River with a focus on the foreshore where most geese occur during their flightless moult stage.

This project was coordinated by the Guardians of Mid Island Estuaries Society with financial assistance from the Greater Victoria Regional Goose Management Working Group, City of Parksville, and the Canadian Wildlife Service.

Methods & Materials:

A Jet Ranger Helicopter (West Coast Helicopters) was used to perform the aerial survey on July 7, 2017. Altitude for observation was held at 100ft (30.48m) when conditions allowed and 300-500ft (90-150m) over populated areas. The flight began from Nanaimo at 11:45 am and ended at 7:25 pm with a total flying time of 5.8 hours of which half was spent in the Sooke, Victoria, CRD, and Saanich Peninsula region and the remaining time in the RDN, Nanaimo, MoNC, and CVRD. The helicopter refueled once at the Cassidy airport and three times in the Victoria region.

An iPad with GIS software was used to record coordinates of counting locations and number of individuals observed. A four-person crew was used, a pilot, a photographer/counter, a counter/spotter and data entry/navigator. Photos of large groups of geese were taken and later blown up to improve the accuracy of original counts.

Ground based counts were conducted using spotting scopes and binoculars from Nanoose Bay to Little Qualicum estuary by Garreth Ashley and Dawson Clermont on July 3. Garreth joined Barry Peters to count moult geese at the Campbell River estuary post-2017 harvest on July 6th and completed the moult surveys of foreshore areas in Baynes Sound on July 13. Garreth also visited an Errington farm known to have had nesting geese around their dug out and considerable goose damage to their crops in the past few seasons. Canada Geese were observed in flight by mid-July around the Craig Creek estuary.


Results:

The total count of moulting geese observed from a helicopter along the coastline and nearby lakes from Victoria to Nanoose Bay on July 7, 2017 was 6,118 (Table 1). Over 4000 were found to be in the Sooke, Victoria, and Saanich Peninsula, 892 in the Cowichan Valley (including Fulford




Harbour) and 1224 in the RDN (Cedar, Nanaimo to Nanoose Bay) (Figure 1). The Victoria count did not include the Gorge and Victoria Harbour water ways which were known to also have moulting Canada Geese. No geese were found at the Trial Island complex east of Oak Bay near Victoria. The presence of a lone wolf may be protecting these sensitive ecosystems from goose damage.

A ground based count was also conducted in early July 2017 from Nanoose Bay to Campbell River with a total count of 1787 geese (Table 2). Approximately 500 geese were likely counted in both aerial and ground based surveys in Nanoose Bay (Lantzville to the Nanoose estuary). It is important to note that a total of five Canada Goose harvests/culls have been conducted under permits with the City of Parksville and the Wei Wai Kum First Nations that removed 1,535 adult Canada Geese from this region in 2016 and 2017. The largest cull in Canadian history was carried out this past June - when 1051 birds were removed at two sites with limited public knowledge and no direct media exposure through the direction of the Guardians of Mid Island Estuaries society. All banded geese (with neck collars) were released. The meat from these goose harvests were enjoyed by the Wei Wai Kum and K'omoks First Nations and the Tribal Journey guests from many other Pacific North West First Nations in August 2017 hosted by the Wei Wai Kai and Wei Wai Kum in Campbell River and Quadra Island.

Table 1: July 7, 2017 aerial population counts of moulting Canada Geese at locations from Victoria to Nanoose Bay, East Coast Vancouver Island.

Location	WGS Lat/Long	#individuals (CAGO) observed	Aerial Photo (of general location, all birds observed not always shown in photo)
Nanoose Bay	Lat:49.26693° Long:-124.19147°	84	Photo 163 
Nanoose Bay	Lat:49.26080° Long:-124.18525°	11	
Nanoose Bay	Lat:49.25403° Long:-124.14680°	6	
Nanoose Bay	Lat:49.25890° Long:-124.12499°	346	
Nanoose Bay	Lat:49.25520° Long:-124.12311°	21	
Lantzville	Lat:49.25643°	128	

