Survey for Shortface Lanx (*Fisherola nuttallii* (Haldeman, 1841)) October 7-9, 2025 with comments on Ashy Pebblesnail (*Fluminicola fuscus* (Haldeman, 1841))

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Les numéros 1 à 25 de cette série ont été publiés à titre de Records statistiques, Service des pêches et de la mer. Les numéros 26-160 ont été publiés à titre de Rapports statistiques du Service des pêches et de la mer, ministère des Pêches et de l'Environnement. Le nom de la série a été modifié à partir du numéro 161.

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Survey for Shortface Lanx (*Fisherola nuttallii* (Haldeman, 1841)) October 7–9, 2025 with comments on Ashy Pebblesnail (*Fluminicola fuscus* (Haldeman, 1841))

by

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Gilmore, S., Wade, J., LoScerbo, D., Lepitzki, D., Lepitzki, B. and Grant, P. 2026. Survey for Shortface Lanx (*Fisherola nuttallii* (Haldeman, 1841)) October 7–9, 2025 with comments on Ashy Pebblesnail (*Fluminicola fuscus* (Haldeman, 1841)). Can. Data Rep. Fish. Aquat. Sci. 1465: vi + 11.

Shortface Lanx (*Fisherola nuttallii*) was assessed Endangered by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) in 2016, with limited survey effort conducted subsequently. A survey was conducted in 2025 to determine if the species was still present at previously known sites and if it could be found at new ones. A total of 172 Shortface Lanx were found at six sites in the Columbia River from Genelle in the north to 27.7km, south, within 4km of the Canada-US border. Ashy Pebblesnail (*Fluminicola fuscus*) was found at most, but not all, sites surveyed.

RÉSUMÉ

Gilmore, S., Wade, J., LoScerbo, D., Lepitzki, D., Lepitzki, B. and Grant, P. 2026. Survey for Shortface Lanx (*Fisherola nuttallii* (Haldeman, 1841)) October 7–9, 2025 with comments on Ashy Pebblesnail (*Fluminicola fuscus* (Haldeman, 1841)). Can. Data Rep. Fish. Aquat. Sci. 1465: vi + 11.

Patelle géante du fleuve Columbia (*Fisherola nuttallii*) a été classé comme espèce en voie de disparition par le Comité sur la situation des espèces en péril au Canada (COSEPAC) en 2016, et des efforts de recensement limités ont été menés par la suite. Un recensement a été effectué en 2025 afin de déterminer si l'espèce était toujours présente sur les sites précédemment connus et si elle pouvait être trouvée sur de nouveaux sites. Au total, 172 Lanx à face courte ont été recensés sur six sites du fleuve Columbia, de Genelle au nord jusqu'à 27,7 km au sud, à moins de 4 km de la frontière canado-américaine. Lithoglyphe sombre (*Fluminicola fuscus*) a été trouvé sur la plupart des sites étudiés, mais pas sur tous.

INTRODUCTION

Shortface Lanx (SFL), *Fisherola nuttallii*, is a small freshwater snail with a limpet-like shell that grows up to 13mm long (Clarke 1981). Globally it is restricted to the Columbia River basin; while in Canada, it is only found in a short stretch of the Columbia River around Trail, British Columbia (BC). Shortface Lanx was assessed as endangered in 2016 due to its limited range (COSEWIC 2016). It is not on Schedule 1 of the Species at Risk Act (SARA), but is under consideration.

The history of SFL within its Canadian range, as well as summaries of its biology and habitat requirements, are described in the COSEWIC assessment and status report (COSEWIC 2016) and the recovery potential assessment (DFO 2018). Briefly, SFL needs highly oxygenated, fast flowing, cool water.

Until this survey, only one previous survey has been undertaken to look for Shortface Lanx in Canada and occurred on 9–11 October, 2014 (COSEWIC 2016). Ashy Pebblesnail (APS), *Fluminicola fuscus*, is currently under consideration for listing under COSEWIC. It was discovered in the Columbia River during the 2014 survey for SFL. Following that survey at least five SFL specimens were collected just south of site 11 (below the Beaver Creek Park boat launch) on 7 Oct 2020 and sequenced on BOLD (Barcode of life database) (JTTHE689-21, JTHE694-21 to JTHE697-21; https://portal.boldsystems.org/bin/BOLD:ACI1487; associated iNaturalist record. One other iNaturalist record was collected just north of Gyro Park (part of Site 7) on 20 Oct 2015 and deposited in the Canadian Museum of Nature (https://www.gbif.org/occurrence/1804269305) (Ian Gardiner pers. comm.).

