

The Watershed

Vol. 4, No. 1

The Oyster Pond Environmental Trust Newsletter
OPET, P.O. Box 496, Woods Hole, MA 02543-0496

Summer 1999

George Woodwell, Director of World Renowned Woods Hole Research Center, to speak at OPET's Annual Meeting on July 1st. Save the Date! Don't Miss this One!

OPET's Annual Meeting will take place Thursday, July 1st 1999 at 7:30 pm at Sea Education Association, Woods Hole Rd / corner Ransom Rd. The program will begin promptly at 7:40 pm with welcoming remarks from our host, SEA, followed by the year's overview and reports on OPET's activities. At 8:15 pm, keynote speaker Dr. George Woodwell, Director of the world-renowned Woods Hole Research Center, will speak of the Center's research activities worldwide and of his plans for the Center's new

campus located within Oyster Pond's watershed area on Woods Hole Rd, opposite Treetops. Dr. Woodwell's vision is to make the center into a model for what can be done now to conserve resources for the new millenium. Following this talk and discussions will be the election of directors and whatever other OPET business remains. We then adjourn to refreshments and socializing. **Please plan to join us and bring comments, questions and suggestions to your elected board members.**

WE'RE ALMOST THERE!!! \$10,000 DONATION REDUCES DEBT ON CONSERVATION LAND TO LESS THAN \$20,000!



Summer Scene in OPET's Park

OPET received a most generous Christmas present of \$10,000 from long-time OPET members and supporters Mindy Hall and Lawrence Pratt. With this gift and other donations in response to our year-end appeal in December, the debt on OPET's conservation land sank below the \$20,000 mark.. Let's finish off the debt in 1999 and enter the new millenium with a clean slate! We can do it - WITH YOUR HELP! Your donation is tax-deductible and you may take pride to have helped protect Oyster Pond by preserving seven acres of woods and wetland surrounding its headwaters. Send in your \$25, \$50, \$100, \$1000 contribution to OPET's Land Conservation Fund today! Remember, too: \$5,000 brings you a Life Membership to OPET and a bronze plaque with your name on a large boulder alongside the main trail in the Conservation land !



Winter Scene

MOVING?

Are you moving out of Oyster Pond's watershed area for good? How sad!! We wish you the best wherever you settle next! Before you leave, however, please do OPET the great favor of letting us know who will move into the home you are vacating! OPET needs to inform the new residents about how they can help protect the pond. You can drop us a note (P.O. Box 496, Woods Hole, MA 02543) or call 548-5984 and leave the name(s) and address if no answer. And one more thought: if you have just sold your house or condominium, won't you consider a parting gift for the benefit of Oyster Pond?

Oyster Pond Study by High School Student Nate Hart Wins Awards at Regional, State and International Science Fairs.

Nate Hart, high school freshman at Cape Cod Academy and resident on the shores of Oyster Pond, has won a number of Science Fair awards this spring for his project involving Oyster Pond. Nate took core samples of bottom sediment from various locations in the pond; several of these samples reached back to a time when, in place of the pond, there was only a hollow with forested slopes. As the sea level rose following retreat and melting of the continental ice sheet, this forest was drowned and buried with marine mud. In collaboration with the carbon-14 facility at W.H.O.I., Nate dated wood from this drowned forest and found it to be about 3500 years old. Considering the depth below present sea level at which this ancient wood was

cored (about 11 feet), Nate calculated a rate for sea level rise over the ensuing 3500 year period of about 4 inches per century. At that rate, Nate thinks, present-day pond shore residents have little to fear from a further rise of sea level, provided the global warming doesn't trigger a collapse of the West Antarctic ice sheet!

