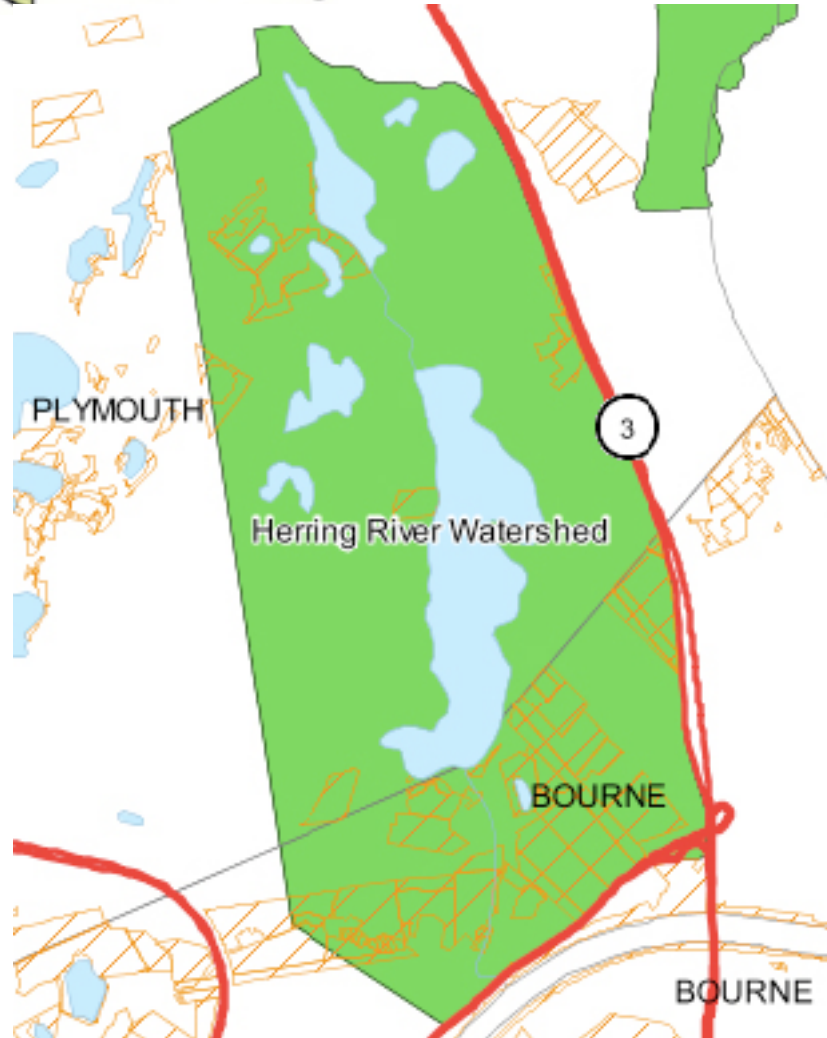




Herring Ponds Watershed

What's so special about it?

April 3, 2016



State- Designated Herring River Area of Critical Environmental Concern

(ACEC)

