

Long Island Sound Study
STAC Meeting
November 16, 2007
Stamford, Connecticut

I. Welcome, Review of Agenda STAC Co-Chairs

- A. Larry Swanson thanks Corey Garza for his service and congratulates him on his new position at University of California at Monterey.
- B. Time to elect Co-Chair from CT. Volunteers from CT Johann Varekamp and Paul Stacy, From New York Bill Wise, and Anne McElroy. to come up with slate of candidates by January. Will elect Connecticut co-chair in February meeting.

II. Introduction of LIS STAC Fellows:

- A. James (Jamie) Reinhart: PhD student at UConn. From Connecticut, went to Kenyon College, got masters at Southern CT - studied attachment strength of blue mussel. Now at UConn Avery Point. Works with "fouling assemblages" as way of studying community dynamics. Invasive. Works with Bob Whitlatch. Presented past, present, and future projects. For LIS STAC fellowship project: looking at "impacts of increasing sea surface temperatures on the dynamics of Benthic Communities: Alterations in Competition and Invisibility."
- B. Elizabeth (Beth) Pillsbury: PhD Candidate at Columbia in American History, writing a history of fishing and contests over fisheries management around Long Island. Dissertation entitled "American Bouillabaisse: The Ecological, Political and Economic History of Fishing around New York City, 1870-1970." Master's thesis on battles between oystermen and the City of New York over sewage waste. Will write general history of oystering and regulations in LIS in late nineteenth century to aid in the effort to identify the former locations of natural oyster beds in LIS

III. Mark Tedesco: Updates

A. Introduces Louise Harrison - new FWS liaison to LIS

B. Two day Management Committee meeting October 17-18th, focus on climate change. Three goals:

1. Recommendations for what to think about for potential climate change impacts;
2. Identify priorities for next budget cycle; and
3. Commitments which would be a part of a 2008 agreement for what we want to achieve for Long Island Sound - try to bring some goals and objectives at the highest level for the long term.

C. Funding report: House approved in its bill \$10 million for Long Island Sound -- large increase. Specifically mentioned Stewardship initiative and restoration. Senate appropriations passed bill for \$2 million. We don't know what the situation is going to be. "Always enjoy working with that kind of uncertainty." Says that in near future, next research grant announcement and futures fund announcement will go out, and then enhancement.

D. Outcome of Management Meeting

1. Much support to explore: extractive techniques to accomplish nutrient removal - Using bio production (like shellfish and sea grass) to remove nutrients.
 - a) Charlie Yarish talks about the limits of sewage engineering solutions giving funding available. Importance of looking at new technologies in nutrient removal - which are not as expensive as they have been. Wants to bring together a workshop to look at "nutrient removal technology" which will address science and the socio-economic influence. Want LIS back on the cutting edge of technology. Will be calling on STAC for suggestions for the workshop. Workshop will take a Sound-wide approach. Wants to compare to Chesapeake where they have similar kinds of problems and are using shellfish and other solutions to address nutrient removal.
 - b) Art Glowka - questioning worth of reducing nitrogen levels.
 - c) Mark Tedesco acknowledges public health concerns of growing shellfish in contaminated waters but points to efforts of New York State which is using ribbed mussels to complement engineering technologies in Jamaica Bay
 - d) Process of reevaluation of the TMDL - what are the limits to nutrient control.
2. Expand some sentinel monitoring points, like Millstone.
 - a) Charlie Yarish: Management Committee feeling that Millstone monitoring program is a model effort in LIS. Want to establish parallel monitoring program in Western Long Island Sound, which is absolutely lacking. Wants a parallel rocky shore monitoring program as well as a salt marsh monitoring.
3. Summary of the meeting will circulate. Talked about coming-up with a synthesis document to think about climate change.

E. Water Projects Bill: Money for Army Corps projects. \$25 million for oyster restoration in Long Island Sound. Bill has not much detail but likely clear direction for where it will be spent, and even though it has passed, Corps will still have to get approval for specific projects.

