

## 2018 BC Conservation Status Rank Review and Changes

### Vertebrate and Invertebrate Animals

#### Reptiles

B.C.'s 21 reptiles were reviewed this year and seven of them underwent rank changes. All changes were the result of refining the previous rank calculator scores based on new information from updated COSEWIC reports and other sources (eg. new locations as a result of increased search effort; more information on trends and/or population size etc.). All of the reptiles that had changes remained on their current red or blue list.

Western Painted Turtle pop. 1 (Coastal)	S2 to S1S2
Western Yellow-bellied Racer	S3 to S2S3
Western Rattlesnake	S3 to S2S3
Western Skink	S3 to S3S4
Leatherback	S1S2N to S1N (N=nonbreeding)
Desert Nightsnake	S1 to S2
Gopher Snake	S2S3 to S3

#### Fish

##### **Stickleback (*Gasterosteus spp*)**

B.C.'s 17 Stickleback species and populations were assessed this year, resulting in rank changes for four of them.

**Charlotte Unarmoured Threespine Stickleback (pop.1) and Giant Threespine Stickleback (sp.1)** changed from S2 to S1S2 as a result of refining the previous rank calculator scores based on information from the 2013 COSEWIC report.

**Enos Lake Limnetic Stickleback (sp. 2) and Enos Lake Benthic Stickleback (sp. 3)** (formerly S1) are considered Extinct (SX), as they have collapsed into a single hybrid swarm.

**Little Quarry Lake Benthic and Limnetic Threespine Stickleback** populations (*Gasterosteus aculeatus* pops. 2 & 3) were assessed this year and are now on the red list (S1). They are endemic to Little Quarry Lake, on Nelson Island on the Sunshine Coast.

##### **White Sturgeon (*Acipenser transmontanus*)**

The white sturgeon designatable units were adjusted to match those used by the current COSEWIC assessment (2012) and reassessed using the current data and range. There are now four units: Upper Columbia River; Upper Fraser River; Upper Kootenay River; and Lower Fraser River populations. They cover the same geographic area as the previous populations, however the former Middle Fraser River, Nechako River, and Upper Fraser

River populations are now combined into a single Upper Fraser River population (north of Hell's Gate).

The Lower Fraser was found to have continued high threats and declines resulting in a rank of S1S2, formerly S2.

Table 1. The current names, previous names and ranks of the designatable units of White Sturgeon in BC.

<b>Previous populations /DUs</b>	<b>Former</b>	<b>Current</b>	<b>Current</b>
Lower Fraser River (pop 4)	S2	Lower Fraser River (pop 4)	S1S2
Middle Fraser River (pop 6)	S2		
Upper Fraser River (pop 5)	S1	Upper Fraser (pop 5)	
Nechako River (pop 3)	S1		
Kootenay River (pop 1)	S1	Upper Kootenay River (pop 1)	S1
Upper Columbia River (pop 2)	S1	Upper Columbia River (pop 2)	S1

#### **Bull Trout (*Salvelinus confluentus*)**

The Bull Trout designatable units (DU) were adjusted to match those used by the current COSEWIC assessment (2012) and reassessed provincially using the current data and range. Each DU is significant in terms of the distinctive ecological and zoogeographic settings that they represent and the inferred phylogeographic and adaptive differences associated with such distinctions, their current demographic independence (all are and have been historically separated by natural watershed divides, and the major gaps in distribution of Bull Trout that would be created should any DU become extinct COSEWIC 2012).

Table 2: The current names, previous names and ranks of the designatable units of Bull Trout in BC.

		Designatable Unit Name	COSEWIC unit	NatureServe population s	Current Ranks (2018)
Bull Trout, full species	S3S4				S3S4
Genetic Lineage 1	Unk	South Coast	DU 1	28	S2S3
Genetic Lineage 2	S3S4	Pacific	DU 5	26	S3S4
		Upper Yukon	DU 3	12	SU
		Western Arctic	DU 2	10	S3

