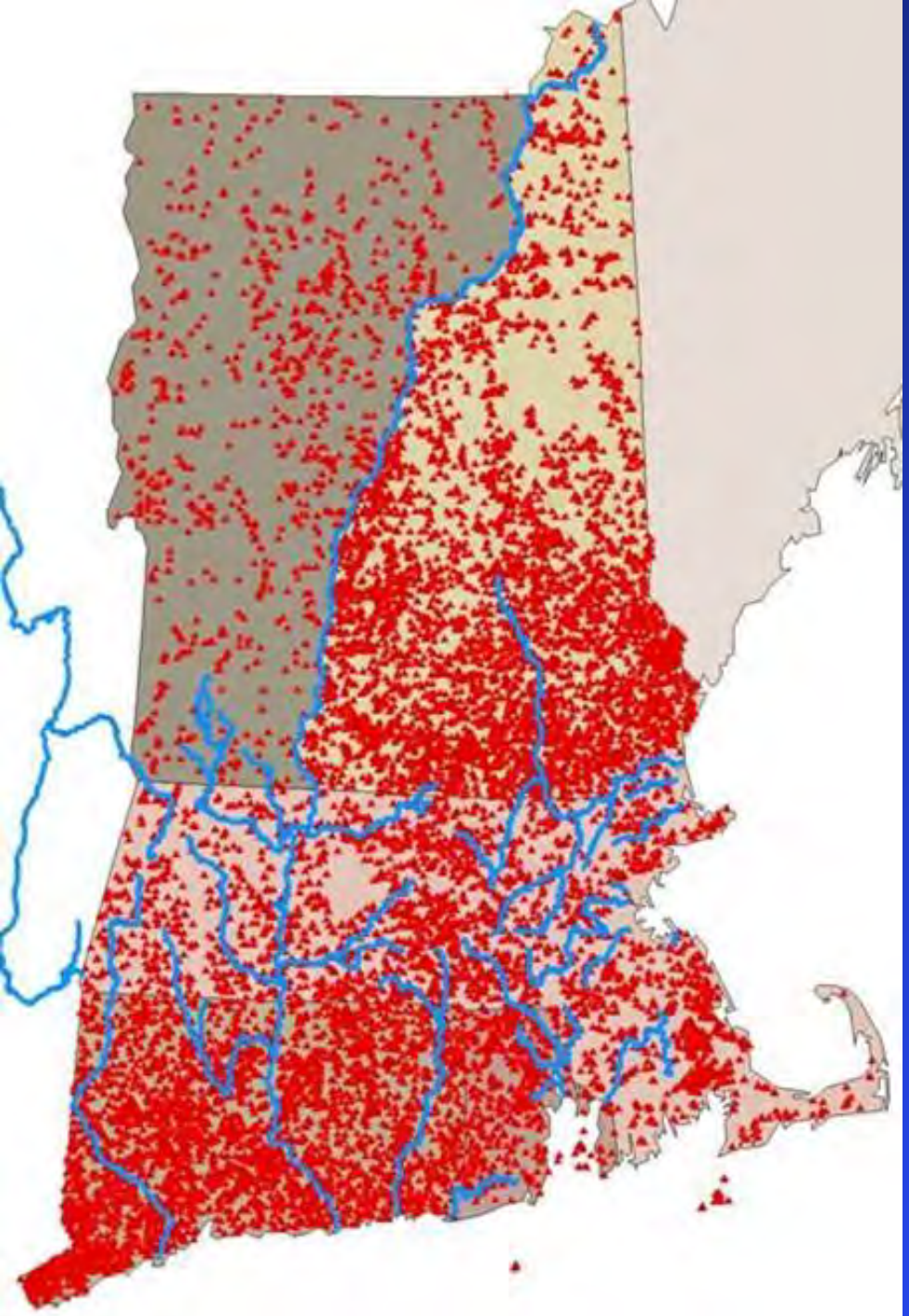
Fish Runs, Dams and River Restoration

SAVE THE BAY.