METHODS

The first five authors undertook searches between Castlegar and the US border south of Trail across 3 days from 7 to 9 October, 2025. The goal was to resurvey sites from the 2014 survey, and to explore additional sites that appeared suitable to both confirm and potentially expand the current known distribution of SFL in Canada. Searches consisted of standing in the Columbia River and turning over rocks by hand before replacing them. Rocks from depths of arms length (<1m) to the waters edge (only partially submerged), and were of sizes that could be lifted by hand, were examined on all sides for SFL and APS. Given the difference in slope at the river's edge, the width of search areas ranged between <1m to >5m. The search methods for finding SFL are identical to finding APS, and as such, the presence or absence of APS was noted while counts of SFL were made. SFL is easily identified despite the small size as they are the only snail with a limpet-like shell in the Columbia River (Figure 1a). APS superficially appear similar to several other snails found in this habitat, but can be distinguished by a combination of shape, having an operculum, and being dextral (aperture on the right) (Figure 1b).

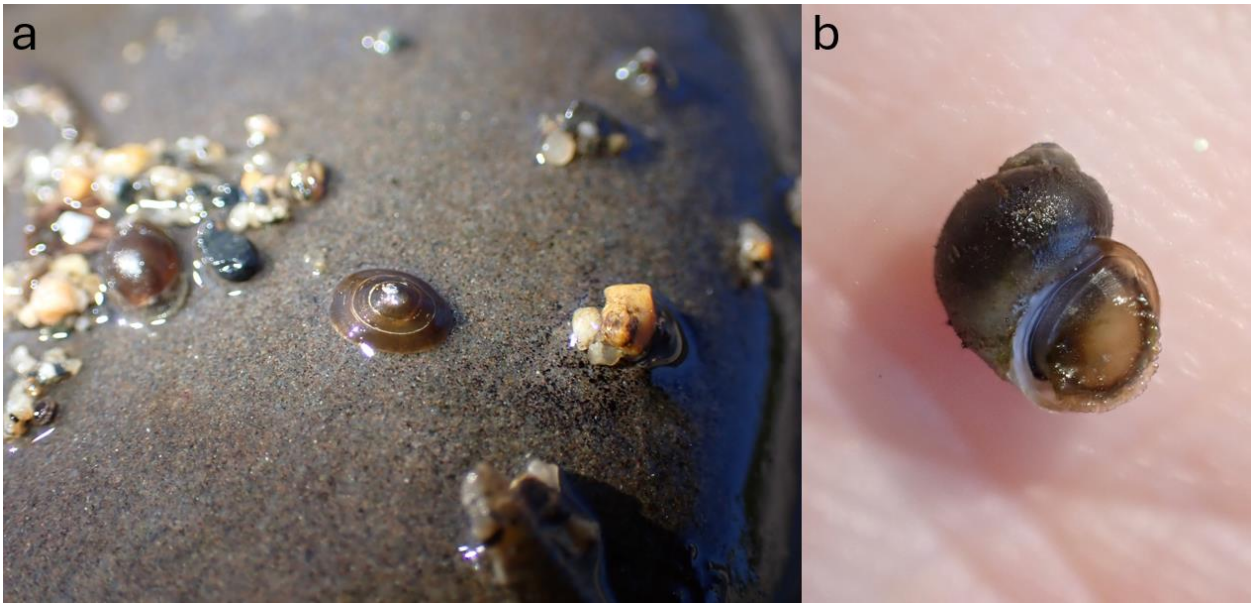

Figure 1a) Shortface Lanx attached to the bottom of a rock. b) Ashy Pebblesnail removed from rock to show operculum and dextral shell. (photos by Scott Gilmore)

At each site at least one water chemistry measurement was taken by either a WTW Multiline P4 Universal Meter and/or a YSI ProDSS Multiparameter Digital Water Quality Meter.