1. This connects to a conversation at the Management Meeting, where there was discussion of how to pull the Army Corps back in to LIS efforts.
2. Bill requires cost sharing. Louise Harrison thinks its 75/25.
3. Lot of money in bill for flooding projects in Westchester County - that can be good or bad for the ecosystem of LIS. LISS wants to be involved and influence direction of where money is spent and how projects will develop.

IV. LISS STAC Fellows

A. Charlie Yarish: Long Island Sound fellows are supposed to work closely with the STAC co-chairs. A couple of years ago the SeaGrant programs were asked to be the agencies that governed funds. Then, the STAC co-chairs excluded from fellows selection process directly. Decision left to SeaGrant directors. Both STAC CO-Chairs upset that they don't have the opportunity to make that final decision. Want to bring the selection of the fellows back under the direction of the STAC Co-Chairs.

1. Larry Swanson says concern of SeaGrant was that there might be personal involvement in the selection of a LIS fellow. Larry can't think of any situation where the supervisor is totally excluded from the selection process. "our recommendation is to seek an alternate way to pass money to STAC fellows"
2. Mark Tedesco gives background. Says there are three points:
 - a) EPA's requirements: EPA has clear rules says that if someone belongs to an institution that a proposal is coming from they can't be on selection committee. This rule is in place in order to avoid appearance and perception of conflict of interest.
 - b) Through SeaGrant situation is a little different: we provide an agreement to SeaGrant which provides agreement with fellows. We have grantor/grantee relationship with SeaGrant which has own policies about the selection process of applicants. Says that the co-chairs couldn't participate if the student is from their university, but that they could make a recommendation.
 - c) Mark Tedesco says that co-chairs are not a direct supervisory role which would mean that the fellows would be directly working for chairs. Rather fellowship to support young scholars who are conducting relevant research. Fellows role is to support STAC committee, taking notes, etc. and to write a report at the end of the fellowship that ties into their research and into the work of the STAC, some of the reports have been very useful and interesting for the STAC
3. Charlie Yarish says that initially STAC Chairs had a lot more control. Now SeaGrant can make own decisions without accountability.
4. Larry Swanson underscores this accountability issue. Says that Co-Chairs are accountable for fellows, they must approve and review

minutes. SeaGrant calls upon Larry and Charlie to manage the fellows, requiring them to get the minutes from fellows/etc.

5. Mark Tedesco: not opposed to changing the way that this position is administered. EPA recently changed the way it did its selection process because of deep criticism of the way it did its selection process.

6. Bill Wise: "Is this being raised as a matter of principle? Or is there an on the ground problem?"

7. Larry Swanson says that the problem is gone for 2007/2008 but the problem will re-arise for next year.

8. Mark Tedesco: Just to be clear "outcome this year was spectacular"

9. Larry Swanson- "But, let me be frank, if it were up to SeaGrant, one of this year's scholars wouldn't have been considered eligible on basis of background."

10. Roman Zajac - thinks that the bucks stops at the co-chairs. Very simply the chairs should be part of the selection committee. Need to trust that the co-chairs will be objective.

11. Carmela Cuomo- Do we need to do this as a pass through SeaGrant? Frankly, SeaGrant directors have same problematic relationship to students and institutions.

12. Larry Swanson- SeaGrant co-opted Process

13. Johan Varekamp -- need to say that this is unacceptable to co-chairs of STAC

14. Anne - need to broaden the involvement of the STAC

15. Carmella - maybe there is a way to conduct the review process as a committee of STAC

16. Mark Tedesco- do not need to go through SeaGrant. To clarify, SeaGrant has competition requirements that we need to follow. Then question is whether or not we want to use a different mechanism. EPA rules would mean that members of a particular institution couldn't be an explicit part of the competition.

17. Bill Wise- Sounds like there is dissatisfaction with the way system is working but suggests it might be easier to bring internally within STAC.

18. Anne McElroy- Says that even though money passes through SeaGrant it doesn't that they should be in charge. We should have subcommittee, involving co-chair. If conflict, people leave the committee

19. Dave Simpson- how is this different from EPA office hiring? Mark - according to EPA competition requirements co-chairs couldn't be on selection committee.

