

2015

**Monitoring Casco Bay Connections: a fresh perspective (2015
State of the Bay Presentation)**Karen Wilson
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Monitoring Casco Bay Connections: a freshwater perspective

Karen Wilson

Dept. of Environmental Science and Policy

University of Southern Maine

karen.wilson@maine.edu

Freshwater-marine linkages



Aug 14, 2014 Presumpscot River plume after a 6 inch rainfall
(Source: Portland Press Herald, Photographer John Patriquin)



Alewife on their spawning run, Mill Brook, 2014.
Photo: T. Willis.



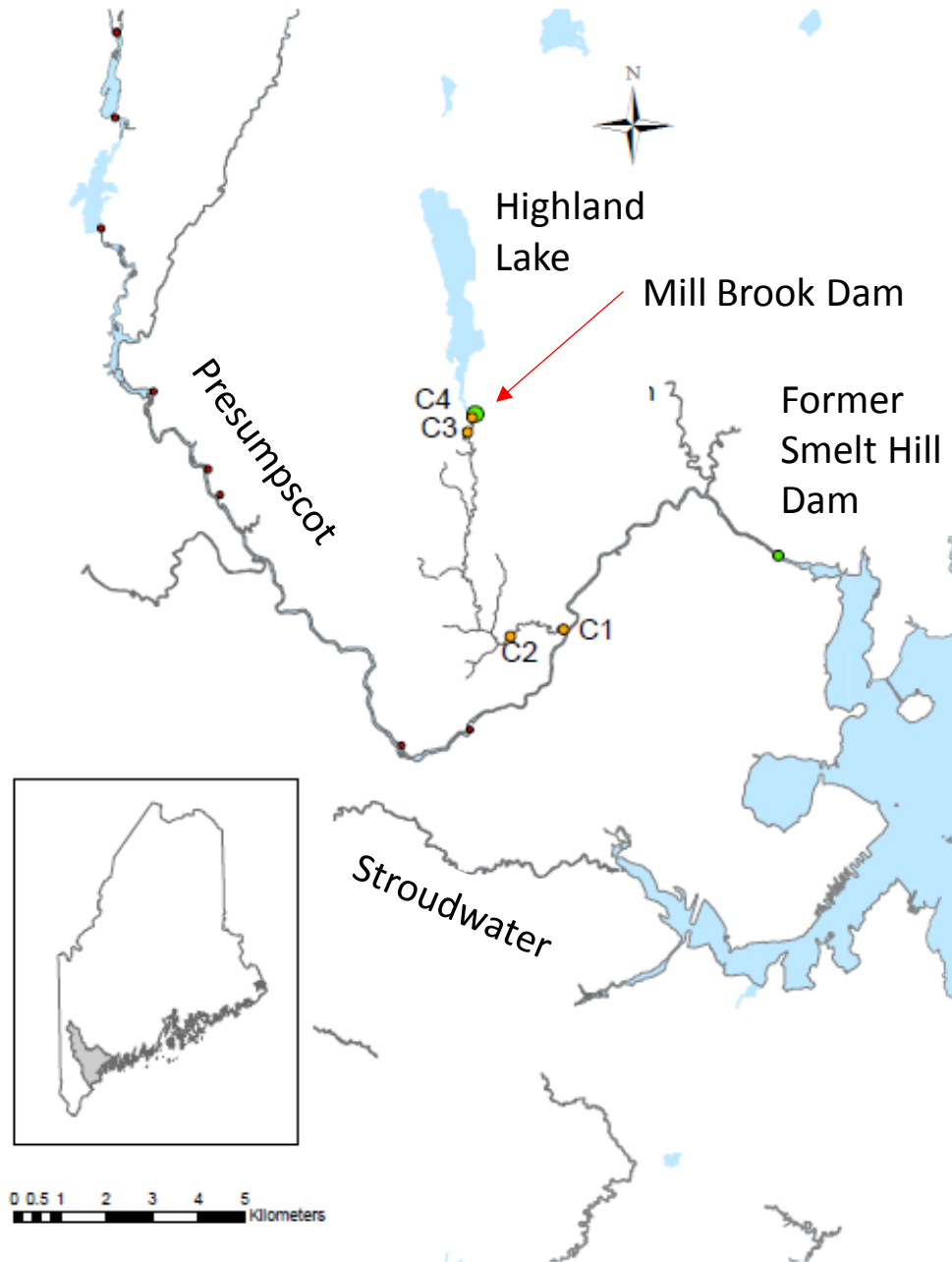
Gulls feeding at Mill Brook (Source: PRLT)

