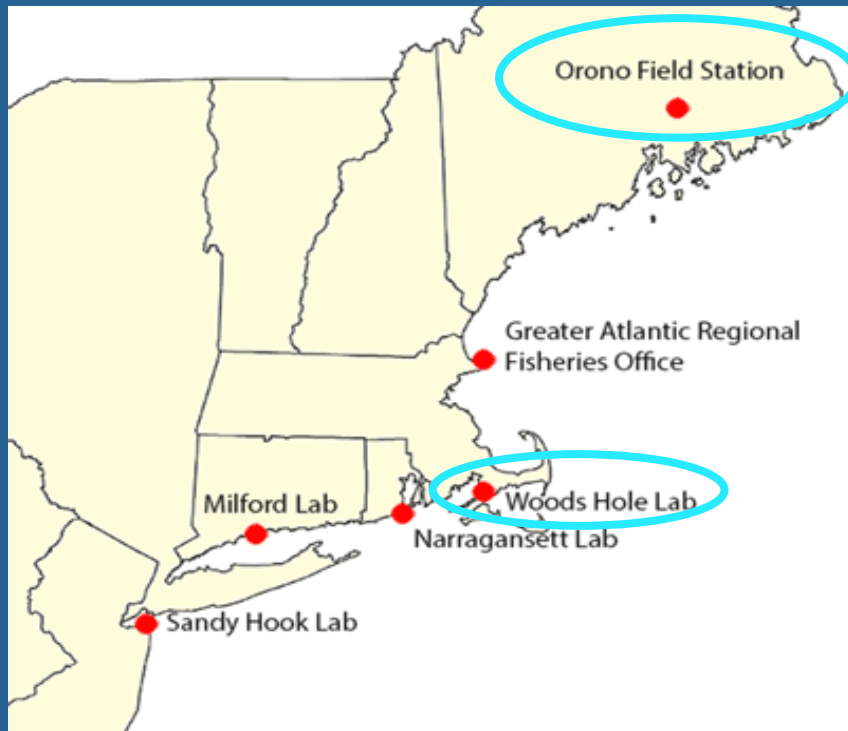




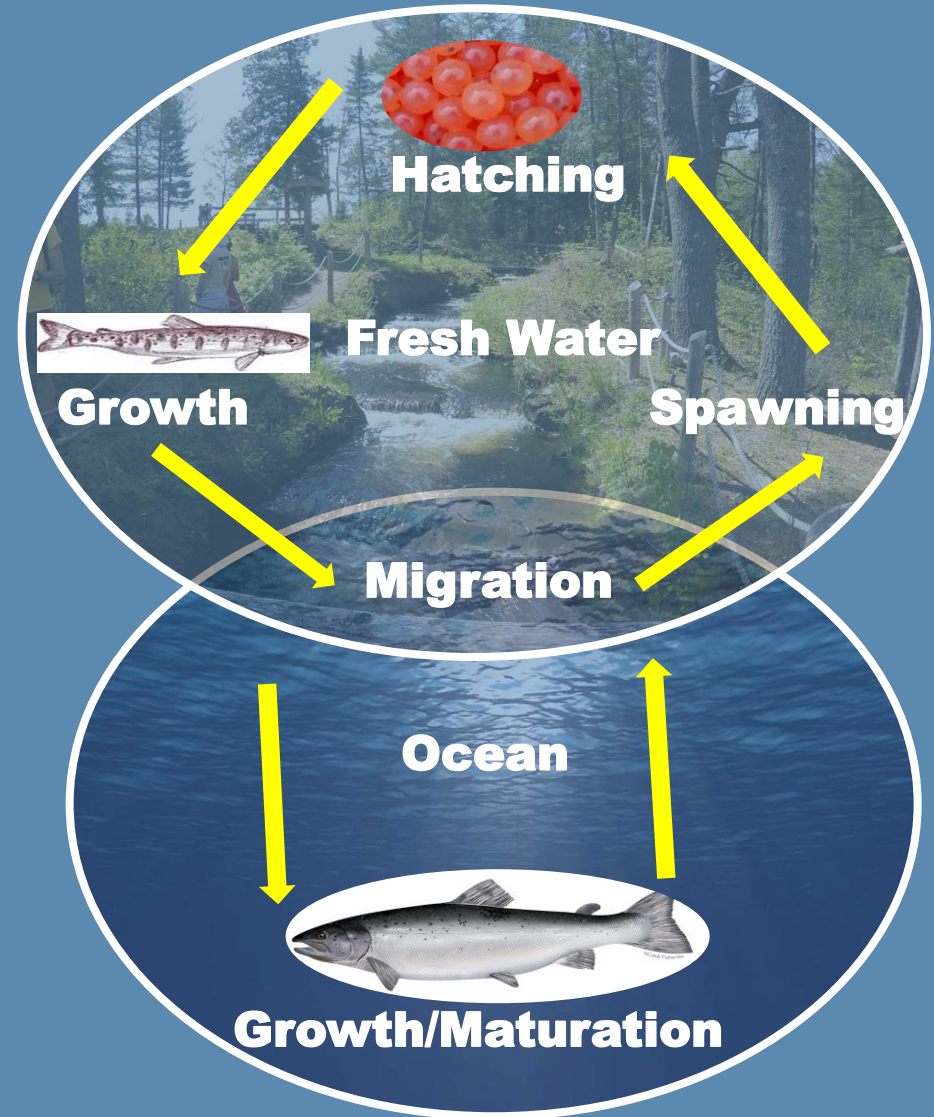