20. Bill Wise-different on advising office on applicants than handling this internally

21. Milan Keser- what would the problem be if we had a committee to do this and had people with conflict of interest leave room.

22. Mark Tedesco- sounds like people want to expand the role of the STAC in reviewing proposals. Recommendation would go to SeaGrant who would make the decision.

23. Milan Keser- why do we need SeaGrant?

24. Nancy Balcom- The way I understand it is that Seagrants find it easier to provide funding within the state. If SeaGrant is allowed to continue in selection process, would like to clarify the process.

25. Mark Tedesco- SeaGrant has provided a service to LISS STAC. It has been a valuable service that has really helped us, otherwise we would really be tripping and stumbling. Need to clarify the way the STAC wants to provide adequate involvement in terms of the funding requirements of EPA.

26. Mickey Weiss - Lots of opportunity of conflict of interest in funding of LIS - brings into question the checks and balances in how we award funding. Triggered for his mind, that he doesn't know what those checks and balances against conflicts of interest take place within our processes.

27. Charlie - Says process is clear: committees meet, people with conflict of interest exclude themselves.

28. Charlie Yarish- let's form a committee to come up with a recommendation to circulate recommendations through STAC committee.

a) Bill Wise and Johann Varekamp volunteer to head up the committee and make recommendation back to the STAC

V. RFP Recommendations

A. Corey Garza - We are planning on having an RFP: need recommendations about areas of what should be considered for RFP.

B. Charlie Yarish- Would like the other funding committees who grant research projects in LIS to have the RFP recommendations of the STAC.

VI. Marilyn Weigold, Pace University.

A. Larry Swanson introduces Marilyn Weigold, a historian who has written extensively about the history of Long Island Sound. Gave presentation to the CAC where it has received rave reviews.

1. Winter of 1933-34 - bays on LIS froze for almost two weeks.
2. Image of Adrieen Block's ship - 1614 discovery of LIS. Came to New World to trade with Indians who felt cheated by Block. Indians burned his ship. Block's crew built a new boat - The Restless, which they sailed up through Hell's Gate through LIS. Went up CT River and eventually up to Cape Cod, where block hitched a ride back to Europe.
 - a) Original vessel discovered in early twentieth century during subway construction and again in 1960s during World Trade Center construction -- this time an artillery piece from the Dutch company that sold munitions to Block found.
3. Discussion of how native peoples used Long Island Sound as a nautical highway.
4. Captain John Underhill who with John Mason lead fight against Pequot's in Pequot War - at conclusion of the war, the English determined that the CT Coastline was "safe for settlement."
5. Rye Ferry began operating from 1739 -1938, between Oyster Bay and Rye.
6. Slavery - part and parcel of lives of colonists in LIS area in 1600s. European newcomers made more intensive use of upland for agriculture than did Indians and utilized slave labor to do so.
7. European Settlers used sound as a nautical highway.
8. Steady stream of refugees of Long Islanders from LI to CT during revolutionary war. Throughout the war, whale boat raids launched from CT shore to British controlled Long Island. British returned favor - attacking and burning villages and cities in CT.
9. Steamship introduced in long island sound in early 19th century - trip from NY to New Haven 11 hours, considered very good time.
10. By mid-19th century, very large vessels on LIS. Shows image from one of many accidents on Long Island Sound. The Lexington explosion - terrible accident. Since many of the people who died on the ferry washed ashore, people from city came to Long Island and literally mugged the dead bodies. Shirt manufacture gathered up unburned bails of cotton to make "Lexington Shirts."
11. Shows image of the steamboat New York: new class of steamboat.
12. Glen Cove used to be called Mosquito Cove until rise of tourism.
13. Fall River line 1847-1947 - number of its ships comparable to the lovely cruise ships of today in their luxuriousness.
14. 1880 - Commuter steamship caught fire on East River not far from where the General Slocum went down in 1914. Unlike General Slocum, the commuter ferry was able to beach and most people waited until the ferry beached till they got off. Regular commuters took up collection and presented the captain with a gift for their gratitude. Captain died within year because of burns.
15. Long Island Railroad - 1830s conceived by Brooklyn Business men who had in mind a regional transportation network that linked NYC with Boston. System in place in 1844. Passengers traveled by ferry from Manhattan to LIRR to Greenport to ferry through Peconic Bay to Stonington at Stonington 4.5 hour rail journey to Boston. 11.5 hours. Brooklyn backers felt that no one would spend money to build the

