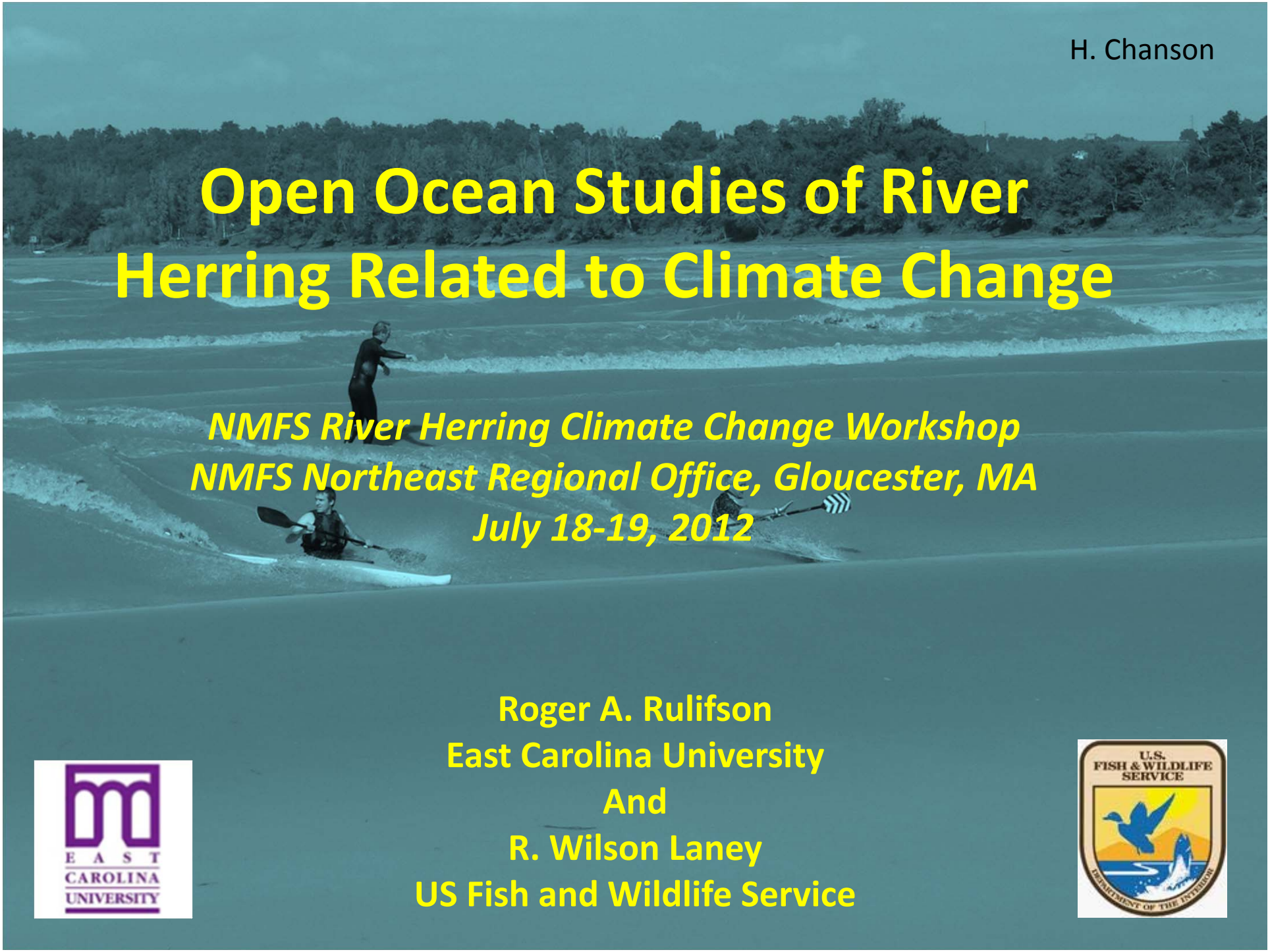


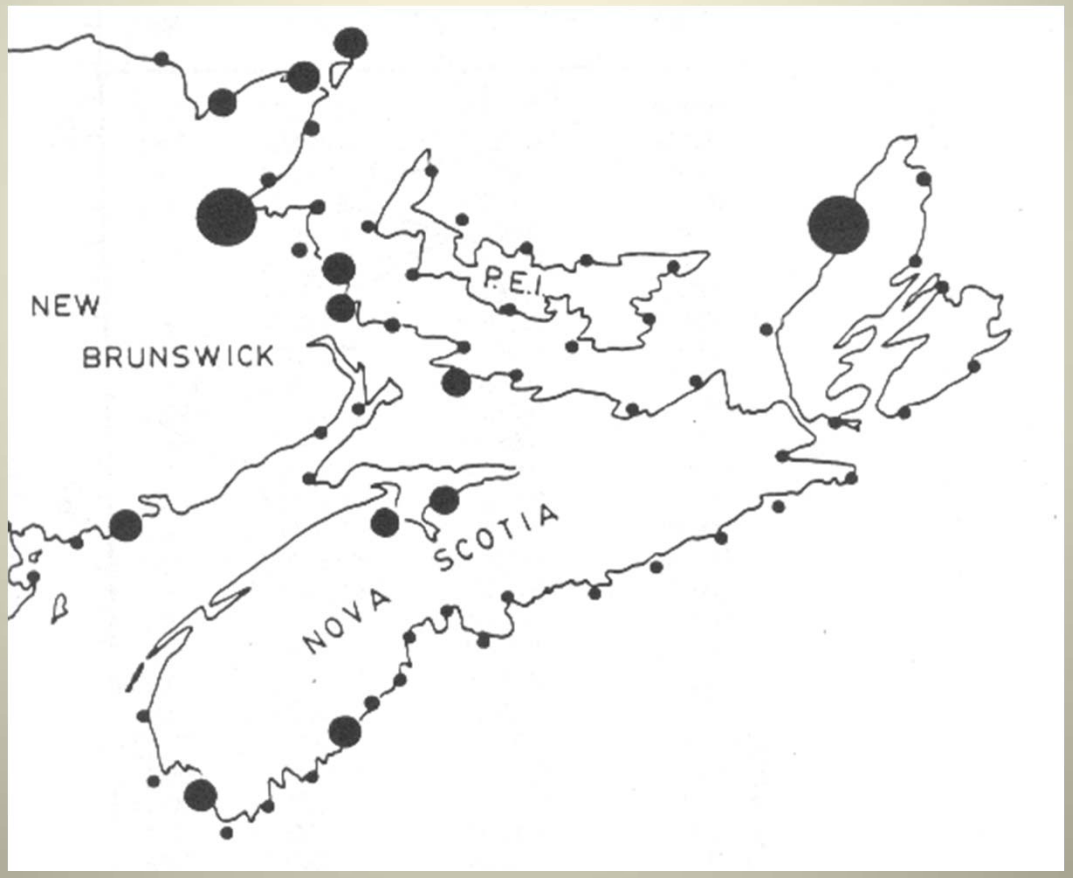
H. Chanson

Open Ocean Studies of River Herring Related to Climate Change

NMFS River Herring Climate Change Workshop
