



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

Winter 2001

OPET does not have a phone to its name, but you can call 508-540-7345 and leave a message. We'll gladly get back to you! Or e-mail us at [opus132@rcn.com](mailto:opus132@rcn.com) or at [brose@cape.com](mailto:brose@cape.com). And do visit our website, [www.opet.org](http://www.opet.org)!

## OPET Officers and Directors Elected for the 2001/2002 Term

### Officers

Jonathan Davis  
Birgit Rose  
Co-Presidents

Eric Davidson  
Vice President

Patricia Kerfoot  
Clerk

Barry Norris  
Treasurer

### Directors

Susan Gagosian  
Christine Gault  
Melinda Hall  
Robert King  
Leonard Kreidermacher  
Julie Rankin  
Peter Valtin  
Martin White

Honorary Boardmember:  
Robert Lingstone

OPET Board meetings are open to all OPET members. Meetings are usually held on the third Sunday, of the month, at 4 pm in the Treetops Clubhouse.

We'd love to have you come!  
For information call 508-540-7345



Burning The Zinn Park Mortgage Papers

Photo by Erika Hahn

## Zinn Park Dedication Held on September 1st!

A magnificent boulder with a bronze plaque honoring those whose major donations made the Zinn Park a reality, now marks and graces the entrance to the Zinn Park on Ransom Road. In a lively party, organized by OPET's directors at the park entrance, the Park was dedicated to the memory of the Zinn family, especially Don Zinn. The plaque was 'baptized' with water from the Park's creek (aptly named Mosquito Creek) by Pat Kerfoot, OPET's Clerk. Bill Kerfoot recounted the struggle of many years to save the 7 1/2 acres of land from development. John Dowling, OPET's first President, honored and thanked the many, many contributors who donated money big or small, or time and effort to the cause. Treasurer Barry Norris then burnt the mortgage papers in effigy -- OPET now has clear title to the land! Birgit Rose, OPET's current Co-President, handed the Bronze Plaque contributors a booklet published by OPET celebrating the beauty of the Zinn Park and of Oyster Pond in photos. (These photos can be seen on OPET's website, [www.opet.org](http://www.opet.org)) The party of about 50 OPET members and other guests then toasted the future of OPET and of Oyster Pond! With champagne, wine, juice and savory delectables the celebration continued with lively conversations until the last light (and wine?) had gone. It was a particular pleasure to see a number of kids, hopefully our next-generation guardians of Oyster Pond, among the party!



Pat Kerfoot baptizes the Zinn Park Plaque which reads: "Founded in 1994 to protect the wood lands at the headwaters of Oyster Pond, OPET welcomes you to explore the woods and waters. Take nothing but an awareness of the beauty of nature. Those listed below have left their distinct heavier footprints among many others on these trails."

Photo by E. Hahn



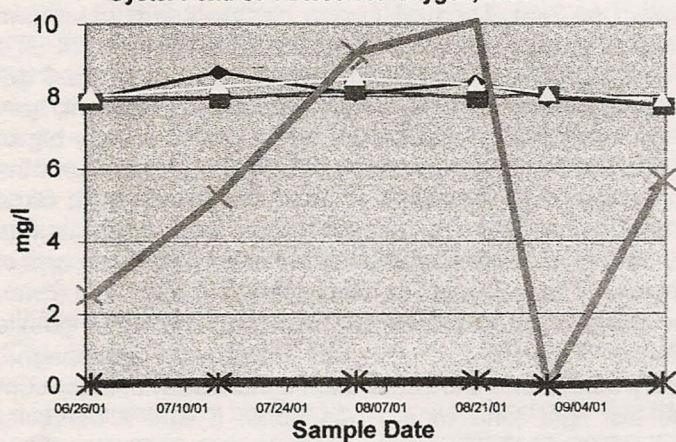
## Pond Samplings

The summer of 2001 was of great interest to *OPET*, because this was the first summer the Pond's salinity was within the limits of the management plan, which calls for a range of 2-4 parts per thousand (ppt). And salinity was about 2 ppt down to 4 m depth throughout the pond since the Trunk River jetties had been repaired and the Trunk River been dredged. Only the deep south end basin is a trap for the heavy salt water, which, coming across the weir now at the height of the high high tides (but not the low high tides), just seems to flow along the bottom of the pond and settle there. Salinity at 5 and 6 m settled around 12 and 15 ppt, respectively, at those depths.

