

ASMFC Habitat Committee Meeting Summary

May 12-13, 2016

The Grand Hotel

1045 Beach Avenue

Cape May, New Jersey 08204

Committee Participants: Lisa Havel (ASMFC staff), Russ Babb (NJ), John Gill (USFWS NE), Jimmy Johnson (NC), Jake Kritzer (EDF, chair), Wilson Laney (USFWS SE), Dawn McReynolds (NY), January Murray (GA, vice chair), Cheri Patterson (NH), Mark Rousseau (MA), Kent Smith (FL), Marek Topolski (MD), Robert VanDolah (SC)

Other Participants: Karen Greene (NOAA GARFO), Ken Able (Rutgers University)

ACFHP Update

Lisa Havel gave the Atlantic Coastal Fish Habitat Partnership (ACFHP) update. Jason Clingerman from Downstream Strategies led a 2.5 hour workshop on the Fish Habitat Decision Support Tool (www.fishhabitattool.org). Caroly Shumway gave an update and recommendations from the ACFHP Science and Data Working Group. This group met on Monday and Tuesday of this week to discuss improvements to the Conservation Strategic Plan and our future mapping efforts. Marek Topolski provided an update on the Black Sea Bass (BSB) project for which the Mid-Atlantic Fishery Management Council (MAFMC) has provided funding to ACFHP. Seven proposals were received for that work, and one was selected which will be conducted by Dr. Brad Stevens, of the University of MD, Eastern Shore. Dr. Stevens is currently reviewing the contract. ACFHP also discussed funding for 2016. The second day of the meeting was dedicated to a Conservation Strategic Planning workshop, which was facilitated by David Arnold of the Florida Fish and Wildlife Conservation Commission (FLFWCC). The next Conservation Strategic Plan will cover 2017-2021.

Discussion on Genetic-Habitat Interactions

This discussion is a carry-over from the fall meeting, where Jake Kritzer introduced the Habitat Committee (HC) to genetic differentiation in American eel in regards to spatial distribution within the estuary. The Commission and the Councils are in charge of the genetic health of the managed species, in addition to age structure, population abundance, etc. This issue might need to be brought up to the technical committees and stock assessment subcommittees in the future, but the HC has decided to put this discussion on hold for the time being.

Discussion on Timeframe for Commenting on Issues

This topic was added to the agenda at the fall meeting. When an issue that the HC would want to comment on arises, the timing of getting comments to the action agency is often not accommodated by the ASMFC process. Typically comments are due within 30 days, but the ASMFC Policy Board only meets twice a year. If there is a topic deserving of comment that comes to our attention between meetings, the HC can contact Chairman Doug Grout with a memo providing background information and recommended actions. The Chairman can sign off on it, bring it to the states to approve, or contact the Policy Board for approval. The HC is considering this approach for the seismic testing being conducted offshore (which we discussed in depth), and for an oyster dredging project in Man O'War Shoals. When a committee member wants to act on a project, they can bring it to the HC via email. If there is general agreement to move forward, that person, the HC

coordinator, and the HC Chair and Vice-Chair will work together to draft the memo for Doug Grout. Criteria to follow can be found in the Habitat Committee Guidance on the website.

2016 Work Plan Review

The HC walked through the ASMFC Action Plan for 2016 to review the status of each task. The HC is on target to achieving all tasks, which some highlights below.

Habitat Hotline

The next Habitat Hotline theme will be the water column as fish habitat, with emphasis on technology to study water column use. Article topics were chosen, and Lisa will soon follow up with assignments.

Sciaenid Habitat Source Document

The HC will be paying an expert to finish this document. ASMFC released a request for applications, and the deadline closed on May 6th. ASMFC will then choose the author, and the HC will have a chance to review and edit the document. The HC would like to have a finalized draft to the Policy Board by the annual meeting.

Habitat Management Series

The HC decided that we should still write a brief document on aquaculture, even though the SAFMC has a longer document available. This document will be brief (3-4 pages) and relevant to the entire east coast. The HC discussed revisiting our 2010 habitat management series document on living shorelines for 2017. Many state policies have changes in the past six years, and techniques have improved as well. This update can also include recommendations, which would be a new addition. A lead (Dawn McReynolds) was chosen and subcommittee was formed, and this will be discussed further in the fall.

ASMFC SAV Policy Discussion

Next year marks the 20th anniversary of ASMFC's SAV policy, and the HC decided that they should revisit the document and discuss whether an update is needed in 2017. If an update is needed, the HC will provide a short summary to the Policy Board at the annual meeting.

Climate Change Addressed in State Management Plans

To accomplish task 4.6.2 of the Action Plan, each representative reported on how their state is addressing climate change. Lisa will compile this information and reach out to those who could not attend the meeting in order to develop a document that highlights the work being done, as well as identify any gaps that should be addressed.

Presentation by Dr. Ken Able

Dr. Able gave a presentation to the HC about what we don't know about estuarine habitats. He focused on two local areas: the Mullica River Estuary in NJ, and the more developed New York Harbor. His conclusions are as follows: we still lack sufficient, thorough understanding of the natural history of fishes; the complex life history of fishes compounds the ability to understand habitat issues; shallow water is important, independent of structural habitats (e.g., SAV, marsh, etc.); essential habitats occur throughout the life history across the seascape (e.g., habitat mosaics; summer flounder is a classic example); and climate change will confuse our ability to determine

habitat importance (habitats are changing; fish distributions are changing). The presentation will be available to the HC.

Artificial Reef Committee Update

The ASMFC and GSMFC artificial reef committees met in San Antonio, Texas in March for their annual meeting. The meeting was very Gulf-focused, as they were hosting. ASMFC has three new members, from VA, NC, and FL. ACFHP gave an update on their black sea bass habitat project, and there was discussion on decommissioning oil rigs (and the potential for decommissioning wind farms in the future). NOAA presented on the status of the National Artificial Reef Workshop, which ASMFC is helping to coordinate. There was a presentation on artificial reefs and fish attractant devices in Japan, and each state gave an update on their programs. ASMFC will host the next meeting in Florida.

Action Items (from full notes)

Page 2

Action Item: Wilson will send the Striped Bass Tagging Program guidelines to Lisa, Jake, Kent, and Caroly. *Completed via email.*

Page 5

Action Item: Karen will email Lisa the MAFMC letter to NOAA so that ASMFC can model their letter after it. *Completed via email.*

Page 6

Action Item: Cheri and Wilson will send the materials about Man O'War Shoals around for the entire committee to review. *Completed via email.*

Page 9

Action Item: Lisa will better organize and send Habitat Hotline author list to Habitat Committee to begin putting together articles.

Page 11

Action Item: Lisa will follow up with Marek about the progress of the Aquaculture document.

Action Item: Lisa will suggest a living shorelines document update for the 2017 work plan. Dawn will lead the development of this document, with Russ and Kent helping. Lisa will send them the notes, summary, and current document.

Action Item: Wilson noted that he will still send the SAFMC aquaculture policy document to everyone. *Completed via email.*

Page 12

Action Item: For the fall meeting, have someone present on how they incorporate habitat into their stock assessments, the assessment process, and the challenges related to habitat.

Page 13

Action Item: Wilson will contact Cheri about the citation regarding seismic testing impacts on cod, and download the full paper for the HC.

Action Item: Lisa will compile and share the materials with Jake to start drafting the memo on seismic testing to the Policy Board (except for those materials sent to everyone already). *This was completed via email.*

Page 14

Action Item: Since Lisa is out most of the rest of the month, Jake will work to review the literature (sent by Bob and maybe Jessica), read the letters from the SAFMC and MAFMC, and then write a 1-2 page memo for the Policy Board (after approval by the Habitat Committee). Recommendations might include: having another ASMFC committee write this letter (i.e. it is not negatively impacting habitat), fund more research to study the impacts, write a letter to BOEM, etc.

Action Item: Lisa will follow up with the HC to see if they want to invite Brian Hooker (BOEM) to the next meeting or to host a webinar and describe the leasing process.

Page 15

Action Item: Lisa will make the SAV document a briefing material for the fall meeting for the HC and maybe the Policy Board.

Page 16

Action Item: Lisa will talk with Pat and Toni about ACFHP's and the Habitat Committee's thoughts for the fall meeting in order to inform the doodle poll.

Action Item: Lisa will create a doodle poll for feedback on fall ASMFC/ACFHP meeting time and location.

Page 20

Action Item: Lisa will ask all states to please share how their state addresses climate change (bullet points and links) so she can compile it into a document.

Action Item: Lisa will share Ken's presentation on the Habitat Committee website.

Page 25

Action Item: Lisa will send an email to follow up about Man O'War Shoals.

An aerial photograph of an estuarine fish habitat. The landscape is a mix of brownish-green marshland and blue water channels. A prominent feature is a tall, red and white lattice tower on the left. To the right, there is a white building with a red roof, a dock with several boats, and a long pier extending into the water. The text "Estuarine Fish Habitats: What do we not know?" is overlaid in large, bold, black letters at the top.

Estuarine Fish Habitats: What do we not know?

Dr. Kenneth W. Able

Rutgers University Marine Field Station

Tuckerton, New Jersey, USA

Why do we not know more about estuarine fish habitats?

- Natural history studies are lacking
- Fish have complex life histories
- Habitats are more diverse than recognized
- Behavior unobserved
- Too much emphasis on hypothesis-driven research
- Lack of long term monitoring
- Shifting baselines are underappreciated
- Lack of funding

The Decline in Natural History Studies

- “The naturalists are dying off” (Noss 1996)
- “Despite its fundamental role, natural history recently has been ignored and dismissed.”
(Dayton and Sala 2001)
- “A pervasive denigration of natural history.”
(Cotterill and Foissner 2010)
- “Few, if any, of us would declare ‘naturalist’ to be our occupation” (Ricklefs 2012)

