Upcoming Events: Fall Symposium October 14
Revere Clean-up October 20

(details page 4)

Belle Isle News

Newsletter of the Friends of Belle Isle Marsh *SEPTEMBER 1984*

HAPPY CLAMS?

Throughout Belle Isle Inlet thousands of soft-shelled clams sit nestled under the mudflats waiting for high tide and their favorite activity: when the water closes overhead they stretch their long necks out of the mud and inhale happily. It's feeding time and the tide has brought with it phytoplankton (microscopic plants) and other goodies.

The long neck of the soft-shelled (or steamer) clam contains two siphons. One carries water rich in oxygen and food matter to the gills and to the mouth. The water is then exhaled through the second siphon. In a single day, ten gallons of water may pass through an adult clam.

The seemingly carefree existence of soft-shelled clams begins in June when eggs and sperm released into the water by adult clams unite by chance. The young clams then swim freely in the dangerous water, prey to fish, worms, and changes in temperature and salinity. If they survive for two weeks they descend to the bottom where they cling to grains of sand with threads called byssuses. Gradually they burrow into the mud, getting deeper as their siphons grow. A mature clam (living as long as ten to fifteen years, and growing up to six inches long) may live as deep as two feet beneath the surface.

Living the sedentary life isn't all it's cracked up to be, however. Unable to escape predators, young clams in shallow mud are easy prey to burrowing horseshoe crabs, drilling moon snails, some diving ducks, and the devastating European green crab which has been known to annihilate an entire population in a single season.

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Belle Isle Inlet contains over 8,000 bushels of legal size soft-shelled clams, according to a 1972 inventory by the Massachusetts Division of Marine Fisheries. The current wholesale market value of these clams exceeds

Soft-shelled Clam *[Mya arenaria]*

$600,000. Unfortunately for clammers, shellfishing in Belle Isle Inlet has been prohibited for over 50 years because of excessively high coliform bacteria counts in the water. Sewer overflows into Belle Isle are continually being discovered and industries in the area, past and present, have also unloaded heavy metals into the environment. Just how polluted the soft-shelled clams of Belle Isle are is unknown since the Department of Environmental Quality Engineering hasn't re-tested them in recent memory.

The excellent stock of many varieties of shellfish in Belle Isle Inlet is currently a frozen asset due to pollutants. Until conditions improve we will just have to enjoy the soft-shelled clams for their squirting acts as they retract their siphons from underfoot, and leave their delectation to the neighboring crabs and snails.

Pat Hickey

SALES CREEK UPDATE

Engineers from the Executive Office of Environmental Affairs have removed an integral part of the pumps at the Bennington Street pumping station, according to Victor Impemba of the Winthrop Planning Board. This action follows a second break-in and illegal use of the pumps by Revere officials on June 1.

Meanwhile, an updated environmental impact report (EIR) is being completed and is expected out within the month. The undertaking of a new EIR was recommended last summer by the Sales Creek/Belle Isle Steering Committee.

Margarita Drozdoff

LIKE IT?

This publication is made possible by membership fees and generous donations. Join Friends of Belle Isle Marsh and help us continue. Annual membership fees are:

Individual	$3
Family	$5
Seniors	$1
Under 16	$1

WEBS OF LIFE

The salt marsh plants and animals
Are otherwise quite rare,
And should their special habitat
Die off, they'd have nowhere

To go and start again
To grow and mate, or spawn.
Instead, their form and mystery
Forever may be gone.

For mystery still lies therein
Of how they came to be
Ensconced within the ebb and flow
At edges of the sea,

And when, and why, and what it was
Allowed each kind to stay
And feed, and interact to form
A marsh web to this day,

Providing food and shelter there
For birds who come and go,
And fish who start their lives in pans
To leave on tidal flow,

Returning from ocean deep
Just when it's time to breed,
Requiring then a safer place
In which to leave their seed

Away from ocean turbulence
Of currents cold and harsh,
Where life anew will have a chance
Protected in the marsh.

Esther Fich

PLUMBING THE DEPTHS

Towards the eastern edge of the marsh, not far from Belle Isle Inlet, a cluster of cylindrical brown objects merge with the marsh vegetation. Called piezometers, these instruments measure water pressure in the peat, one aspect of a study of marsh hydrology being conducted by Bill Nuttle, a graduate student in M.I.T.'s Department of Civil Engineering.

The first stage of the study will involve taking thousands of pressure, temperature, and salinity measurements over a period of two years. From this data, patterns of water flow beneath the surface of the marsh will emerge.

Water can be thought of as the "life-blood" of the marsh. Just as blood carries nutrients and toxic substances to and from all areas of the human body, so water carries nutrients and pollutants through all areas of the marsh. Thus, understanding the influx and outflow of water through the peat ia vital to understanding the overall environment.

