

Western Painted Turtle Surveys and Stewardship Activities on Vancouver Island, April 2016 – March 2017

Annual Summary



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Prepared by

Kristiina Ovaska, PhD, and Christian Engelstoft, MSc, RPBio

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Executive Summary

The Pacific Coast population of the Western Painted Turtle is listed as endangered in Canada under the *Species At Risk Act* and is on the Red List of species at risk in British Columbia. COSEWIC (2016) reassessed the species as “threatened”, which refers to a “wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction”. The status was downgraded from “endangered”, partly because of new survey information provided by HAT, which documented that the species is more widespread on Vancouver Island than previously thought. However, Western Painted Turtles continue to face many threats within their range that overlaps with populated and modified landscapes, including the Lower Mainland and Capital Regional District (CRD) on Vancouver Island.

Much of the turtles’ habitat is on private lands, and involving landholders in stewardship activities is essential for conservation. Since 2008, we have carried out annual studies on Western Painted Turtles in CRD and Alberni Valley as part of Habitat Acquisition Trust’s “Species At Risk” Program. This report presents a summary of activities undertaken during the 2016 – 2017 fiscal year (Table 1). We continued to work with landowners, managers, and volunteers to enhance turtle habitats and monitor their use. Other activities included surveys to locate new sites, preparation of turtle management guidelines, and signing up new habitat stewards. We also provided advice, presentations, and outreach materials on turtle conservation and management to various local governments, other groups, and individuals.

Capital Regional District:

In June 2016, turtle nesting habitat was enhanced at a new site, a privately owned property in Saanich near wetlands occupied by Western Painted Turtles. In Elk-Beaver Lake Regional Park, together with CRD Regional Parks and HAT volunteers, we conducted maintenance activities at two previously enhanced nesting sites (East Beaver Pond and EBLES) and continued monitoring these sites for hatching success and nesting. In March – May 2016, we found eight emerged nests (from eggs laid in summer 2015) at this site. Monitoring the site with a time lapse-camera showed six nesting events from 13 May – 8 June 2016. Unfortunately, due to camera failure no information was obtained from 8 – 21 June; the camera was reset on 21 June and showed one additional nesting event, on 23 June (Appendix 1). We found no emerged nests at the second enhanced site in the park (EBLES site) in spring 2016. A monitoring camera in 2015 had recorded three nests at the site, expected to emerge in spring 2016. It is unclear whether the nests did not hatch or were predated, or whether we simply failed to detect them.

During this reporting period, we continued previous efforts to provide basking sites for turtles in water bodies where basking opportunities were deemed to be in short supply. In March 2017, with support from the Highlands Council, we installed seven basking logs into Eagles Lake, where Western Painted Turtles are known to occur. The logs were donated and transported to the site courtesy of the Highlands Municipality. Our past experience indicates that turtles readily use installed basking structures and

that large round logs are preferable because they are durable and will remain functional for many years.

Alberni Valley:

In the Alberni Valley, we surveyed ten water bodies for turtles, and located three new sites with Western Painted Turtles, all within 2 km from known sites (Figure 1). One site is located west of a known site at Devil’s Den Lake (one turtle detected), and the other two sites are ponds west of Turtle Lake. One of these sites within a transmission line right-of-way is of particular interest because it appears to support relatively large numbers of turtles; ten were seen during a visit in April 2016 (Appendix 2).

With help from local naturalists Libby and Rick Avis, we continued to monitor turtle nesting activities at a previously enhanced turtle nesting area (Airport Wetlands), where two sand dunes were created in an old gravel pit in 2011. In 2016, turtles continued to use the dunes, as revealed by turtle sign (trails, diggings, emerged nest holes) and time-lapse camera monitoring from 19 April – 27 June. On 20 March 2016, 11 emerged nests (from eggs laid in summer 2015) were found at the site, five of them in the dunes. The winter 2015 – 2016 was exceptionally mild, probably contributing to the early emergence. As in previous years, signs of heavy predation of new nests (from summer 2016) were evident on a visit to the site on 24 October with egg shells scattered around the site. A motion sensor camera from 19 April 2016 to 26 March 2017 recorded no predation events but showed people walking over the dunes on three occasions, including a group of five with a bucket on 8 June-16 (the bucket appeared to be empty). The time-lapse camera showed 21 appearances of turtles, including 12 nesting events from 2 May – 20 June (Appendix 1). These nests are expected to emerge in spring 2017.