NMFS Northeast Regional Office, Gloucester, MA
July 18-19, 2012

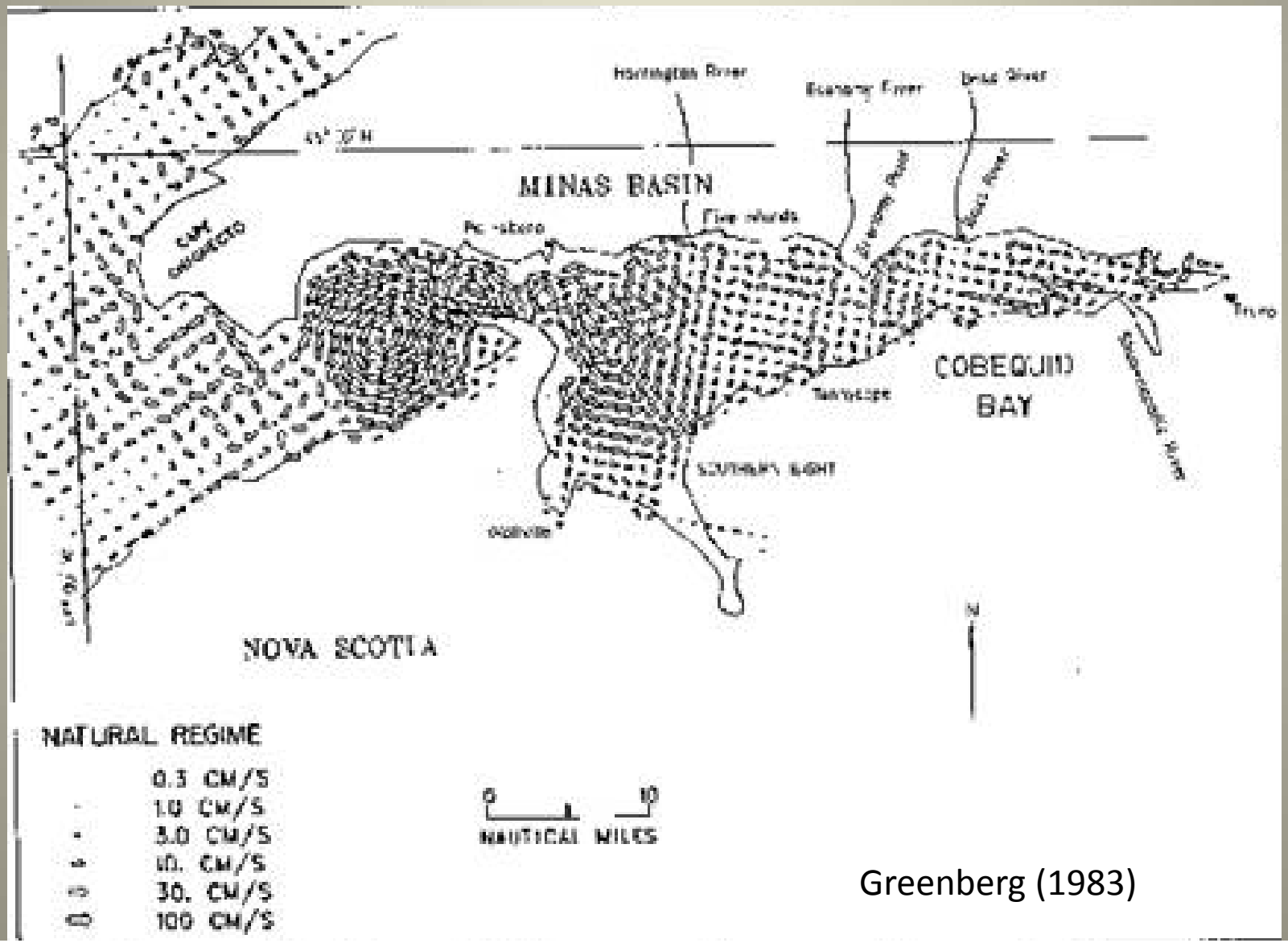
Roger A. Rulifson
East Carolina University
And
R. Wilson Laney
US Fish and Wildlife Service