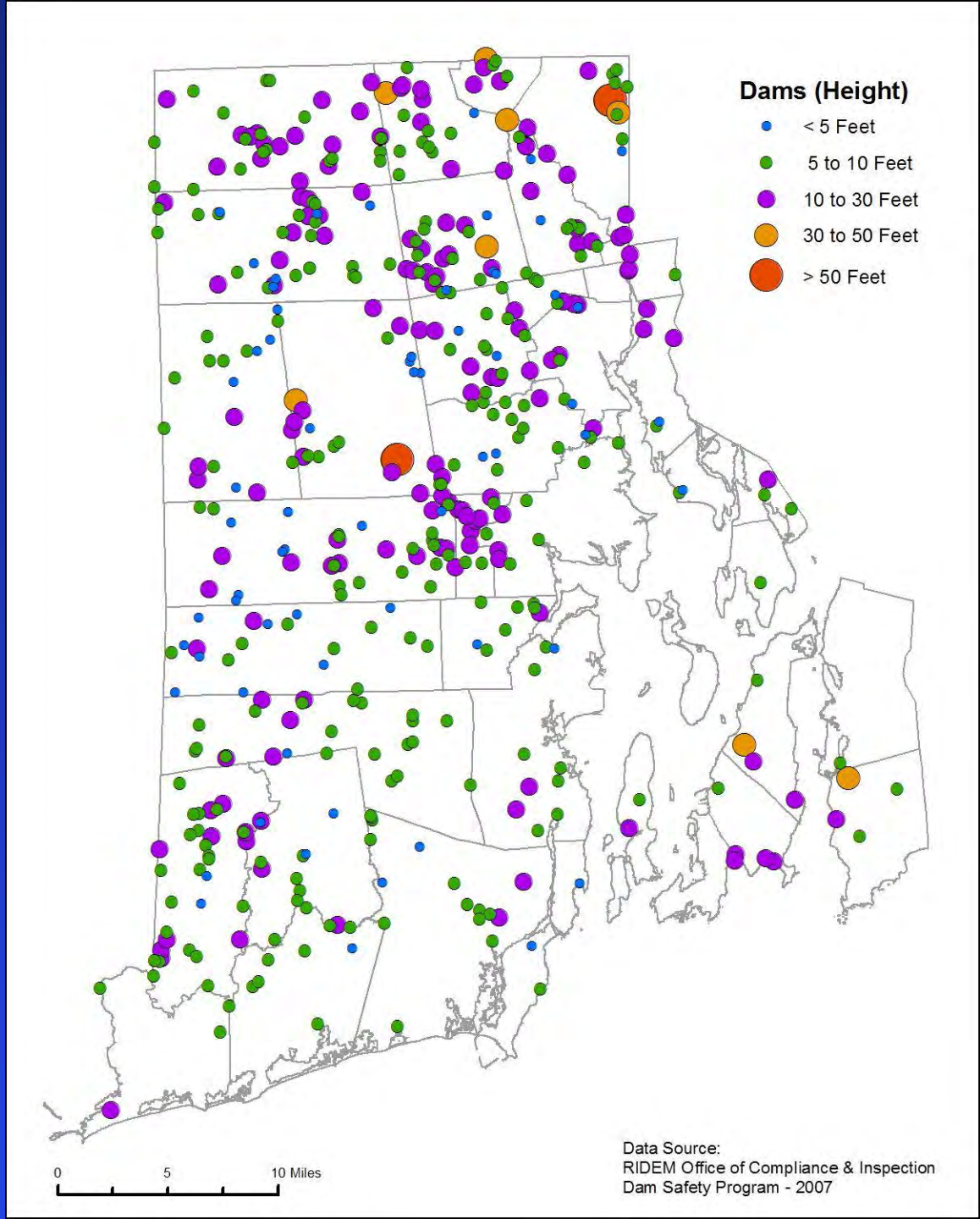
NARRAGANSETT BAY



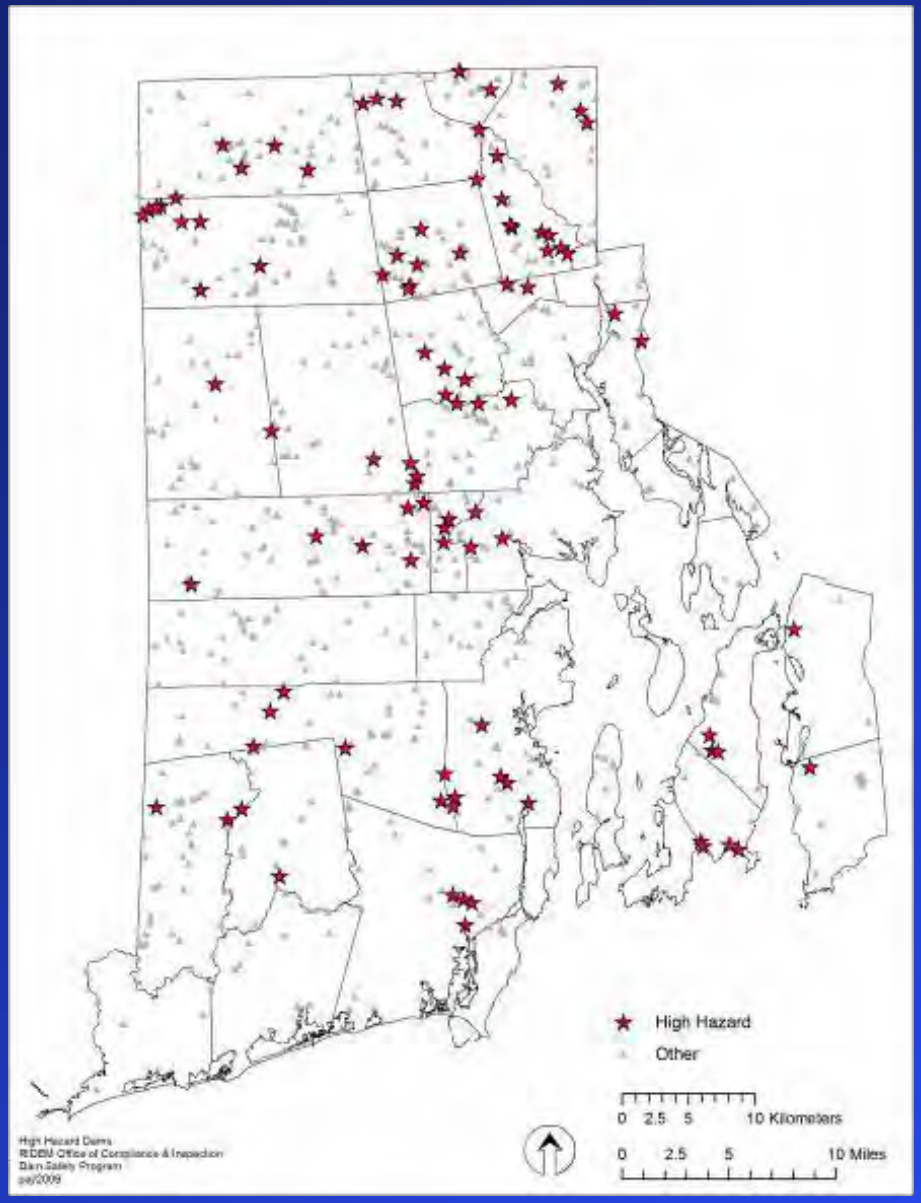
Dams in New England

- 13,126 Dams in CT, RI, MA, VT, NH (databases)
- Majority not serving original purpose

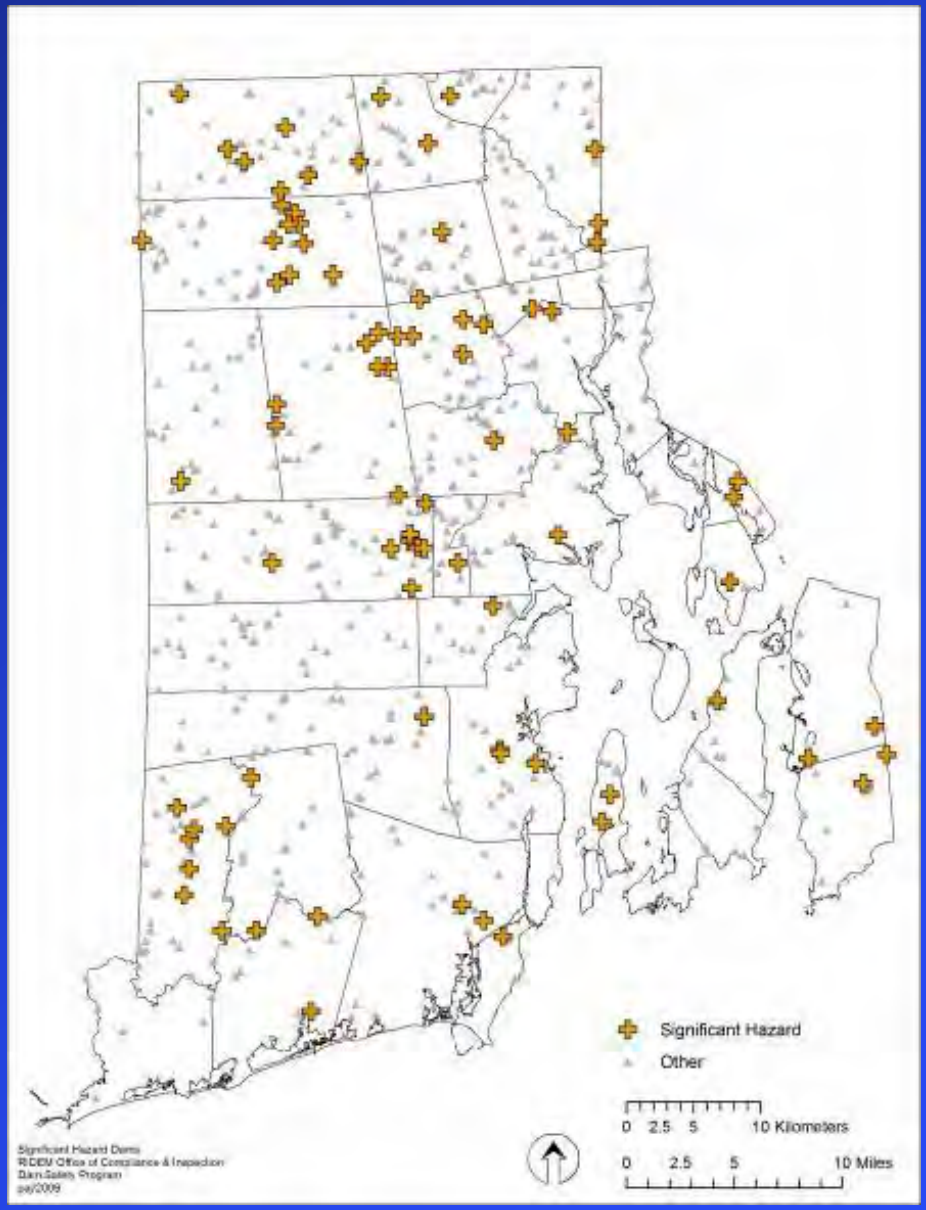
There are 671 regulated dams in Rhode Island