bridges over rivers. Four years after LIRR inaugurated its service, rail line between New Haven and New York completed. Let's face it, an all rail journey preferable to one that required a 2.5 hour boat ride. By 1850 - LIRR declared bankruptcy for the first time. Financial backers saw pine barrens on LI as cheap fuel for the railroad.

16. Port Jefferson an important boat building center.

17. Mystic, New Haven, New London, Bridgeport and Cold Spring Harbor, Greenport and Sag Harbor: sent out whaling boats

18. Farming and part-time fishing mainstay of region's economy.

19. As nineteenth century went on catching and processing of menhaden became ever more important industry around LIS. Oyster industry very important on North Shore of Long Island and in CT.

20. On Long Island - absence of waterways, so little industry which was dependent on water power

21. Image of Boss Tweed - who established a fishing and dining club in the 1860s on Pound Island off Greenwich. Boss Tweed owned the Rye Ferry for a time.

22. Shows image of PT Barnum mansion.

23. Gilded Age Architecture: Long Island's Gold Coast saw development from late nineteenth century to 1920s, development of more than 600 estates.

24. If you were middle class, you could afford a vacation at a Sound shore resort like Sea Cliff: would travel to the top of the cliff on a cog railroad

25. After WWI - cars made day trips possible and popular.

26. Greenwich to Oyster Bay ferry one of two lines owned by the same company.

27. Moses extended the Long Island Expressway. He wanted to have a bridge from Orient Point with one leg to New London and another to Rhode Island

28. 1930s - highways brought tourists to northfork. Also decade of the terrible 1938, north shore of LI hit less than the South Shore of Connecticut.

29. WWII gave boost to the economy of CT and LI.

30. But until Long Island Expressway completed, much of Suffolk County remained open. Not until the 1990s till the portions of western Riverhead started to see condo and housing developments growing up. In Suffolk County - very active farm land conservation program.

31. Agri-tainment has helped farmers stay in business on North Shore.

B. Question and Answer Session with

1. Bill wants to know whether Native Americans had technologies to catch menhaden. Marilyn recommends archivist at Foxwoods. Westchester County - Trailside Nature Museum has a decent collection on Native Peoples. Also, Museum of the American Indian. Larry says that he knows Indians in Mobile, AL took advantage of hypoxic events. Bill - neither rampaging bluefish or hypoxia as present in the spring when Native Americans were fertilizing their lands.

2. Johan - asks whether or not the charred timbers in lower Manhattan were actually the Tiger. All of the items are at the Museum of the City of New York. Connect them to see what documentation they have. Unrest replica currently being built.

VII. Nominating a new STAC Member, HydroQual Representative

A. With John St. John's retirement from HydroQual, Inc. his alternate, James Fitzpatrick becomes the new STAC member representing HydroQual, Inc.

VIII. LISICOS and IOOS Update

A. James O'Donnell unable to attend.

B. Todd Fake and Grant McArdle in his place. Todd Fake Gives Presentation of the Long Island Sound Integrated Coastal Observing system.