Table 1. Summary of Activities, April 2016 – March 2017.

Activity and rationale	Tasks	Results
<p>Surveys, Inventories and Monitoring</p> <p>Adequate knowledge of distributions is the first step towards conservation, allowing us to prioritize habitat protection, management, and restoration efforts and helping in determining Critical Habitats.</p>	<p>In April – May 2016, ten water bodies, including two new localities, were surveyed in the Alberni Valley. One water body with no previous observations was revisited within Saanich, CRD.</p> <p>Additional site visits were conducted in response to reports from the public and landowners.</p>	<p><u>Alberni Valley:</u> Western Painted Turtle was observed at 6 of 10 water bodies surveyed, including 2 new sites: in a pond along a power transmission line corridor, and a pond just west of a known site in Devil’s Den Lake. Introduced sliders were not found at any of the sites in 2016.</p> <p><u>CRD:</u> Western Painted Turtle was documented for the first time in Viaduct pond. The presence of the species was suspected based on observations on roads nearby. Introduced sliders were also found at this site.</p> <p>See (Appendix 2) for details of the surveys.</p>

Activity and rationale	Tasks	Results
<p>Nesting Habitat Improvement and monitoring</p> <p>Suitable warm, sparsely vegetated turtle nesting habitats with suitable substrates near occupied water bodies are in short supply along the west coast and appear to be a limiting factor for Western Painted Turtles.</p> <p>Monitoring of previous nest site enhancement by HAT has shown that turtles readily use enhanced sites.</p>	<p>One new turtle nesting area was created on a private property in the Beaver Lake area in Saanich, CRD.</p> <p>Maintenance and monitoring activities was carried out at previously restored sites in Alberni Valley (Airport Wetlands) and within CRD (Elk-Beaver Lake Regional Park, East Pond and EBLES sites) in collaboration with land managers.</p> <p>The sites in Elk-Beaver Lake Park were visited multiple times from Feb – May 2016 to detect holes signifying emerged nests (from previous year) and were monitored by time-lapse cameras from May – early August 2016 to detect nesting turtles.</p> <p>At the Airport wetlands site, turtle activity was monitored at an enhanced site by cameras from 19 April to 28 June 2016. Two sandy dunes were created in an old gravel pit in June 2012 to enhance turtle nesting habitat.</p>	<p><u>Beaver Lake area:</u> A new turtle nesting site was created on 17 June 2016 (appr. size: 2 x 3 m). Blackberries and thistles were cleared and ~1 yard of sand was mixed into the existing soil.</p> <p><u>Elk-Beaver Lake Regional Park:</u> Two previously enhanced nesting areas were weeded and patches of bare ground were exposed on 8 June 2016 by CRD Parks and HAT volunteers.</p> <p>Monitoring the sites in spring revealed 7 emerged nests from 12 February to 5 May (from eggs laid in summer 2015), all within the ~10x10 m enhanced area by East Beaver pond.</p> <p>At East Beaver pond, the surveillance camera revealed Western Painted Turtles on 9 occasions, including 6 nesting events from 13 May – 23 June 2016. A slider was observed walking at the site once, on 4 June. Turtles that did not complete a nest were either walking or digging for brief periods. Unfortunately, the camera had failed on 8 June, which was not detected until memory card exchange on 21 June; therefore, nesting events during this prime period were not documented. The camera was operational again from 21 June to 24 August 2016.</p> <p>A camera was not deployed at the second nesting habitat enhancement site (EBLES) in 2016.</p> <p><u>Airport Wetlands, Alberni Valley:</u> A site visit was conducted by our collaborators Libby and Rick Avis on 20 March 2016. 11 emerged nest holes were found, 5 in the dunes and 6 in the hard packed substrate around them. As in previous years, egg shells were scattered around the site, probably indicating predation.</p> <p>At the restored nesting area, turtle activity was detected by the monitoring camera on 21 occasions, including 12 apparently completed nests, from 2 May – 20 June 2016. A subsequent visit by Libby and Rick Avis on 24 October revealed heavy</p>