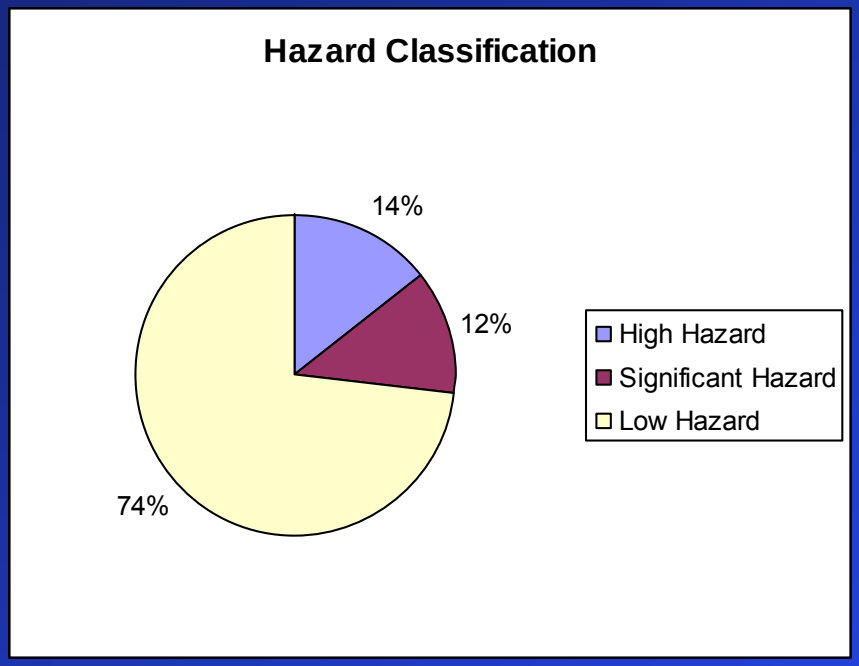
97 High Hazard

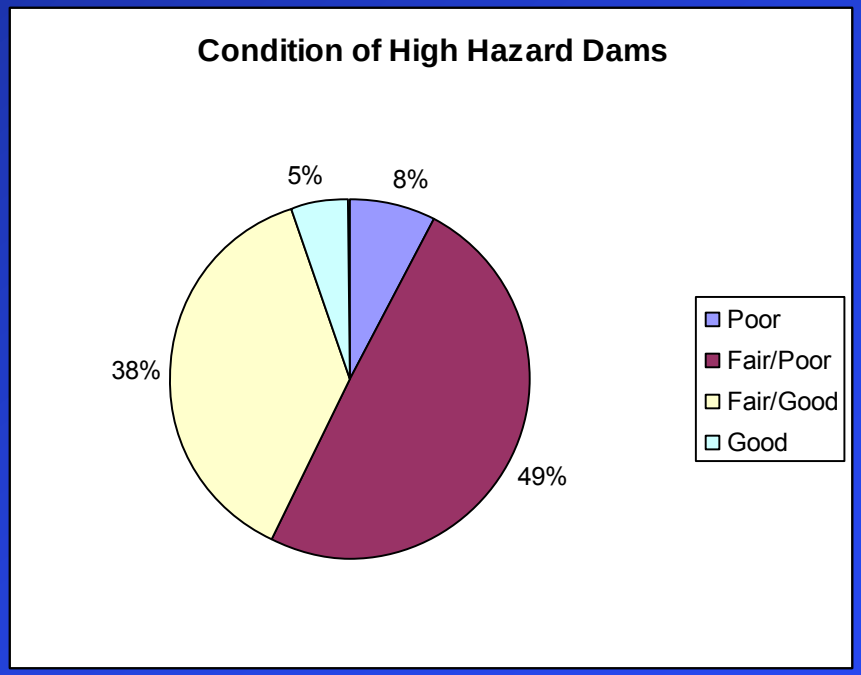


83 Significant Hazard

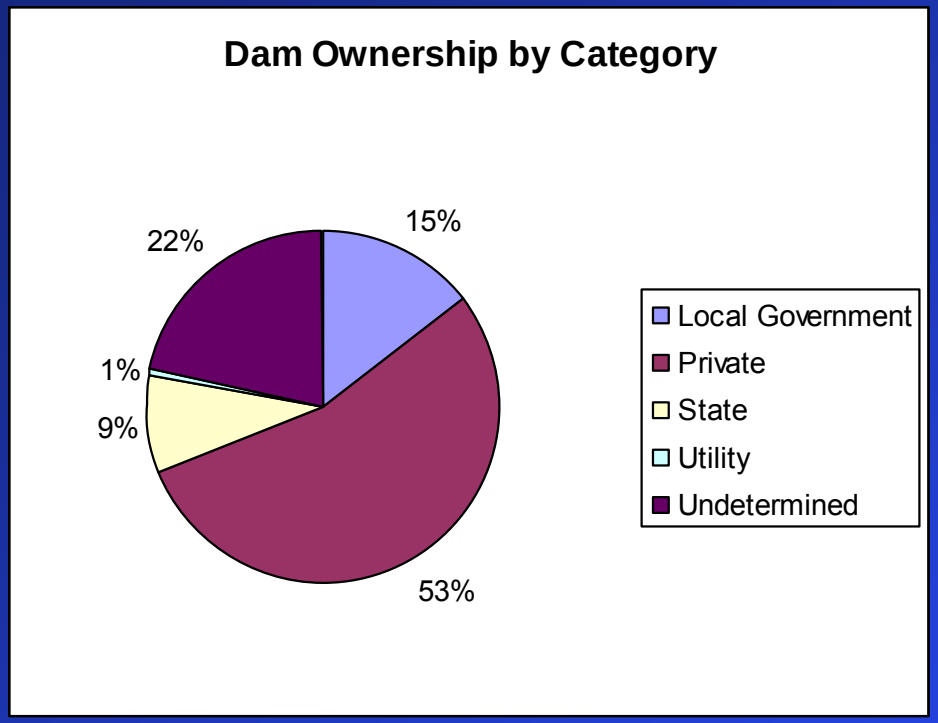


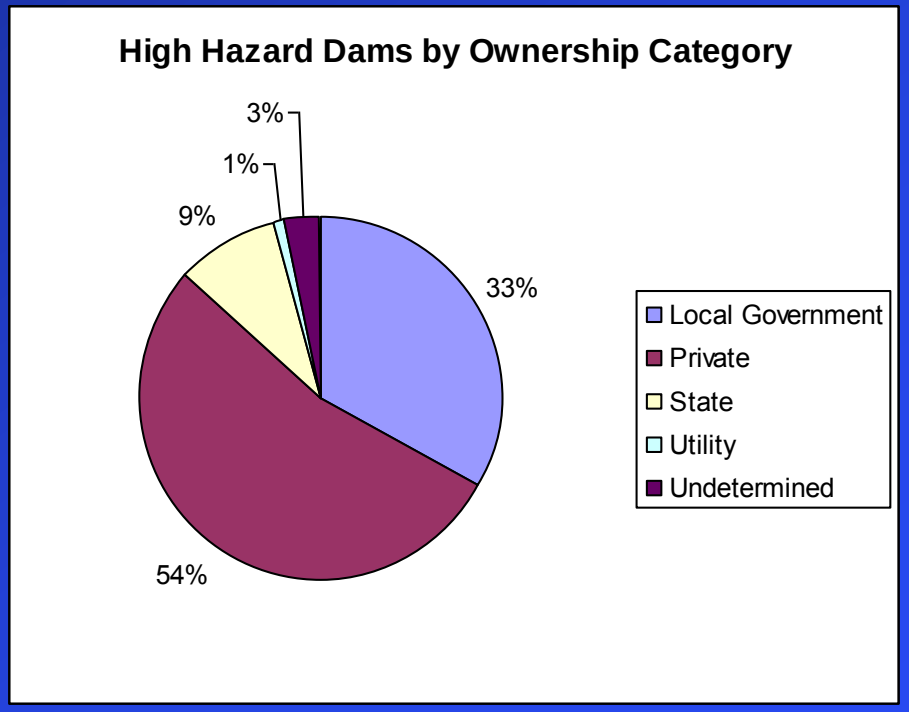
97 dams are listed as High Hazard, 43 of which are in poor/fair condition