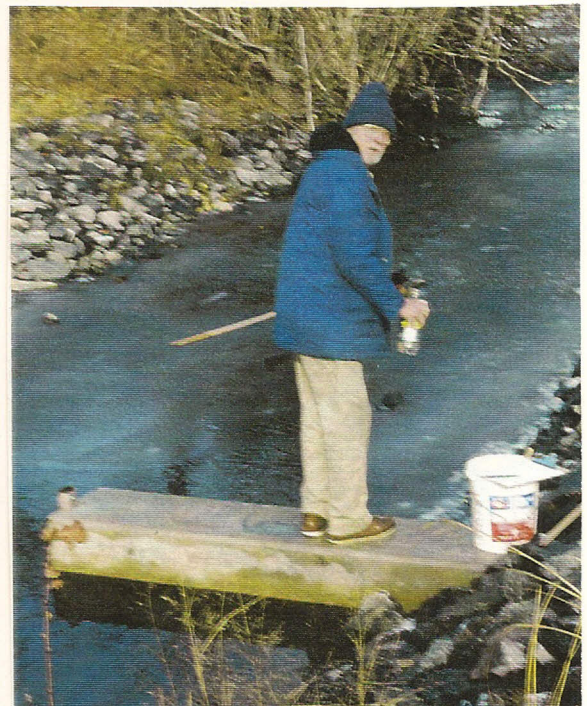
Nate's project won a first place award at the Regional Science Fair at Bridgewater State College, a third place award at the State Science Fair at M.I.T. and a third place distinguished achievement award at the International Science and Engineering Fair held in Philadelphia. **Come see Nate's poster at OPET's Annual Meeting!**

Collaboration with WHOI Scientist Will Allow OPET to Measure Flow Volume Across the Weir

Sandy Williams, Senior Scientist and head of the Laboratory of Coastal and Ocean Fluid Dynamics at WHOI, will develop an instrument to be located at the weir for measuring water flow rate, direction of flow and depth. With a data logger coupled to this instrument, we will be able to monitor these parameters over long periods of time. Combined with *OPET's* pond salinity measurements, the information will aid us in finding the optimal weir settings for varying conditions.

Dr. Williams has a special and personal interest in Oyster Pond: his mother used to live on its shores and, after having introduced her one day to his recently-widowed WHOI colleague **K.O. Emery**, the pioneer of Oyster Pond studies, soon found himself to be his colleague's stepson! Sandy thrives on the challenge of developing instruments for tricky measurements and passes the challenge and enthusiasm on to his WHOI students.

OPET will purchase the sensors and underwater cables, the data logger will be a gift to *OPET* from **Onset Computer Company**, and Sandy and his students will build, test and calibrate the instrument and do the initial data collection.



Bob Livingstone Taking Water Samples at the Weir in Freezing Weather

Pond Management Activities

Trunk River's jetties have been severely "degraded", causing the Trunk River to badly silt in during storm tides. The Trunk River silt ledge now is higher than the setting of our weir, so it is this ledge and not the weir that currently controls pond level and tidal inflow. To make the weir and not the variable silt the controlling element, Trunk River needs to be repaired.

OPET cooperated with the Falmouth Engineering Department so that at the Fall Town Meeting funds were made available for the design and permitting necessary for the repair. Applied Coastal Research and Engineering, Inc. has the design contract. Their engineers are the ones who designed the weir.

The repair design will hopefully be completed to allow timely submission of the Notice of Intent. The following will also need to be submitted: 1) Water Quality Certification, 2) Chapter 91 License (for jetties), 3) Environmental Notification Forms, and 4) Army Corps of Engineers Permit. We expect permits and design specifications in time to be able to go to the Fall Town Meeting to ask for the construction funds.

A Big Thank You to those of you who resurfaced your driveways with gravel or shell and not with asphalt!

There is so much less road runoff with permeable surfaces. And thanks also to those who refrained from using any fertilizers on their yard or garden, or switched to a slow-release kind. Let's reduce the nutrients reaching the pond!

POND SAMPLINGS



Winter Waterfowl Tell of Abundance of Fish in Pond



Word gets around: Oyster Pond's fish population is increasing. Have fish, will feed ducks!