Monitoring

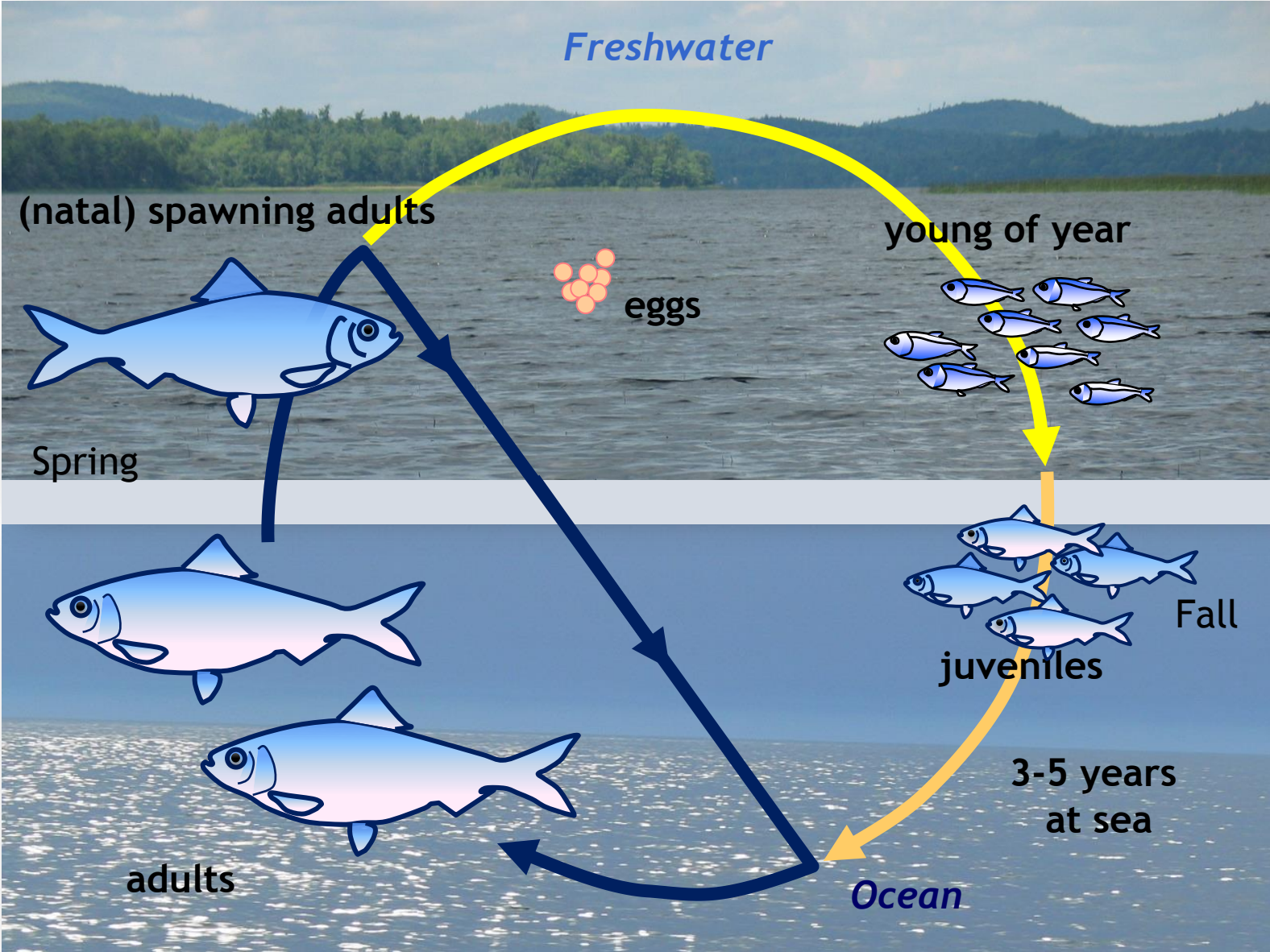
- Presumpscot River water quality
[Presumpscot River Watch, VRMP, CBEP, DEP, CCSWCD, PWD, USM, EPA, SAPPI]
- Presumpscot River fish [IFW]
- Highland Lake [VLMP]
- Cumberland Mills Dam fish counts [SAPPI]
- Highland Lake/Mill Brook alewife spawning run [DMR, USM, CBEP, PRLT, GMRI]

Highland Lake alewife spawning run

- Valuable: one of only non-harvested, counted runs
- Largest accessible lake habitat in Presumpscot watershed