4,450 acres



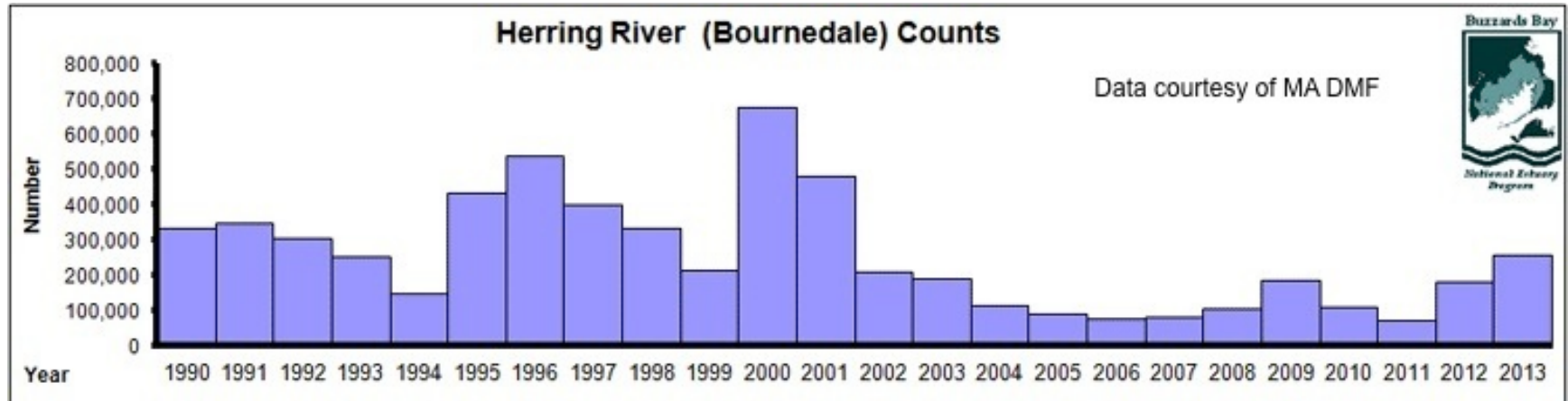
State Significance

- ▶ The historic Monument/Herring River Watershed is a state-designated **Area of Critical Environmental Concern** (ACEC).
- ▶ This is one of the Commonwealth's **most accessible and productive river herring populations**.
- ▶ This run is the **primary source of mature adult alewives** for the MA Div of Marine Fisheries stocking program.



Research

- ▶ The Monument/Herring River is one of eight Massachusetts major coastal drainage “**sentinel**” **systems** chosen for long-term monitoring.
- ▶ An **electronic counter** in the fishway north of the Cape Cod Canal has provided a **25-year record** of migratory numbers of river herring since 1990. (278,000 in 2014)
- ▶ **HPWA** began volunteer **Water Quality monitoring** in 2008 **and herring counting** in April 2015 at the south end of Great Herring Pond. Our 2016 count began March 29th.



Updates: 2014 – 278,134 up 10%

2015 – 239,169 down 14%



HPWA Herring Count Station:

Sandy Pond Rd bridge

**Herring River outlet, South end of
Great Herring Pond, Bourne, MA**



**Photo by Jerry Prezioso
<jerry.prezioso@noaa.gov>**



April 3, 2016:
Through sun, wind, rain or snow
the count goes on.



River Herring Count Form
Intended to be compatible with MA DMF herring count software