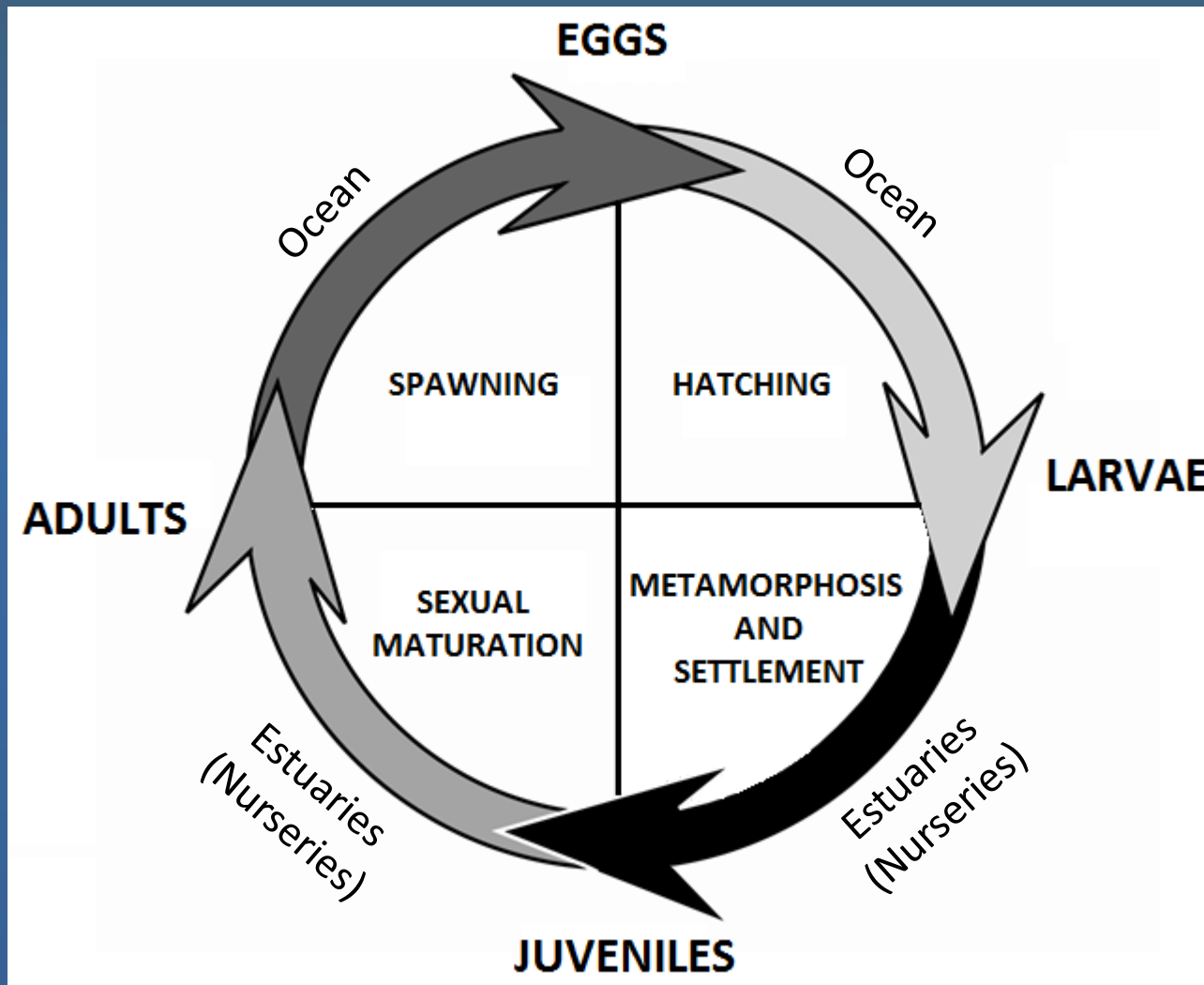
**Natural history: An approach
whose time has come, passed,
and needs to be resurrected**

Kenneth W. Able

ICES Journal of Marine Science

2016

Estuarine Dependent Fishes have Complex Life Histories



Shifting Baselines



Habitats are more diverse than commonly recognized

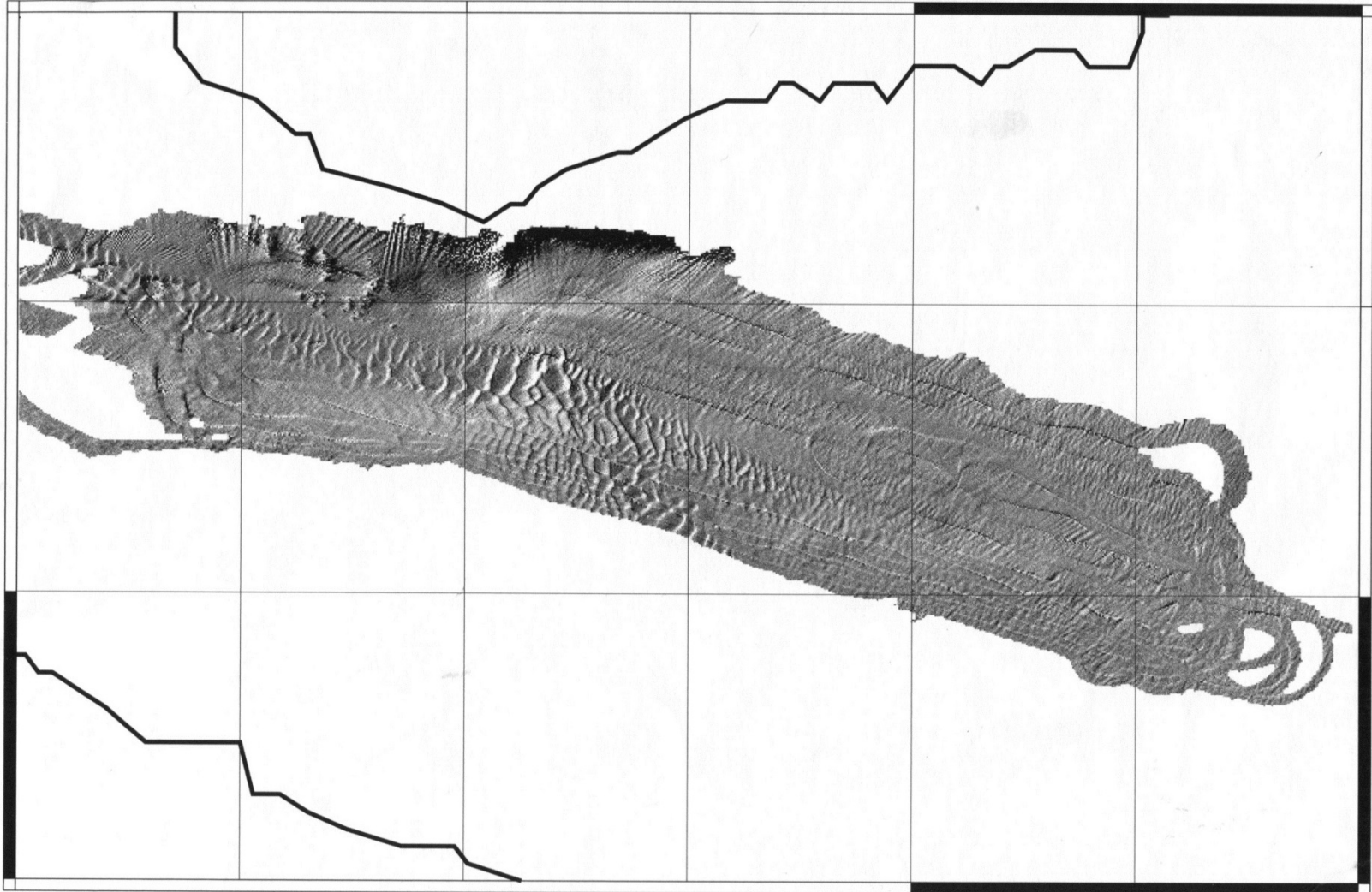
- Typically emphasize those with 3D structure (shellfish beds, macroalgae, SAV, marshes, substrate)
- Infrequently consider the water column (estuarine turbidity maximum, migratory pathway)
- “Hidden” habitats unobserved or infrequently studied