1. History and funding of the LISICOS Project
 - a) 1999 MY Sound: EPA (EMPACTS and LISS)
 - b) 1999 FRONT: NOPP (ONR & NSF)
 - c) 2004 LISICOS: NOAA, NOS
 - d) 2005-2006 LISICOS: NOAA, CSC
 - e) LISICOS: NOAA CSC /IOOS through MACOORA and NERACOOS, State of CT
 - f) 2008 LISICOS: NOAA IOOS (MACOORA & NERACOOS)
2. To learn more and obtain data, see www.LISICOS.uconn.edu.
3. LISICOS consists of buoys, data system, model, codar
4. Process Studies:
 - a) Production (Kremer)
 - b) Respiration (Kremer & Fitzgerald)
 - c) Grazing (McManus)
 - d) Sinking (Dam)
 - e) Advection and mixing (O'Donnell)
5. Benthic Respiration: Robust benthic in situ flux chambers (developed by UCONN Marine Sciences) equipped with sondes were used to assess sediment oxygen demand (SOD; aerobic uptake).
6. Western Sound DO trends monitored with buoys, observations show magnitude of ventilation and variability of mixing. These observations complement DEP survey data which defines the spatial extent of hypoxia and with measurements can define rate of decline and frequency of ventilation.
7. When the wind is blowing from the NE re-stratification takes longer and allows mixing to persist longer allowing DO to mix down. Fresh water from the East River on the surface. Salty water on the bottom. Net transport toward the east. When wind blows from NE the transport on the surface to the eastward transport of fresh water is slowed and the mixing period is increased allowing DO to mix downward.
8. SWEM was developed by HydroQual Inc. and is the basis of LIS TMDLs
 - a) 50% of new 24 Processor parallel computer system
 - b) Implementation of SWEM
 - c) Development of Visualization and database tools
 - d) Replication of HYDROQUAL results for 88-89 & 94-95
 - e) Quantitative analysis of sensitivity
 - (1) to parameter choices and to boundary forcing

- f) Simulation of other years
- 9. SWEM: Transport and mixing rates from a circulation model that was “tuned” and “validated” with sea level, current meter and salinity and temperature surveys. Exchanges between model grid cells saved and transferred to water-quality model (RCA). 25 state variables & 125 parameters
- 10. NOAA IOOS/NOAA CSC – represents a new way of doing business
 - a) Conducted IOOS FFO: 23 Regional IOOS Development Grants: \$14,943,876
 - (1) 11 FA1: Regional Coastal Ocean Observing System (RCOOS) Development
 - (2) 8 FA2: IOOS Applications and Product Development
 - (3) 4 FA3: Regional Data Management and Communications (DMAC) Guidance and Process

b) NOAA wide BAA: \$2,350,000

c) 3 cross cut capacities

d) Third year of RA grants

11. Awarded \$650,000 for 2008. President has requested \$14 million to be allocated to IOOS. House approved \$14 million and senate has requested \$47 million for IOOS. \$18 million of which is already allocated. What is left will be available for competitive regional observation system. Likely \$11.5-29 million. LISICOS funding from that group

a) A basic level of funding for LISICOS (~650,000/yr) has been approved by the NOAA competitive process for 2007-2009

b) Budget realities mean that there are more commitments than appropriation. Seeking STAC support in order to maintain and improve the system. Wants letters of support for the program and a listing of priorities for observations.

c) Summary:

d) LISICOS - Development of a sustained capability to observe LIS ecosystem

e) SWEM - Current management plan for TMDL

f) Observations and models will improve understanding of summer hypoxia and management regulations

C. Q and A:

1. Charlie Yarish reminds group that this project originated as a research grant to Jim O'Donnell and others from LISS and STAC.

2. Mark Tedesco about future money questions.

3. Milan Keser - Puts formal motion on table, seconded by Johann Varekamp to support LISICOS with a letter from the STAC. Unanimous STAC vote in favor of motion.

4. Anne McElroy asks whether the Ferry project and the buoy projects are integrating data. Todd says that it is a goal to integrate the data

5. Roman Zajac asks whether the current pattern of data is for surface, Todd Fake and Grant McArdle says that it is, though they are getting other data. ADCP data will be available online.

6. Data is replication of what hydroqual did. Just to say that we could do better if we understand physics better

7. In response to Johann Varekamp, Grant McArdle says water column respiration is much higher and that the rate of decline is non steady. Without this hypoxia would happen much more quickly. Mixing occurs during weather driven wind events. No extensive studies to date on vertical column mixing rates.