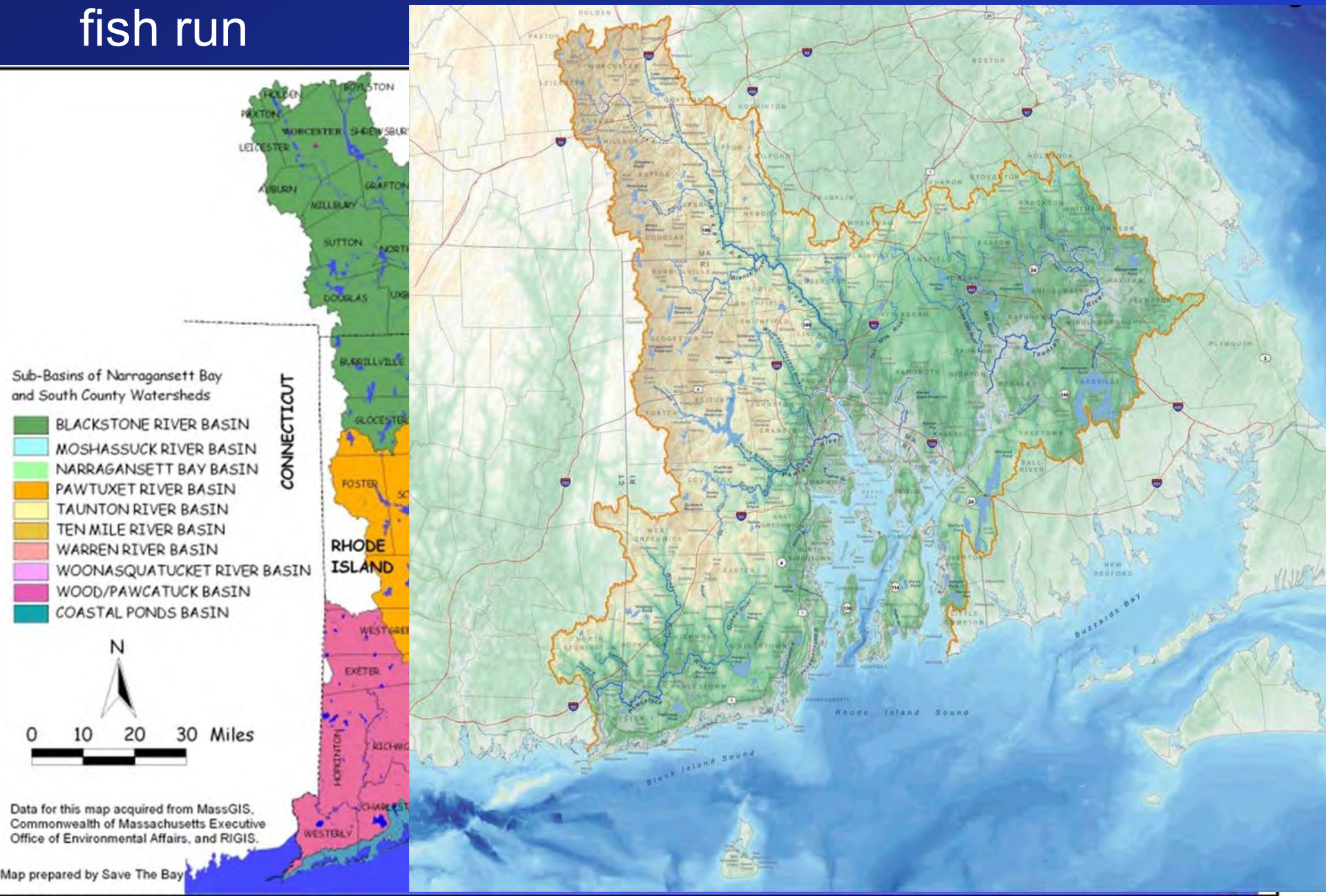
Most dams in RI are privately owned, but almost one quarter have no category and more have either wrong or no ownership information





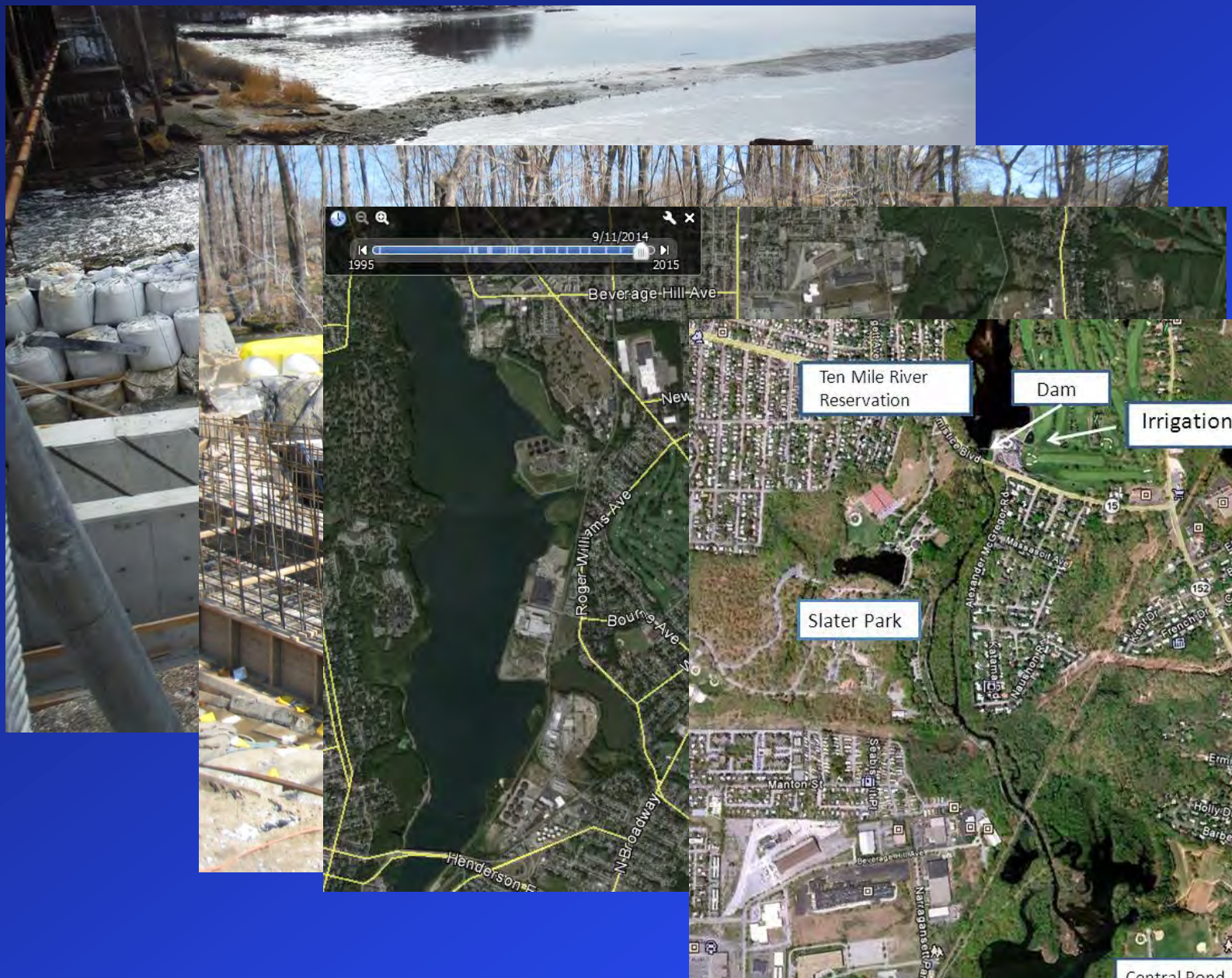
More than 150 dams have questionable ownership…