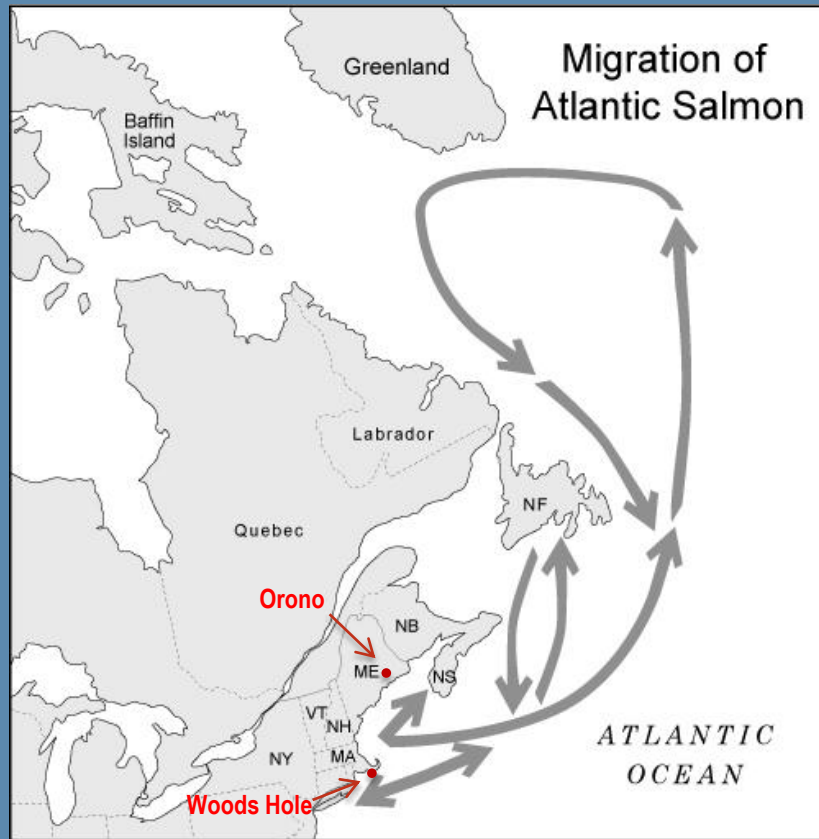
**NOAA  
FISHERIES**