Activity and rationale	Tasks	Results
		<p>predation of the new nests both on the restored dunes and hard-packed mounds around them.</p> <p>See (Appendix 1) for details of the camera monitoring of nesting activity.</p>
<p>Basking Habitat Improvement</p> <p>Turtles need suitable basking sites for thermal control, digestion, vitamin D production, and embryo development. Strategically placed basking logs also facilitate monitoring turtle numbers over time enhance recreational wildlife viewing opportunities. Our previous observations show that turtles readily use a variety of added basking structures.</p>	<p>Basking logs were added to Eagles Lake, in collaboration with the municipality of Highlands, who provided the logs and their transport to the site.</p>	<p><u>Eagles Lake:</u> Eight basking logs were installed in the lake on 30 March 2017. The logs were ~25 – 50 cm in diameter and ~5 m long. They were attached with rope to shoreline woody vegetation.</p> <p><u>Viaduct Pond:</u> Existing logs (installed on 18 March 2016) were inspected three times in April – May 2016 for use by turtles. Sliders and a Western Painted Turtle were observed on the logs. Cormorants, Common Mergansers, and a Bald Eagle were also observed on the logs.</p>
<p>Working with landowners/ managers</p> <p>A large proportion of Western Painted Turtles occur in multi-use lands, including parks, and on private lands. Management guidelines are needed to a) improve habitat quality and mitigate threats and to b) increase awareness by landowners and managers of habitat needs of the turtles.</p>	<p>Management guidelines were prepared for landowners with confirmed Western Painted Turtle occurrences.</p> <p>Property owners/ managers who previously received turtle management guidelines were contacted to provide assistance with implementation and monitoring.</p>	<p><u>Alberni Valley:</u> HAT biologists conducted a site visit with provincial government (FLNRO) personnel on 16 January 2017 and provided management recommendations associated with forest clearing for airport improvement.</p> <p>Collaboration continued with Island Timberlands to survey and monitor turtles.</p> <p><u>CRD:</u> HAT biologists conducted site visits to two golf courses with turtle occurrences (in March 2017) and provided information on monitoring and managing turtle habitat.</p> <p>Collaboration continued with CRD Regional Parks to protect turtles. Western Painted Turtles have been confirmed to occur in three regional parks: Elk-Beaver Lake, Matheson Lake, Thetis Lake (McKenzie Lake), and habitat restoration is in progress in Elk-Beaver Lake Park.</p>
<p>Outreach</p> <p>Given the high cost of land, engaging private landowners is a cost-effective way to conserve Western Painted Turtle habitat. Awareness</p>	<p>As in previous years, the activities consisted of engaging regional & municipal planners in turtle habitat protection/ management. We also</p>	<p>Meetings were conducted with CRD Regional Parks, Highlands Council, FLNRO, and Island Timberlands representatives.</p> <p>Presentations on turtles, including ways to participate in protection and stewardship</p>