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	Long:-124.08946°		
Lantzville	Lat:49.25767° Long:-124.08071	20	
Lantzville	Lat:49.25285° Long:-124.06345°	54	
Nanaimo	Lat:49.24876° Long:-124.03170°	60	Photo 160 
Nanaimo	Lat:49.24461° Long:-124.02268°	32	
Nanaimo	Lat:49.24030° Long:-123.99848°	10	
Nanaimo	Lat:49.23951° Long:-123.97831°	18	
Nanaimo	Lat:49.22640° Long:-123.95883°	10	
Nanaimo	Lat:49.20650° Long:-123.96362°	6	
Nanaimo Nanaimo Estuary 1	Lat:49.13568° Long:-123.91444°	88	Photo 25 
Nanaimo Estuary	Lat:49.14204° Long:-123.89719°	190	Photo 33 (sub group) 
Nanaimo Estuary	Lat:49.14742° Long:-123.88886°	31	
Cassidy/Quennell Lake	Lat:49.07550° Long:-123.82175°	0	
Michael Lake	Lat:49.04244° Long:-123.80335°	98	
Kulleet Bay	Lat:49.01772° Long:-123.77882°	11	Nanaimo – RDN sub-total 1224
Chemainus Estuary	Lat:48.90388° Long:-123.68196°	80	Cowichan Valley sub-total 892

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Chemainus Estuary	Lat:48.88334° Long:-123.66074°	55	
Chemainus Estuary	Lat:48.88504° Long:-123.64640°	0	
Crofton	Lat:48.86110° Long:-123.61876°	208	Photo 53 
Duncan	Lat:48.82048° Long:-123.59834°	0	
Somenos Lake	Lat:48.80273° Long:-123.70092°	4	
Quamichan Lake	Lat:48.79572° Long:-123.67482°	18	
Quamichan Lake	Lat:48.80358° Long:-123.66538°	4	
Quamichan Lake	Lat:48.80816° Long:-123.64781°	18	
Quamichan Lake	Lat:48.80249° Long:-123.65046°	8	
Quamichan Lake	Lat:48.79574° Long:-123.66105°	14	
Quamichan Lake	Lat:48.78906° Long:-123.67084°	155	
Cowichan Estuary	Lat:48.7012° Long:-123.63446°	44	
Cowichan Estuary	Lat:48.76002° Long:-123.63087°	110	
Salt Spring Island	Lat:48.77202° Long:-123.45986°	60	
Salt Spring Island	Lat:48.76250° Long:-123.45072°	60	
Cherry Point	Lat:48.72028° Long:-123.56116°	54	Photo 97 
Shawinigan Lake	Lat:48.63895° Long:-123.62851°	63	Photo 104



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John Dean Provincial Park	Lat:48.62630° Long:-123.46666°	5	
Sidney	Lat:48.67292° Long:-123.40000°	64	
Sidney	Lat:48.66315° Long:-123.40005°	40	
Sidney	Lat:48.66031° Long:-123.39099°	147	
Sidney	Lat:48.65532° Long:-123.39123°	54	
Victoria	Lat:48.63306° Long:-123.40621°	92	
Victoria	Lat:48.63044° Long:-123.40840°	150	Photo 152 
Victoria	Lat:48.62418° Long:-123.40583°	50	
Victoria	Lat:48.61742° Long:-123.40117°	80	
Victoria	Lat:48.61129° Long:-123.39612°	107	
Victoria	Lat:48.60800° Long:-123.39320°	250	
Victoria	Lat:48.60272° Long:-123.39123°	36	
Elk Lake	Lat:48.53474° Long:-123.40522°	12	
Beaver Lake	Lat:48.50910° Long:-123.39445°	120	
Cordova Bay	Lat:48.51526° Long:-123.36278°	54	Photo 146 

