Salmon Lifecycle Monitoring Project
Coos Watershed Association

A Bit of Background

The Coos River Estuary, situated on the southern Oregon Coast, is the largest estuary between the Columbia River and San Francisco Bay. It is also home to one of the most productive coho salmon populations in the state of Oregon.

Life Cycle Monitoring

Since 2004, the Coos Watershed Association has conducted a Life Cycle Monitoring Project for coho salmon within the Coos watershed. Palouse and Larson Creeks, nestled within the valleys and forested uplands north-east of Coos Bay, were chosen as the focal point of the study. In recent years, channelization, dredging, diking, and the installation of tide gates has presented challenges to the returning and departing salmon. The increased strain placed on the salmon population has motivated scientists and local residents to team up to figure out how to best manage the system and ensure a thriving salmon population for the future.

Coho Salmon Life Cycle

The life cycle of a coho salmon begins and ends in the gravel beds of small freshwater tributaries, passing through many distinct life stages on its way to and from the ocean.

**Alevin -** newly hatched salmon with yolk still attached for initial feeding.

Fry - depleted egg yolk, exterior still resembles alevin more than adult

Parr - larger than fry, have developed distinct vertical markings on the torso

Smolt - one year old coho that are ready to make the journey to the sea, now closely resemble adult

Jack - two year old coho that attempt the return journey one year early. Often meddle in the mating of adult pairs.

Adult - three year old coho. Migrate in the fall to pair off and breed late in the winter. Exterior adopts a red hue.
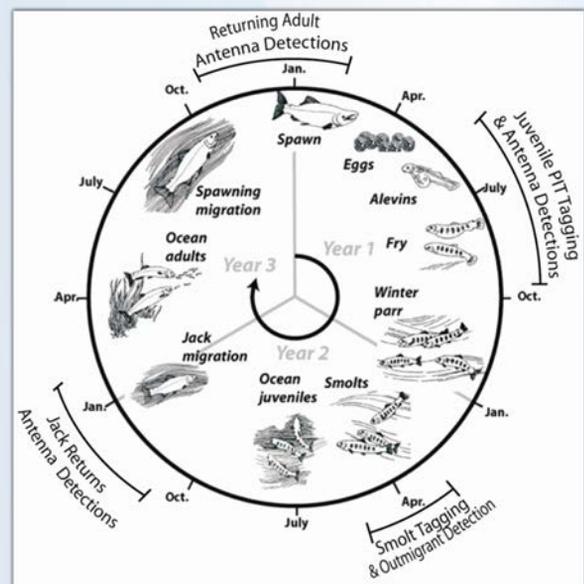
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What We Do

Spawning Surveys

Spawning surveys have been the foundation for monitoring the productivity of salmon populations. Designed to track long-term trends in population abundance, spawning surveys have been conducted on the Palouse and Larson Creeks since the 1950's. Monitoring locations are usually about 1 mile long sections of stream, checked every 10 days for the duration of the spawning season. Surveyors hike up the creek counting spawned salmon and marking corpses of spawned out salmon.

PIT Tags

Another means of detection used by the Coos Watershed Association is the Passive Integrated Transponder (PIT) tag. Small PIT tags are inserted into young parrs' stomachs. When a tagged salmon passes through an antenna array, its identification number, date, and time are recorded.

Antenna Arrays

To track migration of PIT tagged salmon, a radio frequency identification (RFID) telemetry network was installed. Two or three rectangular antenna circuits spanning the width of the creek are set up around three to four yards apart from each other. As a PIT tagged salmon passes through the rectangular circuit, its ID is logged. Using two logged points, with a third as reference, directionality and velocity of the salmon can be determined.

Rotary Screw Traps

Rotary screw traps provide an accurate and efficient count and trapping method that In small width streams, can be highly effective. As salmon swim into the slowly spinning screw they are funneled into a collection reservoir where they can then be tagged and released.

Seining

Seining nets provide a random, mobile, and cost efficient trapping method. Seining is usually done off the shore of larger bodies of water, or across streams using two lateral nets, by dragging one end of the net along the bottom of the water, while the top end floats. Seining allows for sampling of larger areas similar to spawning surveys.