# Welcome to the Northeast Fisheries Science Center

Woods Hole, MA and Orono, ME



# Atlantic salmon (*Salmo salar*)



# Why study Atlantic salmon?

- Endangered species

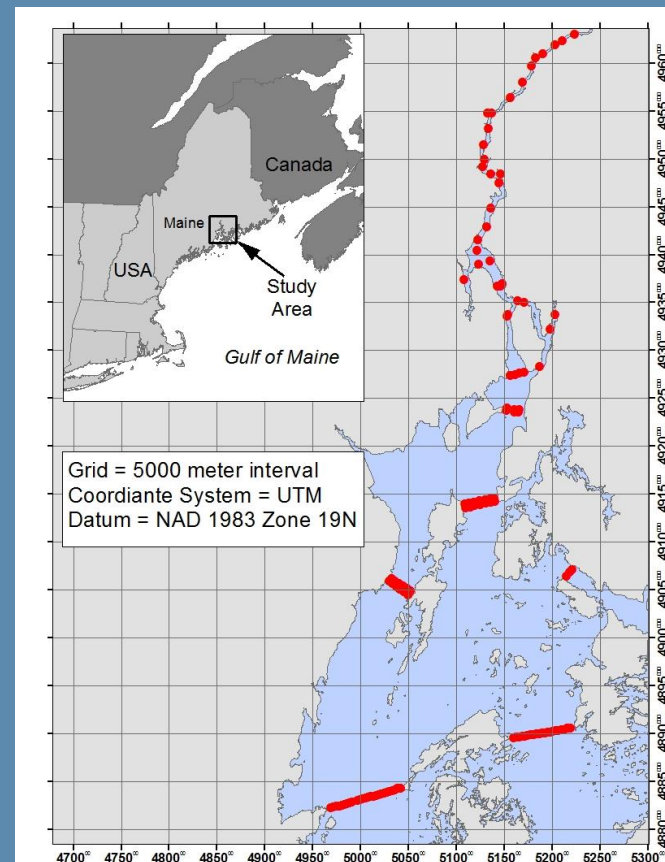
- Threats?



- The Northeast Salmon Team (NEST)
  - Telemetry, marking, trapping, modeling



# Telemetry



# Activity 1: Follow that fish

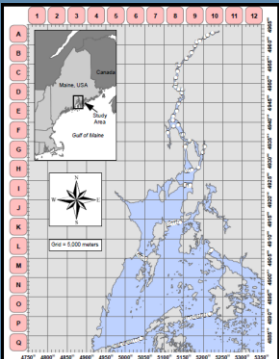
## Materials:

map  
data sheet  
worksheet  
dry erase marker  
classroom pencil  
classroom ruler

