2015

Habitat Resilience: Dams; the Past, the Future and Everything In-between (2015 State of the Bay Presentation)

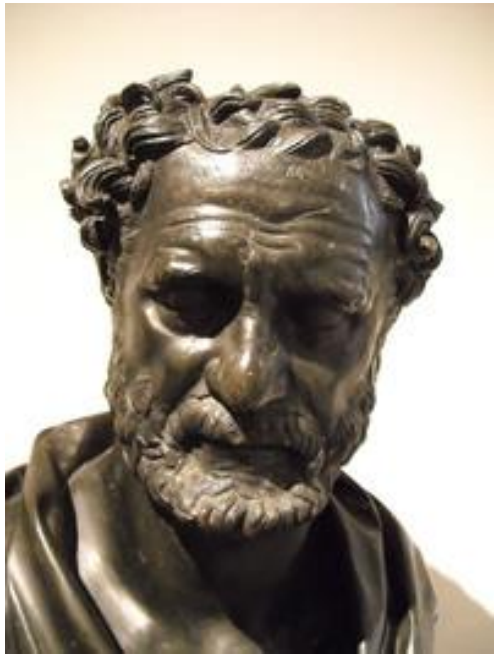
Landis Hudson
Maine Rivers

CBEP State of the Bay 2015
Habitat Resilience: Dams

Maine Rivers

The Past, the Future and Everything In-between

“No man ever steps in the same river twice, for it's not the same river and he's not the same man.” -Heraclitus



Fish kill, Androscoggin River

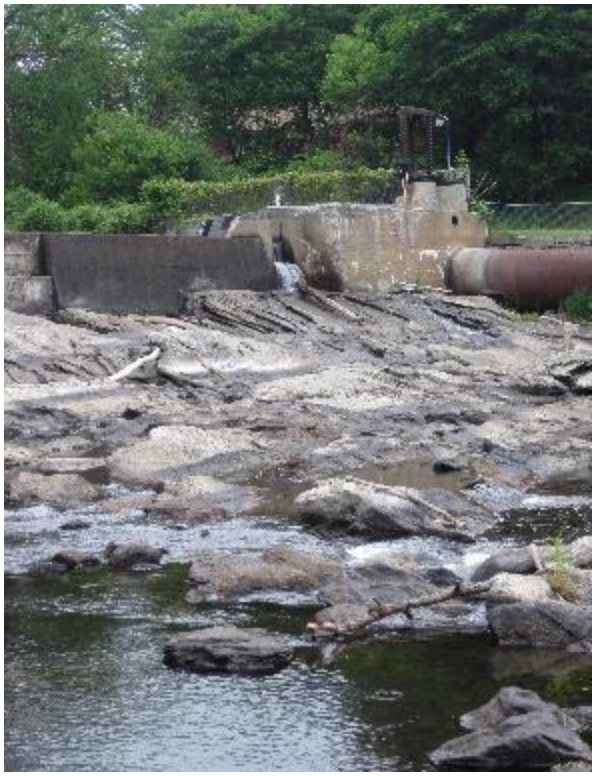
Chemical containers,
Eastland Woolen Mill

Environmental impacts of dams:

Difficult or impossible for **migratory species** to pass

Change water temperature in impoundments- usually **increasing temperatures** by decreasing flow

Reducing the circulation of water and increasing the temperature often results in **less oxygen**



Increased upland flooding

Dams hold back silt, debris, and nutrients

Dams increase predator risk- reservoirs tend to be warm and murky, favoring predators

Dams reduce the **productivity of estuaries and bays** (= fewer juvenile fish due to inaccessibility of spawning grounds)

Left: Carolyn Hall
Above: mill on Megunticook River
Below: mill on St. George River

Charles Atkins

1. Be it enacted by the Senate and House of R
gislature assembled, That from and after the
shall be lawful for the inhabitants of the town
their annual meeting in the month of March or Apri
ballot a fish committee of not more than seven
rsons inhabitants of said town, who shall be sworn to
their duty; and it shall be the duty of said Comm
eks sluices or fish ways, which may be built around
ms or other obstructions on Royals River or the bra
ion as hereinafter provided, to be kept open and