Every major watershed has (or had) an historic fish run



Blackstone River

Ten Mile River



Woonasquatucket River

Woonasquatucket River – Paragon Dam Removal

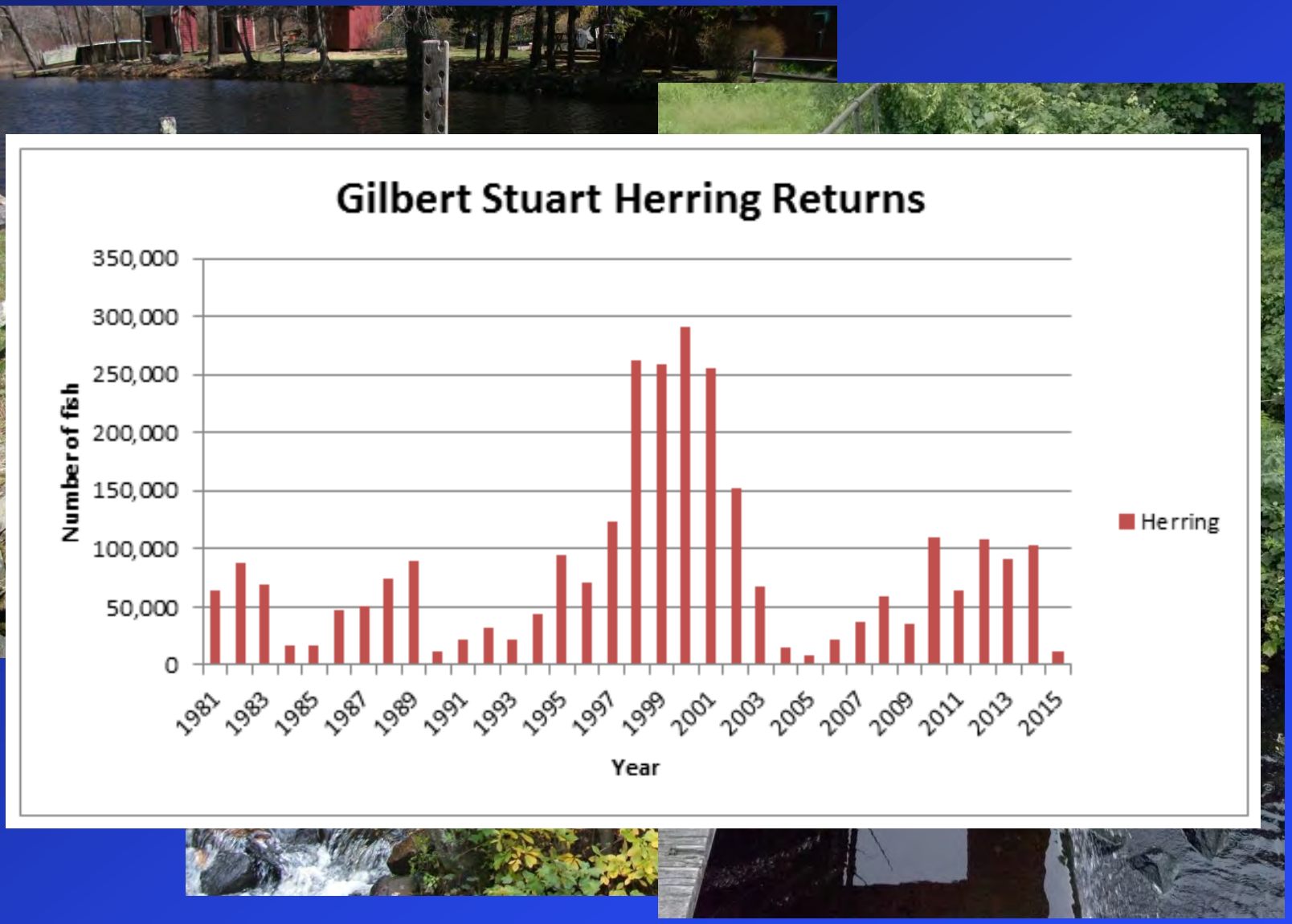
Pawtuxet Falls, Cranston/Warwick

- Opened up 7.5 miles of habitat
- Urban river sediment issues
- Challenging in-stream environment
- Very visible site