74 18' 24"W

74 18' 12"W

74 18' 00"W

74 17' 48"W



39 32' 36"N

39 32' 24"N

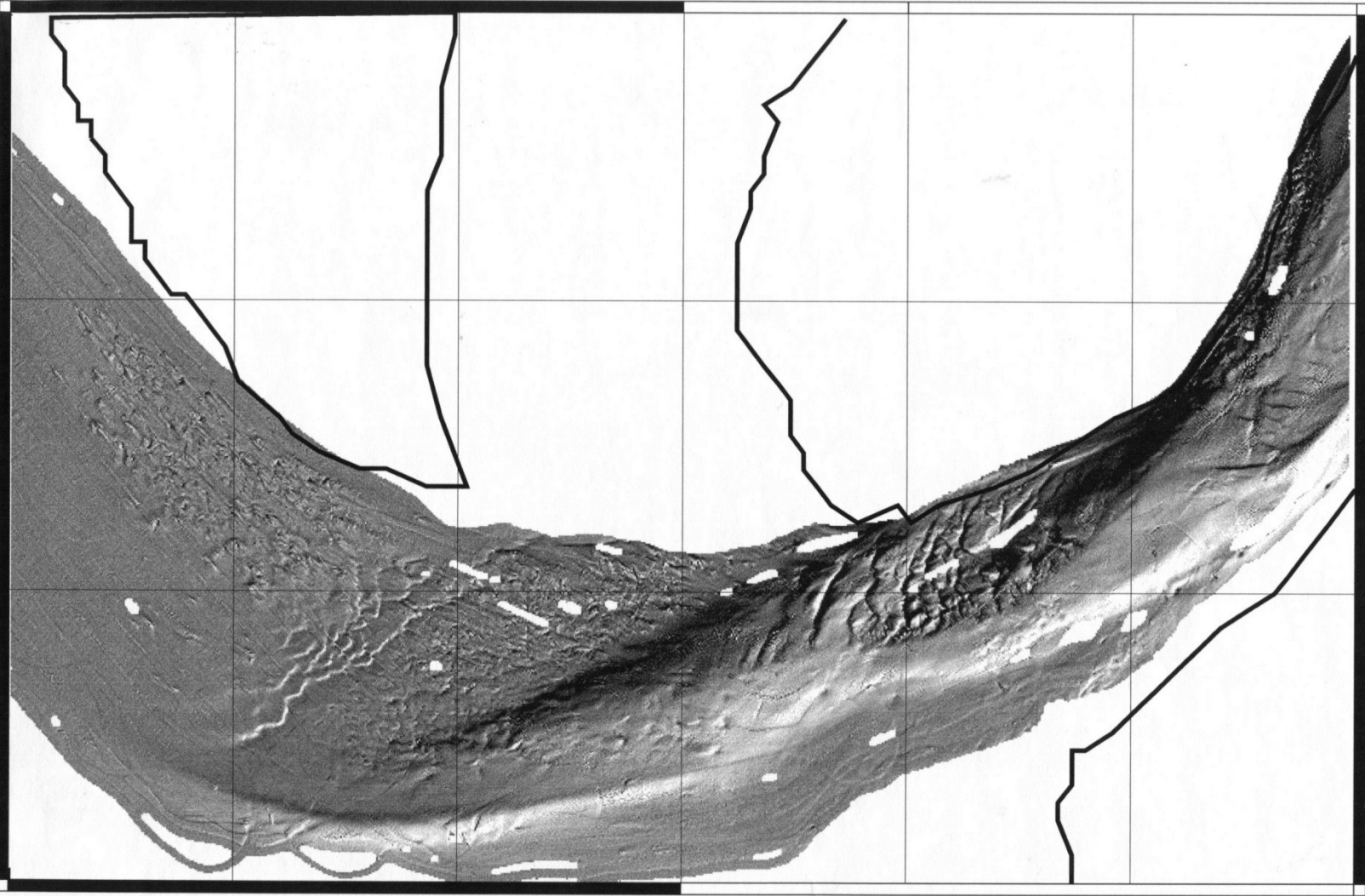
74 31' 48"W

74 31' 36"W

74 31' 24"W

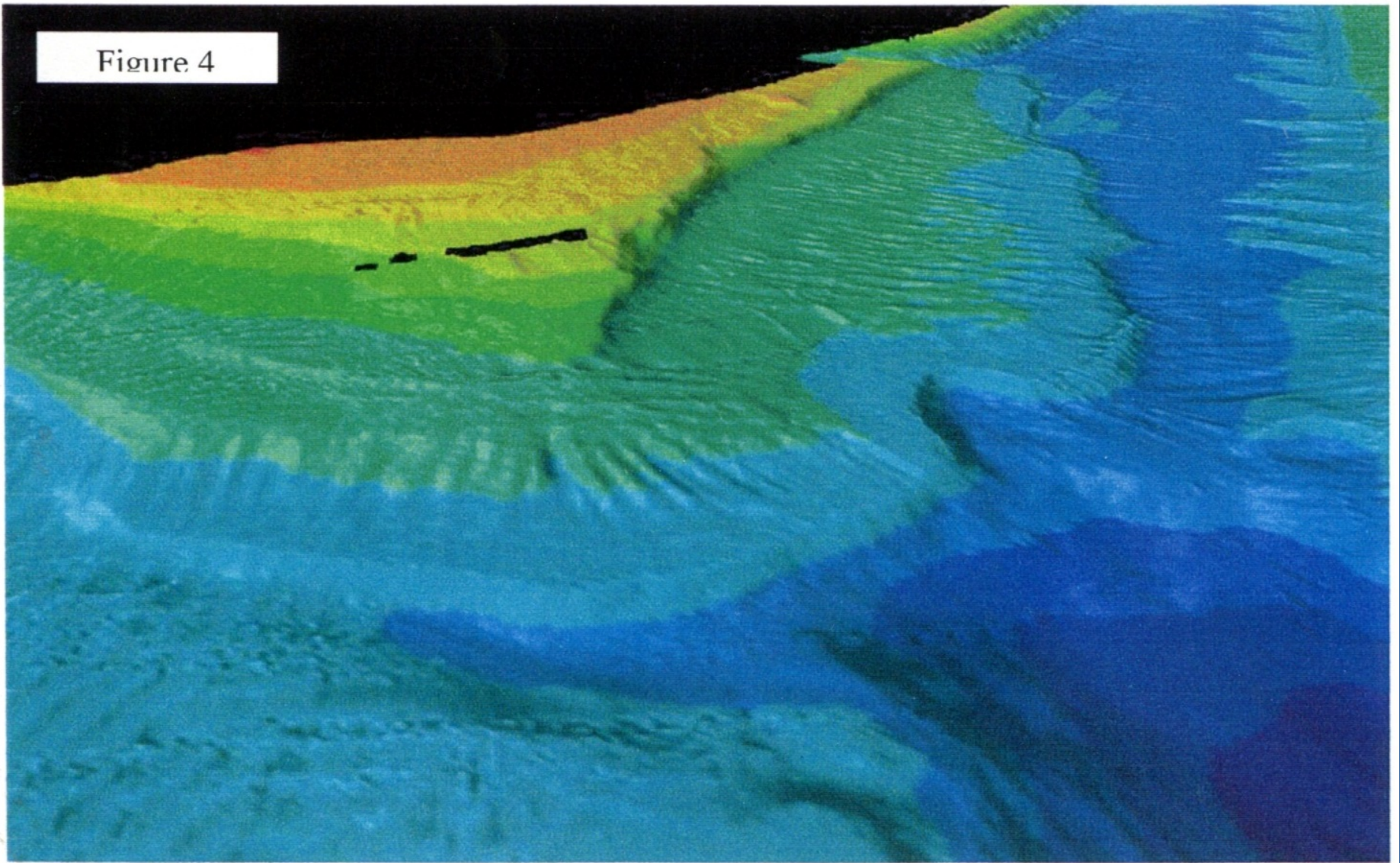
74 31' 12"W

39 34' 24"N

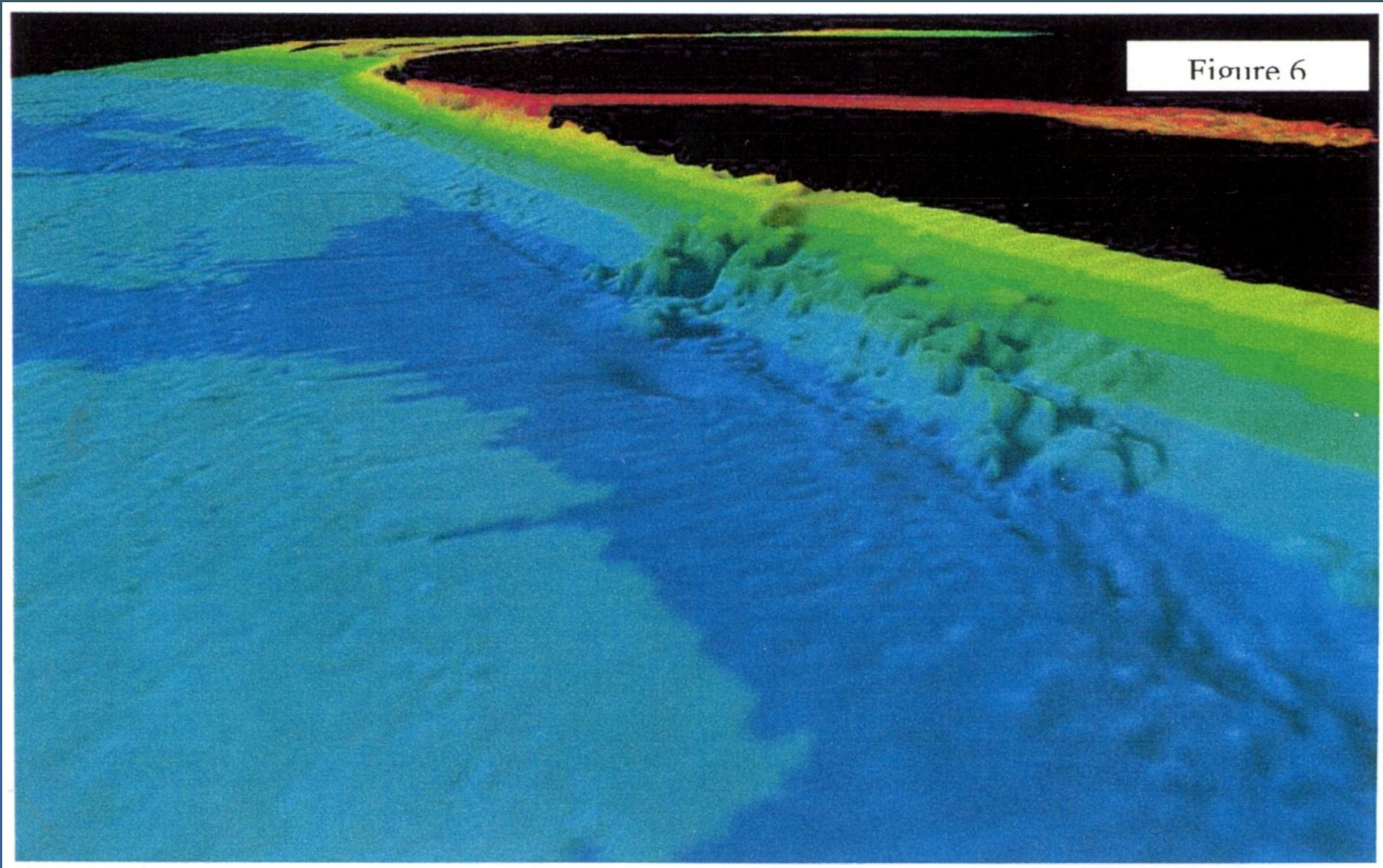


39 34' 12"N

Figure 4



(Flood and Able 2002)



(Flood and Able 2002)