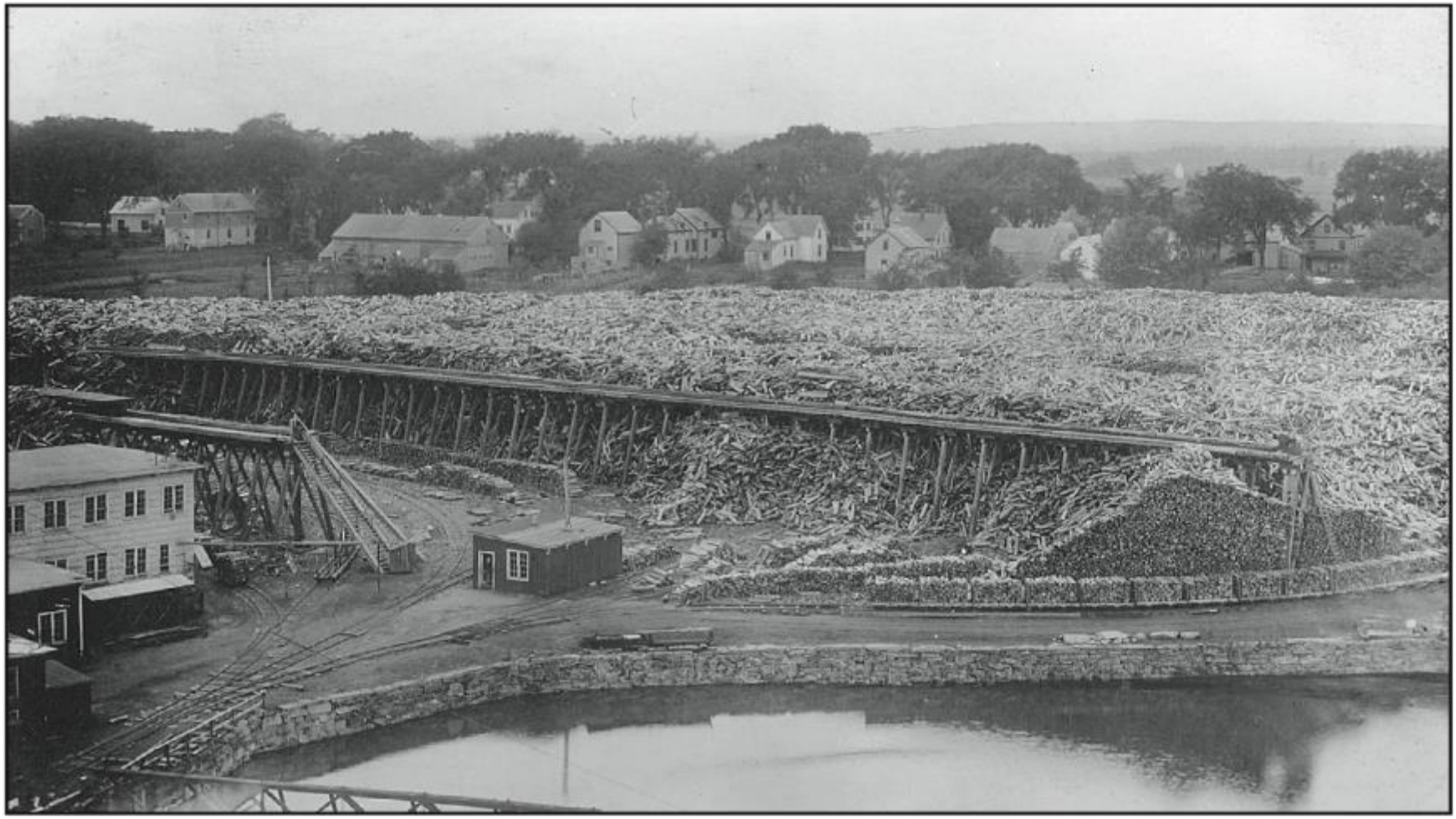
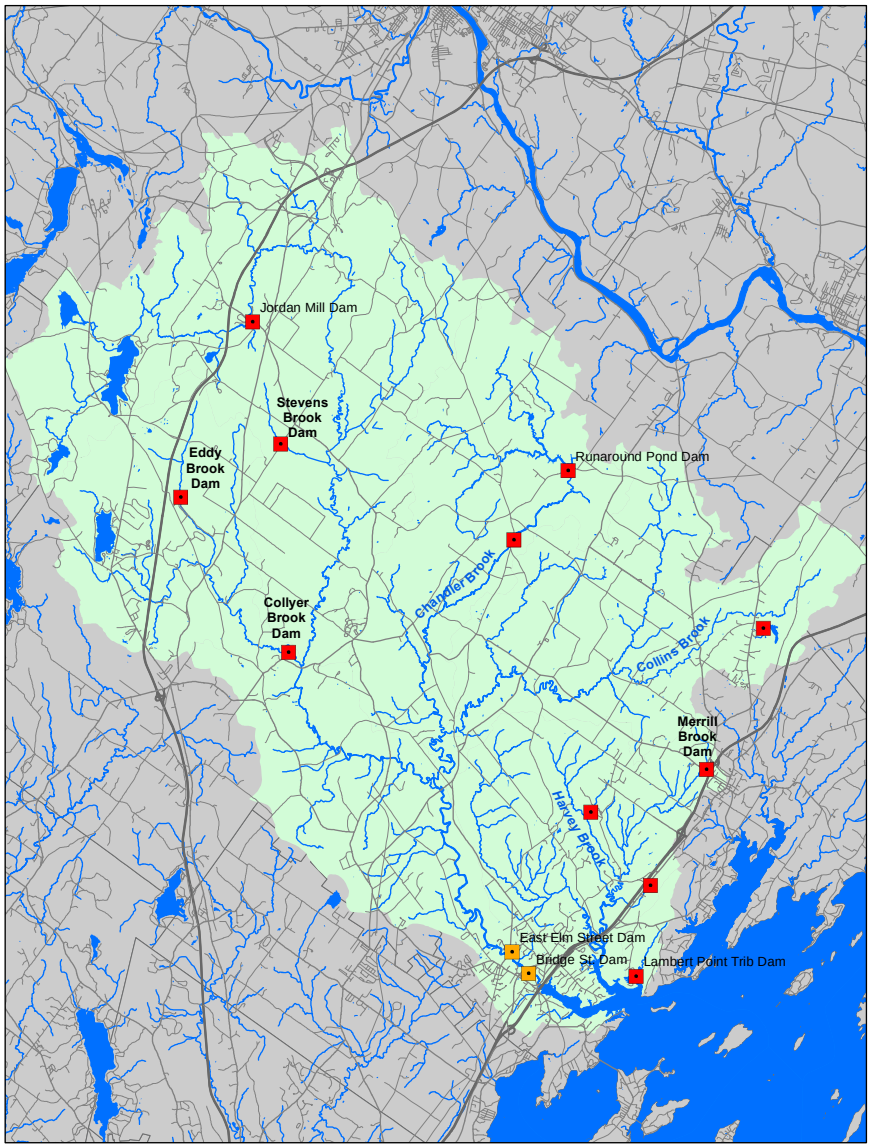