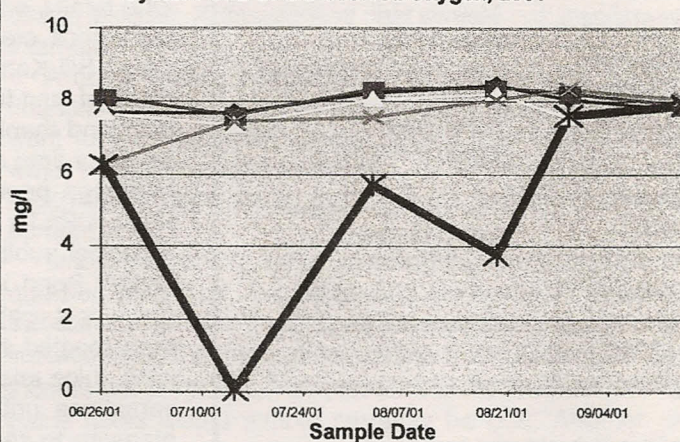
What happened to dissolved oxygen, the crucial parameter for supporting aerobic life in the pond, this summer? That turns out to be an interesting story. For one, oxygen levels varied with pond area. The sampling site **OP1**

is located in the north end of the pond. To a depth of 2 m, oxygen was as high as can be expected: about 8 mg/l. But at 3 m, oxygen varied between near 0 and 10 mg/l. At 4m, there was no oxygen at any sampling date. In the geographic middle of the pond, at **OP2**, oxygen at 3m was about 8 mg/l throughout the summer, but at 3.5 m (X-X curve) it was much less during the midsummer. At the south basin, **OP3**, oxygen was high down to 3 m throughout the summer. At 4m, there was none in June, but it climbed to 8 mg/l by the fall. At greater depths, in the high-salinity water, oxygen was lacking throughout the sampling period. This is expected, because the heavy saltwater does not rise up to mix with the surface water, that gets its oxygen from the air-water interface. For most of the pond, then, fish can thrive down to a depth of 3 m. And, indeed, traps set in August at 3 m caught small white perch and sticklebacks.

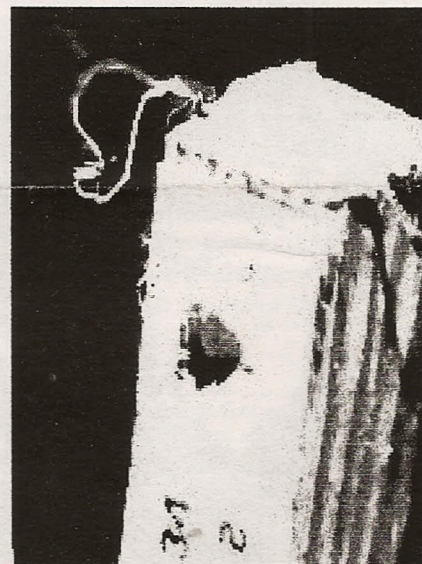
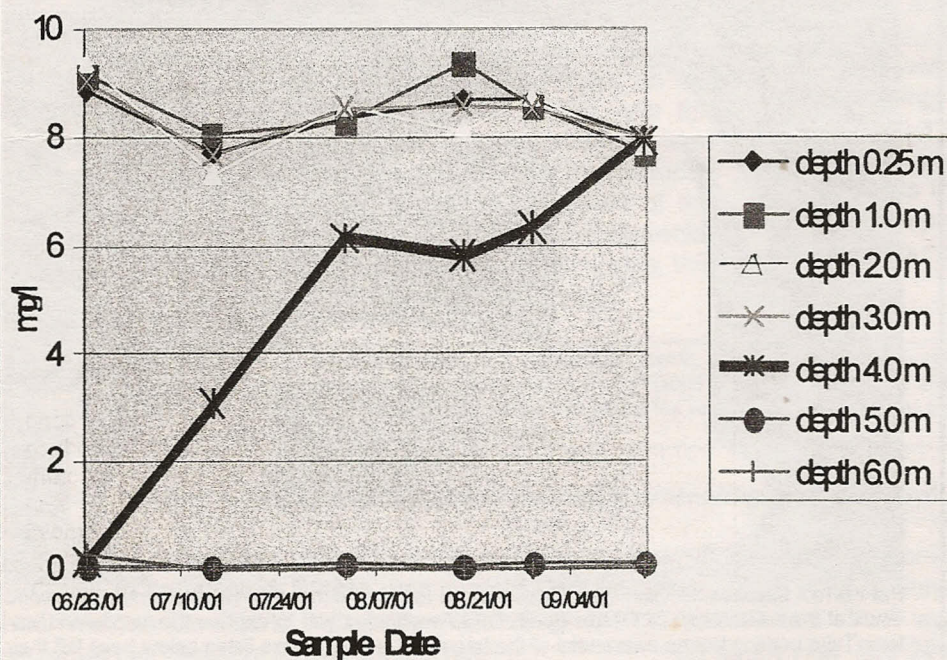
Oyster Pond OP1 Dissolved Oxygen, 2001