Coordinators:
Volunteers
Donna Gage
donnagage@aol.com

Technical
Sara Grady
spgrady@gmail.com
781-831-1788

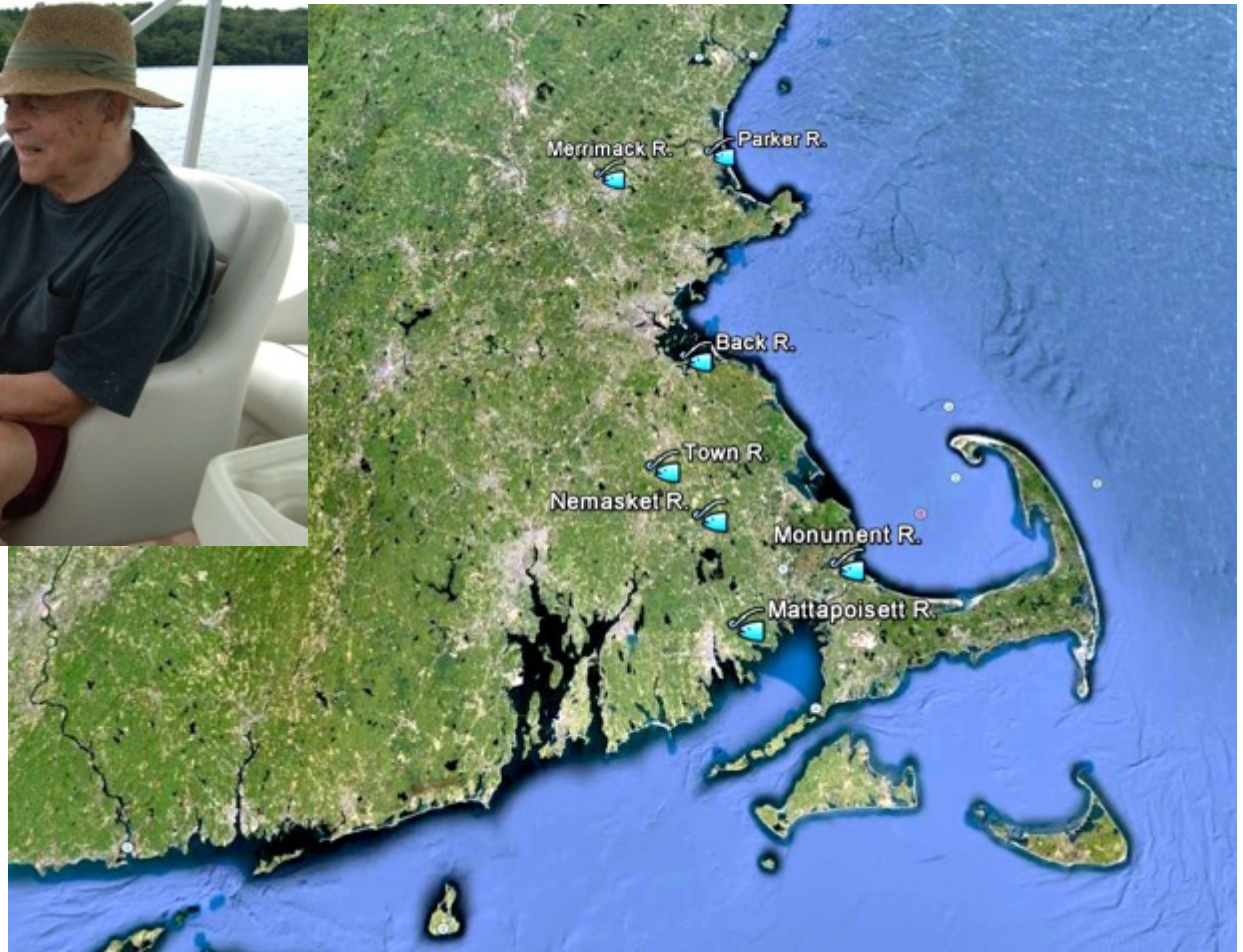
Sheet 1

Bournedale River/Herring Pond

		Times 10 mins apart		Herring Count (Up)	Water Temp, °C	Air Temp, °C	Wx Code	Comments (Herring migrating down, herring gathered below the ladder, eels...)
Initials	Date	Start Time (24-hr)	End Time (24-hr)					
DL	3/29	9:51	10:01	0	10°	10°	2	
DL	3/29	10:48	10:58	0	11	12	2	
LP	3/29	11:53	12:03	0	11	13	2	Gage @ 1.30
JBF	3/29	12:22	12:32	0	11	13	2	
MS	3/29	15:05	15:10	0	12°	15°	2	
DL	3/29	17:48	17:58	0	12°	11°	2	
DS	3/30	8:56	9:06	0	10	8	1	
LP	3/30	12:19	12:29	0	11	13	1	Gage @ 1.25 Osprey over Donna's house
(DMEA Wardens have additional count data)								
DL	3/30	18:29	18:39	0	11	4	2	
DS	3/31	7:42	7:52	0	11	11	1	
LP	3/31	8:02	8:12	0	11	11	1	Gage @ 1.275
JL+JY	3/31	11:06	11:16	0	11	14	1	Gage @ 1.275
"	"	11:36	11:46	0	11	14	"	"
"	"	11:46	11:56	0	11	14	"	"
BAH	"	14:50	15:00	0	8	13	3	
"	"	15:10	15:20	0	8	13	3	
DL	4/1	10:28	10:38	0	12	16	7	
LP	4/1	10:48	10:58	0	12	16	7	Gage @ 1.30 Person Threster, 2 dark fish & size offering in pool above crowder.

Explanation of Wx Code: 1: 0% clouds (sunny), 2: 1-25% clouds, 3: 26-50% clouds, 4: 51-75% clouds, 5: 76-100% (overcast)