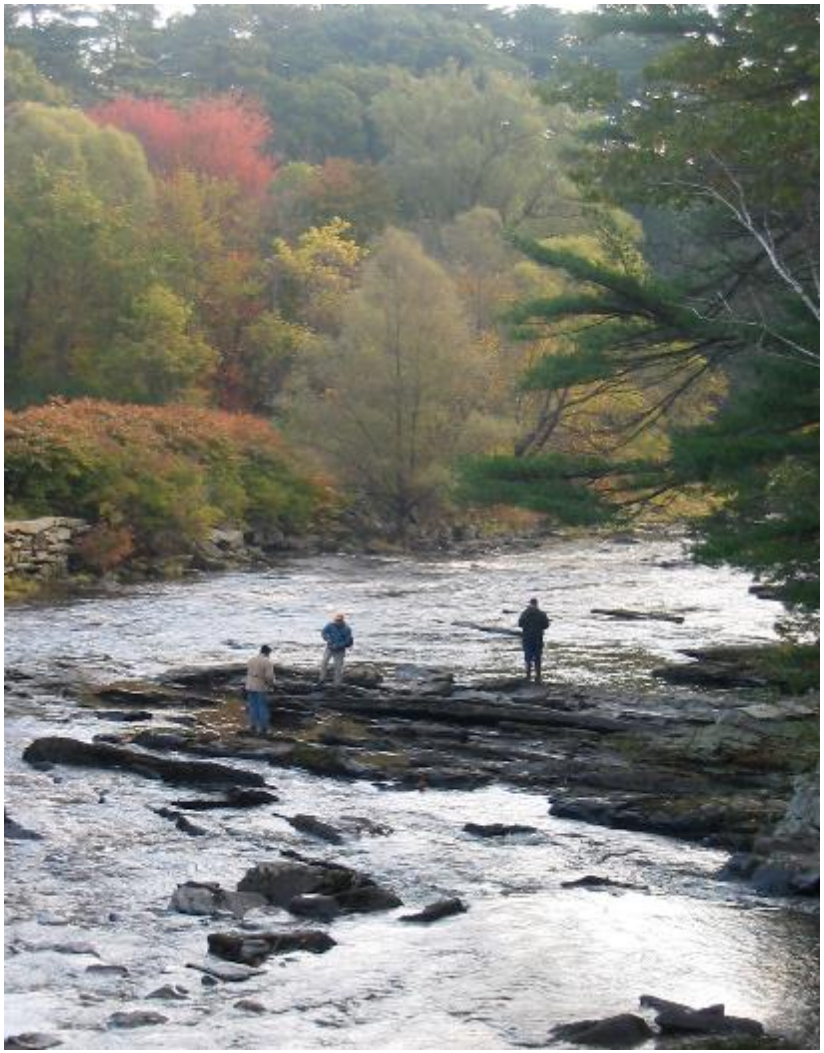