What a busy winter it was on Oyster Pond! The first bufflehead and several hooded mergansers arrived on October 30. There still were alewife fingerlings in the pond and it must have been easy fishing for those diving ducks on either side of the Surf Drive culvert where these fish schooled in great numbers before leaving for Vineyard Sound and beyond. Two weeks later, 4 more buffleheads arrived and about 30 redbreasted mergansers. On the morning of Nov 19, 20 hooded mergansers fished the north end of the pond, many coming up with a catch on almost every dive; and on the 21st there were about 50 of them, plus 10 mallards, 5 Canada geese, 2 great blue herons, 1 kingfisher, 4 redbreasted mergansers and, YES!!, a male wood duck (YEAH! -- A first for me!). What a spectacular, extravagantly feathered bird! I couldn't take my binoculars off him! Two days later a second male wood

duck showed up, like the first in company of mallards. In fact, one of the two was enamored with a female mallard, courting her quite openly in the presence of her mate. This *menage a trois* dabbled the pond until February when most of the pond froze over for a second time. They and many mallards disappeared then, as did most of the 50-60 hooded mergansers that had graced the pond since November. From my perch on the north end of the pond I sighted daily a higher number and more species this winter than during the preceding two. Often seen on a single morning: red breasted merganser (up to 20); hooded merganser (up to 60); bufflehead (up to 15); wood duck (2 males); pied billed grebe (2); red throated loon (2); ring necked duck (3 males); scaup (up to 30); great blue heron (2); kingfisher (2); mallard (up to 30); Canada goose (12); mute swan (2); cormorant (2 immature great cormorants?); and various gulls. Now that all fishing ducks have gone north, the fish population can recover.

Rowan Davis' Oyster Pond Fish Catch in the Summer of 1998



Rowan Davis with 11" White Perch he caught

DATE	#	length	where/whAT
7/26/98	2	6"	Dad's Dock/worms
	3	9"	"
8/2/98	3	5-6"	dad's dock/worms
	2	9"	"
8/9/98	8	10"	daVis dOCK/WoRMs
	10	8"	
9/5/98	7	6"	WORMS/dOCK
	2	9"	
	1	11"	WoW!! Big fellow!
9/19/98	10	4-6"	dad/ worms
	1	9"	
	1	10"	
10/3/98	3	6"	me and worms
	1	9"	
	6 & 1	10" & 11"	The Biggest yet!

Total Tally: 61 White Perch



Bob Livingstone Sampling at the Icy Weir

OPET Receives Grant to Continue Pond Studies

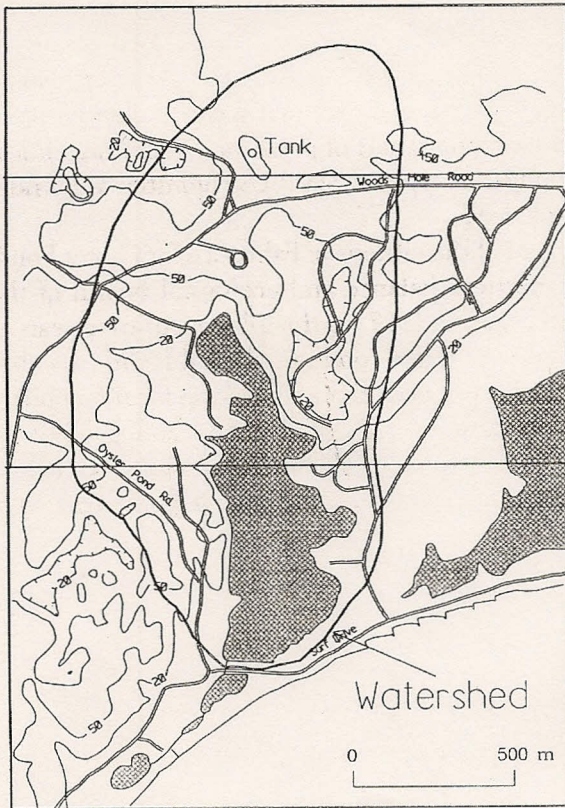
The Community Foundation of Cape Cod has awarded \$2,500 to OPET to continue to monitor the effect on the pond's health of the reduction in pond salinity. This grant allows us to follow up on past year's studies and to include the Trunk River Lagoon in the monitoring program. OPET received \$3,000 from the Community Foundation last year, money that was spent on equipment purchases, and on water sample analyses.