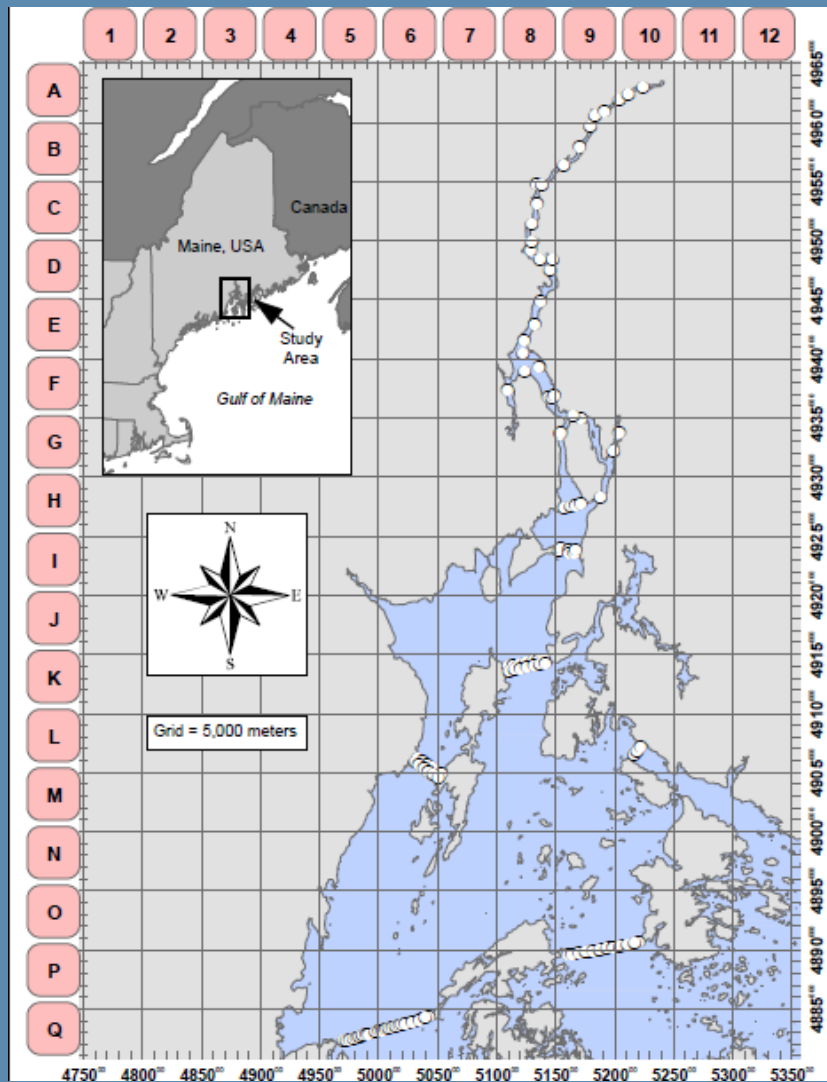
## Challenge:

Plot the path your fish takes as it travels downriver.

- (1) Mark each receiver your fish passes on the map.
- (2) Fill out the worksheet based on your fish's behavior