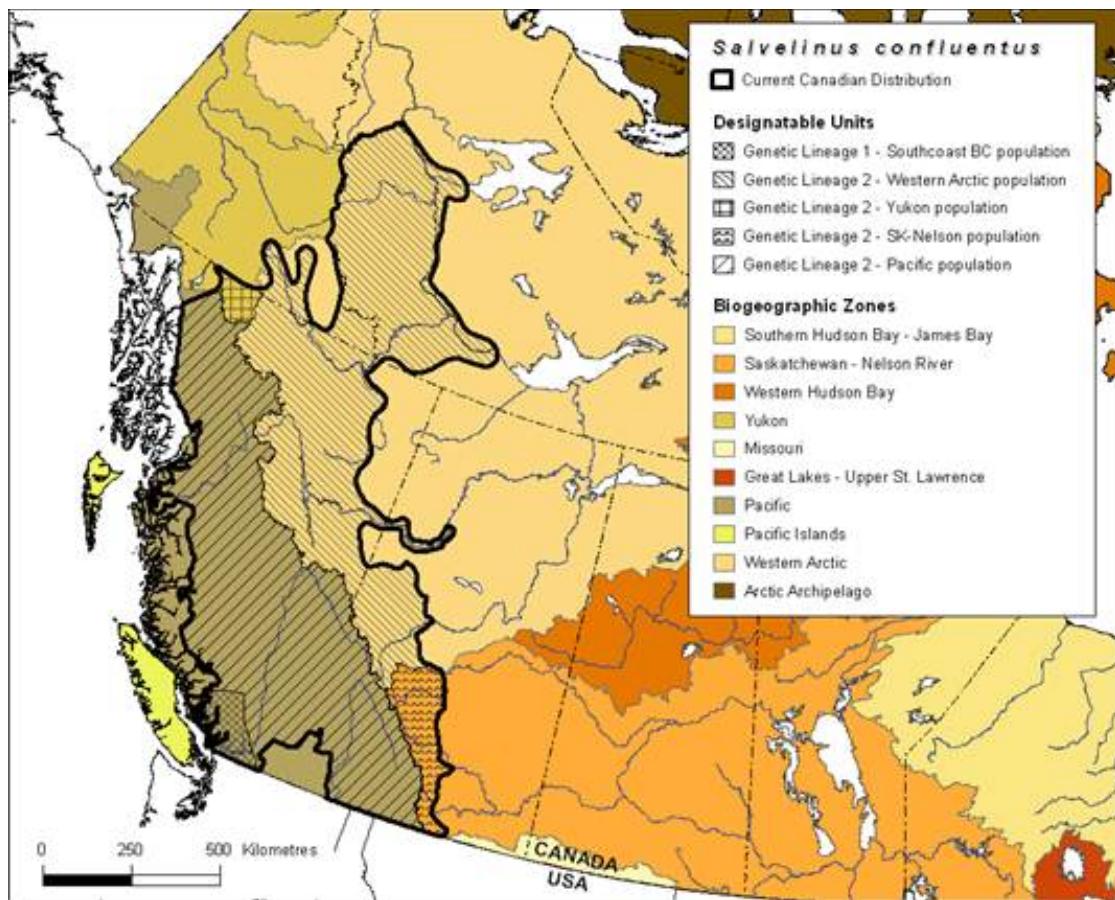


Figure 1. Map of the Canadian distribution of the Bull Trout. The areas occupied by the five designatable units of the Bull Trout (South Coast B.C. populations, Western Arctic populations, Upper Yukon Watershed populations, Saskatchewan - Nelson populations, and Pacific populations) are indicated. Data from: Province of British Columbia (2007); Rodtka 2009; Laframboise (pers. comm. 2010); Parkinson (pers. comm. 2010); Mochnacz et al. (submitted); Reist and Sawatzky (in prep.); Hagen and Decker (2011). (Map from COSEWIC 2012)

## Birds

**Cassin's Auklet** breeding rank changed to S2 from S3 and is now on the provincial red list. Three major threats have been identified: (i) impacts of climate change affecting prey quantity, quality and access, (ii) predation by introduced rats and raccoons on several colonies, and (iii) marine oil spills. The short-term decline is estimated to be 30.45% over the past 21 years (three generations).

A number of tracked subspecies of birds had not been assessed for upwards of 12 years and several had yet to be assessed using the new methodology or had not had full rank calculators with threat calculators completed.

Two Vancouver Island subspecies, **White-tailed Ptarmigan**, *saxatilis* ssp and **Northern Pygmy-Owl**, *swarthi* ssp., changed from S3 to S3S4. The ptarmigan has a small range but has relatively few threats and has remained stable. The owl has remained relatively stable, does have some threats, but does cover most of Vancouver Island.