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Cordova Bay	Lat:48.49470° Long:-123.32050°	300	
Cormorant Point	Lat:48.49651° Long:-123.30901°	80	
Arbutus Cove	Lat:48.47565° Long:-123.29621°	41	
Victoria	Lat:48.46791° Long:-123.28171°	12	
Flower Island	Lat:48.44856° Long:-123.27819°	105	
Cadboro Bay	Lat:48.4560° Long:-123.28857°	66	
Cadboro Bay	Lat:48.44930° Long:-123.29021°	44	
Willows Beach	Lat:48.43672° Long:-123.29407°	107	
Willows Beach	Lat:48.43176° Long:-123.30205°	26	
Oak Bay	Lat:48.42453° Long:-123.29656°	12	
McNeill Bay	Lat:48.41017° Long:-123.31432°	116	
Victoria	Lat:48.41746° Long:-123.40471°	75	
Victoria	Lat:48.41872° Long:-123.41354°	58	
Brothers Islands	Lat:48.42572° Long:-123.43669°	6	
Esquimalt Lagoon	Lat:48.43085° Long:-123.45500°	69	
Esquimalt Lagoon	Lat:48.43011° Long:-123.46607°	30	
Esquimalt Lagoon	Lat:48.42960° Long:-123.47139°	500	
Esquimalt Lagoon	Lat:48.41687° Long:-123.47082°	200? (heavy winds pulling Helicopter)	
Tibet Rd. Beach	Lat:48.41687° Long:-123.48222°	26	
Tower Point	Lat:48.38689° Long:-123.50204°	21	
Witty's Beach	Lat:48.38303° Long:-123.51022°	0	
Taylor Beach	Lat:48.37191° Long:-123.52392°	25	
Langford Lake	Lat:48.44732°	2	

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	Long:-123.52826°		
Florence Lake	Lat:48.45843° Long:-123.51261°	8	
Goldstream Estuary	Lat:48.48850° Long:-123.55053°	114	Photo 112 
Becher Bay	Lat:48.33724° Long:-123.59486°	20	
Sunny Shores Marina	Lat:48.38752° Long:-123.66345°	36	
Sooke	Lat:48.38344° Long:-123.68503°	6	
Sooke	Lat:48.38151° Long:-123.69524°	244	
Sooke	Lat:48.38236° Long:-123.70219°	105	Photo 125 
Sooke	Lat:48.37718° Long:-123.71447°	32	
Sooke	Lat:48.36041° Long:-123.70618°	40	
Sooke	Lat:48.35631° Long:-123.71253°	83	
Sooke	Lat:48.36395° Long:-123.72794°	19	
Sooke	Lat:48.36207° Long:-123.72949°	50	Victoria region sub- total 4,002 Note: this survey did not including Gorge and Victoria Harbour water ways
		Total:6118	