Oyster Pond OP2 Dissolved Oxygen, 2001



Oyster Pond OP3 Dissolved Oxygen, 2001



Damselfly practicing for Valentine's Day at Oyster Pond.

Photo by B. Rose

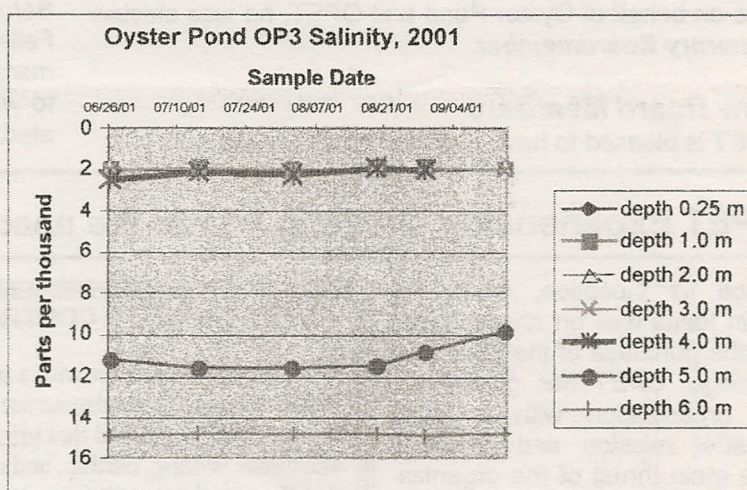
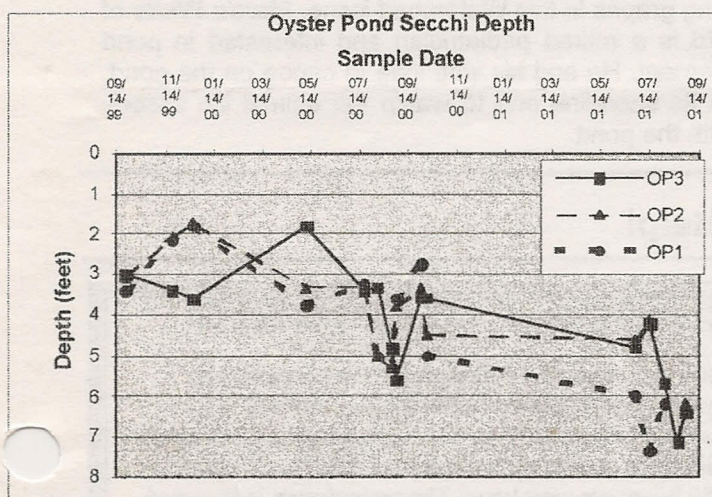


## More Pond Samplings

Another parameter of a pond's health is the clarity of the water. Very turbid water indicates either an overabundance of silt and/or of phytoplankton. Abundance of the latter (mostly algae) is a function of the nutrient level in the pond - the more nutrients, the better it grows until it has consumed all the oxygen and the pond becomes eutrophic. Well, this summer, the pond was exceptionally clear. It was a great pleasure to swim in the soft, clear and warm water. And unlike last year, the plant growth was much less. In the summer of 2000, one swam through a quagmire of plants that grew from the bottom of the pond to the surface, whereas this summer, most of the pond surface was free from those weeds.