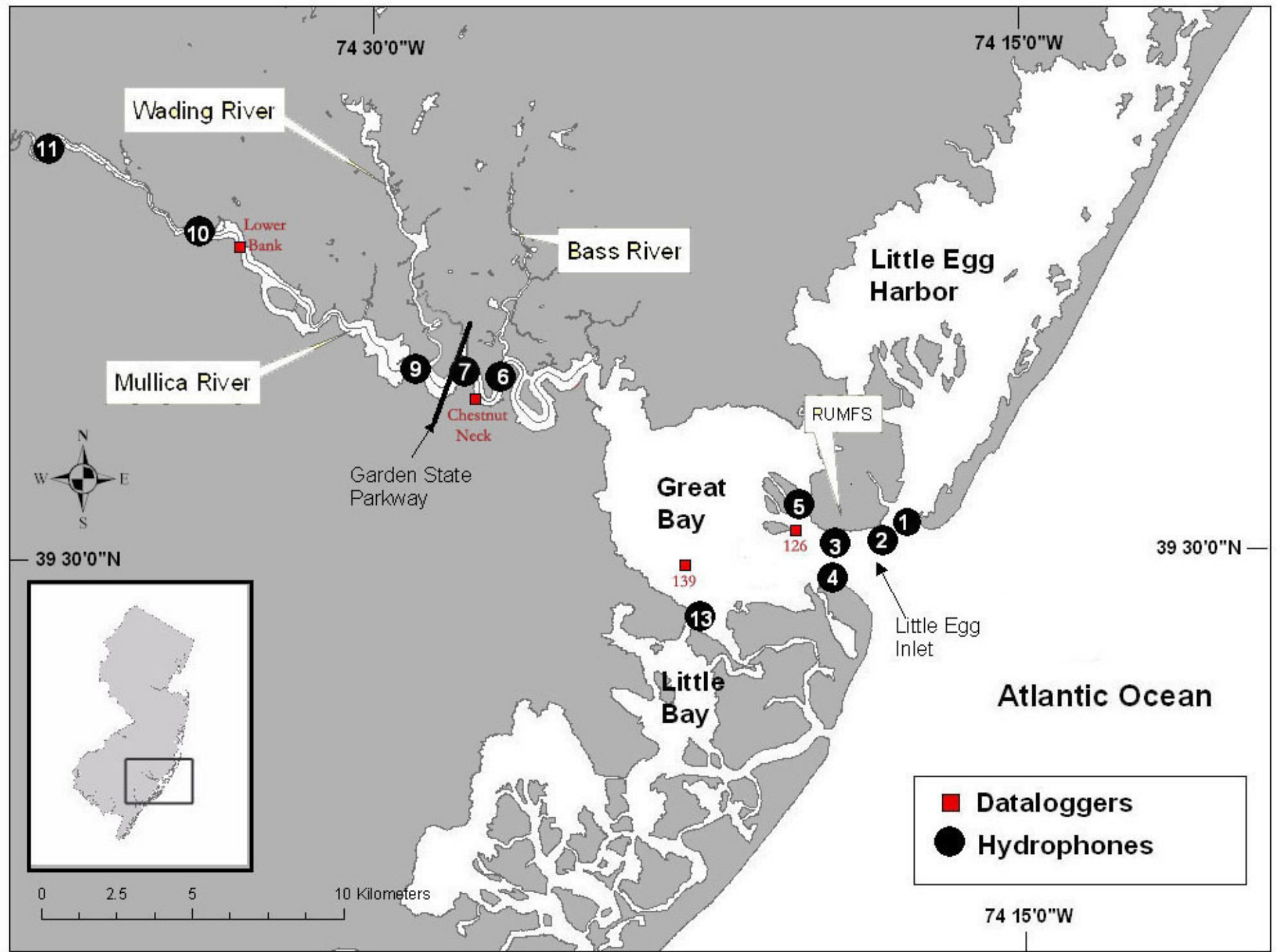


Enhanced Technologies

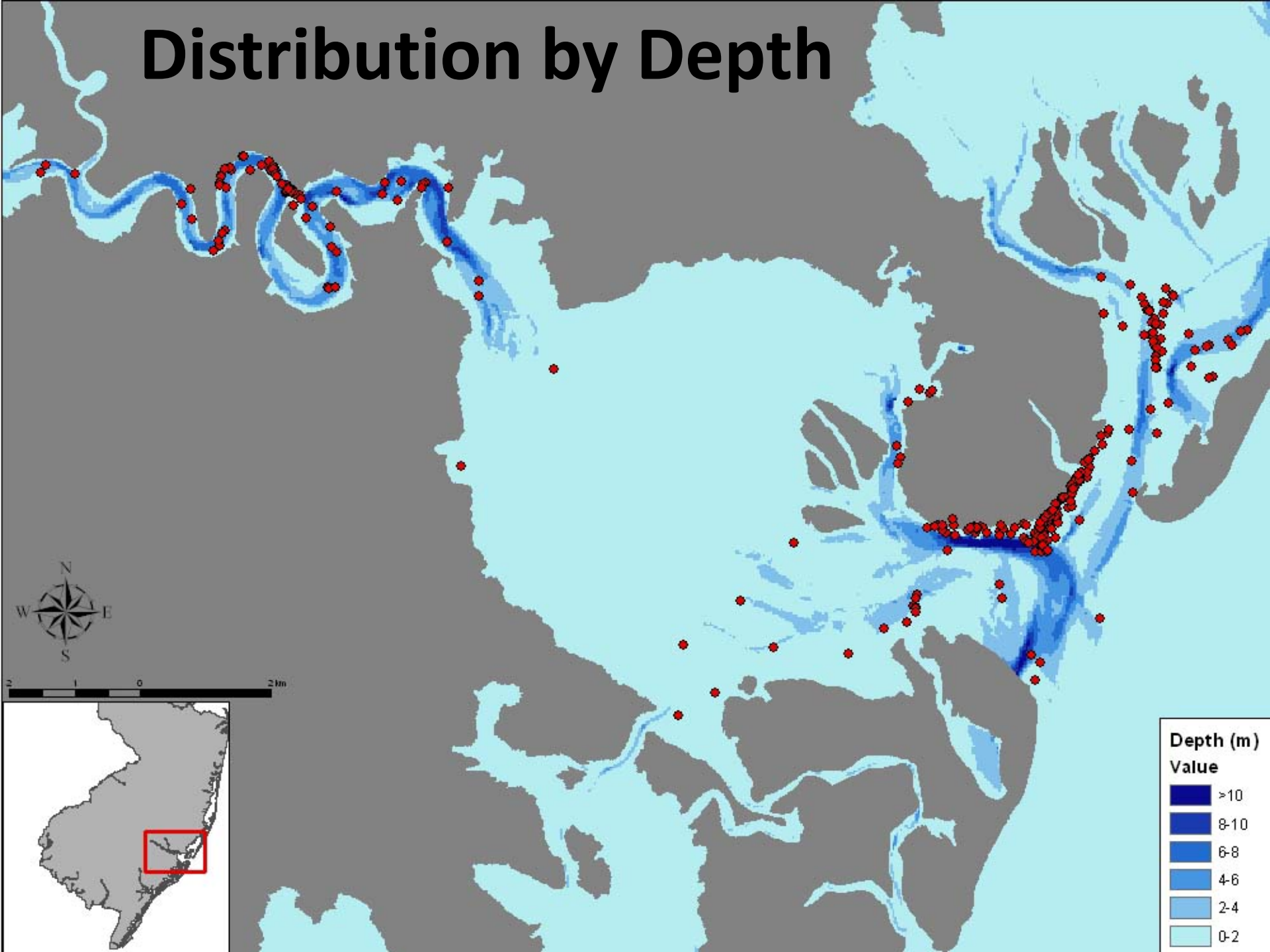
Implant ultrasonic transmitter

- Unique code
- “pings” every 5 seconds
- 2 year battery life
- Detect with passive and active telemetry

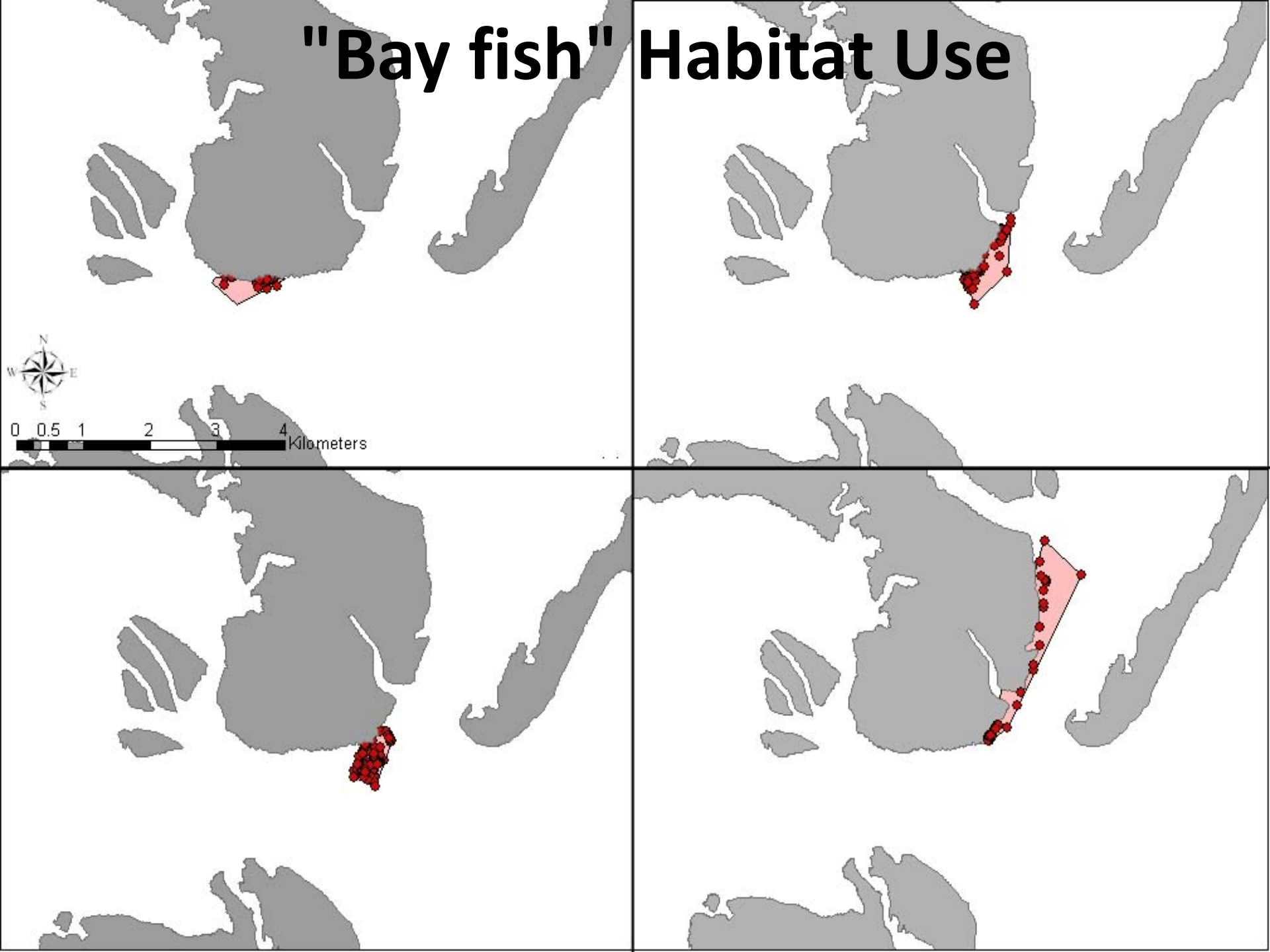




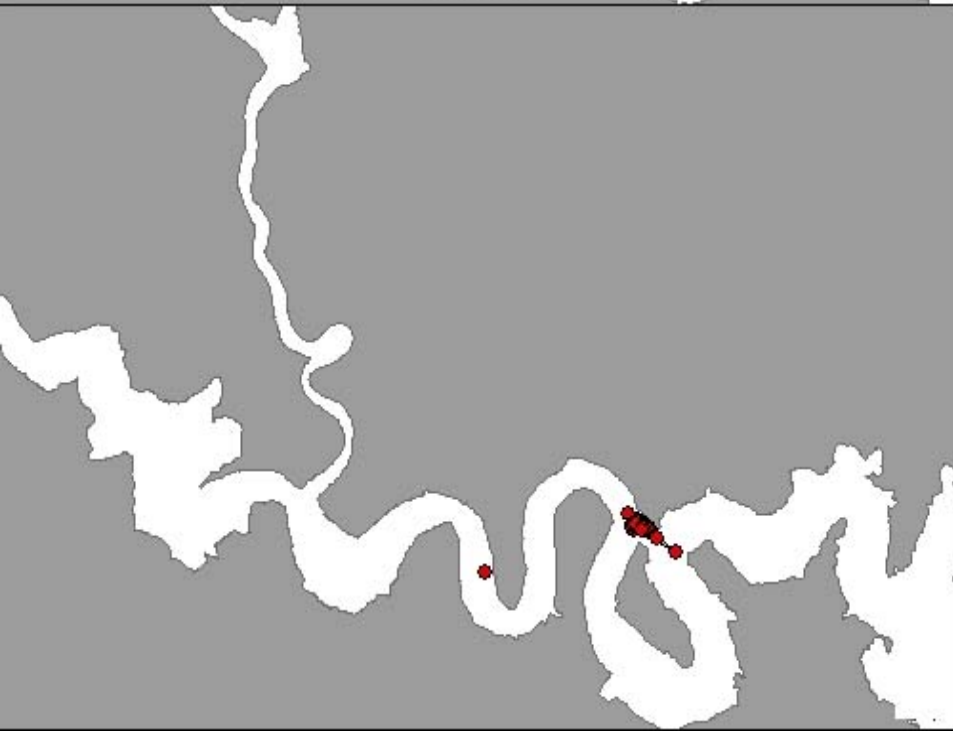
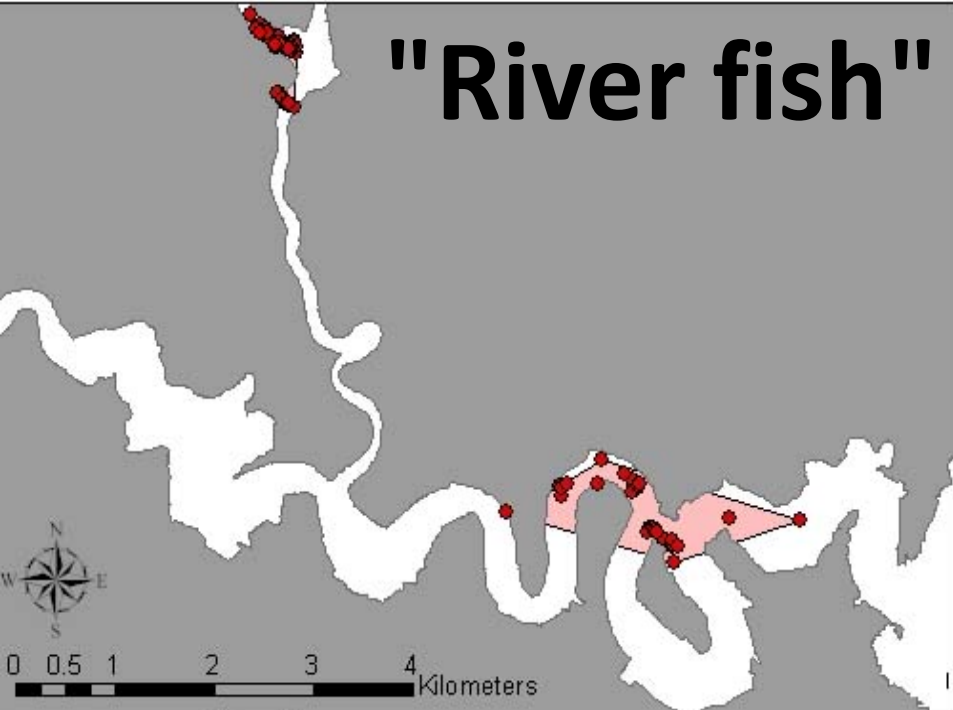
Distribution by Depth



