

# Fishway Inspections

**Hydro Training  
U.S. Fish and Wildlife Service  
Hadley, MA  
February 2015**



**Brett Towler**  
Hydraulic Engineer  
Fish Passage Engineering  
Fisheries  
Northeast Region  
USFWS



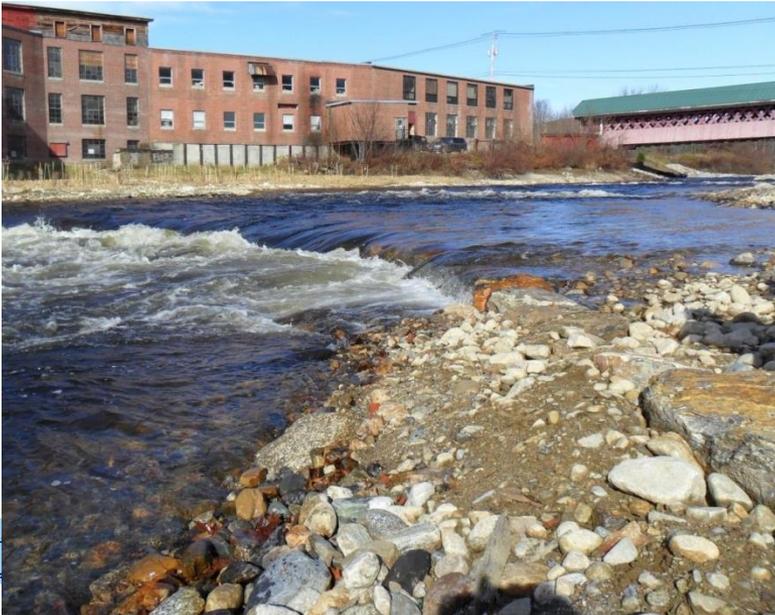
# Recall that our definition of “fishway” is broad.

*In 1992, Congress provided guidance on what constitutes a fishway in the National Energy Policy Act, Section 1701(b):*

“...items which may constitute a "fishway" under section 18 for the **safe** and **timely** upstream and downstream passage of fish shall be limited to **physical structures, facilities, or devices necessary to maintain all life stages of such fish**, and **project operations and measures** related to such structures, facilities, or devices which are necessary to ensure the **effectiveness** of such structures, facilities, or devices for such fish.”



*Fishways can be small or large, fixed structures or moving machines or made from natural materials*



## A fishway can include...

- ✓ • **physical structures**
- ✓ • **facilities**
- ✓ • **devices**
- ✓ • **project operations**
- ✓ • **measures**

... a lot of moving parts!



# Why inspect a fishway?



*Fishways are complex machines  
and hydraulic structures.*

- Verify debris maintenance program
- Identify damage
- Document changing conditions
- Ensure proper functioning

***Safe, Timely & Effective!***











# When to inspect a fishway...

- Daily\*
- Pre-Season
- During fish run
  - Upstream
  - Downstream
- During construction
- Shutdown
- ...when problems are identified













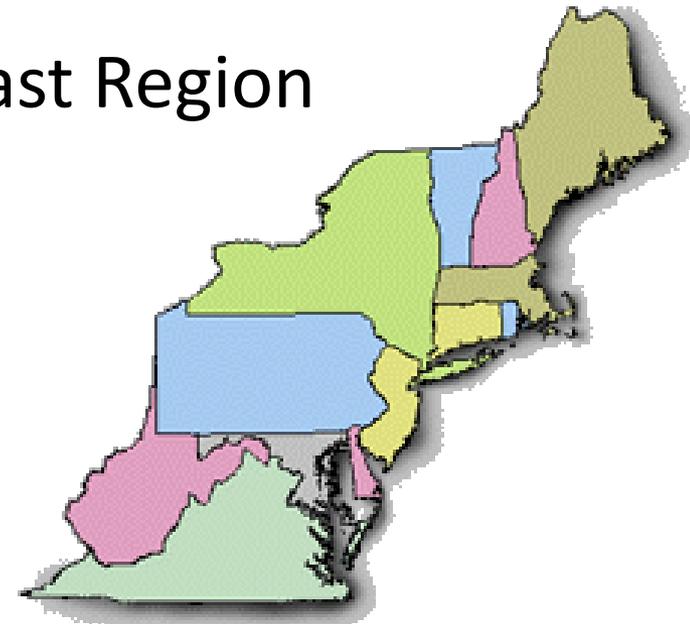


# Who should inspect a fishway?



# USFWS R5 Fish Passage Engineering

- Maintains a cadre of engineers with \_\_\_ years of experience in river hydraulics, surface water hydrology, hydropower, and fish passage.
- Supported, in part, by Ecological Services
- Works throughout the Northeast Region (and beyond)
- Supports FWS biologists, state agencies, tribes, and other stakeholders