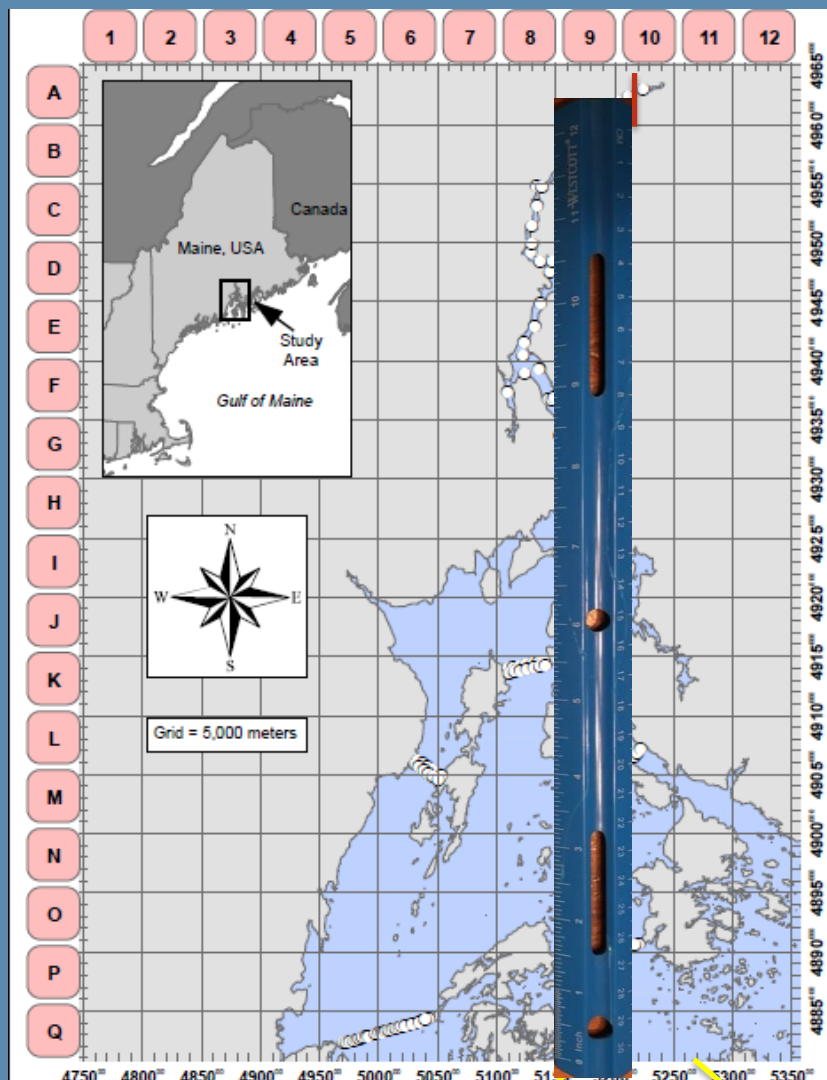
## Example: Starting Spot



UTMN = North

UTME = East

# Example: Starting Spot

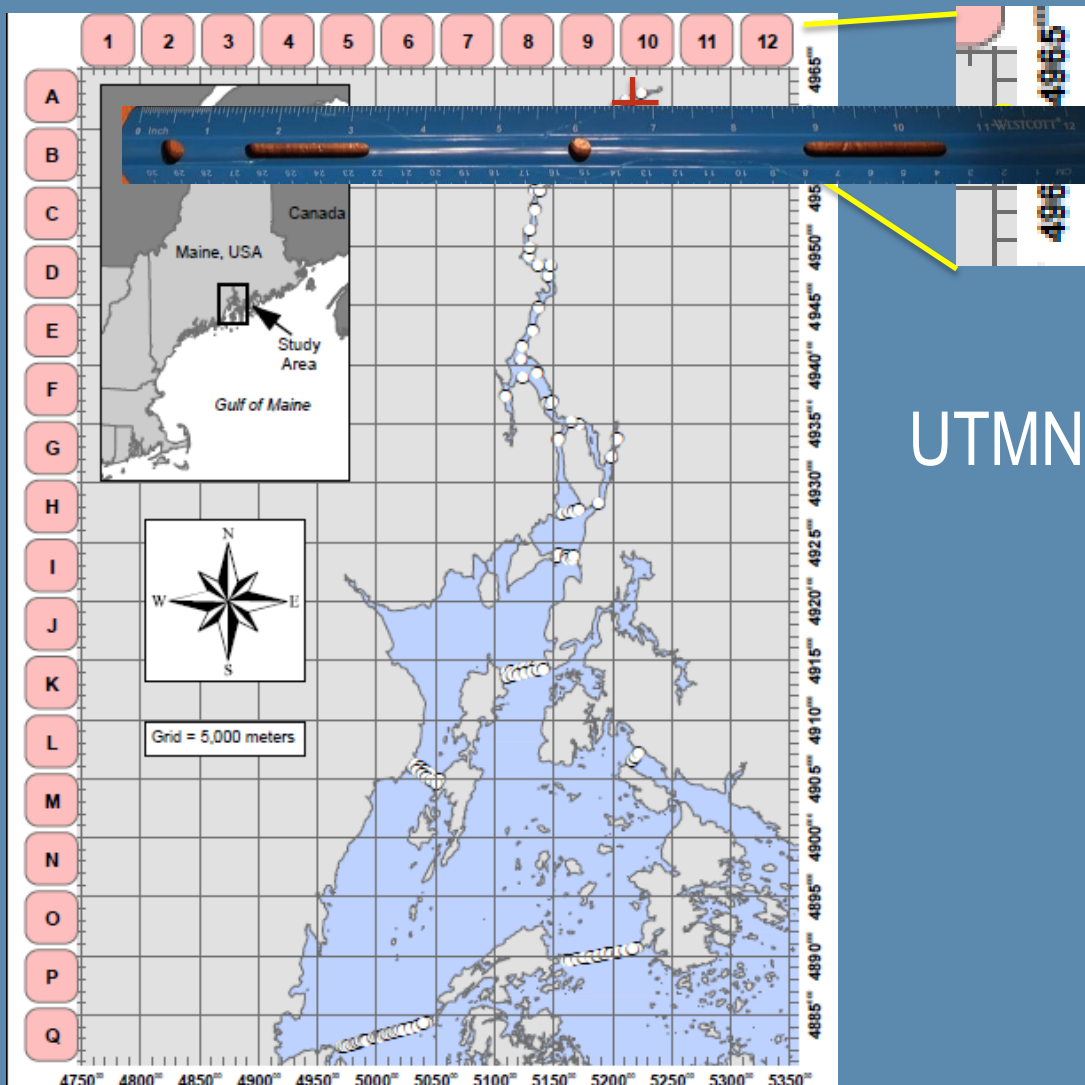