Relative Distribution of River Herring Landings in the Canadian Maritime Provinces, 1957-1973



(Rulifson et al. 1987, after Caddy and Chandler 1976)

Residual Water Current Patterns of Inner Bay of Fundy



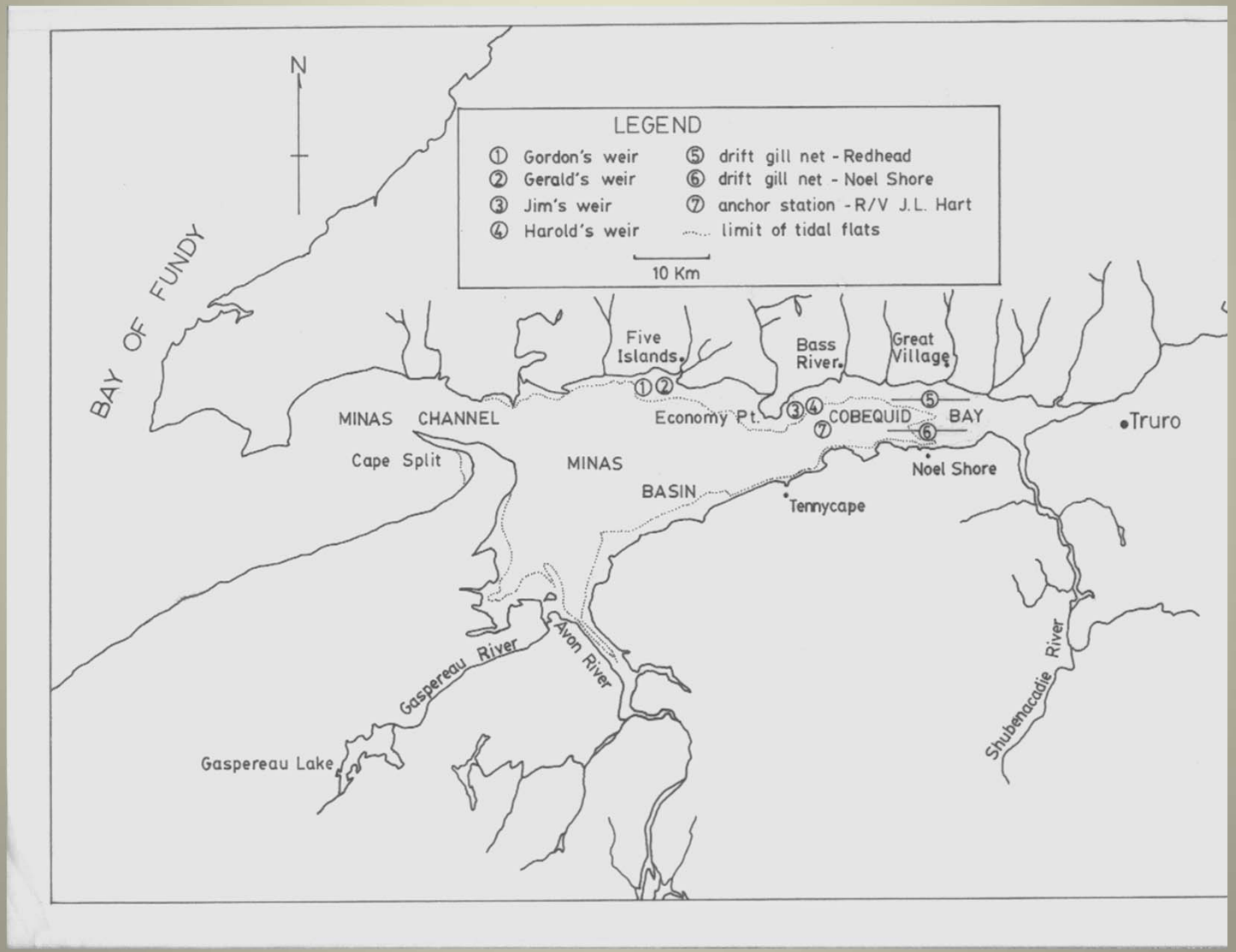
Greenberg (1983)