# How to inspect a fishway?

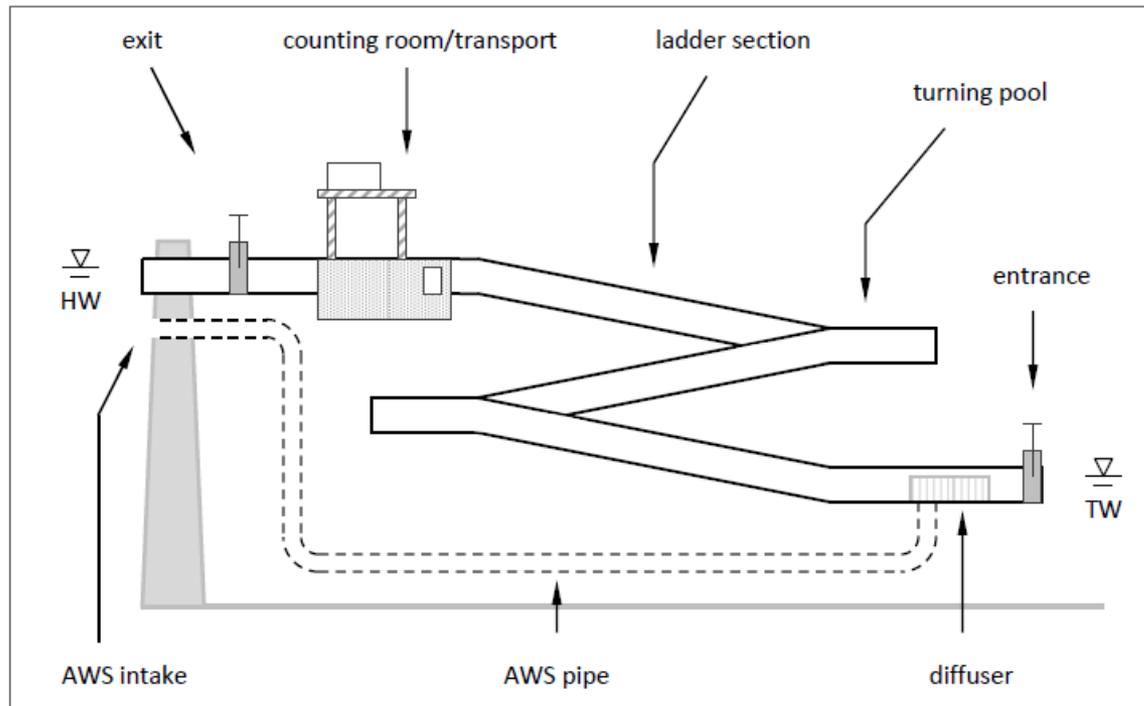
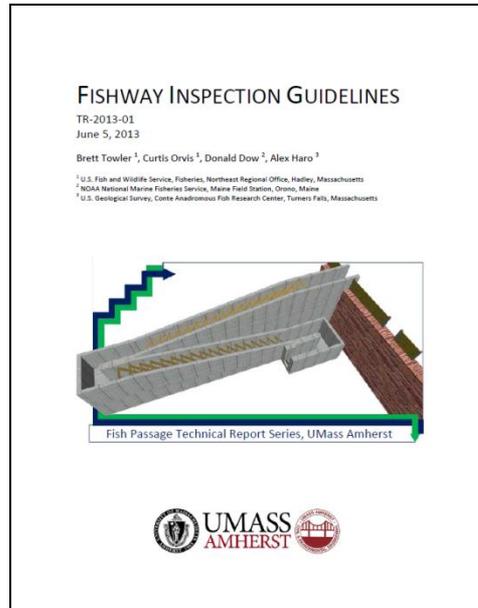


Figure 2. Major components in typical volitional fish ladders

- Hydrology & ecology
- Hydropower Operations
- Entrance
- Ladder/Lift
- AWS
- Exit
- Downstream bypass
- Counting/Trapping facilities
- Eelways



# Fishway Inspection Guidelines



- Developed 2013
- Joint USFWS/NMFS/USGS
- Including input from:
  - CTDEEP
  - Maine DMR
  - NOAA NWR
  - and many others!

*“provides guidance for engineers, biologists, operators, regulators and dam owners involved in the inspection of fishways at dams”*



# FISHWAY INSPECTION GUIDELINES

TR-2013-01  
June 5, 2013

Brett Towler<sup>1</sup>, Curtis Orvis<sup>1</sup>, Donald Dow<sup>2</sup>, Alex Haro<sup>3</sup>

<sup>1</sup> U.S. Fish and Wildlife Service, Fisheries, Northeast Regional Office, Hadley, Massachusetts

<sup>2</sup> NOAA National Marine Fisheries Service, Maine Field Station, Orono, Maine

<sup>3</sup> U.S. Geological Survey, Conte Anadromous Fish Research Center, Turners Falls, Massachusetts



*Available online:*

<http://scholarworks.umass.edu/fishpassage/>



# *Questions?*