8. Gary Wikfors - need TMDL on Wind. Relationship between SWEM Model and TMDL. How is this effort serving TMDL effort. Grant McArdle says that is part of what they need to talk with hydroqual about.

9. Mickey Weiss - CAC very interested in this model. Under impression that the LISS Community would help formulate the questions would be posed to the model. Asks Mark Tedesco - will that happen?

(1) Grant McArdle - one of the things they have seen from data during ventilation events is correlation of which way the wind is blowing. Decadal scale - some of the improvements in Long Island Sound may require us to move into a different wind cycle. Emphasizes the need for

long term data sets. Highlights Management's need to be patient. May not see reduced TMDL effects because of changes in weather

(2) Mickey asks whether we should be questioning validity of TMDL given long term trends.

(3) SWEM model as implemented shows that mixing rates artificially stepped down.

10. Mark - any more thought on disconnect between production rates and respiration rates. Jim Kramer's work. Grant doesn't know status.

11. Mark - responding to Mickey Weiss. This is not an open contract for UCONN to accept "what if" scenarios from public. Need to do an evaluation and assessment from the bottom up.

12. Larry Swanson - TMDLs chosen without regard to physical processes. Hope that we aren't going to use this as an excuse for why the TMDLs are not delivering what was promised a decade ago

13. Art Glowka: Have you got any visibility in there? Todd Fake: not currently measuring that, but do have turbidity.

IX. Nancy Seligson CAC Meeting Update

A. Wants to see 2008 agreement happen.

B. CAC had presentation by Leonne Huddy who ran a public perception survey for CAC. Very few people know what LIS is and where it is. All though it should be cleaner, but didn't think they could do anything. Reminds us that the general public is not so aware of what is going on. Need to bring LIS to the public. We want them to start identifying their place, their lives with LIS. Like they do in Chesapeake and Puget Sound. When you bring Governors together for 2008 agreement this will be a big public event. Also anniversary of Adriean Block in LIS - opportunity for publicity.

C. Anne asks whether the poll showed change over time -- are LISS efforts successful. Nancy says it was shocking and a wake up call to CAC. Need to better promote Long Island Sound.

D. In other areas, it is a history and culture that is incorporated into how people think about their waterways, their sounds.

E. Bill Wise asks about watershed boundary signs? Nancy Seligson says no - but they have been working toward it. Says congressional representatives including Chris Shays were excited by the idea. Says they are a very, very powerful tool for LIS watershed area.