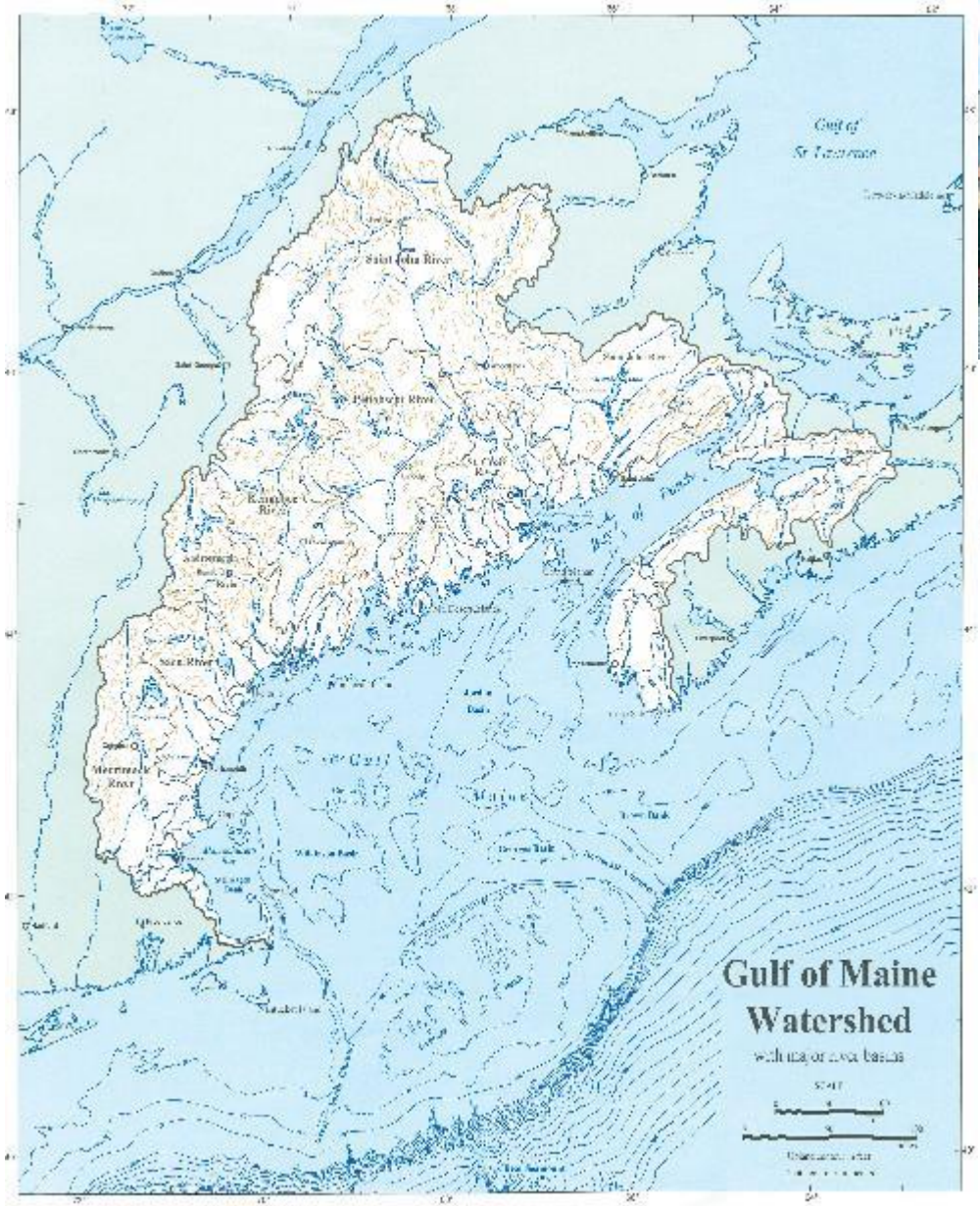
Figure 1. *Forest Paper, Yarmouth, Maine. c. 1915*