Activity and rationale	Tasks	Results
<p>among local governments and land owners/ managers of the species' habitats and requirements will help in identifying and protecting important habitats and mitigating threats. Habitat stewards and other volunteers also contribute through habitat restoration and monitoring efforts.</p>	<p>continued to sign up new landowners with turtle observations on their properties as voluntary habitat stewards and to involve volunteers in turtle habitat restoration, as part of outreach activities.</p>	<p>activities, were given during the HAT Wildlife night (21 Sep 2016) and at Victoria Naturalist Society seminar series (28 March 2016).</p> <p>Turtles were featured in HAT newsletters and website. Examples include designated newsletters on turtle nesting habitat restoration at Elk-Beaver Lake Regional Park and on a private property (June 2016). We updated HAT's habitat management and rehabilitation techniques interactive website (http://www.hat.bc.ca/speciesatrisk/index.php/western-painted-turtle). HAT provided resources, such as signage and outreach materials, and on-the-ground advice on turtle habitat enhancement and management.</p>

Figure 1. Map of Western Painted Turtle occurrences on Vancouver Island, highlighting new sites detected in 2016.



Appendix 1. Turtle activity at enhanced nesting areas as revealed by monitoring cameras deployed in 2016.

*CHPI – Western Painted Turtle

Camera	Year	Date	Start time	End time	Species*	Occasion #	Activity	Location	Activity comments
Alberni Valley, Airport wetlands restoration site (19 Apr-16 to 17 Jan-17; motion sensor):									
Moultrie	2016	12-May-2016	19:49	~	CHPI	1	nesting	Dune 2	Same turtle as #9 on time-lapse camera
Moultrie	2016	16-May-2016	13:13	~	people				
Moultrie	2016	8-Jun-2016		20:00	people				5 people with bucket repeatedly walking over dunes for 0.5 h
Moultrie	2016	3-Dec-2016	12:12		deer				
Moultrie	2017	10-Jan-2017			people				
Alberni Valley, Airport wetlands restoration site (19 Apr to 27 Jun-16; 10 min time-lapse):									
Wingscapes	2016	2-May-2016	18:30	20:10	CHPI	1	nesting	Dune 2	
Wingscapes	2016	5 May-16	17:00		CHPI	2	walking	Dune 2	
Wingscapes	2016	5-May-2016	18:40	20:40	Turtle	4	nesting	Dune 2 crest, far	
Wingscapes	2016	5-May-2016	18:50		Turtle	3	unknown	Dune 2	
Wingscapes	2016	8-May-2016	18:00	19:10	CHPI	5	nesting	Dune 2 slope	Walking away in last picture
Wingscapes	2016	9-May-2016	19:00	20:00	CHPI	6	nesting	Dune 1	
Wingscapes	2016	10-May-2016	17:40		CHPI	7	walking	Dune 2	
Wingscapes	2016	10-May-2016	18:40	20:50	CHPI	8	nesting	Dune 2, slope, far west	Still digging in last picture at 20:50
Wingscapes	2016	12-May-2016	19:30	20:50	CHPI	9	nesting	Dune 2, slope, far west	
Wingscapes	2016	15-May-2016	19:10	20:30	CHPI	10	nesting	Dune 1	
Wingscapes	2016	16-May-2016	17:40	19:20	CHPI	11	nesting	Dune 1	
Wingscapes	2016	21-May-2016	19:10		CHPI	12	unknown	Dune 2	
Wingscapes	2016	3-Jun-2016	17:00		CHPI	13	unknown	Dune 1	
Wingscapes	2016	5-Jun-2016	19:30	20:50	CHPI	14	nesting	Dune 2	Still digging at last picture at 20:50
Wingscapes	2016	7-Jun-2016	19:10		CHPI	15	unknown	Dune 2	

Camera	Year	Date	Start time	End time	Species*	Occasion #	Activity	Location	Activity comments
Wingscapes	2016	8-Jun-2016	18:00	20:10	CHPI	16	nesting	Dune2	First appearance on Dune 1, digging in 2nd picture on Dune 2
Wingscapes	2016	16-Jun-2016	17:50	20:10	CHPI	17	nesting	Dune 2, crest	
Wingscapes	2016	19-Jun-2016	19:40	20:50	CHPI	18	nesting	Dune 1	Still digging at last picture at 20:50
Wingscapes	2016	20-Jun-2016	18:00	18:30	CHPI	19	digging	Dune 1	Digging for ~1/2 h only; nest probably not completed (1 of 2 turtles)
Wingscapes	2016	20-Jun-2016	18:10	19:10	CHPI	20	digging	Dune 1	Digging for ~1/2 h only; nest probably not completed (2 of 2 turtles)
Wingscapes	2016	20-Jun-2016	20:00		CHPI	21	walking		