Tagged River Herring Releases in Inner Bay of Fundy, 1983, 1985, & 1986

Alewife and blueback herring marked and released in the upper Bay of Fundy, Nova Scotia, from 1983-1986.

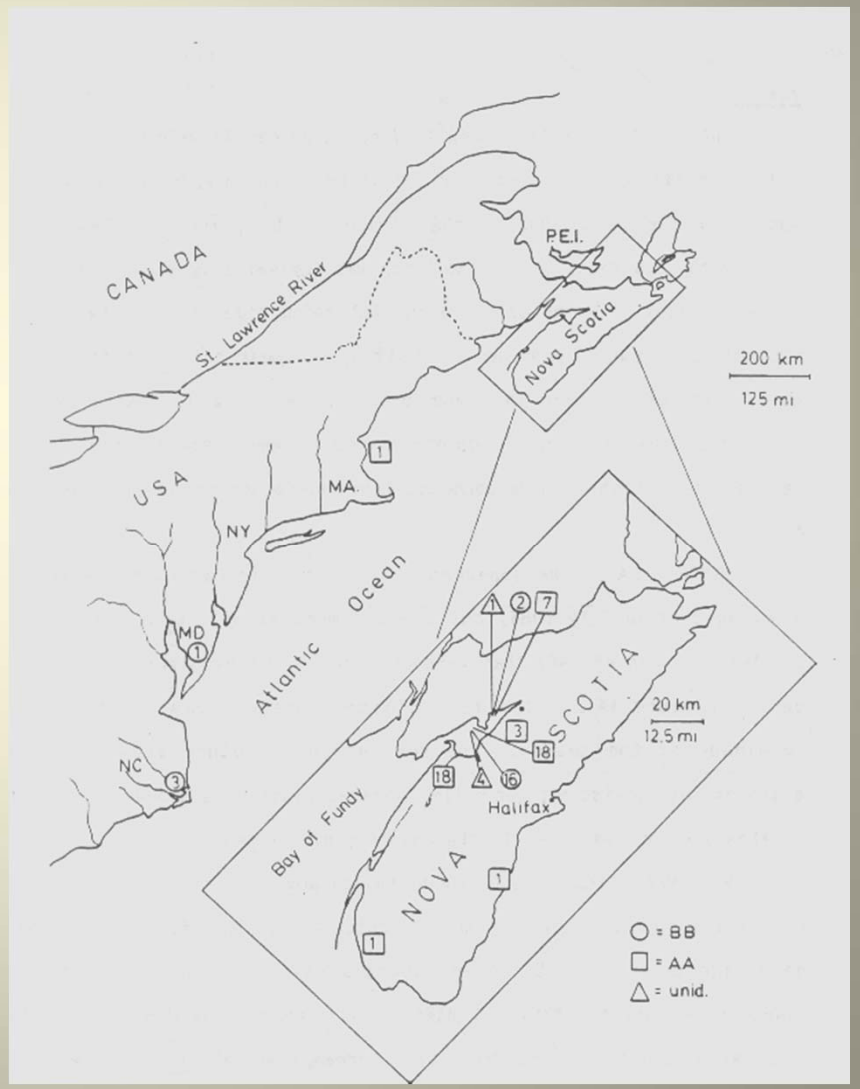
	Cobequid Bay			Minas Basin			J.L. Hart	
	1983	1985	1986	1983	1985	1986	1983	1985
June	554	602	0	68	3,488	746	289	1,998
July	1,770	404	90	601	6,187	1,082	77	
August	0	0	0	225	749	28	0	
Total	2,324	1,006	90	894	10,424	1,856	366	1,998

Release Locations for River Herring in Inner Bay of Fundy



River Herring Recaptures

- Total recaptures=74
- Alewife (n=37)
  - 51% from Canada rivers
  - 49% ocean
  - 2% from US (Cape Ann, MA)
- Blueback (n=20)
  - 75% ocean
  - 25% rivers (all USA)
    - Wicomico R, MD (25%)
    - Roanoke River, NC (75%)
- Unidentified = 5 (all ocean)