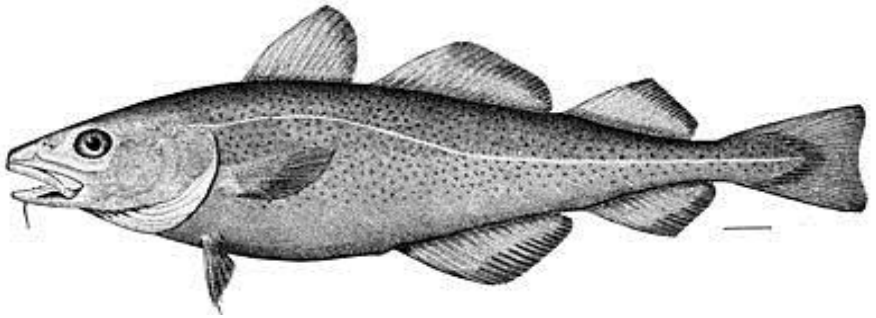


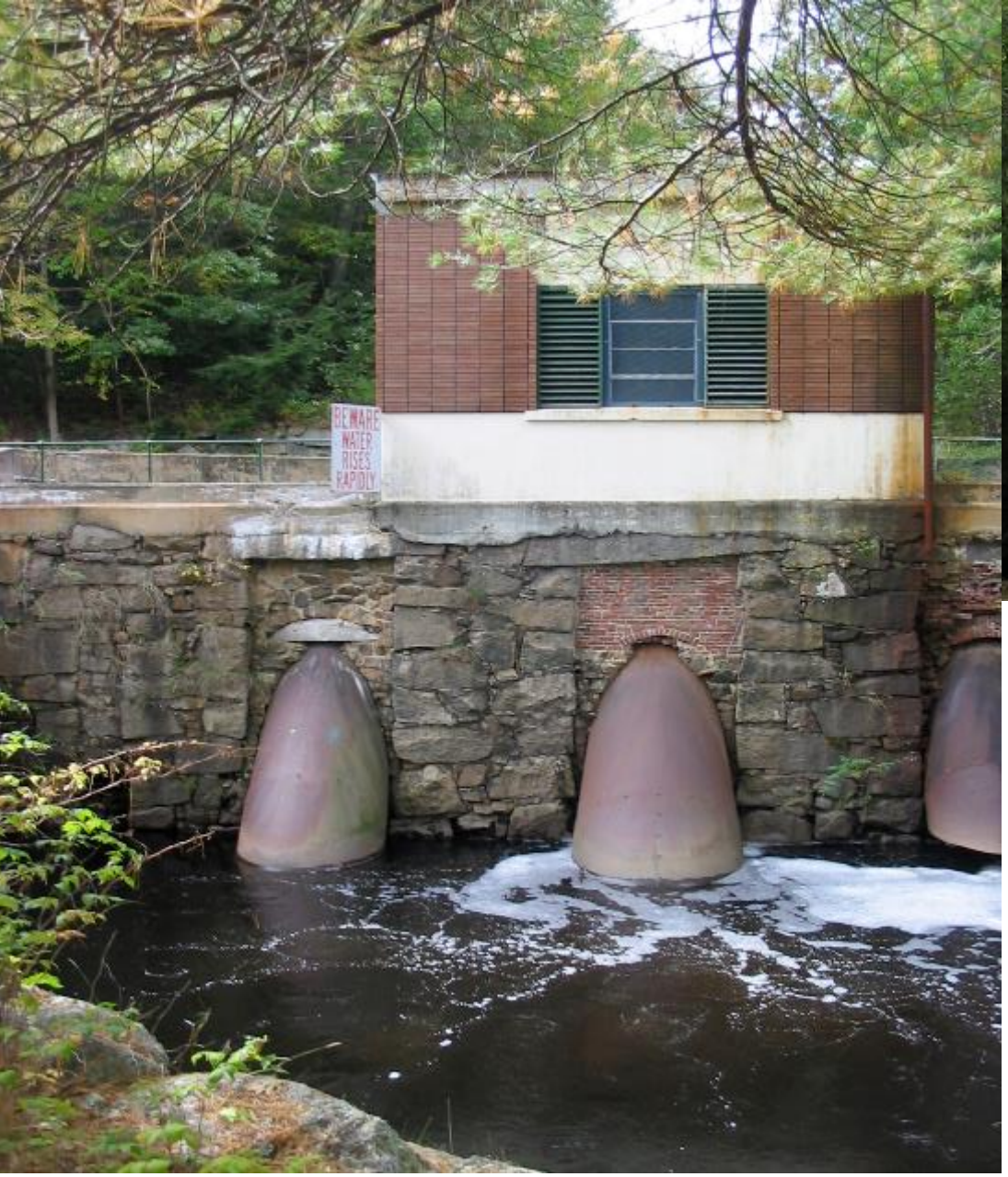
Royal River Watershed dams

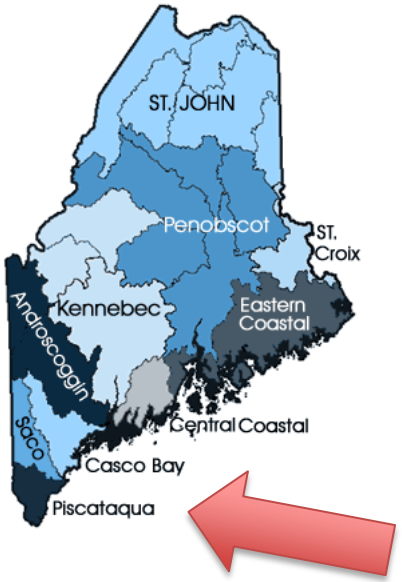
Presumpscot River



Map created by Richard D. Kelly, Jr., Maine State Planning Office, for the Gulf of Maine Council on the Marine Environment