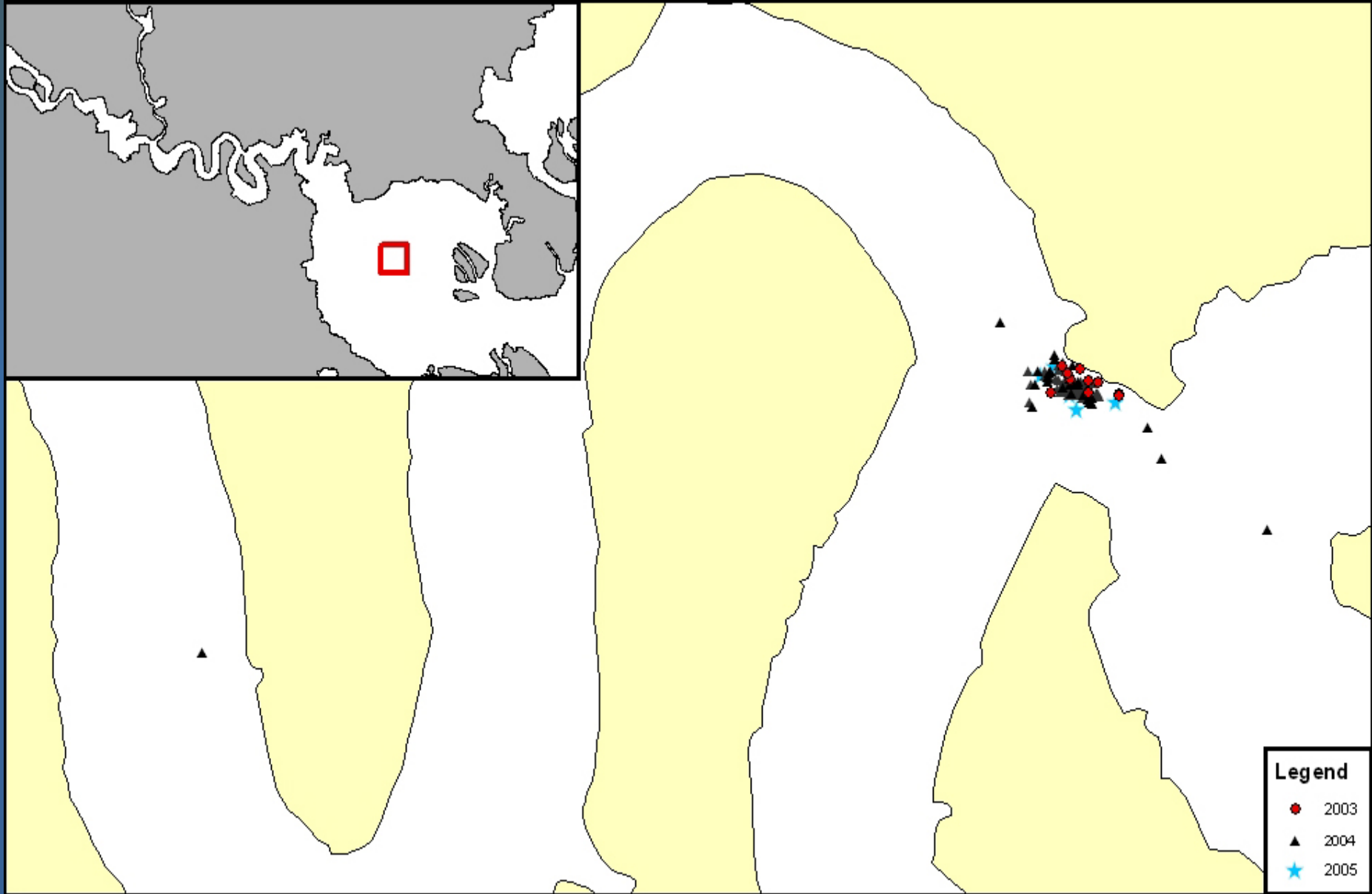
"Bay fish" Habitat Use

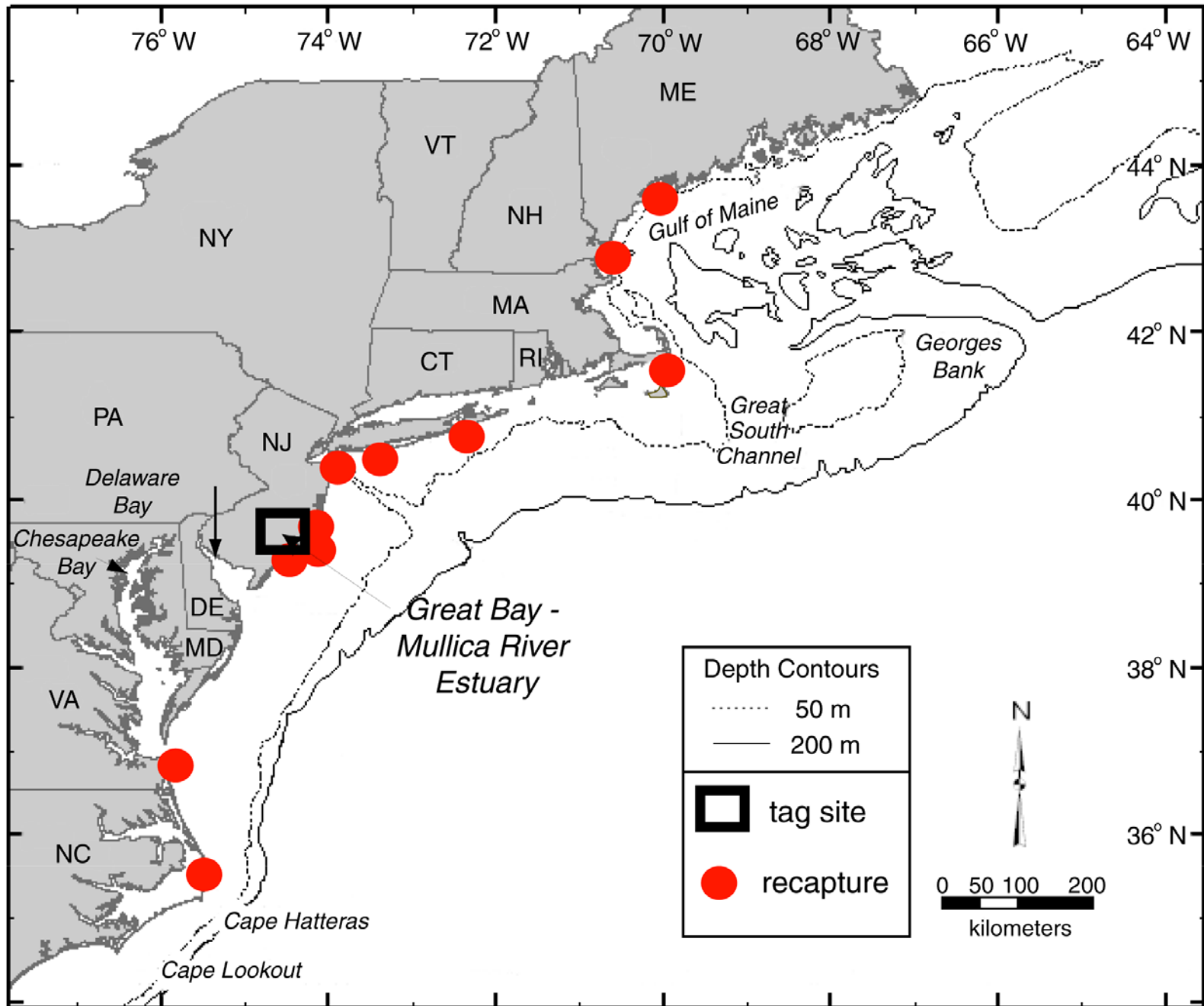


"River fish" Habitat Use



Annual site fidelity for tagged striped bass







Top Ten Insights

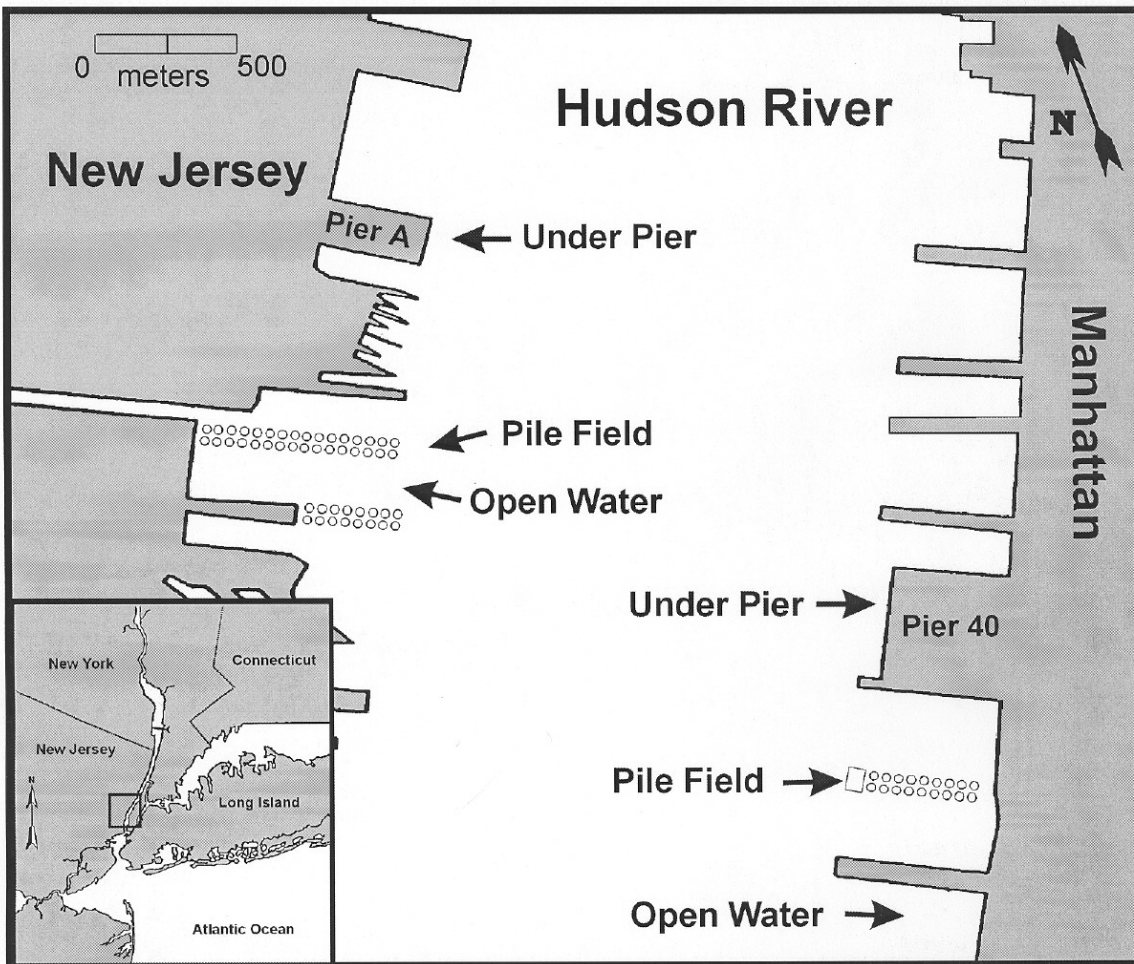
1. Many fish species are amenable to telemetry
2. Coastal migrations can be detected
3. Estuarine fidelity may be common
4. Site fidelity in estuaries may be common
5. Burial may be common
6. Individual variation is important
7. Responses to episodic events occur
8. Biotic (including social) interactions are underappreciated
9. Implications for improved understanding of stock structure
10. Improved understanding of the role of piscivores in estuaries