http://pawtuxet-falls-dam-destruction.blogspot.com/

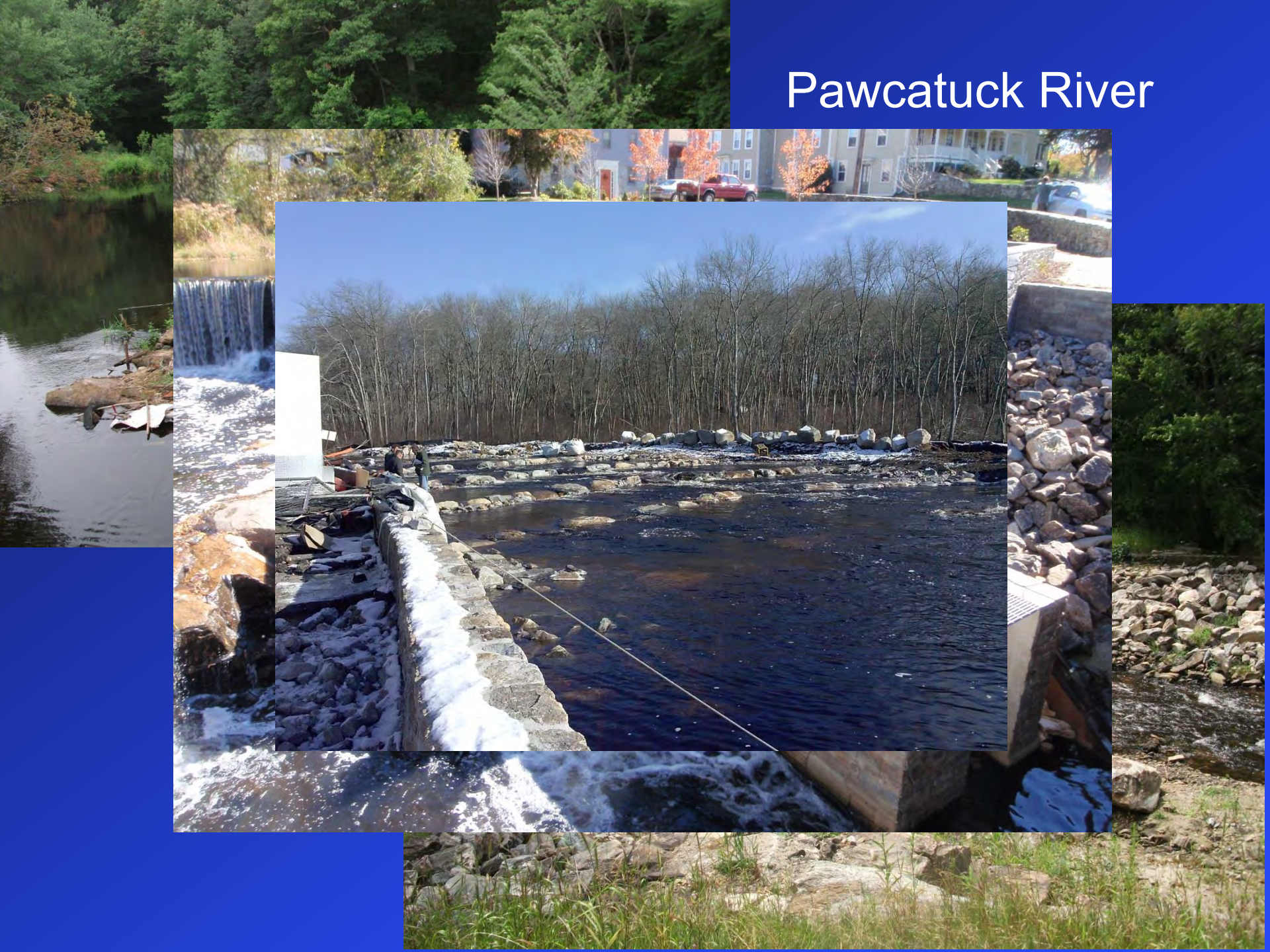
Hunt - Annaquatucket

Mattatuxet River (Narrow River)