RESULTS

The 2014 study surveyed 12 sites. In 2025, we examined eight of the same 12 sites along with two additional sites not surveyed in 2014. Table 1 lists each of these sites and search effort details including time and distance covered as well as presence and absence of both SFL and APS. A total of almost 55 person hours was spent searching a little over 1.8 km of shoreline of the Columbia River between Castlegar and the Canada-US border (Figure 2). Figure 3 shows images of some of the habitat where SFL was found. SFL was found from Site 5 south to Site 12, a span of 27.7 km along the Columbia River, from 14 km upstream of Trail to 13.7 km downstream of Trail. APS was found at the majority of sites surveyed from the most northerly survey point at site 4, south to site 10 (Table 1). Other gastropods seen during the survey included physids, lymnaeids and *Gyraulus*.

Table 1. Results of surveys showing presence of SFL (Shortface Lanx) and APS (Ashy Pebblesnail) as well as search effort.

Site	Date	SFL	# SFL	APS	Latitude	Longitude	Effort (mins)	Distance (m)	Notes
4	9-Oct-25	absent		present	49.3253	-117.6505	90	270	Millenium Park, Castlegar upstream of wading pool
4a	9-Oct-25	absent		absent	49.3209	-117.6511	30	10	Millenium Park, Castlegar downstream of wading pool
WEP	9-Oct-25	absent		present	49.2630	-117.6430	180	75	Waterloo Eddy Park
5	9-Oct-25	absent		present	49.2112	-117.6825	90	310	Genelle upstream of boat ramp
		absent		present	49.2089	-117.6837	120		Genelle downstream of boat ramp
		present	25	present	49.2056	-117.6914	400		Genelle @ historical site 5; 36 dead SFL shells at this site
		present	12	present	49.2049	-117.6935	150		Genelle south of 5; 14 dear SFL shells at this site.
6	8-Oct-25	absent		present	49.1279	-117.7369	90	35	Rivervale
7	7-Oct-25	present	120	present	49.1039	-117.7095	1350	600	Trail Gyro park boat launch north to Gyro beach
7a	7-Oct-25	present	1	present	49.1008	-117.7080	225	55	south of Gyro Park boat launch
8	8-Oct-25	absent		present	49.0930	-117.6453	98	100	Waneta
10	8-Oct-25	present	13	present	49.0694	-117.6122	225	125	Beaver Creek
11	8-Oct-25	absent		present	49.0665	-117.6123	30	35	West of Beaver Creek boat ramp
11a	8-Oct-25	absent		absent	49.0656	-117.6119	60	90	South of Beaver Creek boat ramp. Site of BOLD/ iNaturalist records
12	8-Oct-25	present	1	absent	49.0287	-117.6043	150	100	c. 4km south of Beaver Creek boat ramp

Figure 2. Map of Columbia River from Castlegar to the Canada-United States border showing sites 1-12 from the 2014 survey. Colours denote site results for the 2025 survey including sites which were not surveyed (blue), Shortface Lanx was present (yellow) and Shortface Lanx was absent (red). Details of site locations can be found in Table 1.

Figure 3. SFL and ASP habitat. Upper left; Columbia River at Trail. Upper right; Columbia River at Trail, view of typical rocks searched. Lower left; Columbia River at Genelle. Lower right: Columbia River at Genelle further south. (photos by Scott Gilmore)

Water levels in the Columbia River as measured at Birchbank Hydrometric Station (08NE049) were 3.86m on 7 October and 3.82m on both 8 and 9 October. Water levels during the 2014 survey (9–11 October 2014) were lower and varied from 2.93 to 2.95m. Hence a different area of the river was being searched.

Notes on sampling locations

Site 4: Two regions were searched one above and one below the wading pool. No SFL were found and only two living APS were found.

Site WEP: Waterloo Eddy Regional Park has what appeared to be possible habitat on the eastern bank of the Columbia River. Despite finding over 40 APS at the southern end of the search no SFL were seen.

Site 5: This was the most northerly location where SFL were found in 2014. Four separate reaches were surveyed at this site covering 330m across 1120m of riverside. Shortface Lanx was only found at the southern end of the search (Figure 3 bottom right). The Columbia River at this site was shallower and rocks were on average much smaller than other sites where SFL was found. Over 50 shells (dead) and 37 living SFL were found. APS were found in scattered low numbers at this site.

Site 7 was a continuous reach from the boat ramp north to Gyro beach, as well as a section south of the boat ramp. Total distance covered was 730m. The majority (70%) of the SFL for the whole study (n=120 of 172) were found at this site along one 220m stretch of the River, immediately adjacent, and on the opposite bank to the Teck Cominco smelter in Trail.