UTMN = 4962

UTME = 5218



## Example: Starting Spot

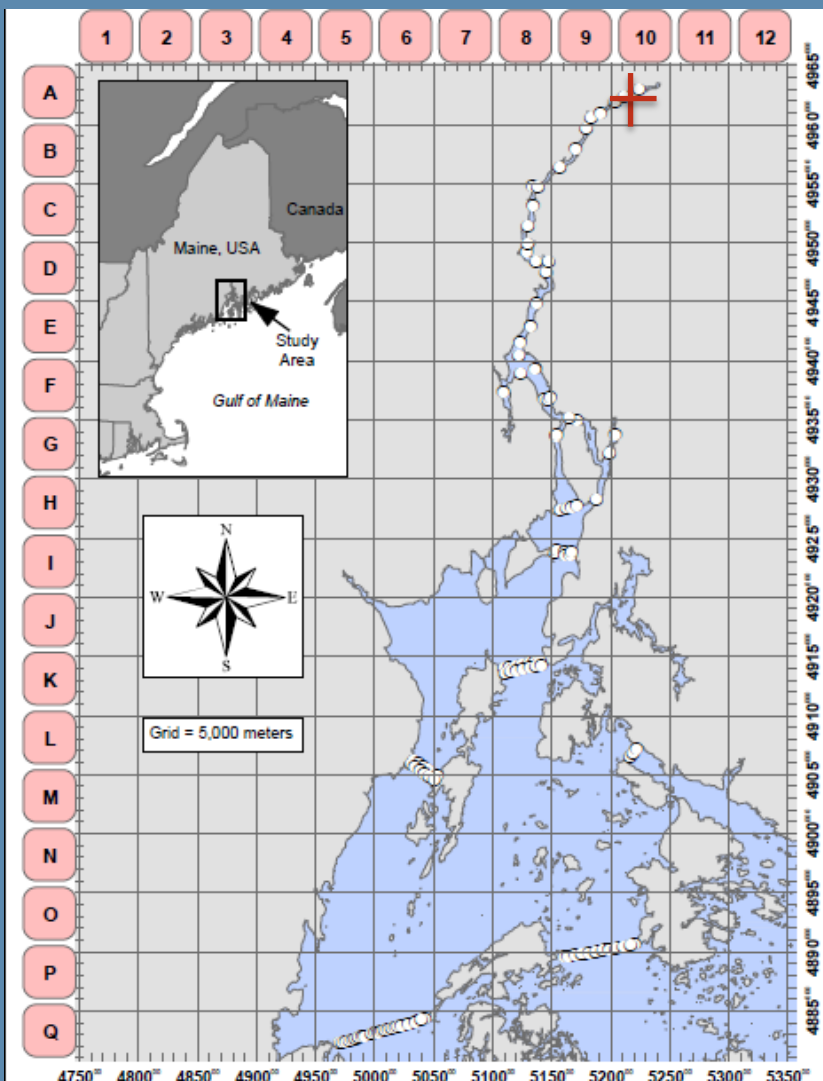
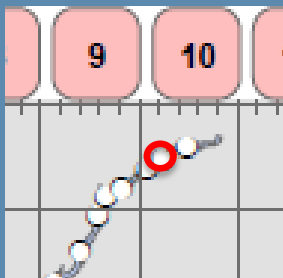


