

Elk River Test Fishery

Introduction

The commercial salmon troll fishery has been hit particularly hard in recent years to meet the demands of weak stock management of salmon, yet some hatchery fish are under utilized. Currently 59% of the Elk River, Oregon run of Chinook salmon are of hatchery origin. Current regulations prohibit terminal fisheries north of Cape Blanco in order to protect wild runs of Sixes River Chinook. A test fishery was designed to help address concerns related to the straying of hatchery fish and their impact on genetic integrity of wild stocks and overharvest of wild fish mixed in with hatchery stocks in ocean fisheries. Since only a portion of Elk River hatchery salmon are tagged, the ratios of hatchery to wild fish encountered in the terminal fishery off Port Orford, i.e., Elk River Bubble Fishery, are unknown. This project used a test fishery to sample mixtures of hatchery and wild stocks of Chinook salmon near the Elk and Sixes Rivers in areas open to fishing and above the traditional fishing boundary to look at the genetic stock structure through space and time as salmon returned to these systems to spawn.

Objectives

Our objectives were to (1) determine the distribution, timing, and relative contribution of Elk River hatchery and wild stocks, Sixes River wild, and other wild stocks caught coincidentally with Elk River fish, by sampling stocks through a test fishery and using genetic stock identification (GSI) and otolith microchemistry methods, (2) develop a simple spatial impact model to determine the best timing and location for a commercial troll salmon mixed stock terminal fishery which maximizes the contribution of Elk River hatchery Chinook salmon while minimizing the contribution of Sixes River wild Chinook, (3) augment existing sampling programs to achieve a 100% marking rate for Elk River hatchery Chinook salmon, (4) compare and contrast results from objective 3 with an alternative selective fishery option which would harvest only hatchery marked fish over a broader geographic area assuming 100% marking of Elk River hatchery Chinook, and (5) coordinate with similar on-going studies (i.e. Cooperative Research on Oregon Ocean Salmon-CROOS) in an effort to maximize data collected and enhance the utility of information generated.