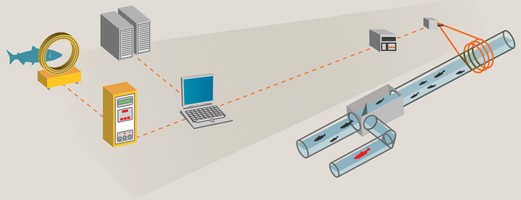
COLUMBIA BASIN

PIT Tag Information System

PTAGIS

OVERVIEW

THE COLUMBIA BASIN PIT TAG INFORMATION SYSTEM (PTAGIS) IS THE CENTRALIZED DATABASE FOR FISH MARKED WITH PASSIVE INTEGRATED TRANSPONDER (PIT) TAGS IN THE COLUMBIA RIVER BASIN.

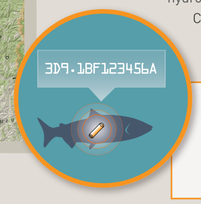


CUSTOM SOFTWARE & HARDWARE

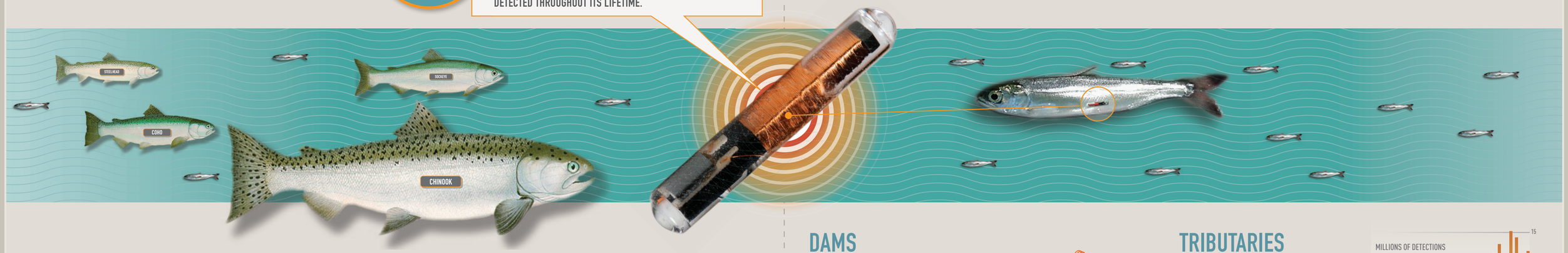
PTAGIS provides custom software to assist data contributors with collecting and submitting high-quality data. PTAGIS also designs, installs and maintains automated detection systems at many of the large hydropower dams on the Columbia and Snake rivers.

SEPARATION BY CODE (SBYC)

Individual PIT-tagged fish can be targeted by researchers for separation from the general population as they pass through juvenile bypasses or adult fishways. Target fish can be diverted to holding tanks for hands-on sampling, or collected for transportation by barge or truck.



PIT TAGS ARE ENCODED WITH A UNIQUE IDENTIFIER AND ALLOW A FISH IMPLANTED WITH ONE TO BE PASSIVELY DETECTED THROUGHOUT ITS LIFETIME.



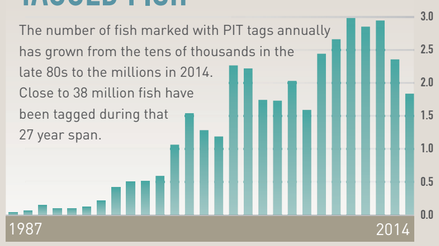
27	38	1.2	1.3	842
YEARS	MILLION TAGGED	MILLION RECAPTURED	MILLION RECOVERIES	LOCATIONS

TAGGING LOCATIONS

Mark/release, recapture, and recovery records are tied to locations in the Columbia Basin. These locations can be a stream segment, a fixed point, or a site within a hydropower facility. PIT tag data has been reported from over 800 different locations across the Basin.

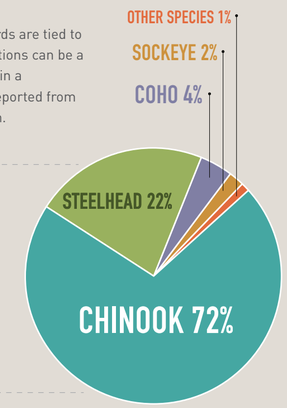
TAGGED FISH

The number of fish marked with PIT tags annually has grown from the tens of thousands in the late 80s to the millions in 2014. Close to 38 million fish have been tagged during that 27 year span.



SPECIES TAGGED

The majority of fish tagged with PIT tags are anadromous salmonids, but PIT tags have been used to mark and track an increasing number and diversity of other species throughout the Columbia Basin, including northern pikeminnow, shad, Pacific lamprey, bull trout, cutthroat trout, and sturgeon.



MARKING & RELEASE

AROUND 40 DIFFERENT ORGANIZATIONS HAVE MARKED FISH WITH PIT TAGS AND RELEASED THEM INTO THE COLUMBIA BASIN.

DATA EVENTS

THE RECORDS IN THE PTAGIS DATA WAREHOUSE DESCRIBE FOUR SEPARATE TYPES OF EVENTS SPECIFIC TO PIT-TAGGED FISH.

INTERROGATION

A PIT-tagged fish may be detected at one or more fixed automated detection sites. The time is recorded as the fish passes by or through antennas.

RECOVERY

Previously PIT-tagged fish may be recovered after death. Recoveries of bare PIT tags, for example from avian colonies, can be inferred as a mortality event.

MARK/RELEASE

Each unique PIT tag is associated with a specific mark event. Species, size, condition, and other associated metadata are recorded for each fish, along with location and time of release.

RECAPTURE

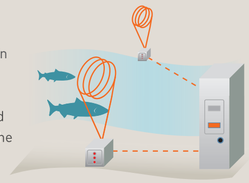
Previously PIT-tagged fish may be recaptured and physically sampled subsequent to initial marking event.

INTERROGATION

AUTOMATED INTERROGATION SYSTEMS PASSIVELY DETECT PIT-TAGGED FISH AS THEY PASS BY OR THROUGH SPECIAL ANTENNAS.

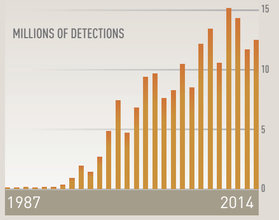
DAMS

Many of the dams on the Columbia and Snake rivers have interrogation equipment installed in the juvenile bypass systems and adult fish ladders. PTAGIS installs and maintains these systems with multiple redundant antennas and high availability computer systems to handle the large volume of fish passing through.



TRIBUTARIES

Low power interrogation systems were developed to provide automated detections in remote locations. These sites, operated by a variety of fisheries agencies, typically have fewer antennas which are installed directly in stream beds.



DETECTIONS

From 1987-2014, almost 15 million unique fish have been detected at one of 311 sites generating 174 million detection records.

PTAGIS is a Fisheries Data Project of the Pacific States Marine Fisheries Commission.

DESIGN: fieldtrip-design.com