Elk Beaver Lake Regional Park, East Pond restoration site (11 May – 9 June; 21 June – 24 August 2016):

Wingscape	2016	13-May-2016	17:40	20:50	CHPI	1	nesting	Plot 3C	Still digging at last picture at 20:50
Wingscape	2016	30-May-2016	18:20	20:50	CHPI	2	nesting	row 2 beyond Plot C	
Wingscape	2016	31-May-2016	18:20		CHPI	3	walking		
Wingscape	2016	31-May-2016	19:00	20:50	CHPI	4	nesting	row 2 beyond Plot C	Still digging at last picture at 20:50
Wingscape	2016	1-Jun-2016	17:00	17:20	CHPI	5	dig	row 2 beyond Plot C	
Wingscape	2016	1-Jun-2016	18:10	20:50	CHPI	6	nesting	Plot 2B	Finished before dark
Wingscape	2016	4-Jun-2016	17:40		TRSC	7	walking		
Wingscape	2016	5-Jun-2016	18:20	19:10	CHPI	8	walking	row 2 beyond Plot C	Moved around
Wingscape	2016	5-Jun-2016	19:50	20:50	CHPI	9	nesting	just outside Plot 1C	
Wingscape	2016	8-Jun-2016	17:40		Camera Failed				
Wingscape	2016	8-Jun-2016	19:30		People				
Wingscapes	2016	23-Jun-2016	18:30	21:10	CHPI	10	nesting	Plot 2C	

Appendix 2. Water bodies surveyed for turtles by HAT biologists from April – May 2016.

New/Resurvey	Site #	Location	Date	Start time	Pers.-min	Air temp C°	Wind	Cloud cover (%)	Western Painted Turtle #	Red-eared Slider #	Unidentified turtle #	Comments
<u>Alberni Valley:</u>												
R	1	Airport Wetlands	19-Apr-2016	15:40	60	28.5	calm	10	21	0	0	~
R	2	Ash Main, at 6 km	18-Apr-2016	15:43	284	31	light	30	1	0	0	New site: Basking on log next to road; also Northwestern Salamander egg mass
R	8	Devil's Den Lake	18-Apr-2016	17:33	212	27	calm	0	8	0	0	Basking on logs in North end
N	15 2	HydroLine Pond 1	19-Apr-2016	12:12	468	26	light	30	10	0	0	New site: Basking throughout pond
R	5	Beaver Pond W of Turtle Lake	19-Apr-2016	13:15	30	26	calm	30	2	0	0	New site
R	5	Beaver Pond W of Turtle Lake	20-Apr-2016	14:10	126	24.4	calm	0	0	0	0	~
R	11	Little Turtle Lake	19-Apr-2016	15:35	20	28	calm	10	2	0	0	~
R	18	Patterson Lake	21-Apr-2016	11:16	40	16.2	calm	100	0	0	0	~
N	E7 5	Patterson Rd Pond 1	21-Apr-2016	11:45	60	19.5	light	100	0	0	0	~
R	14 3	Round Lake	21-Apr-2016	10:39	22	15	calm	100	0	0	0	~
R	21	Turtle Lake	19-Apr-2016	14:30	180	28	calm	10	0	0	0	~
<u>CRD, Saanich:</u>												
R	77	Viaduct Pond	10-Apr-2016	16:00	15	~	~	60	1	2	1	Basking log inspection from bird tower
R	77	Viaduct Pond	17-Apr-2016	17:00	15	~	~	60	1	1	1	Basking log inspection from bird tower
R	77	Viaduct Pond	17-May-2016	16:50	9	18	light	50	0	1	0	Basking log inspection from bird tower