Enhanced Technologies

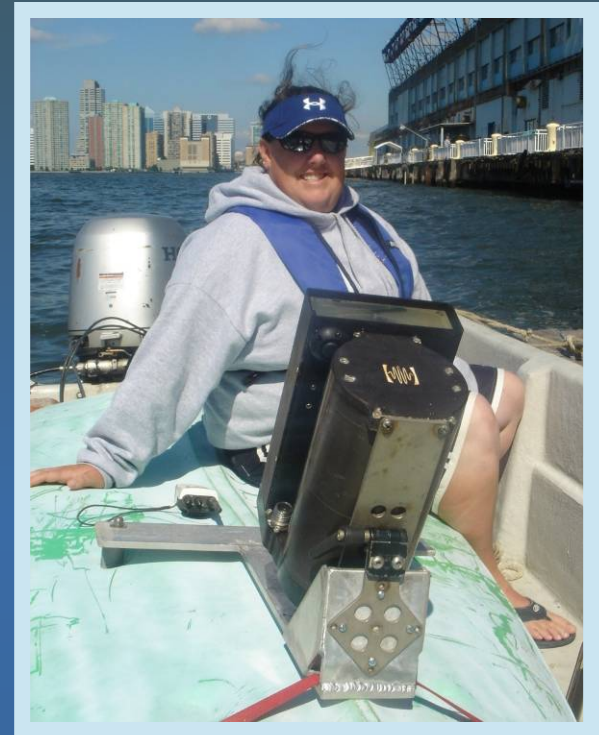
- High frequency acoustic video



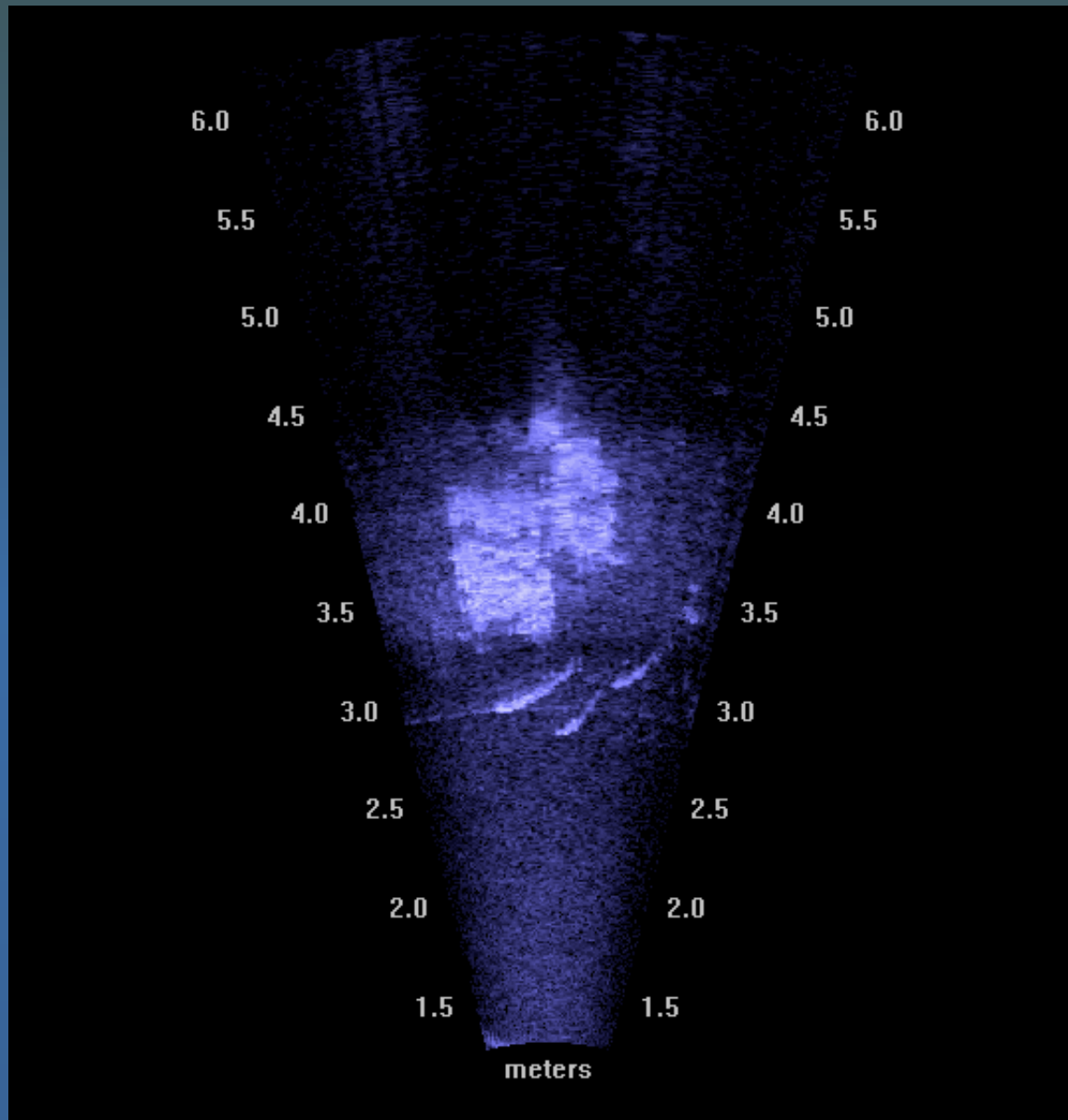
(Able et al. 2013, 2014)



High Frequency Acoustic Video



- Video-like echograms processed as movies
- Effective under a variety of conditions (e.g. low light, high turbidity)
- e.g.: Dual Frequency Identification Sonar (DIDSON)



What we now know

- Large piers have negative impacts on benthic juveniles of selected estuarine fish species
- Intense shading changes the distribution, reduces abundance, feeding and growth for juveniles of selected benthic fishes
- Fishes that seem less impacted by piers are those that are active at night
- Shallow water is important

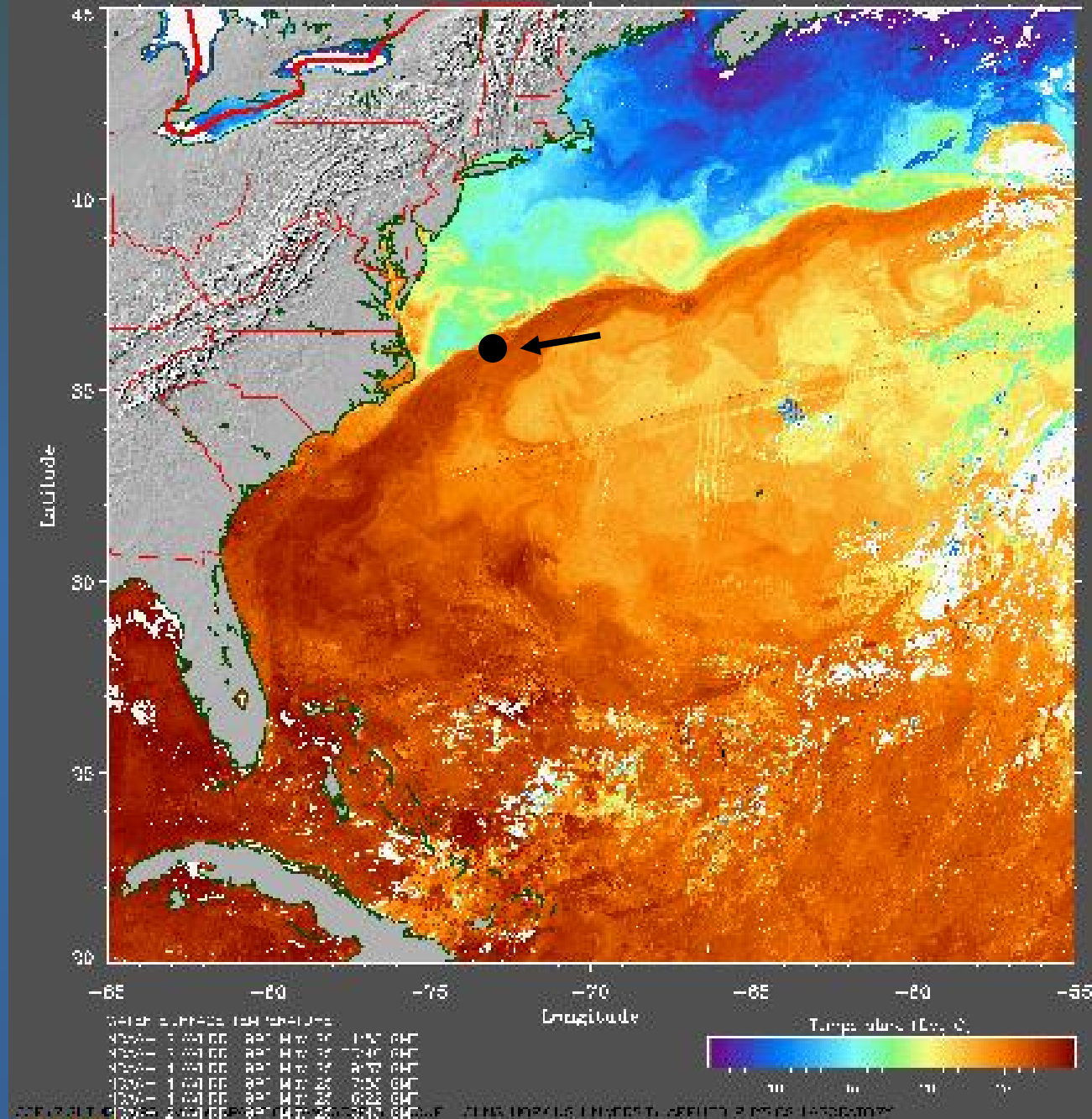
Climate Change Effects and the Value of Time Series