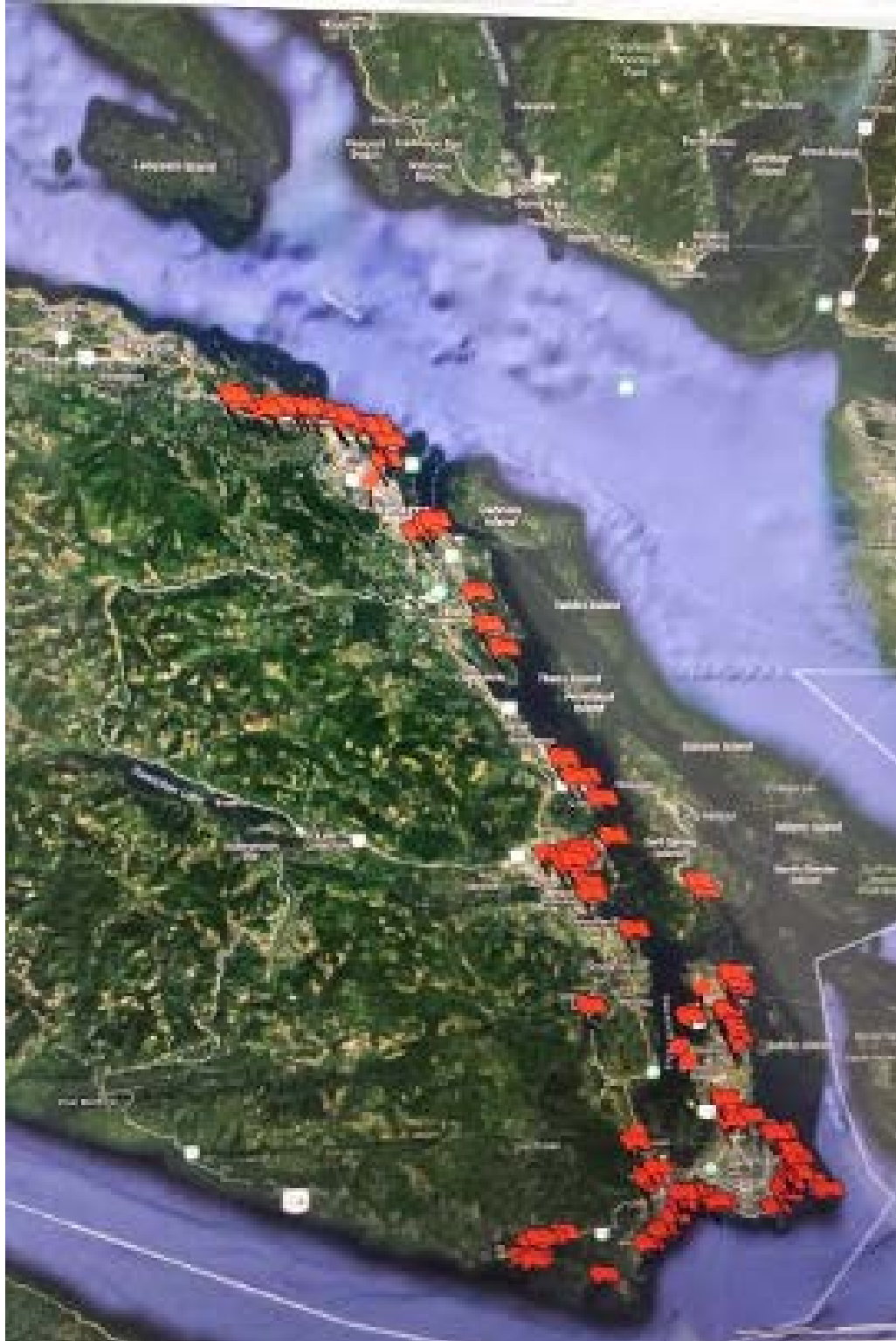







Figure 1: Area covered during July 7, 2017 aerial survey. Red flags mark count locations.





Table 2: Results of ground based counts of moulting Canada Geese at locations from Lantzville to Campbell River, Vancouver Island (July 3-13, 2017).


Location	WGS: Lat&Long of observers' position	# of individuals observed	Photo/comment
Lantzville	Lat:49.25586° Long:-124.10883°	0	
Lantzville	Lat:49.25571° Long:-124.11298°	77	
Nanoose Bay	Lat:49.25436° Long:-124.12808°	217	
Nanoose Bay	Lat:49.26893° Long:-124.18510°	68	
Craig Bay (East)	Lat:49.30798° Long:-124.23959°	137	
Craig Bay (Pacific Shores Resort)	Lat:49.30698° Long:-124.24089°	5	
Craig Bay (West)	Lat:49.30460° Long:-124.24850°	0	
Parksville	Lat:49.32947° Long:-124.28043°	0	

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Parksville (Englishman River Estuary)	Lat:49.33116° Long:-124.28747°	14	
Parksville (Englishman River Estuary)	Lat:49.32640° Long:-124.29490°	70	
Parksville (Public Beach)	Lat:49.32677° Long:-124.30813°	0	
French Creek	Lat:49.34898° Long:-124.35972°	114	
Parksville (off Admiral Tryon Blvd)	Lat:49.35382° Long:-124.36505°	0	
Errington	Lat:49.26643° Long:-124.37151°	25	Cubble's Farm, has stream and new irrigation pond on property
Qualicum Beach	Lat:49.35602° Long:-124.44055°	0	
Qualicum Beach	Lat:49.36801° Long:-124.47905°	77	
Qualicum Bay	Lat:49.38880° Long:-124.59114°	0	
Qualicum Bay	Lat:49.40153° Long:-124.61286°	26	
Qualicum Bay	Lat:49.42088° Long:-124.63945°	0	
Bowser	Lat:49.43476° Long:-14.66504°	0	
Bowser	Lat:49.46467° Long:-124.72813°	52	