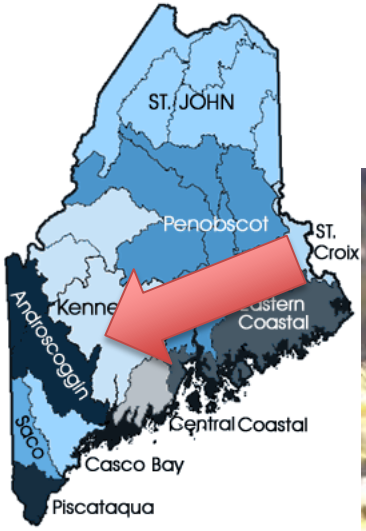


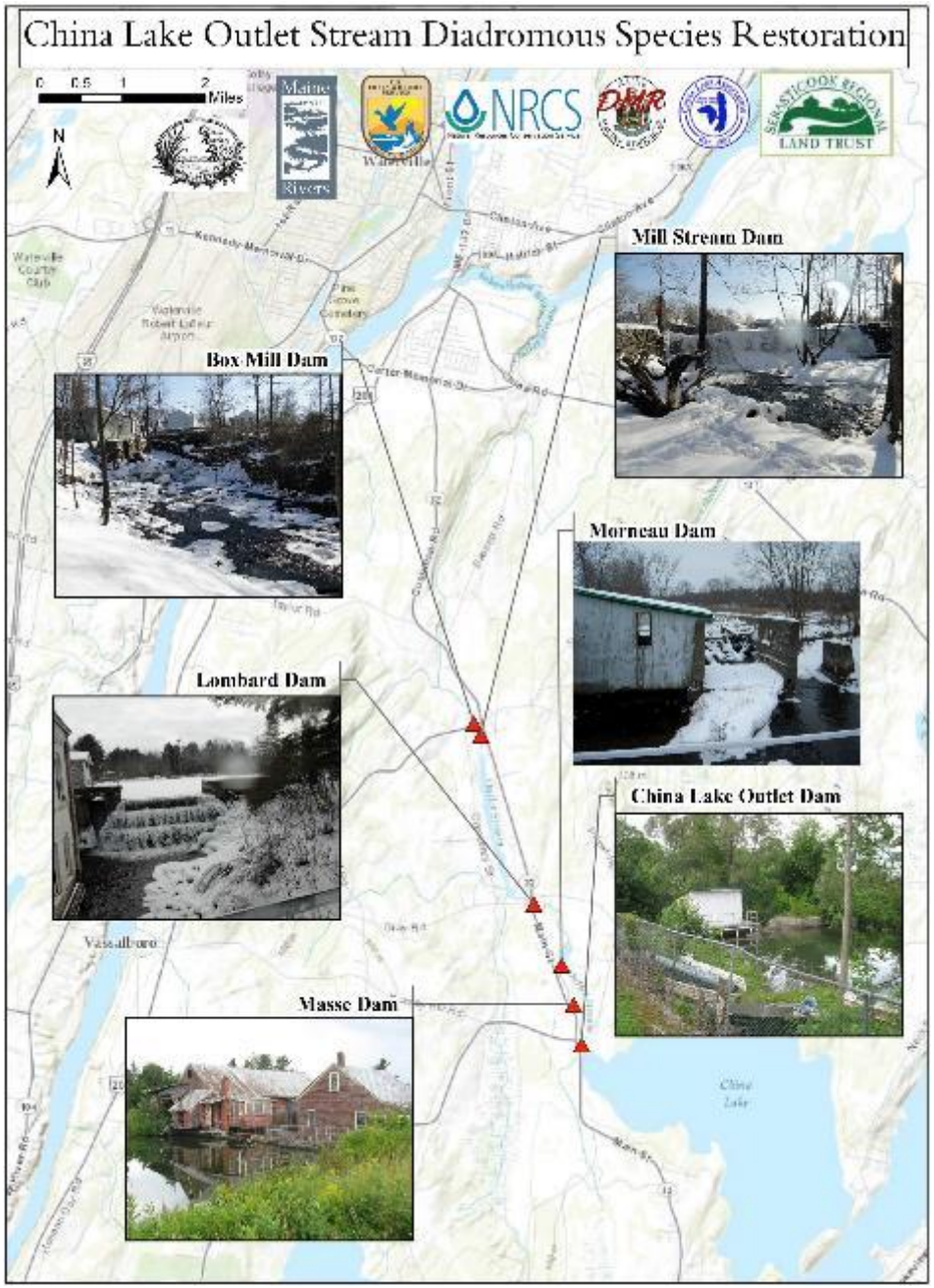




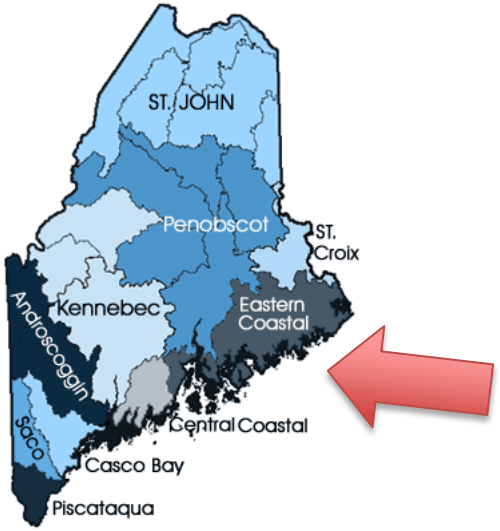
Old Falls Dam on the Mousam River

China Lake Alewife Restoration Initiative

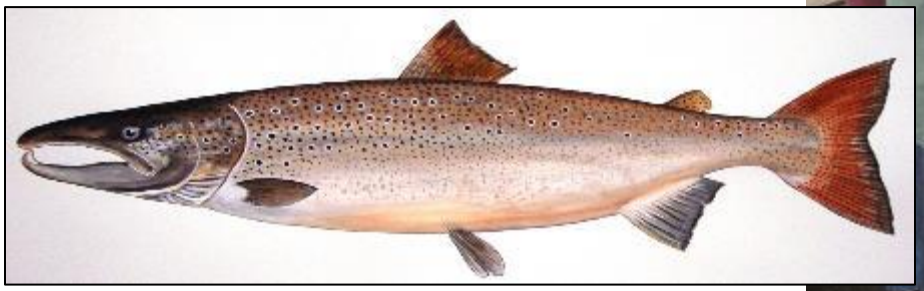