- 25+ year monitoring of weekly larval ingress at Little Egg Inlet in southern New Jersey



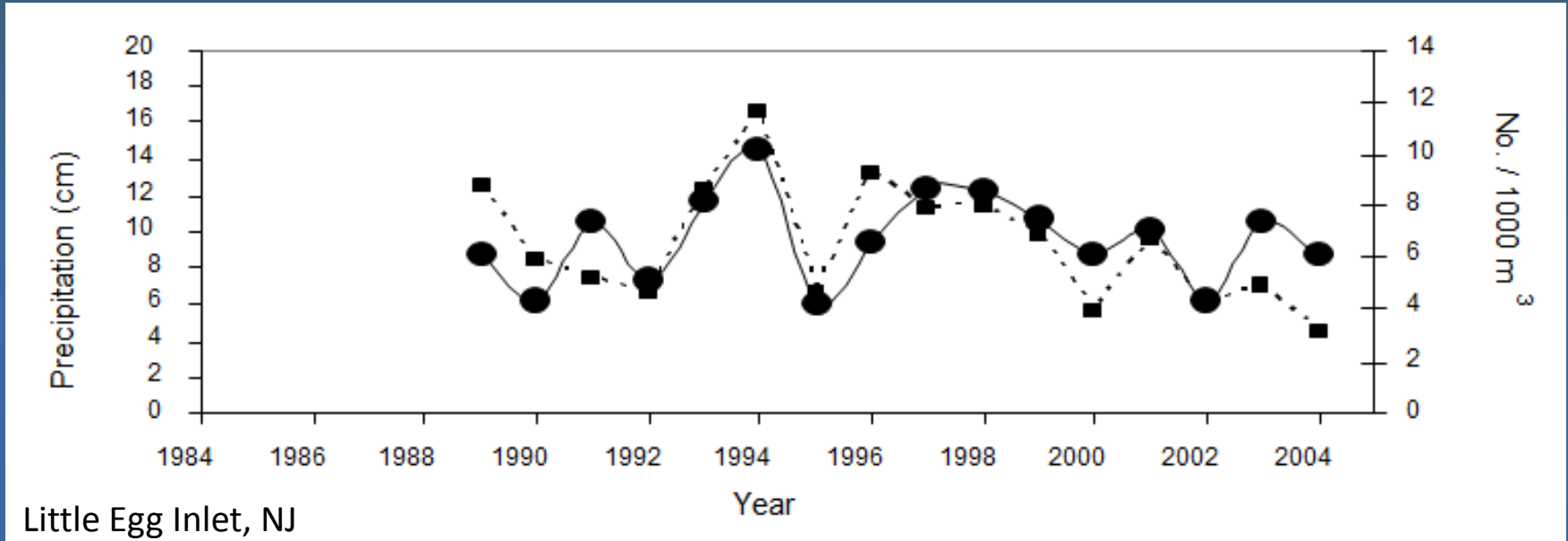
Climate Change at Primary Study Site

Relatively unaltered inlet and estuary



American Eel (*Anguilla rostrata*) Ingress

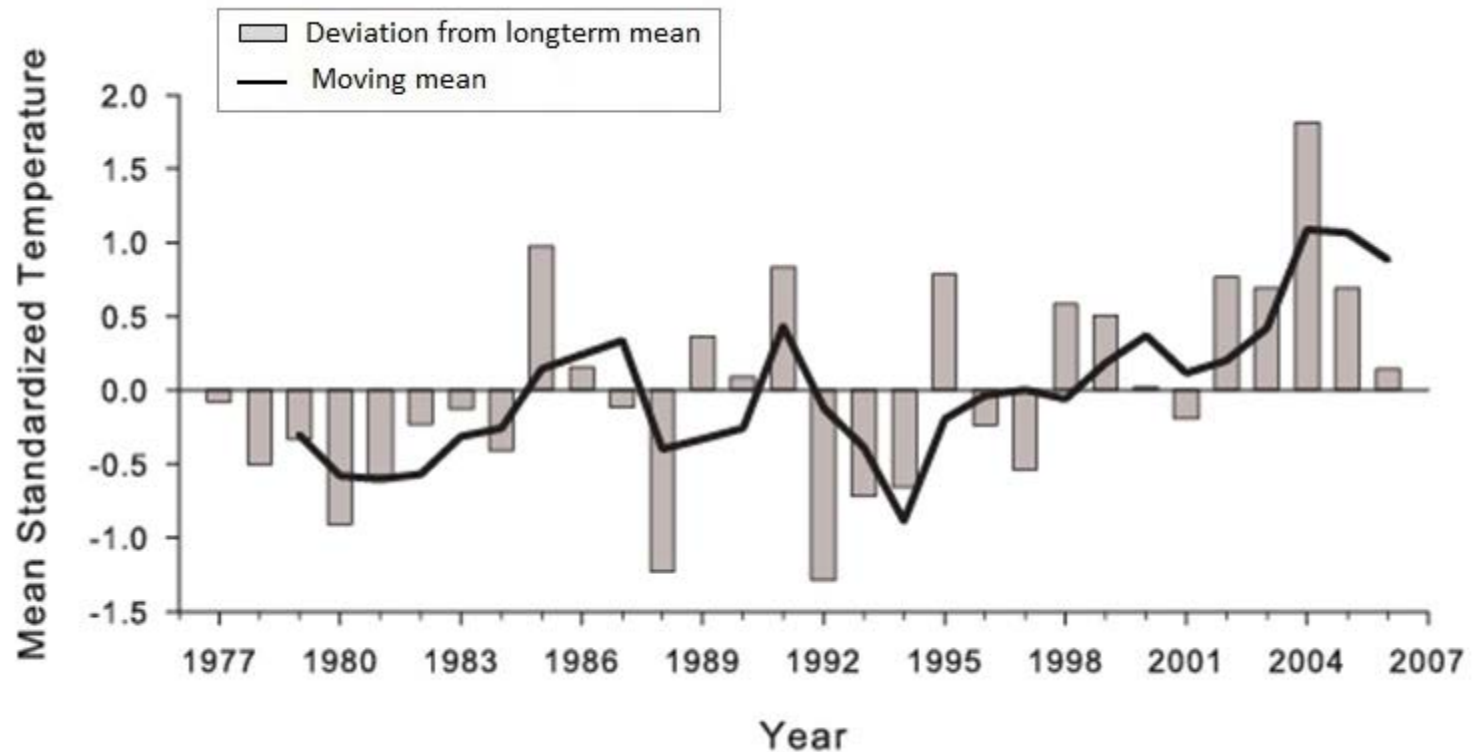
Winter precipitation and ingress magnitude



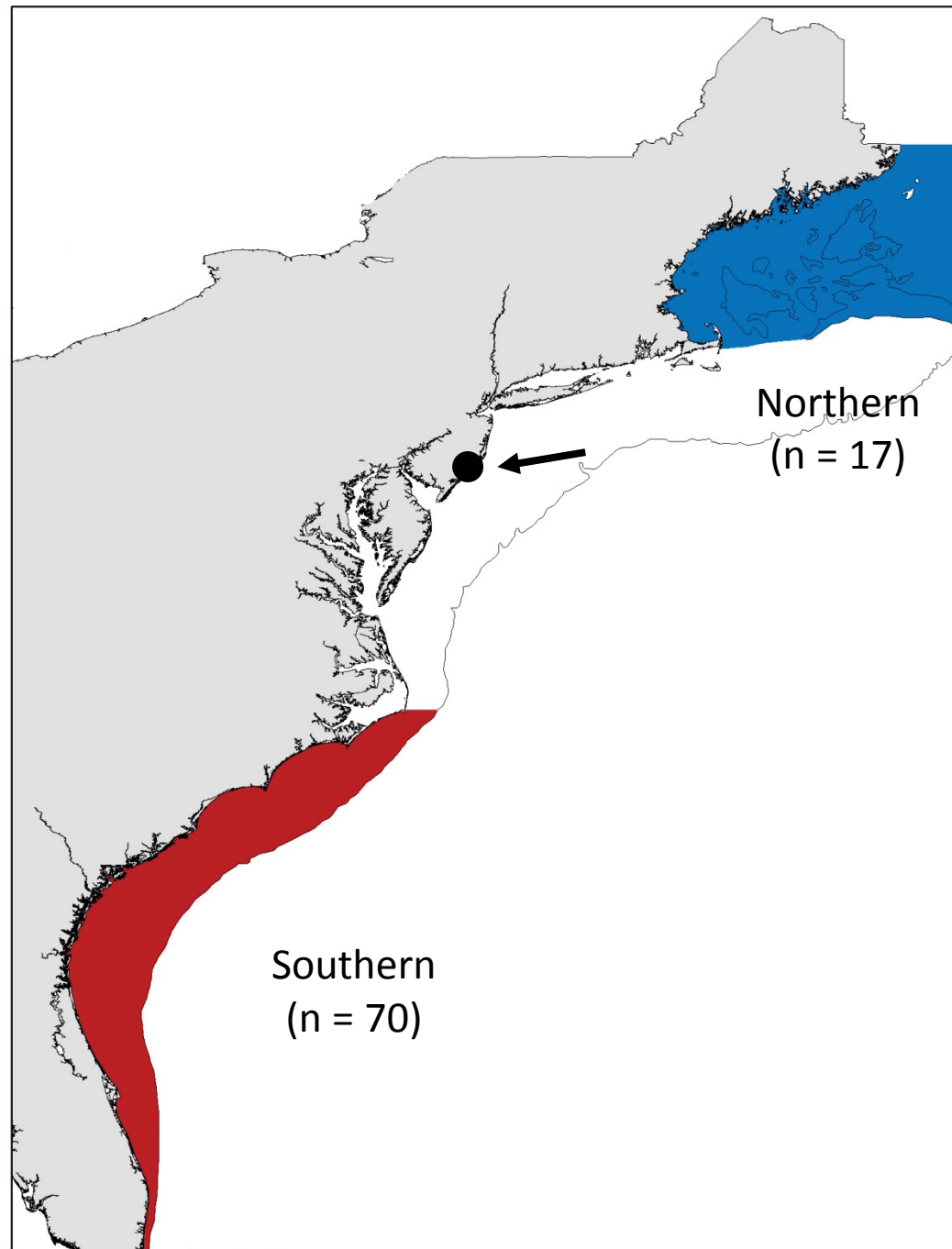
A close relationship exists between winter precipitation and abundance.