Minas Basin Catches in 1985

Alewife

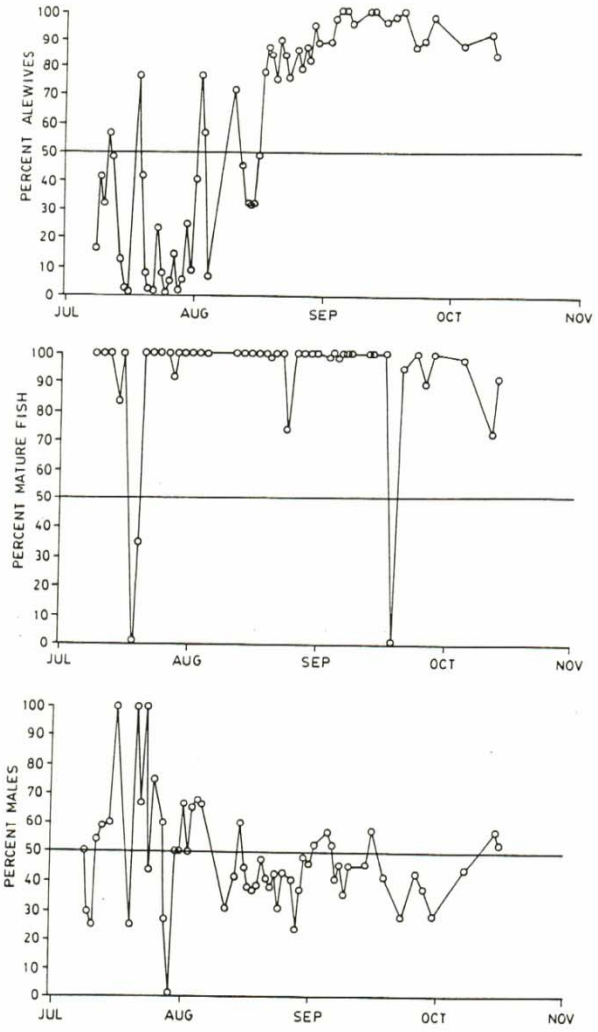


Figure 44. Contribution, percent maturity, and sex composition of alewife in river herring catches from the commercial weir in Minas Basin, Nova Scotia, during 1985.