Alewife Restoration Initiative



Above: Dwayne Shaw, Downeast Salmon Federation
Right: 22 ukuleles supporting river restoration
Columbia Falls, ME



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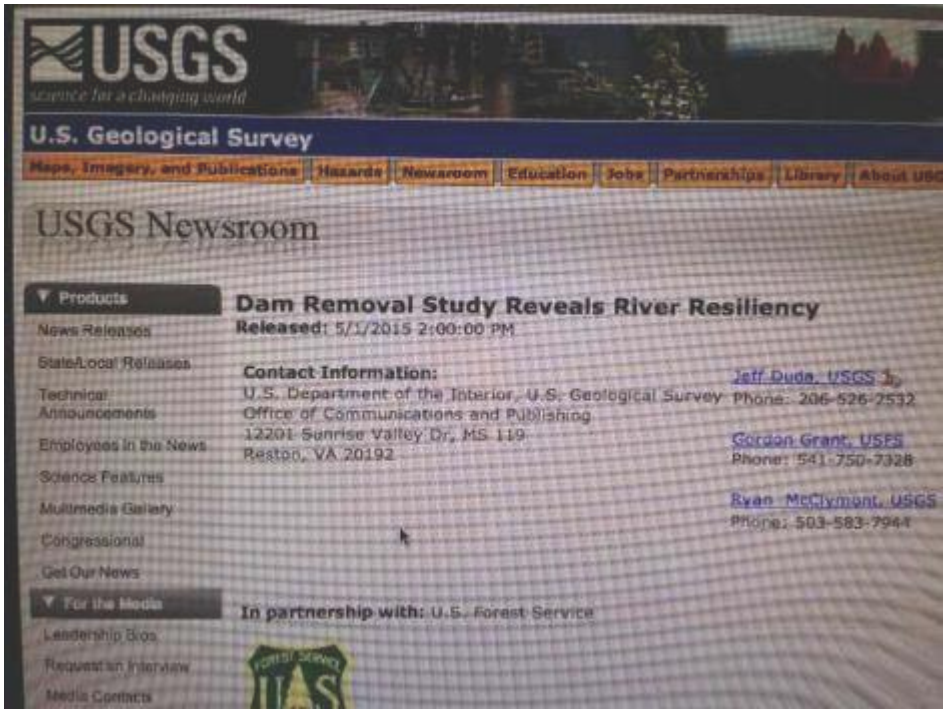

