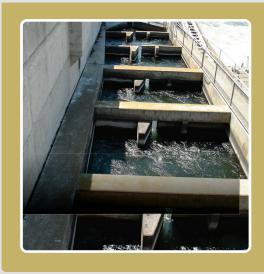
# ADULT LADDER PIT TAG DETECTION EFFICIENCY 2014

## The Dalles





## Lower Monumental



99.2%

John Day

## Bonneville







**McNary** 

ERCENT TAGS DETECTED

## HISTORY OF **ADULT ANTENNA** DESIGN

#### **ORIFICE STYLE ANTENNAS 2002**

The first adult antennas constructed and installed were the orifice style antennas at Bonneville and McNary dams. These antennas were designed to be installed in existing cutouts in ladder weir walls. The weir wall had to be cut to allow for the installation of these antennas.

Aluminum shielding had to be installed on both sides of the weir walls to avoid coupling of the antenna RF fields with existing rebar within the concrete walls.

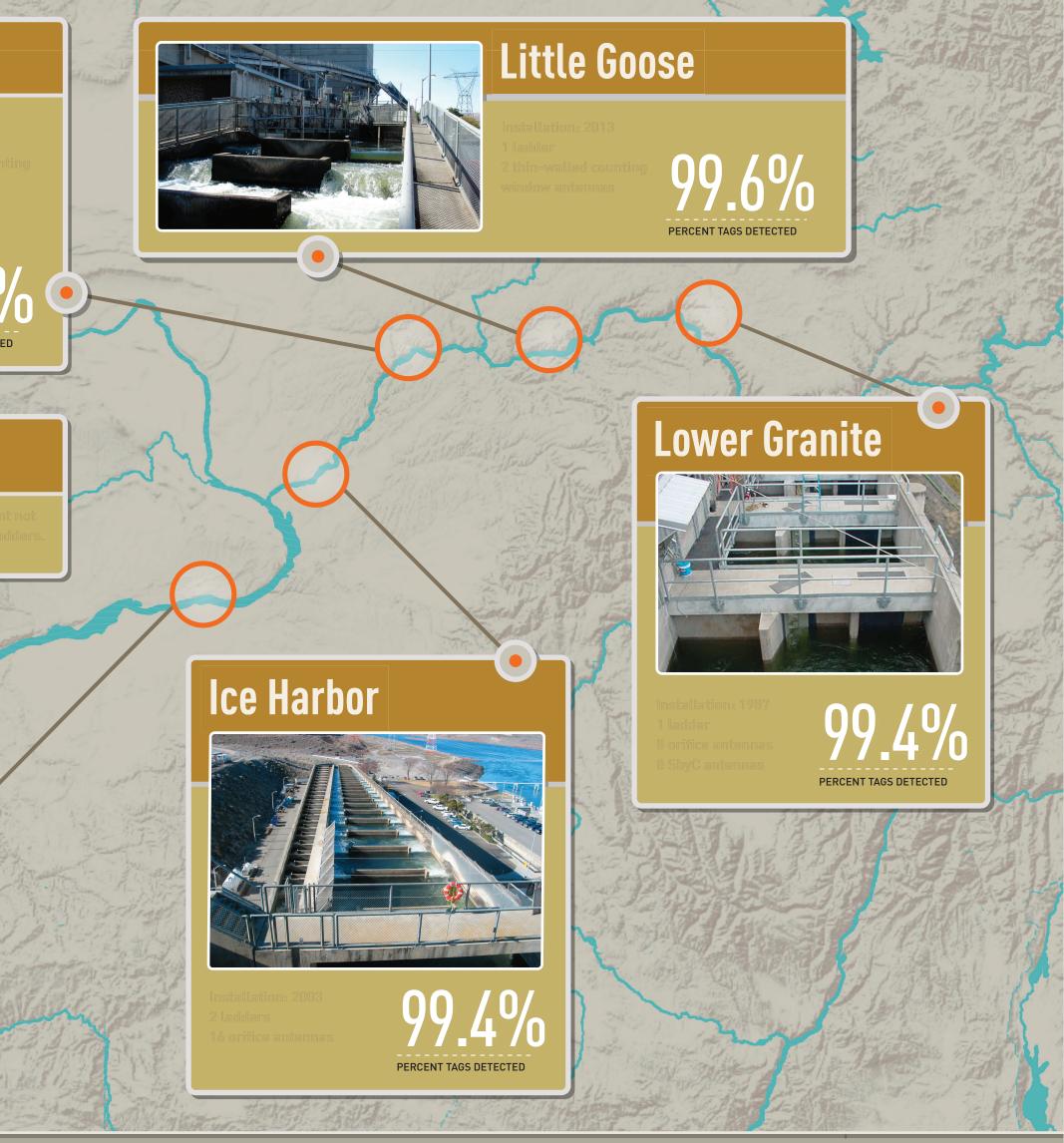
Typical dimensions: 18"x18" to 26"x26" inches with a depth of 8"

#### **SLOT STYLE ANTENNAS 2005**

Slot style antennas were made possible by the development of shielding that both shaped the RF field and provided protection against coupling with rebar in concrete. These antennas were designed to be installed in counting windows and vertical slots of ladders. Installation required removing existing weir walls, building cast-in-place walls, using fiberglass reinforced plastic rebar in conjunction with stainless steel rebar, and cutting slots into concrete to allow for the antenna to be slid into place.

Typical Dimensions: 12" x 93" to 28" x 138" with a depth of 13"





#### THIN WALL ANTENNAS 2013

The next development in antenna design was the use of ferrite tiles for shielding, which can be placed much closer to the antenna wire, allowing for a much narrower antenna. These antennas were designed to be placed in ladder counting windows. Installation of these antennas requires no cutting of concrete or rebuilding of weir walls, but ramps have been constructed to provide improved lamprey passage.



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

Typical Dimensions: 18" x 51" to 32" x 88" with a depth of only 2 1/8"