## Puget Sound Chinook Salmon Subway System

Skagit North

The Tulalip Tribes in conjunction with the Skagit River System Cooperative and the Adopt a Stream Foundation recently developed a model using remotely sensed parameters to predict the presence of juvenile Chinook salmon in small coastal streams in the Whidbey Basin. One of the key model parameters was how far a juvenile Chinook must swim to get from the nearest of three known salmon spawning rivers (Skagit, Snohomish, and Stillaguamish) to each of the small coastal streams identified. Relative swimming distances were calculated using the ArcGIS Path Distance tool for each cell of a water raster layer (note: salmon cannot traverse across Whidbey or Camano Islands so they must swim around them). The shortest path to a small stream from a spawning river is drawn in the color of the nearest (as the fish swims) spawning river. The result is a theoretical map of the "Subway" system for Chinook salmon in Puget Sound. The correlation between travel distance and Chinook salmon presence was calculated to be statistically significant (p-value < 0.01) by Zackey et al (2014).