ECOLOGY

1000 dams down and counting

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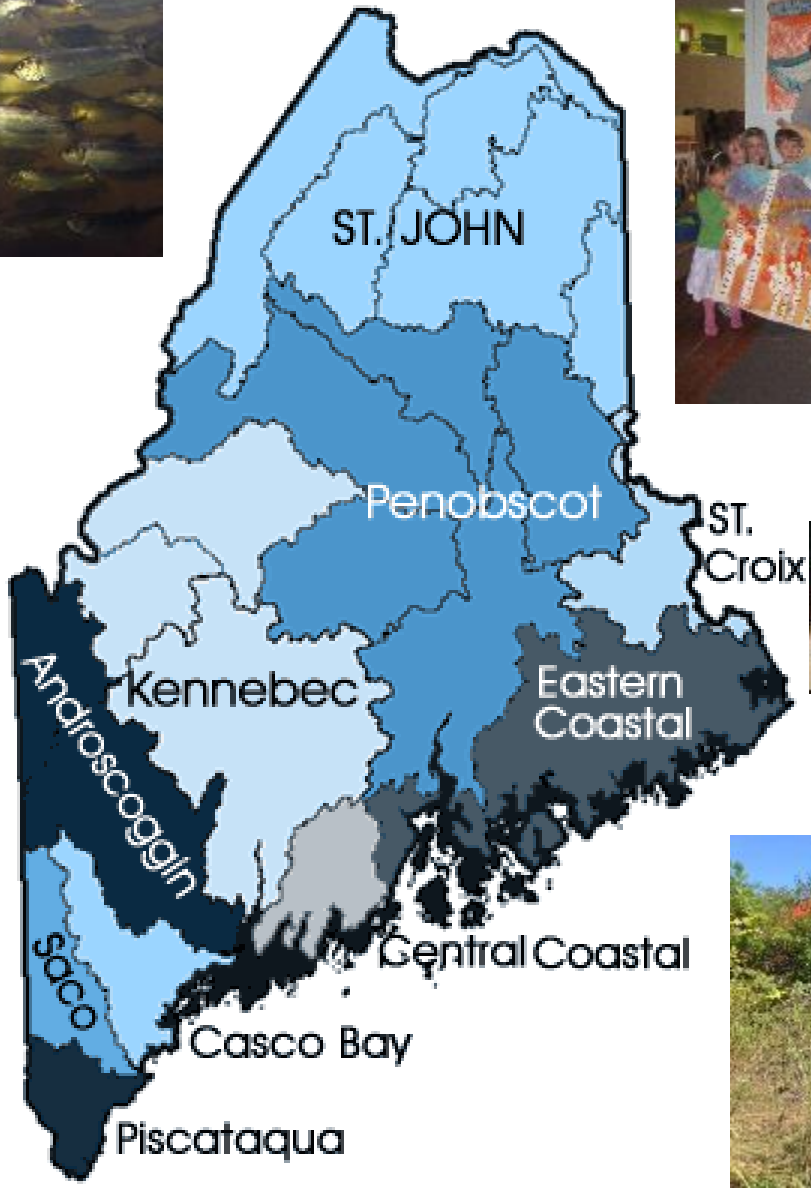
Forty years ago, the demolition of large dams was mostly fiction, notably plotted in Edward Abbey's novel The Monkey Wrench Gang. Its 1975 publication roughly coincided with the end of large-dam construction in the United States. Since then, dams have been taken down in increasing numbers as they have filled with sediment, become unsafe or inefficient, or otherwise outlived their usefulness (1) (see the figure, panel A). Last year's removals of the 64-m-high Glines Canyon Dam and the 32-m-high Elwha Dam in northwestern Washington State were among the largest yet, releasing over 10 million cubic meters of stored sediment. Published studies conducted in conjunction with about 100 U.S. dam removals and at least 26 removals outside the United States are now providing detailed insights into how rivers respond (2, 3).

Supreme Court Affirms States' Role in Dam Licensing *S.D. Warren Co. v. Maine Board of Environmental Protection,* (2006).



Maine Rivers