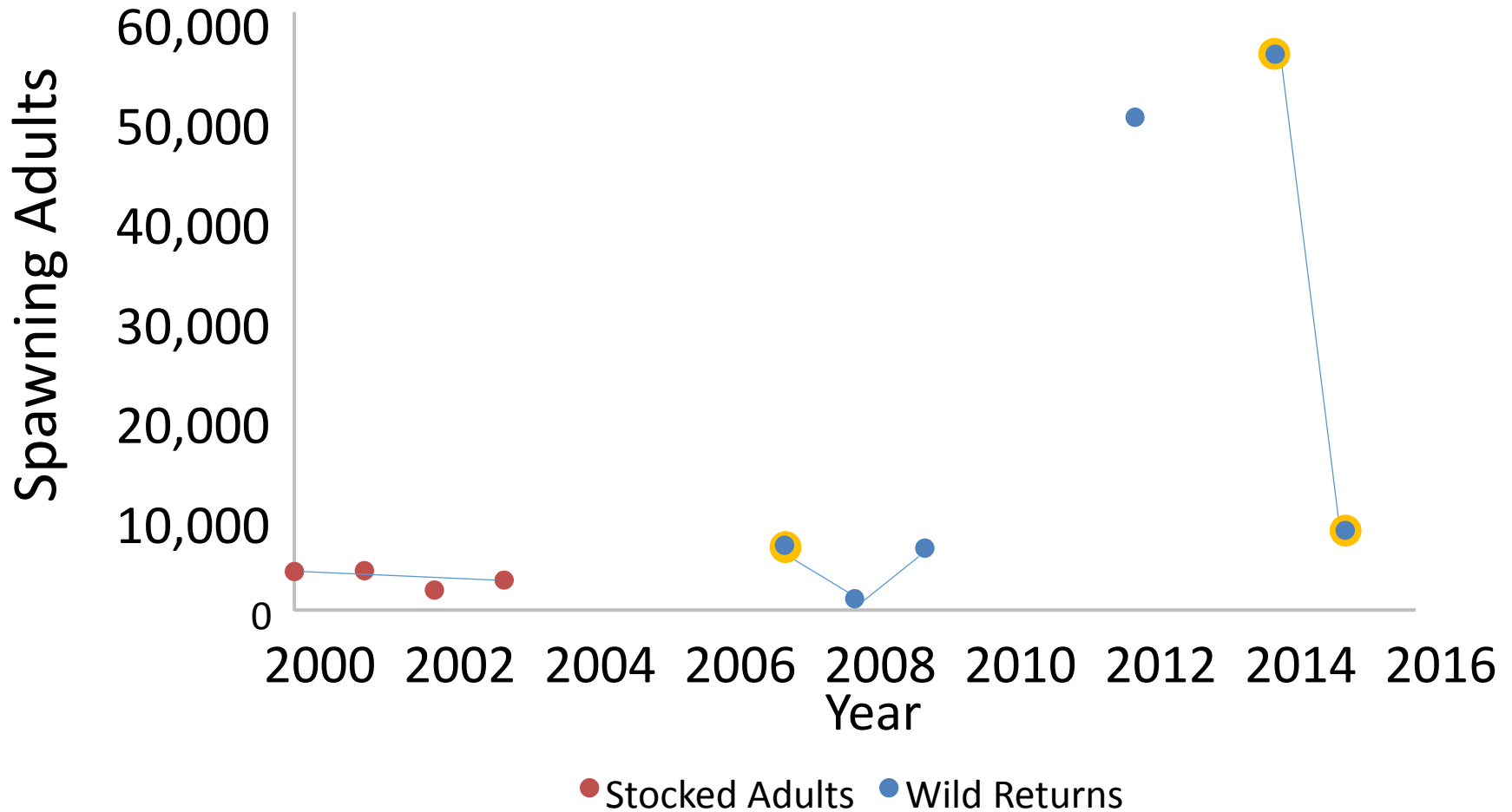
Alewife life history



restoration timeline

- 1987 – DMR constructed fishway at Highland Lake outlet dam, stocked lake with alewives for many years
- 1990 – Fishway constructed at Smelt Hill Dam
- 2000 – Renewed efforts to stock Highland & improve passage
- 2002 – Smelt Hill Dam removed
- 2004 to 2006 – Multi-partner collaboration to improve passage into Highland Lake
 - Channel restoration
 - Fishway improvements at upper and lower ends
 - Entrance guidance weir installed
 - Baffle replacement, additions, and reconfigurations
 - New trashrack at fishway exit
- 2011 – DOT replaced two culverts on Mill Brook