UTMN = 4962





## Example: Starting Spot



UTMN = 4962

# Activity 1: Discussion

- These data help us understand factors that influence smolt behavior:
  1. Timing of when the salmon migrate
    - a. Understanding timing helps us to know when to build on the river



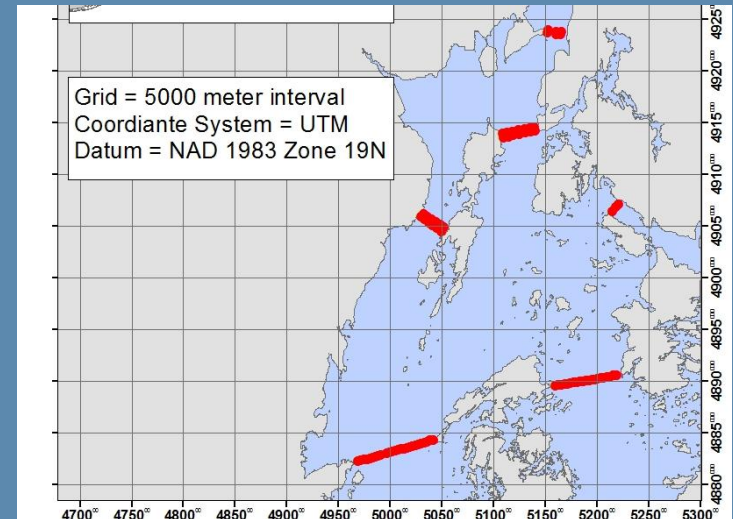
# Activity 1: Discussion

- These data help us understand factors that influence smolt behavior:
  2. Duration of migration
    - a. If all the other species have already finished their migration then there is more predation



# Activity 1: Discussion

- These data help us understand factors that influence smolt behavior:
  3. Route taken
    - a. This helps with placement of structures such as underwater turbines





# Activity 1: Discussion

- These data help us understand factors that influence smolt behavior:
  4. Where fish die on their migration
    - a. This helps identify locations where predators are abundant



# Activity 1: Discussion

- These data help us understand factors that influence smolt behavior:
  1. Timing of when the salmon migrate
  2. Duration of migration
  3. Route taken
  4. Where fish die on their migration

# Activity 2: Dams, Bypasses, and Salmon

- What barriers are there to salmon migration?





# Activity 2: Dams, Bypasses, and Salmon

- What barriers are there to salmon migration?



- How can dams impact salmon migration?



## Activity 2: Dams, Bypasses, and Salmon, Oh My

### Materials:

Water (blue blocks)  
Dam pieces and turbines  
River and banks platform  
Fish  
Building pieces to represent whatever you can imagine

### Challenge:

Build a dam that includes:

- (1) 3 turbines
- (2) A safe way for salmon to get past the dam going both up and down the stream
- (3) Be ready to explain your solution to the class

# Activity 2: Solutions



Fish Lift



Before



After



Fishway

## Howland Dam Bypass

# Innovative Solutions

## Salmon Cannon



<https://safeshare.tv/x/4NkWN7Rcck>

## Truck Transport



- Using innovation and imagination, people are testing many different solutions



# Scientist Spotlight

Jim Hawkes is a research fishery biologist that works with Atlantic salmon in our Orono office.

He telemetry tags salmon smolts to monitor their movements. Through his research, Jim and other NOAA staff, have been able to identify smolt behaviors, speed, as well as how many die or successfully make it to the ocean.





# What Can We Do?

- In ME
  - Visit the river
    - Don't litter
    - Recycle
- In MA
  - Get to know what is living in your streams and ponds
  - Caring for fish in Buzzards Bay promotes a healthy ecosystem



Spread the  
word