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Percent of total catch

Percent mature

Percent males

Blueback

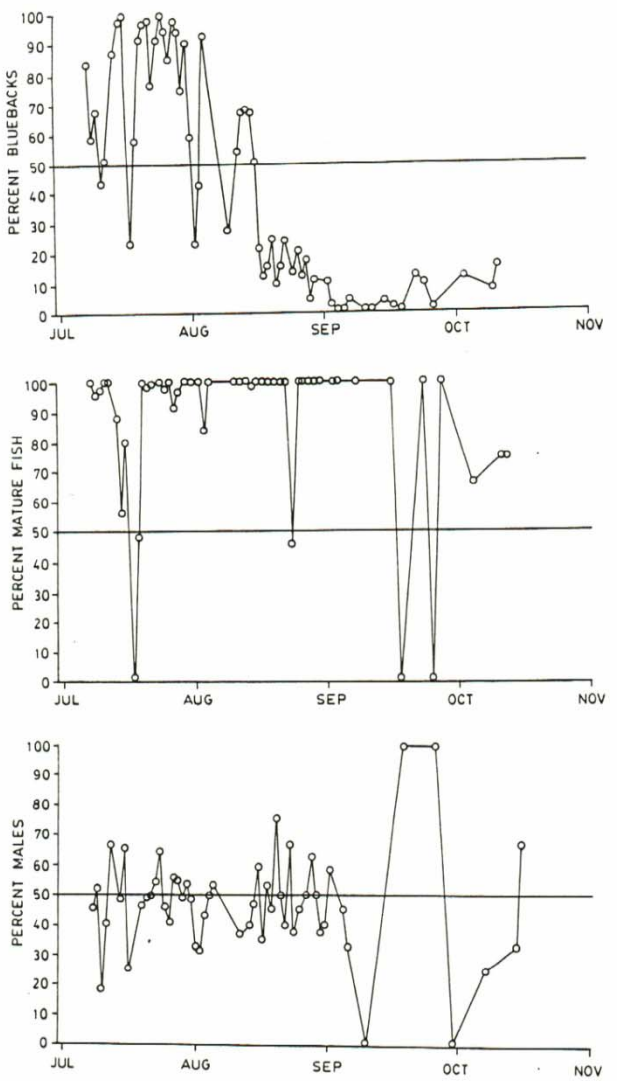


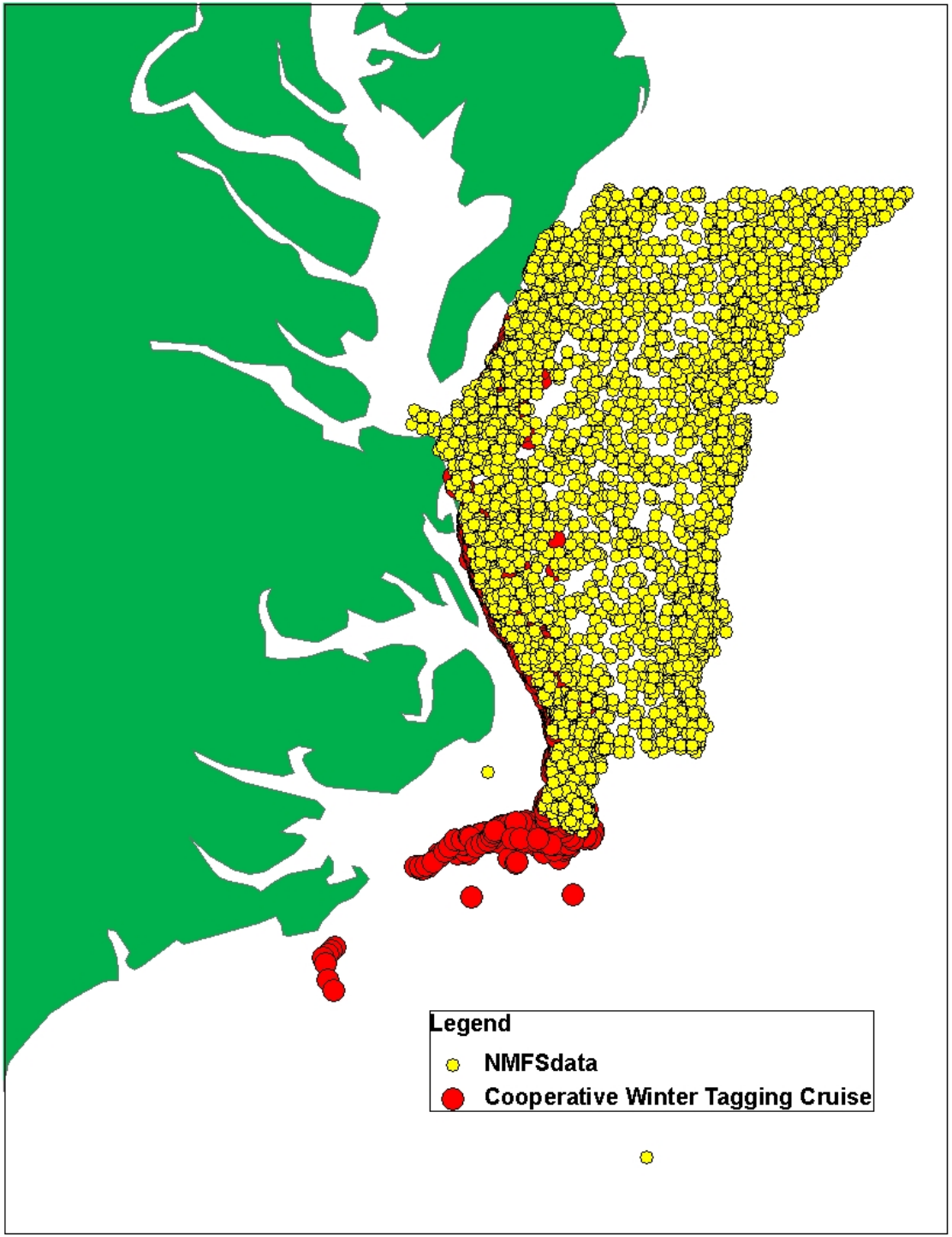
Figure 47. Contribution, percent maturity, and sex composition of blueback herring catches from the commercial weir in Minas Basin, Nova Scotia, during 1985.

Cooperative Winter Tagging Cruise
Past Cooperators

- U.S. Fish and Wildlife Service
- NOAA Fisheries
- Atlantic States Marine Fisheries Commission (ASMFC)
- NC Division of Marine Fisheries
- MD Department of Natural Resources
- South Atlantic Fisheries Management Council
- East Carolina University