(Sullivan et al. 2006)

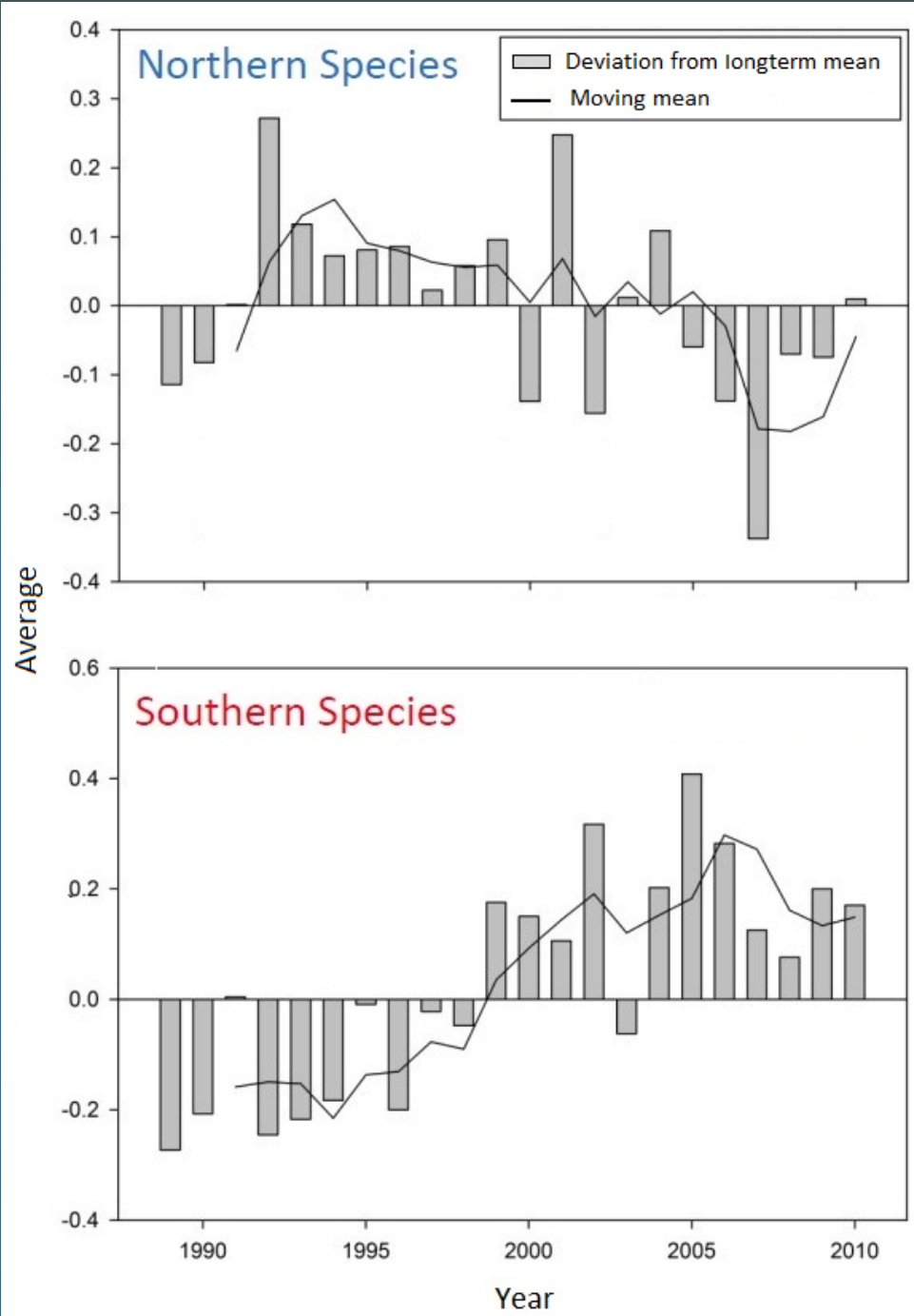
Long Term Trends in Great Bay Estuarine Temperatures



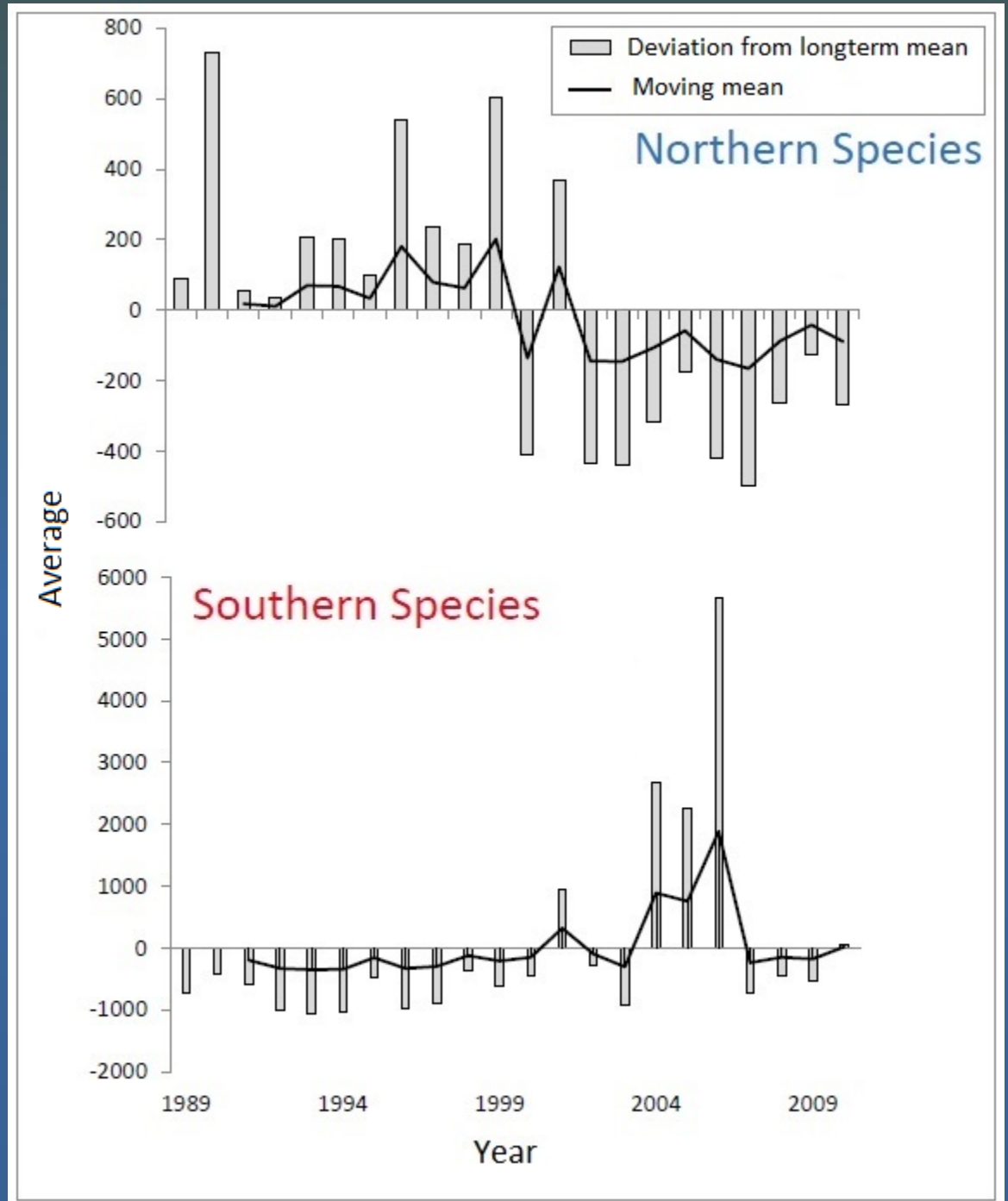
Sources of Larvae and Juveniles



Species Richness



Abundance



Preliminary Climate Change Conclusions

- Enhanced delivery of southern fish larvae in response to warming temperatures (warmer averages, milder winters)
- Decreased delivery of northern larvae
- Ecological significance of enhanced delivery of southern species
 - 1) More delivery but no survival (e.g.: expatriates)
 - 2) More delivery and greater survival (e.g.: Atlantic croaker)
 - 3) Increased diversity for selected groups (e.g.: gobies)
- Influence on habitat use?

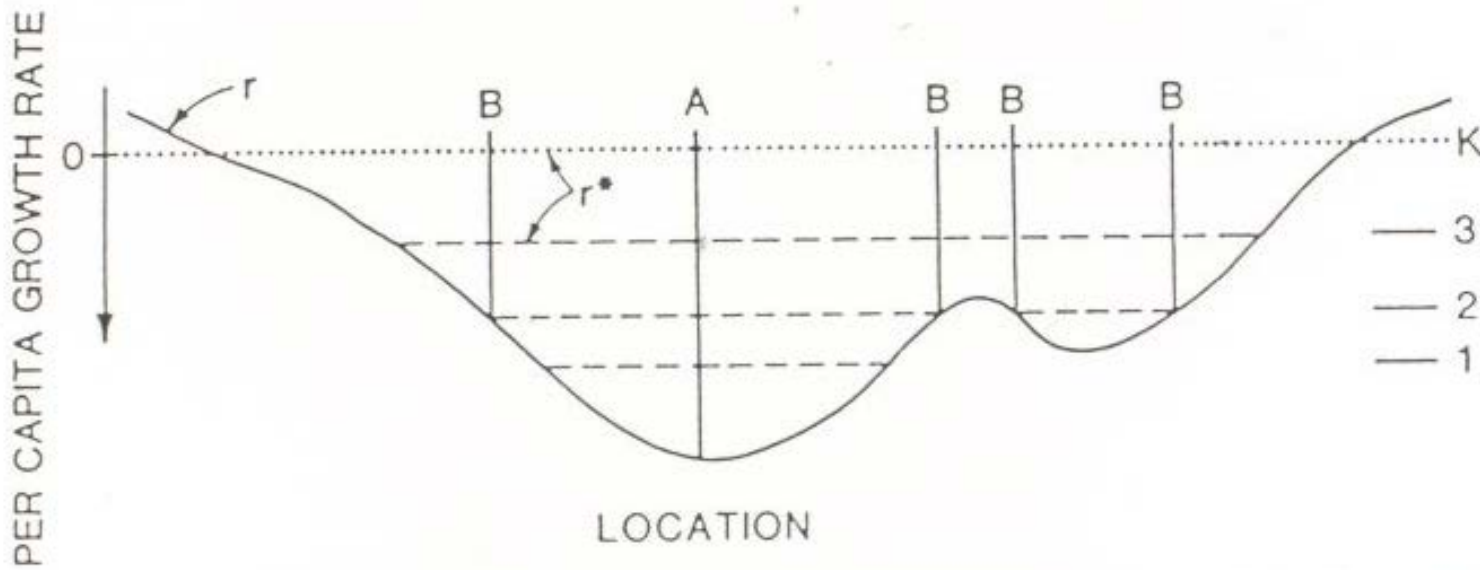


Figure 1.2 Transect through a continuous geographic fitness topography. A and B are the habitat types, and 1, 2, and 3 correspond to the total population sizes in Figure 1.1. Realized suitability (per capita population growth rate), shown by the dashed line, is equal in all occupied habitats due to the ideal free distribution. A population size of carrying capacity (K) is reached when growth rate becomes zero.

Conclusions

- We still lack sufficient, thorough understanding of the natural history of fishes
- The complex life history of fishes compounds the ability to understand habitat issues
- Shallow water is important, independent of structural habitats (e.g. SAV, marsh, etc.)
- Essential habitats occur throughout the life history across the seascape (e.g.: habitat mosaics)
- Climate change will confuse our ability to determine habitat importance
 - Habitats are changing
 - Fish distributions are changing

Questions?