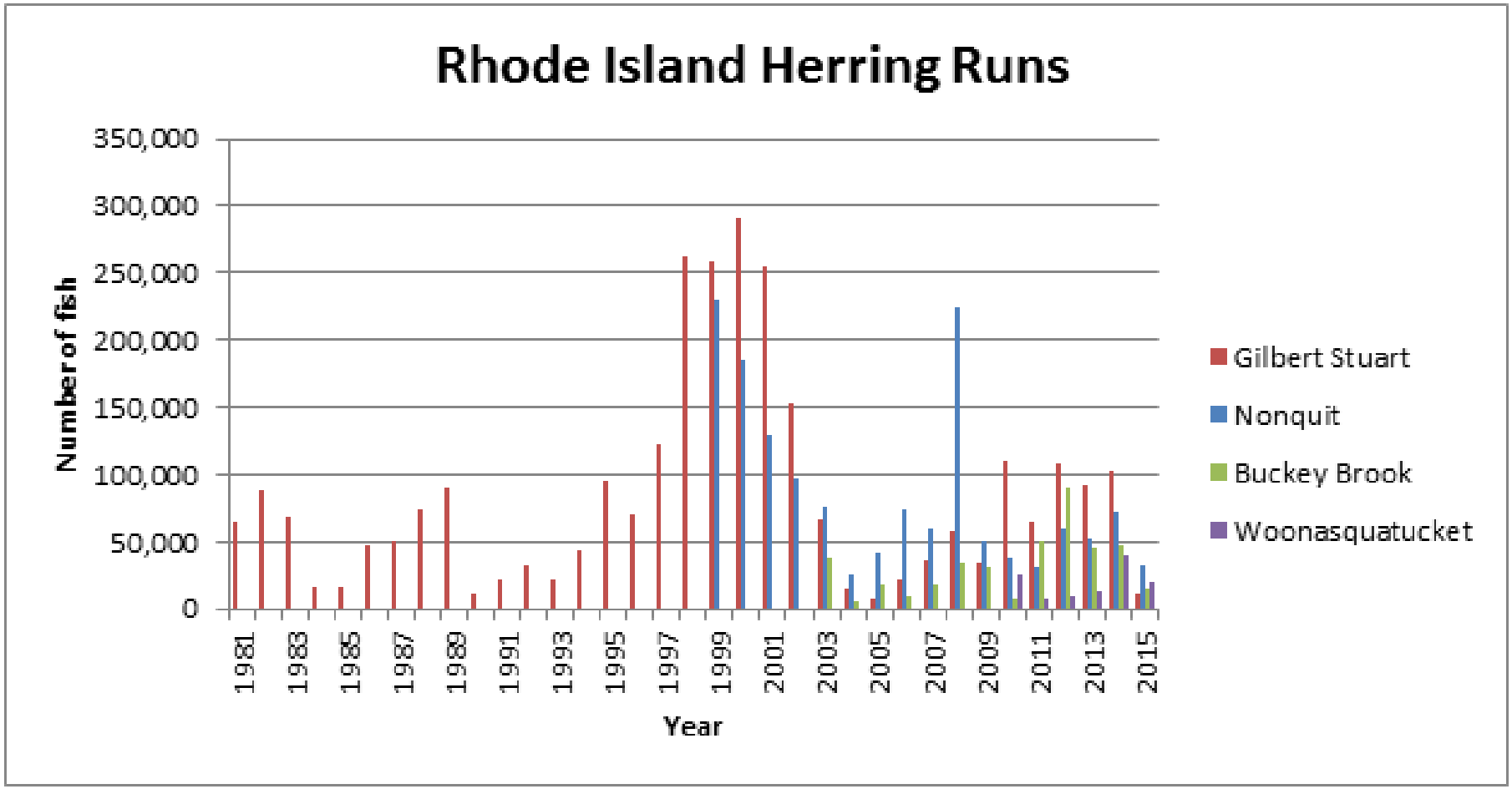


Saugatucket River

Pawcatuck River

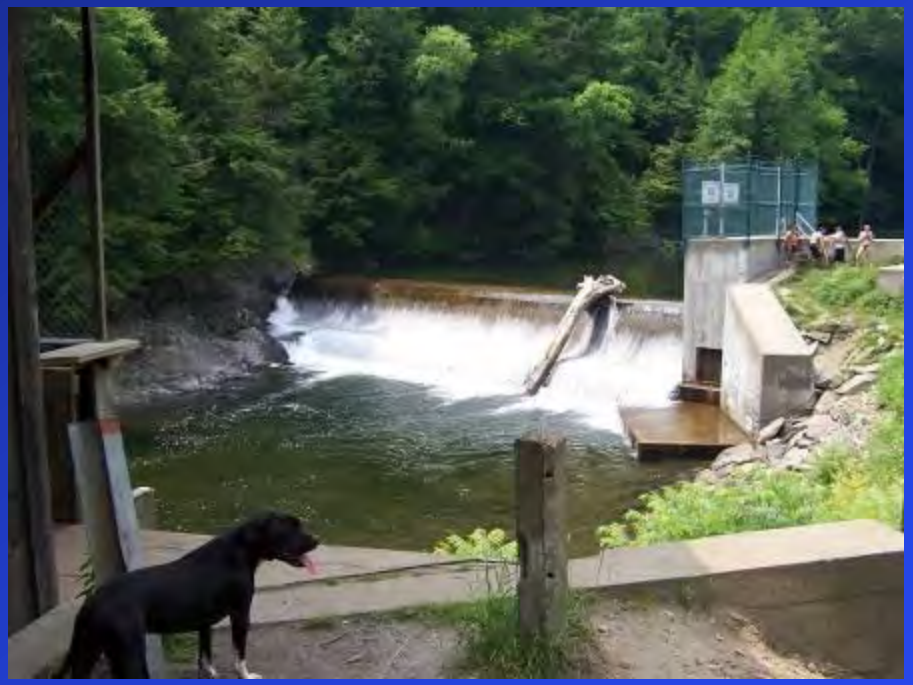


Rhode Island Run Returns



Economic Benefits of Dam Removal

- Removes safety hazard from potential failure
- Eliminates long-term repair and maintenance costs
- Removes "attractive nuisance" liability
- Brings new recreational opportunities



Removal is a one-time cost

Public Benefits of Dam Removal

- Improved public safety
- New fishing opportunities
- Paddling and boating
- Walking trails along river

Ecological Benefits of Dam Removal

- River habitat restored
- Improved water quality
- Connectivity restored
- Natural flow regime

Photo by
Tim Watts

Fish and Wildlife Need to Move

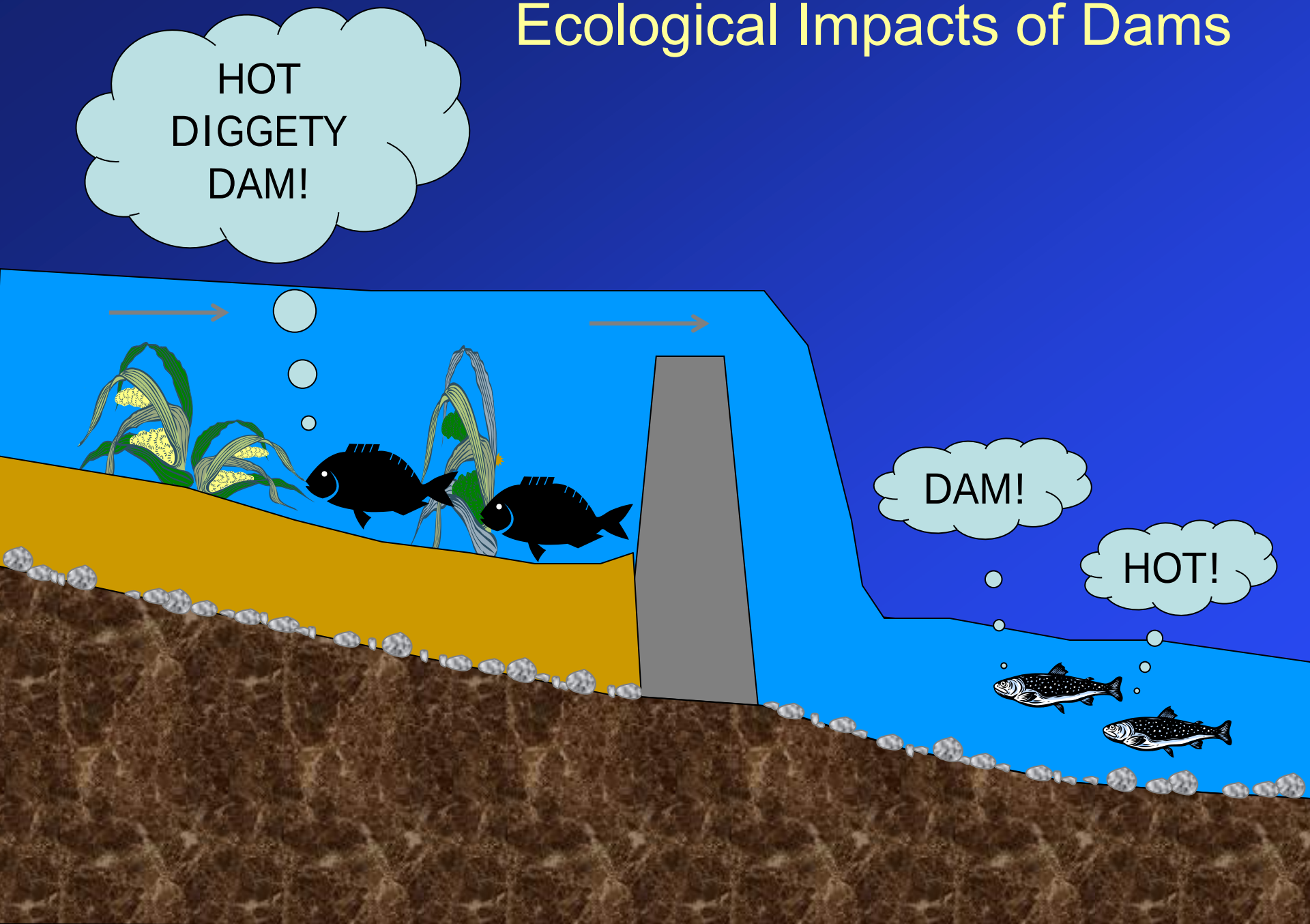
Need access to different habitats for:

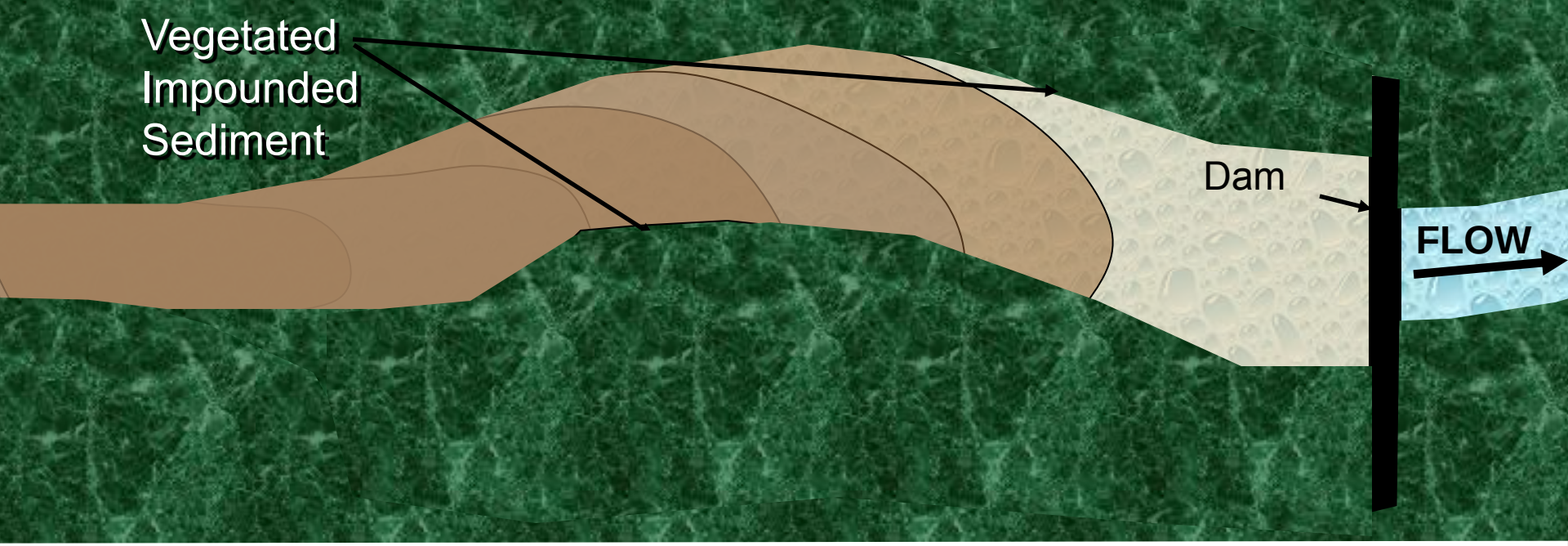
- Lifetime needs
  - spawning habitat
  - nursery habitat
  - adult habitat
- Seasonal needs
  - refuge from heat or cold
  - different food sources

