* A series of pictures and/or drawings that clearly shows the key features required to make a positive ID (including arrows pointing out where to look for key features, as seen in the best bird guides). This would be a good opportunity to show examples of some of the morphological variation (colour and shape) likely to be encountered in the field.
* A written description to aid in identification that includes a summary of the variation in colour and shape likely to be encountered in nature and descriptions of any look-alike species.
* Three questions per species (with diagrams or pictures to illustrate) whose answers together help unambiguously differentiate your species from other similar ones in the field. Examples of suitable questions could be: Does it have a groove at the anterior end (ventral side) of the shell? Do the plates on the top of the closed shell have a distinct zigzag along the midline where they meet? Do the last segments of its walking legs look like they have been dipped in blue paint?
* A one paragraph description of the species (i) current geographic distribution and habitat preferences, (ii) trophic role (including diet and foraging mode), and (iii) reproductive mode.

## Description

\*Littorina sitkana\* is a small periwinkle snail, up to 22mm long. The snail’s body (flesh) is black. The shell colour ranges from black or grey to reddish brown (Sept, 2019). The shell can often have patterned/spiralling bands that are white, yellow, or orange in colour. Inside of the shell is brown to orange. The shell has a globose shape, and the first/lowest body whorl is roughly equal in height to the shell spire. Up to four whorls total (Alaska Department of Fish and Game, 2006). Shells may be smooth, or have spiralling ribs (Sept, 2019). \*Littorina scutulata\*, or the checkered periwinkle, is very similar in size and shell colour. Its shell is more streamlined, the bottom whorl isn’t as thick or wide.

A common intertidal grazer, \*L. sitkana\* is found throughout the rocky intertidal from the South Bering Sea to Southern Oregon (Alaska Department of Fish and Game, 2006). It is found in the intertidal, from splash-zone (very high) to low intertidal on sheltered and slightly wave exposed areas. (Alaska Department of Fish and Game, 2006; Proudfoot & Fretwell, 2015). Splash-zone distributions (above 3.0m above lowest normal tide) generally only occur in wave-exposed sites (McCormack, 1982). The Sitka periwinkle is sedentary and very desiccation prone. They generally live in tide pools and rocky crevices that stay shaded and moist, or under algae such as \*Fucus distichus\* (rock weed) and plants such as eel grass (Proudfoot & Fretwell, 2015; Sept, 2019). However, they are also seen on bare rock, as they risk suffocation if they stay underwater for too long (Proudfoot & Fretwell, 2015; Sept, 2019). The Sitka periwinkle is a herbivore, scraping micro algae and diatoms off of rocks and macroalgae (such as *\**Fucus*\**). It also consumes intertidal lichens (Proudfoot & Fretwell, 2015). Littorina snails are important herbivore, transferring algal carbon up the food chain to their predators – several crabs, sea stars, fish, and shore birds (Proudfoot & Fretwell, 2015).

\*L. sitkana\* are diecious, and eggs can be found in the intertidal year round (Proudfoot & Fretwell, 2015). After sex, females deposit 50-400 fertilized eggs in a gelatinous mass in the high intertidal. Larvae feed on egg casing and emerge as mobile juveniles (Proudfoot & Fretwell, 2015). On Vancouver Island, \*L. sitkana\* spawn several times per year, mostly in the spring and fall (Alaska Department of Fish and Game, 2006).

## Questions

1. Is the snail less than 2cm long, with a black or grey or reddish-brown shell featuring white, yellow, or orange spiralling patterns? If the pattern is not checkered, it is likely the Sitka periwinkle.

2. Is the body shape elongated or stout and globose? If the body is stout (with the first whirl comprising about half the shell’s length), it is likely the Sitka, nor the checkered Periwinkle.

3. If the answer to #1 is yes and you are able to find larvae: are the larval snails planktonic in the pelagic zone, or are they rooted to the intertidal substratum? The Sitka periwinkle is the only snail of this appearance with non-pelagic larvae.

## References

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