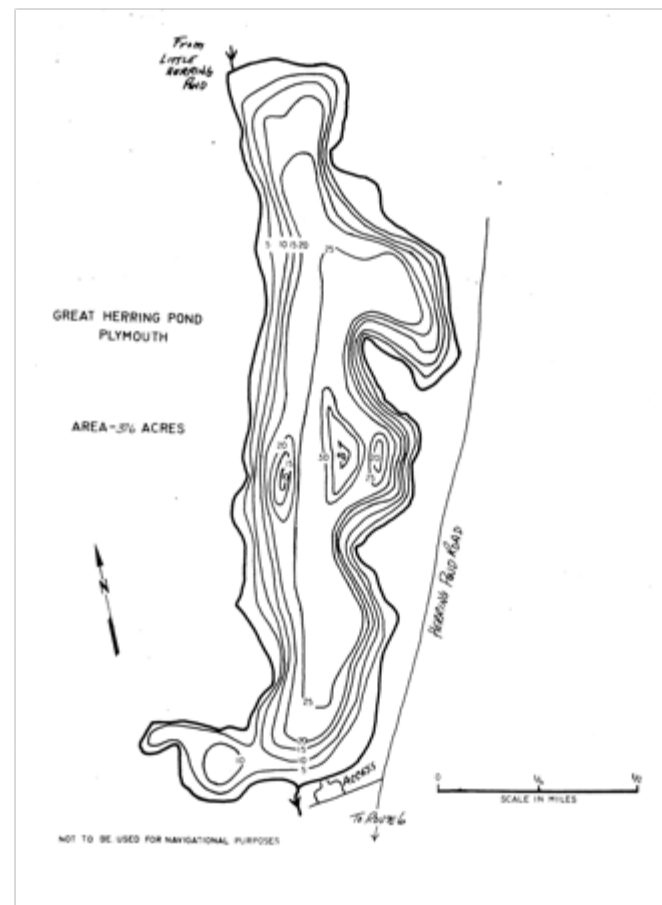
6: Drizzle/light rain, 7: Rain (moderate-heavy), 8: Sleet/snow, 9: other





System Simplicity, Health and History

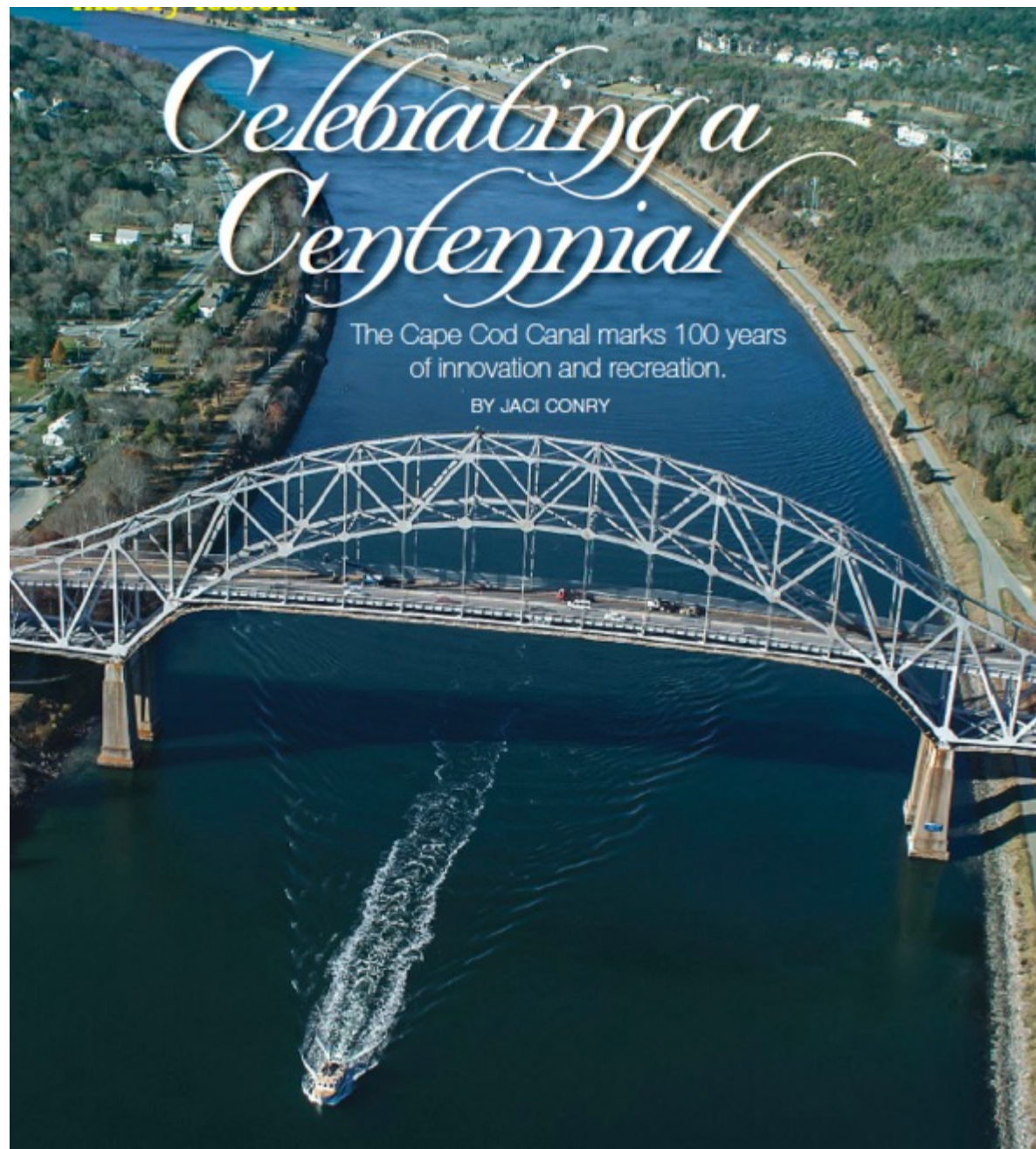
- ▶ The herring run is a relatively contained, **low complexity system** of two ponds and two rivers (LHP–Carters River–GHP–Herring River) **without impediments or multiple tributaries**, providing reduced variables for research.
- ▶ The Monument/Herring River alewife and blueback herring populations show **persistence, resiliency**, and current health (through nearly **400 years of documented fishery management policies** since the founding of Plimoth Colony).