Envirotech Labs, Sandwich, Donates 15 free Sample Analyses

As in the past year, Envirotech Labs, Inc. of Sandwich has donated to OPET the analysis of 15 water samples for fecal coliform bacteria. That represents 2-rounds of pond samples, or 2 months' sampling. A great gift -- thank you!

The Oyster Pond Watershed



Map of Oyster Pond and its watershed. Watertable elevations are given in feet. There are no major surface water inflows into Oyster Pond, only a small stream discharging from a wetland area into the northern basin. (From: "A Coastal Pond Studied by Oceanographic Methods" by K.O. Emery with an Epilogue by Brian L. Howes and Stanley R. Hart, 1997, OPET)

What exactly is a watershed? How is it determined? What does it mean for Oyster Pond? What does it mean for the residents within the watershed?

wa.ter.shed: a region or area bounded peripherally by a water parting and draining ultimately to a particular water course or body of water (Websters dictionary).

The watershed area for Oyster Pond is depicted on the left. How was it determined? By measuring the elevation of the watertable. Water runs downhill, so a high 'point' or 'ridge' in the water table is a divide or water parting.

What does it mean for Oyster Pond? It means that anywhere within this area, groundwater will flow towards and into Oyster Pond. And with it, anything that reaches the groundwater. That includes wastewater from the septic systems, runoff from yards and gardens and roads, whatever doesn't get absorbed or utilized on its way to the groundwater table. But not only the groundwater reaches the pond -- also surface runoff gets there, especially after heavy rains when the ground has either been dry for an extended period and has not yet 'opened' up to absorb the deluge, or when the ground is already so saturated that it can't absorb more, or where road run-off channels directly into the pond.

What does it mean for the watershed resident like you and me? It means we have to be VERY careful about what we allow to get into the septic systems (no toxic stuff down the drain or toilet!!) or onto the ground (pesticides, gasoline, car oil, heating oil, fertilizers that can't be used up entirely by the plants, all these are NONOs if we want a healthy pond). And we need to have as much 'open space' as possible, where 'open space' is defined here not just as vacant lots (no septic systems) but also as those areas within our properties that are covered by native vegetation which requires no or minimal human input to thrive.

Lawns definitely do NOT fit this definition. Have no or only as much lawn area as you really are going to make use of, say for the kids to play on or for the barbecue or that bit of view. Let some of your yard go 'wild', allow brush and bramble in and keep those trees! Check where your neighbors' 'wild' spaces are and make yours contiguous -- a bigger continuous space is more effective as beneficial watershed area, and that way you can also create a wildlife corridor that may stretch over many properties.



From the Treasurer's Books



OPET Income & Expense (in other words: where did your donation \$\$ go?) June 1998 through May 1999

Income

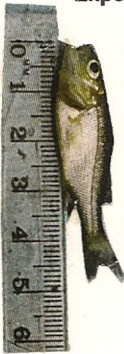


Book Income	419.62	
Cost of Books Sold	-177.06	
Net Book Income		\$ 242.56
Contributions Income		
General Fund	9,725.20	
Land Conservation Fund	48,580.00	
Total Contributions Income		\$58,305.20
Interest Income	146.01	
Total Interest Income		\$ 146.01
In-kind/Equipment Contributions (equivalent \$ value)		
Envirotech: Free Sample Analyses	525.00	
Brennan & Assoc. In-kind Service	1,400.00	
Onset Computer Equipment Donation	398.00	
Total In-kind Income		\$ 2,323.00

Total Income

\$ 61,016.77

Expense



Equipment and Materials	2,143.89
Contributions	1,067.24
Dues (FACES)	25.00
Insurance	1,754.00
Interest Expense (OPET Conserv.Land)	4,260.74
Office Supplies	271.28
Postage	314.76
Printing/Copying	209.00
Professional Fees (CPA)	2,600.00
Science Projects	4,189.00
Soliciting	265.40
Taxes	50.00

Total Expense

\$ 17,150.31

Other Payments

Reduction on Conservation Land Debt	\$ 46,092.26
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With the generous donations to the Land Conservation Fund the debt on OPET's conservation land was reduced to \$ 17,050.40 from last year's \$ 63,142.66! We hope to close out this liability by the end of the year. Please help us achieve this goal!



