

JACQUES COUSTEAU
NATIONAL ESTUARINE
RESEARCH RESERVE

UPCOMING EVENTS

August 2nd:

Creature Feature -
'Horseshoe Crabs &
their Friends'
9:30-11:00 am

August 9th:

Creature Feature -
'Odd Octopus &
Strange Squid'
9:30-11:00 am

August 11th:

Summer Fun -
'Critter Catch-
Seining'
10:00-11:00 am

August 31st:

Ecological Evening -
'Things that Go
Bump in the Night!'
7:00- 8:00 pm

September 17th:

Rutgers University
Marine Field Station
Open House
10:00 am-3:00 pm

September 27th:

JC NERR 101
6:30-7:30 pm

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Learn more about the
Reserve on our website:
<http://jcnerr.org/>

Archived Articles of JC
NEWS now online

Jacques Cousteau

Newsletter

VOLUME 2 ISSUE 7



JULY 2011

JC NERR in July

Hello volunteers!

I hope everyone is keeping cool in this intense heat we've been having this month! There was a slew of a few beautiful humidity-free days but now the heat has returned!

July kicked off our Creature Feature summer program with 'Dandy Dolphins', where children learned about what makes us human land-dwelling mammals different from the graceful swimming ones. In the 'Rockin' Raptors' Creature Feature, children were able to dissect owl pellets and learn about local bird species. 'Rockin' Raptors' was followed by a 'Plankton Party', where children pretended to be larger fish and mammals in the food web in order to understand the importance of some of the

tinest marine organisms - phytoplankton and zooplankton. A big thank you to all of the volunteers who have helped and are continuing to help with these programs!



'Plankton Party' Creature Feature-using string to mimic food web connections

JC NERR also had the opportunity to attend the annual Cape May Harborfest. This year the festival stressed the importance

of local commercial fishermen in the Cape May area. Local fishermen and seafood companies were side by side with researchers from Stockton College and Rutgers University, with displays on fisheries-related research and sustainable fishing practices. JC NERR was excited to be involved in this celebration of the sea and its ecology and importance to our culture and economy.



Volunteers at the JC NERR table at Cape May Harborfest

Reserve Current Events

JC NERR has recently added a new facet to its long-term monitoring research within the reserve - emergent vegetation (marsh grass) communities on marshlands.

Restoration of marsh grasses and submersed aquatic vegetation (SAV), a.k.a. eelgrass, communities is a major management goal in most developed estuarine areas.

Marsh grasses form a buffer be-

tween upland systems and the sea and provide complex biological habitats with irreplaceable value to coastal systems and adjacent wetlands. Eelgrass provides shelter and food to numerous economic and ecologically important species of fish and shellfish.

Here at the JC NERR we have been monitoring SAV (eelgrass) in our reserve since 2004 with a goal at being able to track long-

term changes.

We are now able to expand the same type of research onto the marsh surface. Sampling includes recording what species are present, density of grass shoots and stems and height of vegetation.

If you are out on Great Bay Blvd you may see researchers in action down on the marsh this summer!



Barnegat Light, photo courtesy of Kathleen Spivey



Clammer working in the bay, photo courtesy of Rob Auer-muller

'Barnegat Bay is not solely the state's responsibility. All of the bay's stakeholders, from tourists to boaters to the industries which use the bay, must also step up and commit to protecting and improving the bay. Our economy and quality of life depend on it'

- L. Stanton Hales Jr., PhD. Director of Barnegat Bay Partnership



Volunteers and staff from JC NERR and Rutgers Aquaculture Facility at the Cape May Harborfest

Barnegat Bay-State of the Bay Report

The Barnegat Bay Partnership has recently released a report—State of the Bay—that presents current environmental conditions of Barnegat Bay and its watershed. In the report, 19 indicators are used to assess physical, chemical and biological changes. You can access the full 'State of the Bay' Report at (<http://bbp.ocean.edu/pages/345.asp>), but here we'll give a synopsis of 3 prominent health indicators – **seagrass**, **nitrogen loading** and **shellfish**.

Two main types of **seagrass**

grow in the bay - eelgrass (*Zostera marina*) and widgeon grass (*Ruppia maritima*). Between 2004 and 2010 the biomass (total weight) of seagrass decreased by more than 50%. In 2009 and 2010, researchers found the lowest quantities of seagrass ever recorded. The decline of seagrass is a major concern because it is an important source of nutrition and habitat for many fish and shellfish species. An increase in nutrients (especially **nitrogen**) entering the bay is the biggest factor in seagrass decline. In a process known as 'runoff',

excess nutrients such as **nitrogen**, get carried away by rainwater, enter our stormwater drains and make their way into the bay. Local sources of nitrogen to the bay include lawn fertilizers, septic system wastes, leaky sewer pipes and industrial waste. This excess of nitrogen leads to excess 'fertilization' of the bay and in effect does the same thing as fertilizing your lawn would - allows plants to grow. However, this increased nitrogen encourages all plants to grow, including algae and sea lettuce. These species shade out sea grasses growing

State of the Bay continued...

(cont'd from above) underneath them on bottom of the bay, they decrease oxygen levels, and thus change the fish and shellfish species that can live in the bay.

Shellfish (clams, oysters, scallops) in the bay unfortunately tells a similar story of decline. The good news is that the vast majority (80%) of the bay's water is safe for harvesting shellfish for human consumption. The bad news is that although 80% of shellfish is safe for harvesting, the population of all shellfish in the bay is at

an historic low. The culprits for this decline are hard to pinpoint. Good water quality is an important determinant in growth of shellfish, but factors like overharvesting, disease and predation also play a role. More data are needed to ascertain the reasons for such a drastic decline. In the meantime, the Barnegat Bay Shellfish Restoration program have been working to grow baby clams and oysters for shellfish bed restoration.

The negative trend of numerous indicators can paint a

pretty dismal picture, but L. Stanton Hales Jr. (director of the Barnegat Bay Partnership) encourages us that 'Not all of the news is bad. There is a renewed sense of optimism among the many agencies working to protect and restore the bay due to Governor Chris Christie's Action Plan. With 10 distinct components and a 10 year funding commitment, the Action Plan represents an historic commitment by the state to the protection of the bay. Working together we can protect and restore Barnegat Bay'.

Looking Ahead

Festivals:

August 17th:

US Coast Guard Auxiliary Boating Safety and Environmental Festival (LBI)

September 17th:

RUMFS Open House (Field Station, Tuckerton)

October 2nd:

Cattus Island Nature Festival (Tom's River)

October 9th:

Coast Day in Cape May

We've already had a few volunteers sign up for the RUMFS Open House and Coast Day. If

anyone is interested in volunteering for these or any other upcoming festivals please let me know!

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Until next month!

- Kim Capone