F. Charlie Yarish asks that if you have any suggestions for CAC to send them to Nancy Seligson and Charlie Yarish.

X. Nancy Balcom, Connecticut SeaGrant

- A. LIS Interstate Aquatic Invasive Species update. With Kari H and Alexa Fournier
- B. Prepared for New England Interstate Water Pollution Control Commission, EPA Long Island Sound Study, States of Connecticut and New York
- C. Worked with Academic, Industry, NGOS
- D. Planned follows requirement of ANS task force procedure.
- E. Process Objective -- Develop an interstate Long Island Sound Aquatic Invasive Species (AIS) Management Plan that:
 - 1. focuses on the prevention and control of AIS in a cost-effective, environmentally-friendly manner
 - 2. provides a comprehensive and cohesive framework for management, education and outreach, and research addressing AIS issues in Long Island Sound
 - 3. facilitates interstate and inter-agency cooperation to focus limited resources on mutually-identified and agreed-upon priorities
 - 4. fosters a coordinated, rapid response effort to prevent or combat new introductions of AIS in Long Island Sound
- F. Lists the LIS AIS Working Group, includes Academic Institutions, State Agencies, Regional/Federal Agencies, Non-Governmental Organizations and Industry.
- G. Structure of Draft Plan:
 - 1. Problem definition and ranking
 - 2. Existing authorities and programs
 - 3. Goal and objectives
 - 4. Objectives, strategies, and actions
 - 5. Implementation table
 - 6. Program monitoring and evaluation
 - 7. Appendices
- H. The goal of this effort, as developed by the LIS AIS Working Group, is that the States of Connecticut and New York, in collaboration with relevant federal agencies, academic institutions, and non-governmental organizations, will adopt and implement the LIS Interstate AIS Management Plan, in order to:
 - 1. Prevent the introduction of new aquatic invasive species in Long Island Sound
 - 2. Minimize the ecological, socioeconomic, and public health impacts of existing aquatic invasive species in the Long Island Sound estuary
- I. Management Classes
 - Class 1: Potential AIS Invaders, Impacts Expected to be Severe (Veined rapa whelk, Chinese mitten crab, Caulerpa)
 - Class 2: Newly Identified Species (Lionfish, European flat oyster, Man'O'War)
 - Class 3: Established Species, Significant Impact, Some Practical Control Techniques Available (Mute swan, Phragmites, Purple loosestrife)
 - Class 4: Established Species, Significant Impact, No Known Effective or Practical Control Techniques Available (Green crab, Asian shore crab, Didemnum)
 - Class 5: Established Species, Impacts Unclear (Porphyra sp.)
- J. Objectives: Coordination, Funding, Prevent Future Anthropogenic Introductions, Detect and Monitor, Initiate Risk Management, Education, Research, Legislation and Policy
 - 1. Coordinate AIS-related activities of relevant state and federal authorities for Long Island Sound.

2. Establish a coordinating committee
 3. Coordinate with Connecticut and New York State ANS Plans, and develop risk assessment, management, and policy procedures
 4. Establish an annual work plan and the means for evaluating progress
 5. Coordinate regionally
- K. Funding: Secure adequate funding and staff to implement AIS management objectives for Long Island Sound. Identify and secure funding
- L. Prevent Future Anthropogenic Introductions into LIS: Assess introduction risks and minimize introduction through: marine commerce, marine recreation, education, research, live seafood trade, habitat restoration
- M. Detect and Monitor new occurrences, range expansions, and existing populations of AIS in LIS.
1. Strategize early detection, monitoring, and assessment
 2. Standardize a survey protocol
 3. Implement a monitoring program
 4. Create library of existing AIS
 5. Establish an information service
- N. Initiate Risk Management for all new invasions in Long Island Sound and for existing AIS in LIS as appropriate: Develop / adopt rapid response protocols; Support rapid response; Control established AIS.
- O. Education: Increase public awareness of AIS in Long Island Sound through education and outreach.
1. Facilitate access to AIS resources / information / contacts
 2. Promote AIS awareness through education and outreach
- P. Research: Identify research priorities and potential funding sources for AIS in Long Island Sound. Promote AIS Research. Identify existing research efforts.
- Q. Strengthen enforcement of existing regulations, revise regulations as needed, and strive for future AIS-related legislation or regulations that are comparable in Connecticut and New York.
- R. Implementation
1. Report on past 2 years, look forward 3-5 years
 2. For each action / task, must try to identify its: Priority, Funding, FTE
 3. Implementation Table: Task Name, Funding Source, Implementing Entities, Cooperating Organizations, Current and Planned Funding (\$/FTE)
- S. Priority Actions:
1. Establish a LIS AIS Coordinating Committee, with designated co-chairs from the States of Connecticut and New York
 2. Coordinate with Connecticut and New York State ANS Plans, and develop risk assessment, management, and policy procedures
 3. Establish an annual work plan
 4. Implement a monitoring program
 5. Facilitate access to AIS resources / information / contacts
 6. Seek funding for implementation
 7. Minimize introductions through marine commerce, marine recreation, education and research, live seafood trade, and habitat restoration
- T. Public Input Wanted by 11/30: www.seagrants.uconn.edu/LISINV.HTM, Nancy.Balcom@uconn.edu OR Nancy Balcom, Connecticut Sea Grant, University of Connecticut, 1080 Shennecossett Road, Groton CT 06340
- U. Q and A