Did You Know ?

- Of every dollar you donated to OPET, only half-a-penny was used for fundraising efforts, and 9 pennies to "run the show" (including cost of insurance, CPA, supplies). 90 cents on the dollar went directly to benefit the pond!
- Not only yellow perch used to thrive in the pond but also catfish made it their home, at least in the northern end.
- The mute swans now gracing our ponds are European imports that have displaced the native American swans.
- More than 60% of the pond's nitrogen load stems from the septic systems in the watershed area. That's the toughest problem to solve -- unless we all go on a diet
- We CAN reduce input from fertilizers. Either don't use any at all, or use only natural organic types like mulch, manure, compost or the slow-release kind, and use it sparingly and timely. Try less demanding native plants.
- Use of sink garbage disposals for organic kitchen waste accelerates nitrogen input into the pond -- composting is much preferable.

From the Membership Desk: Recent Contributions

OPET has a loyal and caring membership family! Thank you all for your generous donations! Oyster Pond is well worth it! **Reminder: Memberships expire May 31st. Why not renew today with a generous gift?**

Life Members

Honorary Life Members

Friederun Jannasch
Herbert Willett

Life Members \$5,000 or more

Anonymous
Cecily Selby Coles
Elizabeth Davis
John and Judith Dowling

James and Pat Ferguson

William and Patricia Kerfoot
Birgit and Werner Loewenstein
Harold and Kirsten Sears

New Life Members 1998/9

Carlson Charitable Trust
Mindy Hall and Lawrence Pratt

Supporting Members (Donation of \$100 or more during period June 1st 1998 - May 31st 1999)

\$1,000-\$4,999

Elizabeth Davis
Mindy Hall and Lawrence Pratt
Lon and Carol Hocker
Mr. and Mrs. John S. Price

\$500-\$999

Leo H. Bendit Charitable Trust
Catherine Carlson
Robert Wood Johnson Foundation
Wendy Gabriel

\$100-\$499

Anonymous
Henry G. Behrens
William and Van Brewer
Mr. & Mrs. Robert Browne

Cynthia Woodruff Coffin
John S. Cook and Dorothy Skinner
Mr. and Mrs. Norman Cross
The Cunnick Family
Kevin and Jean Dunn
Mr. and Mrs. Richard Edwards
Falmouth Associates, Inc.
James and Pat Ferguson
Eleanor Garfield
Mr. and Mrs. Richard Goody
Thomas and Patricia Halpin
Stan and Pam Hart
Harold and Maryjoy Hatch
Frederick and Nancy Hilton
Lon and Carol Hocker
Dorothy Jenney
Max Kaufman
Mary Jane Kelly

Peter and Henriette Kien
Melvin and Maxine Kutchin
Melvina and Meryl Langbort
Robert and Laura Livingstone
Ermine Lovell
Werner and Birgit Loewenstein
Francis C. and Victoria Lowell
James and Maryann Lydon
Mr. and Mrs. Hector E. Lynch
James Ware and Sharon McCarthy
Mary A. McDonough
Jean Milliken
Edward and Gene McAuliffe
Mr. and Mrs. Frank L. Nickerson
Barry and Barbara Norris
Arthur Pardee
William and Kay Pechilis
Courtland Perkins

Julia Rankin
Daniel Reagan
Mrs. Ervin D. Remick
Jeanne and Harris Rippes
Dana and Alison Rodin
Cecily Selby
William and Phoebe Speck
William and Helene Spurrier
John and Evelyn Steele
David and Anita Swann
Kent and Annette Swift
William and Mary Telfer
Geoffrey G. Whitney
Robert and Constance Wilterman
Henry and Joan Woodhouse
Margery Zinn