**Brewer's Sparrow**, *breweri* ssp., went S2B to S2S3B. The known populations are considered relatively stable.

**Prairie Falcon** went from S2 to S1. There are between one to three confirmed aeries in the province.

**Grasshopper Sparrow** had its rank refined from S1S2 to S1. The threats are high and there are few consistent breeding occurrences.

B.C. formerly had two subspecies of **Pelagic Cormorant**, *Phalacrocorax pelagicus pelagicus* and *P.p. resplendens*. Hobson (2013) has reviewed the literature and in summary; measurements overlap widely and the genetic markers diverge little and therefore has lumped them all.

Hobson, K. A. (2013). Pelagic Cormorant (*Phalacrocorax pelagicus*), version 2.0. In The Birds of North America (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. <https://doi.org/10.2173/bna.282>

#### Name Changes:

The BC Conservation Data Centre follows the taxonomy and name changes as published annually by the American Ornithological Society. The list is produced by the North American Classification Committee with the list and updates for all of North America are found [here](#). Two sets of changes were based upon some phylogenetic groupings. The dabbling ducks in the genus *Anas* were split into four genera so for example our teals are now *Spatula* and widgeon are *Mareca*. Snow, Ross's and Emperor geese have changed from *Chen* sp to *Anser* sp.

Chesser, R.T., et. al. 2017. Fifty-eighth supplement to the American Ornithological Society's Check-list of North American Bird. The Auk: Ornithological Advances. 134: 751–773

## Mammals

**Humboldt's Flying Squirrel**: B.C. got a new mammal this year! A group of researchers looked at the mitochondrial DNA of the genus *Glaucomys* and found that instead of two species as previously thought, there are three in North America. The third is found along the Pacific coast from southern B.C. to southern California. *Glaucomys oregonensis* (Bachman, 1839), whose type locality is in Oregon, is the senior available name for this taxon.

Arbogast, B.S. et. al. 2017. Genetic data reveal a cryptic species of New World flying squirrel: *Glaucomys oregonensis*. Journal of Mammalogy, 98: 4, pp. 1027-1041.

Another addition to the mammal fauna of B.C. is the **Mexican (or Brazilian) Free-tailed Bat** (*Tadarida brasiliensis*). Calls were recorded during acoustic surveys in 2015 and 2016 on Salt Spring Island. Adults were detected, which suggest residents rather than post-natal dispersal from the south (Ommundsen et. al. 2017). We are retaining the "Accidental" classification until there is further evidence that they are here regularly or breeding.

Ommundsen, P., C. Lausen and L. Matthias. 2017. First Acoustic Records of the Brazilian Free-Tailed Bat (*Tadarida brasiliensis*) In British Columbia. Northwestern Naturalist 98(2):132-136.

#### **Water Shrews:**

There were taxonomic revisions to the shrews in B.C. *Sorex palustris* is found only in the northeast portion of the province and *Sorex navigator* covers the majority. The subspecies of water shrew found on Vancouver Island, ***Sorex navigator brooksi***, was reviewed and with increased occurrences further north on the island, beyond the former range, the rank went from S2 to S2S3 and is now on the provincial blue list.

Nagorsen, D. W. , N. Panter and A. Hope. 2017. Are the western water shrew (*Sorex navigator*) and American water shrew (*Sorex palustris*) morphologically distinct? Canadian Journal of Zoology, 95: 727-736

#### **Insects**

##### **Moths:**

The 2457 B.C. moths were added to the export to BC Species and Ecosystems Explorer this year. Most are not ranked at this point due to lack of data and resources. There are a few exceptions such as **Nuttall's Sheepmoth** (*Hemileuca nuttalli*) which is now on the red list (S1). There are very few records in B.C. – the most recent being 2002. It occurs in Antelope-brush habitat in the Okanagan Valley, which has severely declined.

Pohl, G., Cannings, R., Landry, J., Holden, D., & Scudder, G. 2015. Checklist of the Lepidoptera of British Columbia, Canada. Journal of the Entomological Society of British Columbia, 0(3). <https://journal.entsocbc.ca/index.php/journal/article/view/917>

##### **Wasps:**

Wasps (just from the family Vespidae) are also now being exported. There are 74 known species. They have been assigned preliminary ranks with many as SU (unknown) or a range rank.

Buck, M., Marshall, S. A., Cheung, D. K. B. 2008. Identification Atlas of the Vespidae (Hymenoptera, Aculeata) of the northeastern Nearctic region. Canadian Journal of Arthropod Identification 5: 492 pp.