Federal Facilities

- ▶ At the Cape Cod Canal a **U.S. Army Corps of Engineers visitor center** is adjacent to the mouth of the Herring River salt water/fresh water acclimation pools.
- ▶ These facilities provide visible tourist access from a major Cape Cod gateway, with **parking, public restrooms, picnic area and walkways paralleling the herring fishway**. Rangers conduct walks and talks at the weir-pool near the fishway.
- ▶ The Canal itself is a **National Historic Civil Engineering Landmark**. Each year it draws more than 3 million visitors, and approximately 20,000 ships pass through.





Eco-Resources

- ▶ Because of the complex life cycle of [anadromous fish](#), habitat protection and restoration must occur in both freshwater and marine realms, plus consider land and land use in the surrounding watershed.
- ▶ The ACEC overlies the [Plymouth/Carver Sole Source Aquifer](#), which is critical to surface water levels and flow for wildlife and recreation, as well as the sole source for human drinking water supply, with all private and public water use supported by wells.
- ▶ Most of the eleven ponds in the ACEC are Massachusetts Great Ponds (over ten acres) and the MA NHESP has delineated the entire Herring River Watershed as both [Estimated Habitat of Rare Wildlife](#) and [Priority Habitat of Rare Species](#). In contrast, developed adjacent lands to the west and east have *no designation*.





Recreation & Training

- ▶ Great Herring Pond is one of the most popular recreational boating ponds on the South Shore of Massachusetts, providing [full recreational fishing and boating](#), including winter ice-boating and fishing, to residents and tourists alike.
- ▶ The [Massachusetts Maritime Academy](#) maintains a sailing school on Great Herring Pond, as well as an international oil tanker navigation training center. [Camp Bournedale](#) Summer Camp and Function Facility is on Great Herring Pond.
- ▶ [Bournedale Herring Run Park](#), on the Herring River, is an historic industrial site as well as a public viewing point for the herring run, with a riverside path in the [Carter Beale Conservation Area](#) promising additional educational and tourist potential.





Historic Importance

- ▶ The Herring River run has **historic importance as a critical resource** for pre-colonial Wampanoag peoples and 1620 Plimoth Colony pilgrims.
- ▶ In early colonial times herring populations were much larger than today, and it has been written that “**without herring to eat and fertilize the sandy soils, the early settlers in colonial times would not have been able to survive**” (Mackenzie, U of CT).
- ▶ Although the watershed of the Monument/Herring River is in relative good condition, it is **susceptible to future degradation** from development pressures, resident lifestyle choices, sand and gravel extraction, climate change, and invasive species introduction.