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Fanny Bay	Lat:49.47208° Long:-124.79267°	189	
Fanny Bay	Lat:49.50730° Long:-124.82735°	67	
Buckley Bay	Lat:49.52560° Long:-124.84864°	203	 Located at Denman Island ferry terminal
Buckley Bay	Lat:49.54944° Long:-124.86828°	0	
Union Bay	Lat:49.62333° Long:-124.90863°	0	
Courtenay	Lat:49.64515° Long:-124.93611°	0	
Courtenay	Lat:49.64880° Long:-124.94419°	0	
Courtenay	Lat:49.65746° Long:-124.96277°	0	
Comox	Lat:49.68214° Long:-124.97492°	16	
Goose Spit Park	Lat:49.66666° Long:-124.90030°	0	

Campbell River Estuary	Lat:50.04463° Long:-125.25229°	430	
TOTAL:		1,787 CAGO	

Results and Discussion

Surveys of Canada Goose (CAGO) populations were once conducted by provincial wildlife biologists during the fall/winter migrations back in the 1990's but likely never conducted during the summer moult period. The 2017 aerial and ground based surveys are likely the most extensive for determining Canada goose populations during their flightless moult stage on the east coast of Vancouver Island at a cost of \$12,000. Our findings suggest that at least 9 moult hot spots were identified. Future round up and harvest efforts could target these hotspots to further reduce our current resident and moult CAGO populations.

By far the most geese were found along the waterfront from Sooke to the Saanich Peninsula with hot spots identified at Sooke (579), Esquimalt Lagoon (~800), Goldstream estuary and nearby lagoon (~300+), and the Saanich Peninsula waterfront to Sidney (1070). Over 4002 geese were counted in the Victoria region and this number likely exceeds 5000 if we could have surveyed the extensive Gorge and Victoria harbour waterways. The other island hotspots included the Nanaimo River estuary (309), Nanoose Bay (670), Craig Bay, Englishman River and French Creek estuaries (340), Fanny Bay to Buckley Bay (459) and the Campbell River Estuary (430). Of note, is the relatively small 100 ha Campbell River Estuary had the highest density of CAGO on Vancouver Island with over 1300 geese before the harvest.

We may gain more insight into the Vancouver Island summer/moult population of geese by examining the Coastal Bird Survey data. We also know there are populations of geese in Port Alberni, Oyster River, Sayward, Cluxewe/Port McNeil, and Port Hardy so the total summer moult population on Vancouver Island could easily be in the range of 10,000. With this number in mind, we have possibly reduced the Vancouver Island moult population by approximately 15% from June 2016 to June 2017.

The Guardians have conducted early July moult counts along the coast line of Nanoose Bay to Parksville Bay/Englishman River estuary to the Little Qualicum River since 2007. Canada Goose moult populations have ranged from 1000 to a high of 1500 geese in 2015. In 2016, 810 geese were observed after the removal of 484 birds from Parksville Bay, Craig Bay and the Englishman estuary. In 2017, 804 geese were observed after 100 were removed from the Little Qualicum estuary. Of this total only 25 birds were observed on freshwater (Errington farm pond).

The 2017 aerial moult count found that most of the birds were located along coastal environments (nearshore beaches, estuaries, lagoons, gravel spits or on the beach or boat ramps) with only 502 geese observed on freshwater lakes or ponds from the total of 6118.

Recommendations:

Ideally local individuals or groups would conduct summer moult counts during the period of June 15 to July 15 in a coordinated effort to learn more about the total Vancouver Island population, moult hot spots, and opportunities to monitor impacts and develop management solutions. This could be coordinated through the Vancouver Island Regional Canada Goose Working Group (CAGO Working Group).

Continued support is critical for monitoring of marked (banded) Canada Geese and populations affecting estuaries post-harvest as this data will greatly assist in determining the effectiveness of harvests and the need to do more. A sub-committee of the CAGO working group should collaborate to ensure future re-sight efforts and data collection are standardized.

A priority action of the CAGO Working Group should be to involve more First Nations from Sooke to Campbell River if future harvests are contemplated. The 2017 “Training Harvest” was successful in building Vancouver Island expertise and this type of mentorship and high standards should be continued.