1. Bill Wise asks whether document looks at long term trends like climate change. Says document includes what would happen with temperature increase
2. Nancy asks if the report has suggestions about how to battle invasives - like what just happened in California. Nancy Balcom says that we need to develop a plan for a rapid response when one is needed.
3. Charlie Yarish says that something like this rapid response could come out as a part of the governor's agreement. This is something that needs to be agreed upon by both states
4. Mark Tedesco - commends Nancy and the group on the good draft. Couple thoughts: we really do want to have the approval of the plan part of the 2008 signing agreement. One, benefit of having more clearly defined roles for coordinating groups. Two, general comment to STAC, seems that monitoring will be a tough thing to get off the ground. Should be a part of the monitoring plans for sound. Maybe it should be explicitly recommended. Great that we had support for LISICOS initiatives.
5. Nancy Balacom says that Jim O'Donnell asked her to ask the states and provinces what kinds of support they need for IOOS implementation.
6. Larry Swanson says that most of the IOOS is instrumentation driven.
7. Nancy Balcom suggests that the cleaning of coast guard buoys as a place for easy monitoring.
8. Charlie says that what we need to do is comment on the DOCUMENT and the list of recommendations. Thinks that there are some recommendations coming out of this and the management committee meeting both that point to the importance of establishing clear monitoring programs
9. Larry Swanson -says this is coming out at a great time. It can be introduced as a part of the ecosystem based management plan.
10. Louise - wants to reiterate point that we need to look at the plan and give Nancy feedback. We all need this plan. Louise says that New York DEC has vacancies for invasive species. Only one in state and who is not allowed to work on aquatic species. Need anyone who has interest to give feedback to Nancy.

XI. Corey Garza: Long Island Synthesis (Document Attached)

- A. Charlie Yarish says that Corey Garza will maintain involvement in synthesis project as part of his work plan at University of California.
- B. Corey handing out outline of what everyone agreed to during the workshop in the beginning of the summer.
- C. We had selected a number of themes. Management issues section is going to be critical.
- D. Larry Swanson, Charlie Yarish and Corey Garza are heading up effort. Identifies section leaders (see attached document). Asks section leaders if there are any updates.
- E. Charlie says that they are working with publishers. Says Narragansett Bay study leaders were able to get more than a thousand copies to libraries and schools around the state.
- F. Anne McElroy - two or three schools of thought about appropriate venue. Many like the book. Others said it needed to be online
- G. Charlie Yarish says that each of the publishers have said that the sections will be available online-- "this is a digital world"

H. Larry Swanson - says that in the themes section there should be the underlying current of climate change, which should be incorporated into all the chapters. Corey says that it could be put in outline.

I. Larry asks what the current funding status is: \$39,000 and change. For publishing costs and honoraria. Need to do fund-raising to make up the difference.

J. Bill Wise- Asks whether or not the mixing of money makes it difficult for publishing. Charlie Yarish and Corey Garza say no.

K. Louise Harrison asks whether it would be appropriate to ask governors to purchase one copy of the synthesis for each library in the state.

L. Nancy Seligson says CAC is also thinking about asking for marine education in the curriculum and this would incorporate nicely.

M. Carmela Cuomo asks how much additional funds will be needed.

N. Mark Tedesco says that the number was determined on the basis of Narragansett Bay, but we have more authors.

O. Charlie Yarish says that what is critical is for chairs to get info to Corey so that Charlie and Larry will have information for when they sit down with the publishers.

P. Chapters will be sent out for peer review.

Q. Anne McElroy - this is a scientific volume. There can be spinoffs for children, public, politicians, etc.

R. Larry Swanson- this is a point for the CAC. CAC has a much greater sense of what is marketable for school kids, etc.

S. Johann Varekamp - seems to him that its hard to motivate to write until there is a contract.

T. Charlie Yarish- once we get a publisher we will develop timing, guidelines, etc. Charlie's goal is to get a publisher in Dec.

XII. Art Glowka has YSI 85s -- good for education purposes to sell. For sale "as good as gold"

XIII. 2008 STAC meetings: February 22th, June 20th, November 14th.