Alewife stocking & return history



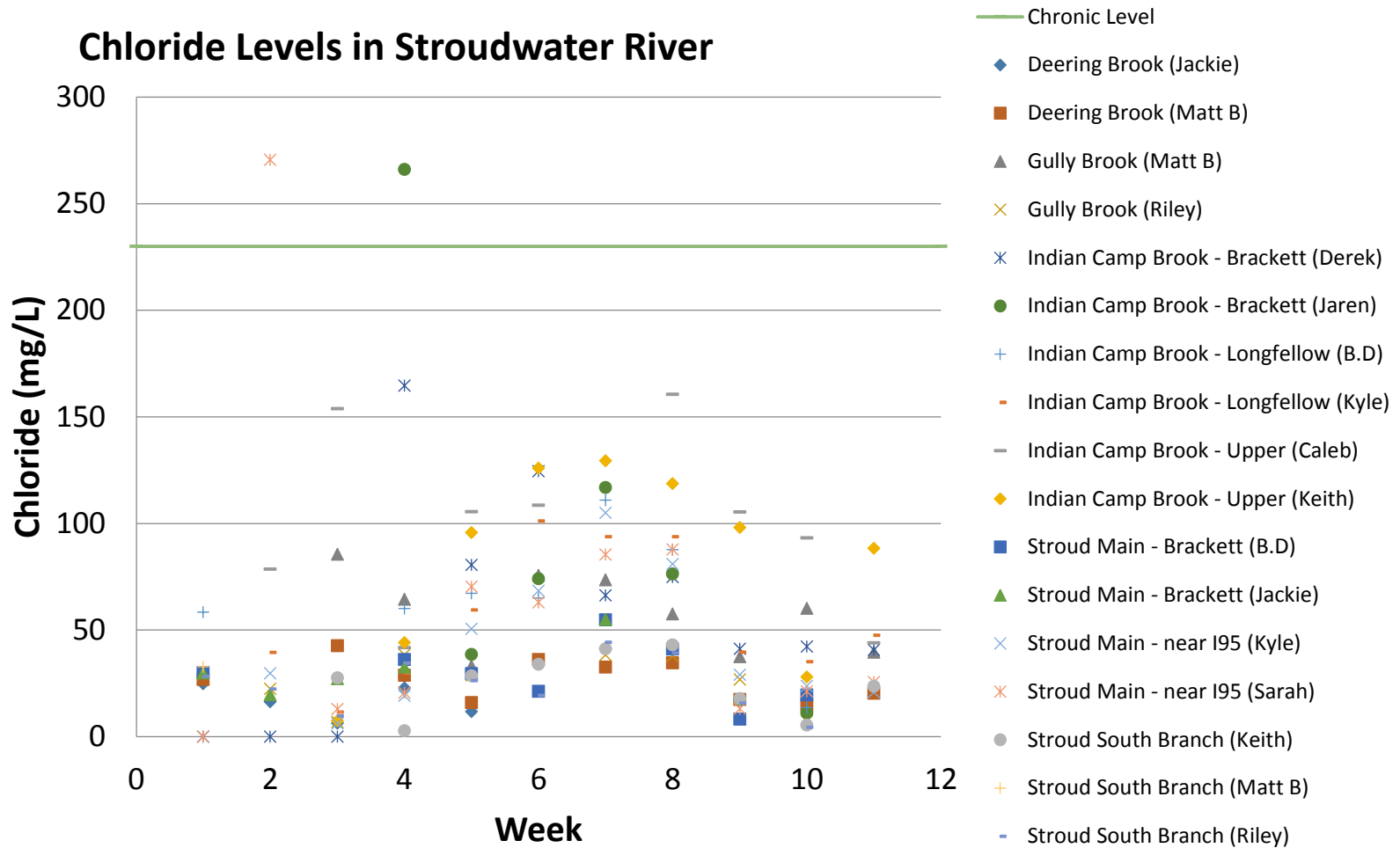
Presumpscot River Watch (PRW)

- Mission: preserve and improve health of the Presumpscot River watershed by scientific monitoring of water quality and sharing data to increase awareness of river conditions (1989)
- Monitors: dissolved oxygen, temperature and *E. coli* bacteria in Presumpscot River & tributaries
- Methods: May - Aug sampling early every other weekend at 22+ sites by volunteers
- Contact: Fred Dillon, prw@maine.rr.com, 774-6476

Other information

- Work on Presumpscot and Casco Bay tributaries by Cumberland County Soil and Water Conservation District (watershed plans, etc)
- Sebago Lake watershed lakes [PWD, LEA, MFS, CCSWCD, Oxford CSWCD, DEP lakes]

Other information (intermittent)



USM Water Quality class: January - April 2015