*Abstract – 2024 Coastal Cutthroat Trout Symposium*

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# Isolated native Coastal Cutthroat populations in the San Juan Islands, WA, threatened by the effects of residential development and climate change on instream flow regimes.

At the 141st annual meeting of the American Fisheries Society (2011) we reported the discovery of several isolated Coastal Cutthroat populations spawning in short, intermittent streams of the San Juan Islands, WA. Two of these populations were subsequently determined to be genetically distinct from Coastal Cutthroat elsewhere in western Washington, and appear to be relics of early post-glacial colonization events. One population is at least sporadically anadromous; the other is trapped above a coastal waterfall and migrates annually within the host watershed.

Coastal Cutthroat in the San Juan Islands have persisted under extreme conditions, including the seasonal intermittency of small streams, natural and artificial barriers to migration, and gradual transformation of wooded natural stream courses to agricultural ditches and seasonally flooded pastures. The only advantage that island streams presumably afford them is lack of competition from other freshwater fishes; they abandon stream reaches colonized by native sculpins (*Cottus aleuticus*, *Cottus perplexus*), or introduced salmonids such as Brook Trout (*Salvelinus fontinalis*).

Since 2011, stream conditions in the already relatively arid San Juan Islands have declined, with more frequent Extreme Precipitation Events in winter threatening to blow out eggs and fry; and longer summer droughts further diminishing instream flows. Impacts of shifting weather patterns are exacerbated by residential landscaping. Human population of the islands has nearly doubled, spurring home construction and clearing around wetlands and streams despite code restrictions.

Public-private efforts are underway to protect minimally sufficient instream flows in the Garrison Bay watershed, which is shared by a National Park, ranches, and homes. In addition to densifying riparian shading vegetation, restoration partners are exploring options for water banking on the federally owned headwaters of the stream, as well as natural wetlands and dug ponds between the trout-spawning reach of the stream and tidewater.