1880
“white
glove”
Eagle Hill
Inn



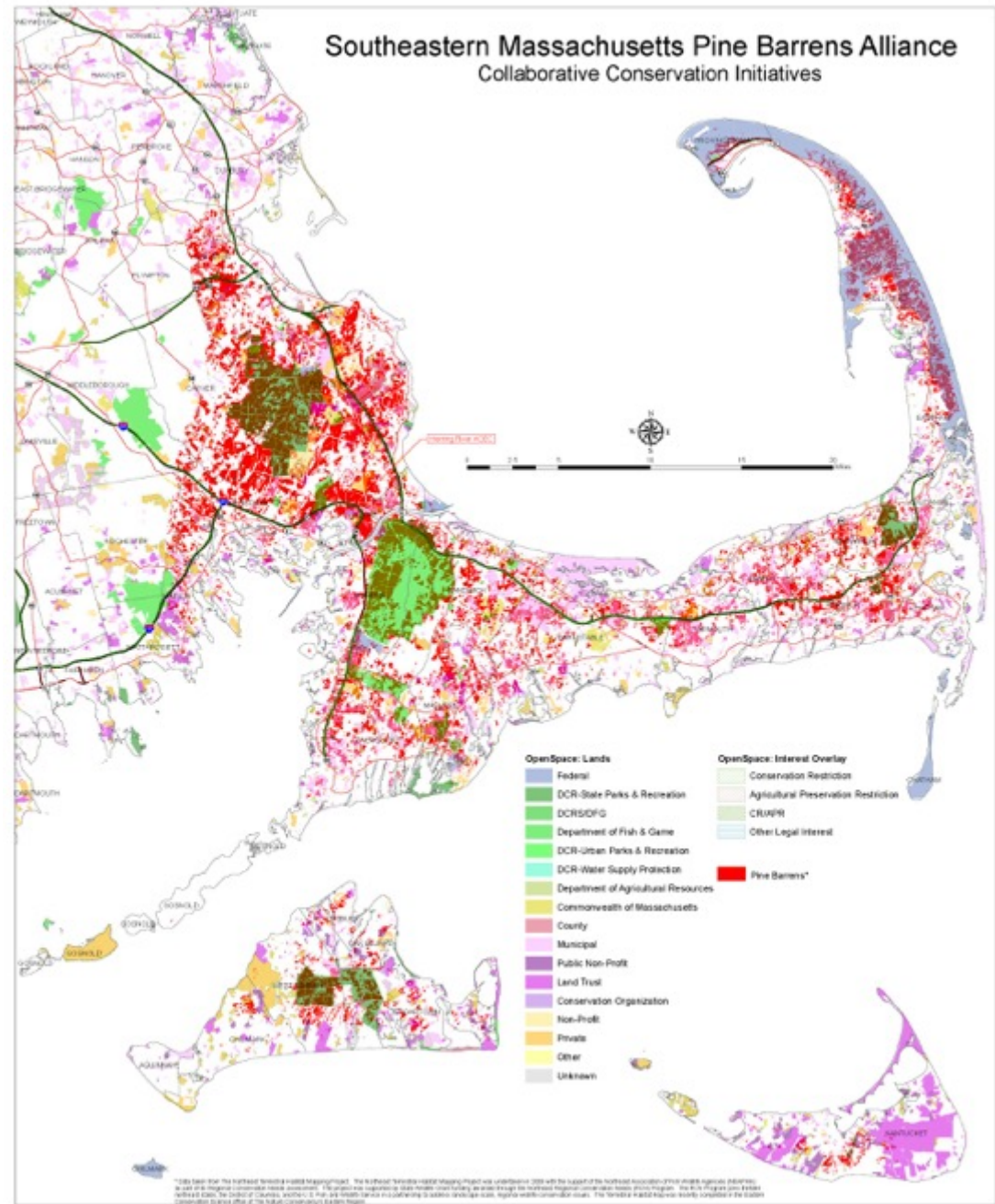


Global Significance

- ▶ Southeastern Massachusetts contains the **second largest Atlantic Coastal Pine Barrens eco-region (ACPB) remaining in the world**, two thirds of which have already been lost to development.
- ▶ The Nature Conservancy has recognized the area, including its herring runs as **one of the most significant ecosystems in the northeastern United States** (Masterson and Walter, 2009).
- ▶ The pine barren uplands in the Monument/Herring River watershed provide unique (and therefore possibly more identifiable) biogeochemistry-based **olfactory cues and markers for the anadromous fish** that return to these natal waters. (WHOI)



- A “Pine Barrens Partnership” has recently formed to coordinate environmental and land conservation efforts in 26 towns.
- The US Fish and Wildlife Service has proposed designation of a Great Thicket National Wildlife Refuge.





HPWA on the Web

- ▶ Visit HPWA's Website

<http://www.theherringpondswatershed.org/>

- ▶ Follow/Like HPWA on Facebook: ▼