Regular Members (\$25-\$99 during period June 1st 1998 - May 31st 1999)

Cynthia Gilbert Allen
Alfred Allenby
Mr. and Mrs. Victor Aresty
Dorothy and Duncan Aspinwall
Bill Armstrong
Proctor H. Avon
Richard & Denise Backus
Robert and Harriet Baker
David and Rhea Banker
Mr. and Mrs. Leonard Beford
Carl Breivogel
Mr. and Mrs. William Burke
Arnold and Ruth Burroughs
Rosella Campion and John Smith
Virginia Carlson
William and Barbara Carr
Mark and Sandra Challant
Evelyn Clements
Frederick and Marcia Cohen
Ethel Conley
Sterling & Marilyn Crandall
Paul and Mavis Crocker
Michele and Jonathan Davis

Edward and Nancy DeWitt
Mr. and Mrs. Robert Edwards
Dr. and Mrs. Herman Eisen
Jim and Jen Estes
Harvey & Marcia Fleishman
Jim and Deb Foley
Kenneth and Davina Fullerton
Robert and Susan Gagosian
George and Georgiana Goehl
Mr. and Wmrs. Wesley Gregory
Capt. and Mrs. Frederick Hancox
Ms Marian Heath
Dorothea & David Hosom
Brian and Karen Howes
Mary Jean Howard
Thomas and Frances W. Johnson
Barbara Woll Jones
Chet and Farla Krentzman
Scott and Diane Krentzman
Kenneth and Marilyn Levey
Charles and Susanne Mann
Norman and Phyllis MacNeil
Walter and Frances McLean

Michael and Carolyn McNaught
Otto Momingstar
Freelon Morris Jr
William and Natalie Munson
Col and Mrs Paul Murray
Jane B. Murray
Pete and Bonnie Murray
Richard and Teresa Norris
George and Bernice Pappas
Janet E. Peebles
Courtland and Nancy Perkins
Abraham and Anne Pressman
James and Adelaide Quebman
Carol Rasic
Fred and Karen Reichheld
Monica Riley
Mary Louise Ross
Edgar and Sandra Rothschild
Bernard and Emmine Ruskey
Lillian Sanders
Irving and Muriel Saver
Anne W. Sawyer
Thomas and Judy Sbarra

Milton G. Schroepel
Melvin Schorin John Scibek
Mrs. Medlyn E. Shaw
Mr. and Mrs. G. Heulings Sherrerd
Richard and Elizabeth Shriner
Dr. and Mrs. Arthur Silverstein
Norman and Jayne Starosta
John and Betsy Stegeman
Albert H. Swain
Mr. and Mrs. Joseph Sweeney
Emil and Eleanor Tietje
Bruce and Elaine Tripp
Claude and Dorothy Villee
Andrew and Susan Vince
Sam and Bea Vincent
Drs. Martin and Tanya White
Albert and Helen Wilson
Arnold & Charlotte Wolf
Mr. Fred Woodward
Barbara Zenker
Erik Zettler and Linda Amaral Zettler
Michael and Naomi Zigmund
Bruce and Elisabeth Zimmerli

Business Members

\$1,400

Brennan & Assoc., Plymouth

\$400-\$525

Envirotech Laboratories
Onset Computer

\$25-\$130

Act1 Real Estate/Carol McLoughlin
BankBoston
Jeffrey S. Hamilton Landscape
Woods Hole Passage

Honorary Members

Sea Education Association

Science Advisers

Dale Goehring, Univ. Mass, Dartmouth
Brian Howes, Univ. Mass, Dartmouth

V for Rats!

On a calm day, when the pond is like a mirror, you may see a silver, V-shaped wave travel across the pond. A small, dark-brown, oval-shaped something moving through the water is the point source for the two silvery lines that fan out in a perfect V. It is a **muskrat**. These busy water rats have their burrows on the banks of ponds and rivers. As far as rats go, they surely leave the prettiest and most evanescent set of tracks!