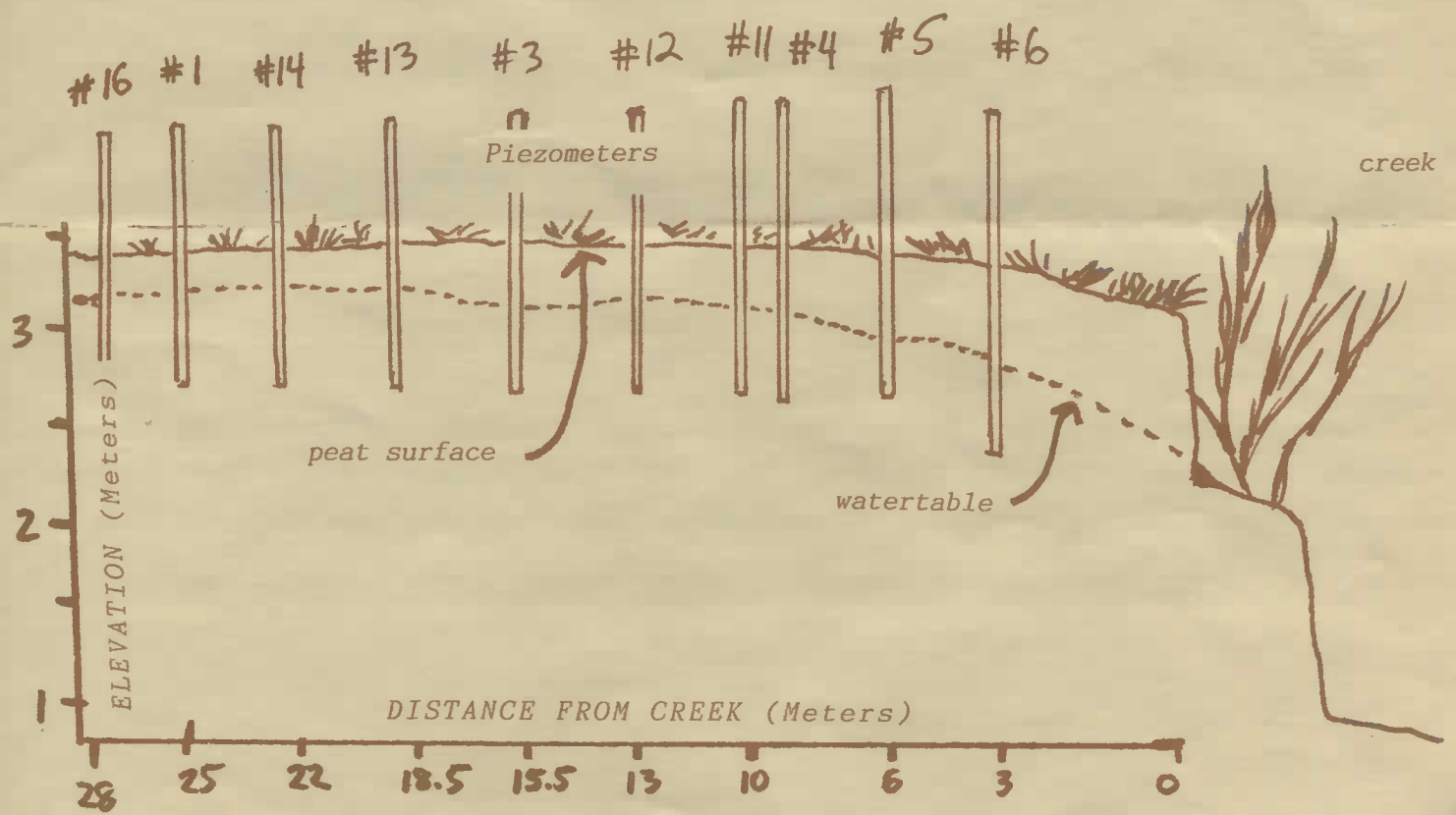
The level of water in a piezometer (which is simply a capped piece of pipe embedded in the peat) indicates the water pressure at a specific location. A change in the level from one reading to the next indicates a change in the level of the water table, which rises and falls according to various influences.

Piezometer readings can also show horizontal water movement through the peat. Nuttle explains that readings have indicated that locations more distant from the bank of the inlet exhibit a higher water pressure than those closer to the bank. This indicates a flow of water towards the inlet, since water tends to flow from an area of higher pressure towards one of lower pressure.

Patterns of water movement can also be studied by observing temperature changes at selected locations in the marsh. One study uses a computer simulation of heat flow and temperature changes at various depths in the marsh and compares it to actual monitored conditions.

In addition to his field work, Nuttle plans to take a piece of the marsh home to the laboratory in order to study a "miniature marsh" under controlled conditions.

Margarita Drozdoff



Watertable Location: June 23, 1984

FIELD TRIP SCHEDULE

Please meet at the entrance to Belle Isle Marsh Reservation on Bennington Street, East Boston. Dress warmly and wear waterproof footwear. The following field trips will start at 2 p.m.:

Sunday, September 9
Saturday, September 22
Sunday, September 30
Saturday, October 13

Due to the change to Eastern Standard Time, the following field trips will start at 1 p.m.:

Sunday, October 28
Saturday, November 3
Sunday, November 18
Saturday, December 8

Field trips are free and open to the public. Please call the following trip leaders for further information:

David Desmond	324-7527
Kermit Norris	567-2339
Soheil Zendeh	628-8990

PHOTO TIME

Don't forget to send pictures to the Belle Isle Photo Contest. Our Deadline is October 1. You can't win if you don't enter! Mail entries to: Photos, 380 Broadway, Somerville, MA 02145. For further information call Mike Sharpe at: 324-2434.

COME, LEARN MORE

Members and guests are invited to our fall symposium, featuring presentations on marsh life and ecology. Winners of the photo contest will be announced.

Time: 2 p.m., Sunday, October 14.
Place: Our Lady of Lourdes Church, 2 Endicott Avenue, Beachmont.

BELLE ISLE CLEAN-UP

A clean-up of the marsh in Revere is being planned for Saturday, October 20. Please come prepared for work. We will meet at Short Beach at 10 a.m. Don't miss the raffle and festivities!

ACTION ALERT

Abutters of Belle Isle Marsh in East Boston met on September 11 at Rose Corrado's to form an action alert group to report and prevent dumping and other abuses of the marsh. Similar groups are being organized in Winthrop and Revere. If you are interested, please contact Frank Carideo at 846-5979 (for Winthrop), or Gail Miller at 567-5072 (for Revere).

This newsletter was produced by Margarita Drozdoff, Pat Hickey, and Soheil Zendeh. Illustrations for this issue are by Ted Davis, Pat Hickey, and Marian Merullo.

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