NMFS 1968-2006

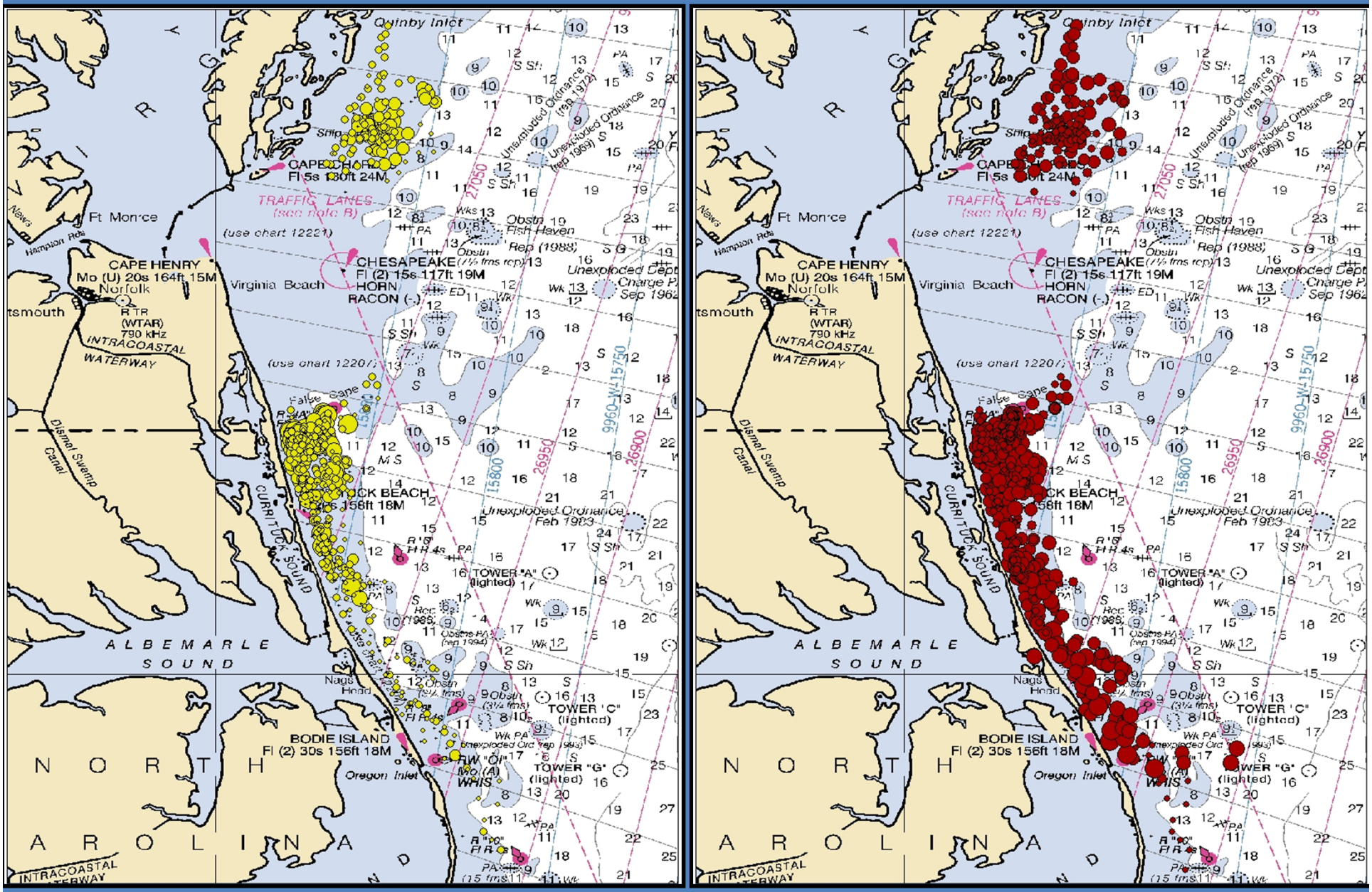
CWTC 1996-2008

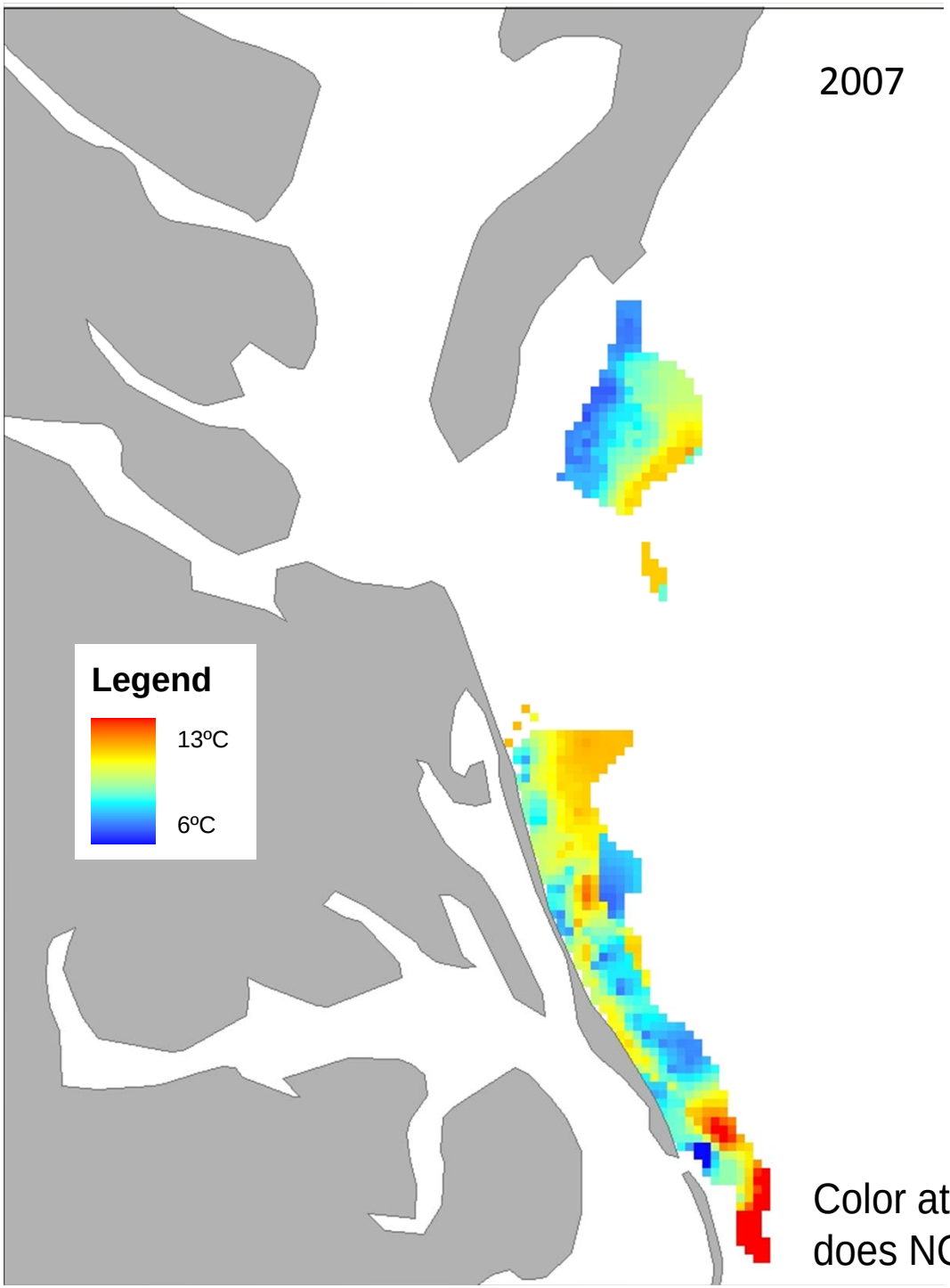


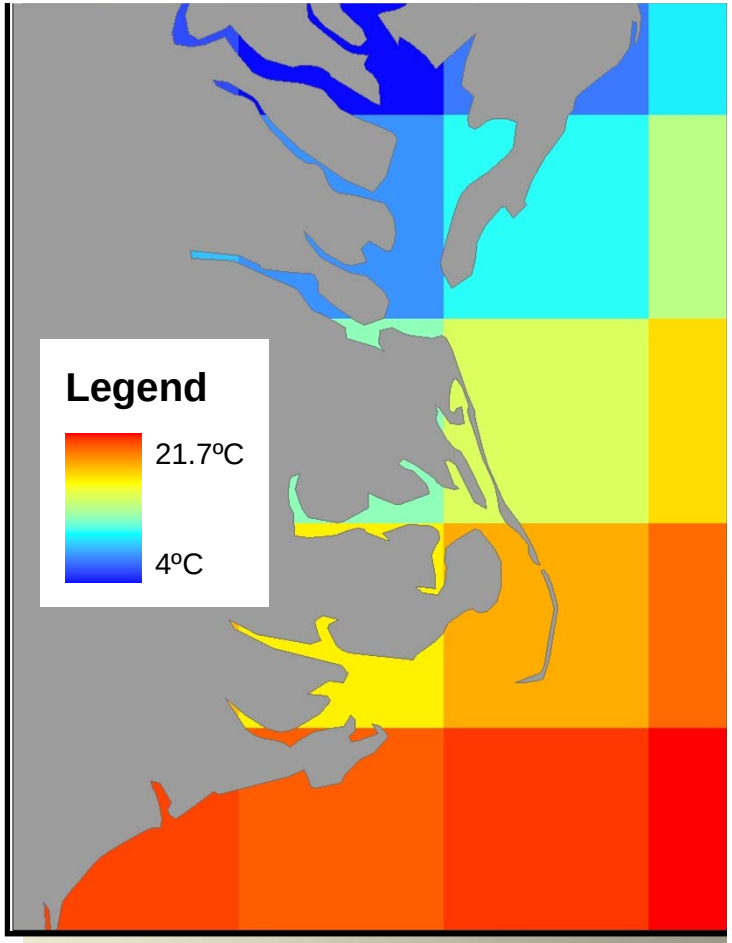
Striped Bass

2006-2008

Dogfish







Color at left represents warmest temperatures, but does NOT equal the SST satellite data

2010 CWTC River Herring

Blueback	Count	Fork Length	Total Length	Weight (g)	Stomach wt (g)	Gonad wt (g)
F	166	207.4	237.9	117.9	1.1	2.4
IM	84	167.5	190.3	55.4	0.4	0.0
M	172	204.7	233.3	113.4	1.0	1.6

Alewife	Count	Fork Length	Total Length	Weight (g)	Stomach wt (g)	Gonad wt (g)
F	29	241.3	274.4	223.9	1.7	16.2
IM	11	125.0	142.7	24.5	0.2	0.0
M	30	230.5	261.5	183.7	2.3	7.9