Site 11a south of boat ramp: This is the location where SFL was found and reported on iNaturalist in October 2020, and for which five specimens were barcoded. No lanx and no APS were found at this location. Multiple Okanagan Crayfish (*Pacifastacus okanaganensis*) were present.

Site 12: A single SFL was found at this location extending the known range in Canada closer to the Canada-US border. No APS were found.

Unsearched sites

Sites 1 and 2 from the 2014 survey were not examined as Shortface Lanx was not found in 2014, and habitat was not deemed likely to find this species. Sites 3 was not easily accessible and due to limited time and previous searches having not found SFL here, effort was placed elsewhere. Site 9 had two SFL in the 2014 survey but upon visiting was found to be a construction zone and it was not possible to search.

General observations

SFL tended to be found on the underside or occasionally, the sides of rocks from as small as 6cm across. SFL were found on rocks right up to the water's edge. Although they tended to be found with just one individual on a rock, on at least two occasions two and once three, and four, SFL were found on a single rock (Figure 4). The COSEWIC assessment and status report suggested that SFL tended to be found on smoother rocks however from our survey, they did not appear to be so selective. Figures 5 and 6 show that the species is found on a large variety of rocks with differing surface textures.

Figure 4. Four Shortface Lanx on the underside of a single rock. SFL are indicated by arrows. (photos by Scott Gilmore)

Figure 5. Photographs of the underside of rocks on which SFL was found. Note no particular preference for rock type (smooth vs. rough, or size). (photos by Daniella LoScerbo)

Figure 6. Photographs of the underside of rocks where SFL was found. Note no particular preference for rock type (smooth vs. rough, or size). (photos by Daniella LoScerbo)

Water Chemistry

Water chemistry measurements taken at each site are listed in Tables 2 and 3.

Table 2. Water physicochemistry measured with the three probes of WTW Multiline P4 Universal Meter at the beginning of the search area unless otherwise indicated.

	pH			oxygen			conductivity		
Site	pH-Temp	pH	volts	O2-temp	O2 (mgl/l)	O2 (%)	cond-temp	cond (uS/cm)	salinity
4	14.1	7.76	-45	14	9.73	98.7	13.8	119	0
4a	14.4	7.8	-47	14	9.62	97.6	13.9	118	0
5b	15	7.78	-45	14.7	9.68	98.7	14.5	126	0
5c	15.9	7.74	-45	15.1	9.62	99.6	15.1	125	0
5d	16	8.05	-61	15.7	9.92	104.5	15.7	125	0
6	15	7.93	-55	14.4	9.52	99	14.5	125	0
7 beginning	14.6	7.84	-49	14.5	9.41	96	14.5	124	0
7 middle	15.1	7.81	-47	15	-	-	14.9	102	0
7 end	15.3	7.87	-52	15.1	9.74	94	15.1	124	0
8	14.6	7.82	-49	14.6	-	-	14.5	124	0
10	14.7	8.02	-62	14.6	8.95	92.5	14.2	125	0
12	14.7	7.77	-48	14.6	9.32	96.6	14.5	196	0

Table 3. Water chemistry was measured using a YSI ProDSS Multiparameter Digital Water Quality Meter. Site 5a-d is in order from North to South. Site 7 began at the boat ramp and ran north to the end. Site 10a was in the south and 10b was in the north. DO= Dissoolved Oxygen, SPC= Specific Conductance; NTU= Nephelometric Turbidity Units. *= the water and sediment were disturbed by a passing boat before this measurement was taken.

Site	Temperature	DO %	DO mg/L	SPC	pH	NTU
WEP	14.1	100	10.29	129.8	7.88	4.04
5a	14.6	102.3	10.4	143.9	8.09	5.80*
5b	14.5	103.5	10.54	131.9	8.08	0.98
5c	14.8	103	10.42	127.8	8.05	1.34
5d	16.3	108.2	10.61	128	8.37	0.96
7 beginning	15.3	100.6	10.1	128.3	8	1.31
7 middle	14.9	101.8	10.3	126.5	8.03	0.98
7 end	15	101	10.2	127	8.05	0.85
7a	15	102	10.28	127.4	8.06	1.28
10a	13.9	108.3	11.17	141.8	8.43	4.27
10b	14.6	99.7	10.15	127	8.04	1.05
11	14.5	99.5	10.14	128.4	8.03	7.99
11a	14.4	97.8	9.99	127.7	8.01	1.15
12	14.7	100.2	10.17	128.4	8.04	0.83

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