Dam Effects on Fish Populations

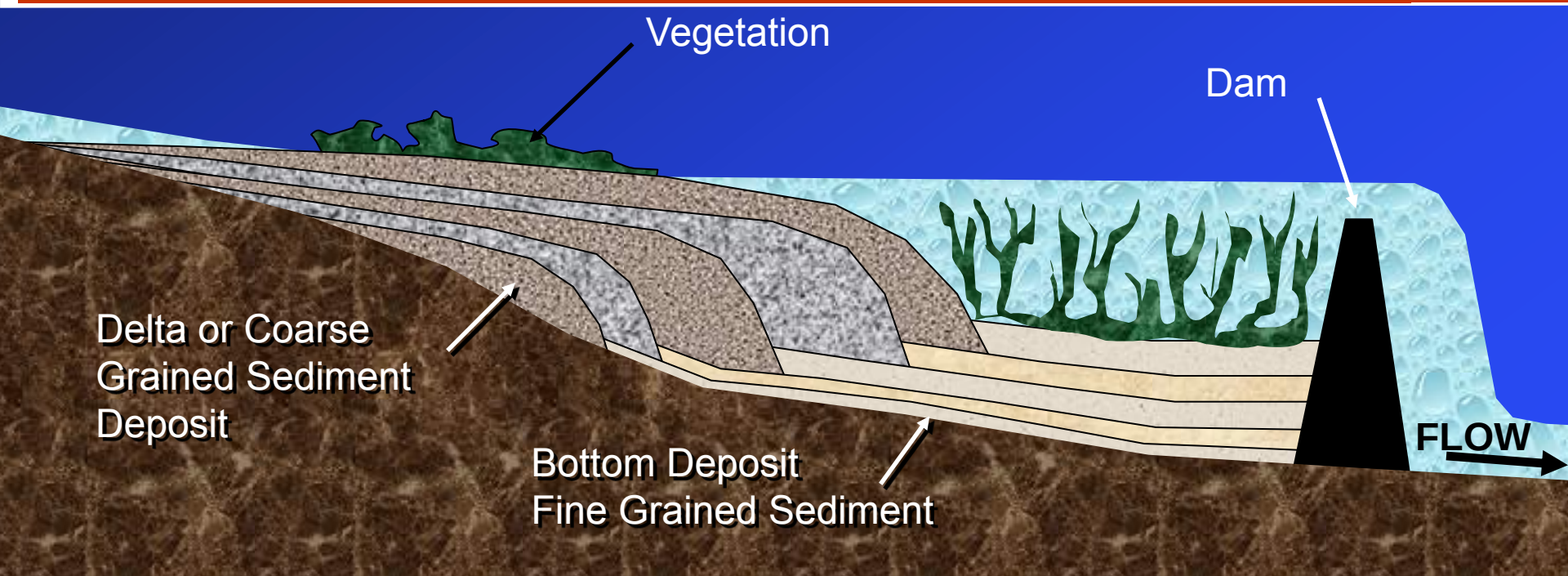
- Atlantic salmon – extirpated from most of east coast U.S. by early 1800s in large part due to dams
- Other anadromous fish like herring, shad, sturgeon, and smelt have all suffered population declines to levels less than 5% of historic levels and many rivers lost these species completely
- American eel - recently reviewed by the federal government for threatened/endangered status because of dramatic population decline
- Only 5% of intact brook trout populations remain

Ecological Impacts of Dams

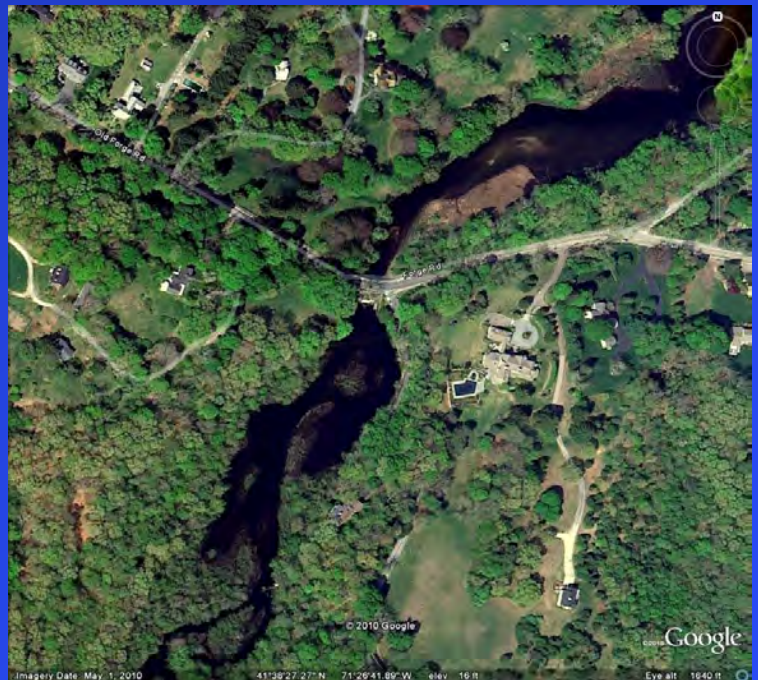



Vegetated
Impounded
Sediment
Dam
FLOW

TIME


Vegetation
Dam
Delta or Coarse
Grained Sediment
Deposit
Bottom Deposit
Fine Grained Sediment
FLOW


© 2010 Google
Google
Imagery Date: May 1, 2010
41°32'02.99" N 71°27'50.21" W elev 41 ft
Eye alt 909 ft


© 2010 Google
Google
Imagery Date: May 1, 2010
41°38'27.27" N 71°29'41.89" W elev 16 ft
Eye alt 1640 ft


Shadylea Rd
Pondar Rd
Tower Hill Rd
1
© 2011 Google
Imagery Date: May 1, 2010
41°32'06.69" N
71°27'55.50" W
elev 31 ft

Climate changes forecast for the Northeast US

- Warmer and wetter
- Larger peak rain events with periods of drought
- Species migration northward
- Sea level rise of 3-5 feet or more
- Migration of wetlands

Connectivity and Climate Change

Dams, roads and development limit the ability for species to move.

Nearly half of the 496 animal species federally listed as threatened or endangered are freshwater species.

There are new restrictions on mobility of species, many living in isolated habitat “islands”

Species that are highly mobile will be less vulnerable to extinction