Why the increased clarity and decreased growth of

weeds? Well, at this point we don't really know. There may be more than one explanation. For one, the pond went down about 6 inches or more. That drop represents a significant fraction of the total volume and means that a lot of nutrient-rich water was drained into Vineyard Sound. What remained may have gotten diluted by the rain and groundwater inflow and become a less nutritious environment for phytoplankton and pond weeds. Or perhaps the higher salinity is not so conducive to weed growth or the type of phytoplankton now dominant in the previously fresher water. An answer will have to await the results of analysis of samples for nutrient levels and a comparison with previous years. Hopefully, the Falmouth Pond Watchers program will be able to furnish these data.



Swans float by Treetops on Oyster Pond. Photo by B. Rose

## Do Water Fowl Foul the Water?

An often heard question regarding pond pollution is: What about all the geese and swans and ducks -- don't they pollute the pond? It is true, waterfowl can contribute to a high count of fecal coliform bacteria in a water body and their abundant poop surely is nutrient-rich, like fertilizer. The fecal coliform count is used by the State to determine whether it is safe for humans to consume shellfish harvested from the body of water being tested and whether it is safe to swim from a health point of view. It is thus important that the count be low, else the water body gets closed by the State for shell fishing or swimming. Oyster Pond is too fresh for shellfish to grow and the count has been well below the limit for safe swimming (except immediately after strong rainstorms).

Back to water fowl. As long as the fowl make their living from the Pond, that is, are not supported by feeding from humans, there is a balance: there will only be as many birds as the pond can support. And our current fowl population does not produce enough fecal coliform to be of concern. As to their poops' contribution of nutrients: unlike humans, who, with their septic systems and fertilizers, only create input into the pond, birds remove biomass, i.e., potential sources of nutrients, with their feeding. Swans and geese consume plant life. Fishing ducks remove fish. They don't produce more than they consume!



## Board Member News

### Retiring Board Members

Founding directors **John Dowling** and **Dana Rodin** are taking a break from serving on OPET's Board. **Dana Rodin** and former Boardmember **Bill Kerfoot** had been the prime instigators in saving what is now the Zinn Park from development. **John Dowling** was OPET's first president and guided OPET from its infancy to a full-fledged 501 (c) 3 charitable organization, complete with Bylaws and other legal instruments. **Dana Rodin** gave generously of his legal expertise to incorporate OPET and to advise the Board in its policies and activities. **Robert Livingstone**, another founding member, had to rotate off the Board, having finished the maximum 6<sup>th</sup>-year term. However, in recognition of his unfailingly enthusiastic support and efforts on behalf of Oyster Pond and OPET, he was elected **Honorary Boardmember**.

### New Board Members

OPET is pleased to have recruited four new directors

ready to contribute to OPET's cause. **Susan Gagosian** from the Moors is dedicated to science education of junior and high school students and will help OPET encourage students to undertake study projects relating to Oyster Pond. **Jason Hyatt** of Ransom Road is an MIT graduate student at WHOI. He has already been involved with OPET and the Pond in a project to measure water flow from and to Oyster Pond at the weir. Jason loves to kayak on the pond and is interested in environmental protection. **Peter Valtin** of Ransom Rd. is a computer programmer. Although living here only since 2 years, and just for the warm season, he has already made more use of the Pond (swimming, kayaking) than many of us 'old-timers'. He also trimmed paths in Zinn Park and produced the Pond Sampling graphs in this Watershed issue. **Martin White** of Fells Rd is a retired pediatrician and interested in pond management. He and his wife love to canoe on the pond, to walk its shoreline and to watch the animal life associated with the pond.

## OPET Experiencing Growing Pains: We need Help!

Since its inception, when the main focus was on raising funds for the purchase of the Zinn Park acreage, OPET has grown into an organization with a much broader mission and program. The main thrust of the organization remains the well being of Oyster Pond. But there are many approaches to achieving this, and OPET's strategic plan has evolved to include the following:

**1) Land Conservation.** This entails keeping a watchful eye on development within the Oyster Pond watershed area; encouragement of owners of vacant, buildable lots to consider placing them under Conservation restrictions; management of the Zinn Park; informing watershed residents about land/home use practices beneficial/harmful to the Pond. **2) Pond Management.** The aim here is to assess the success of low salinity in maintaining dissolved oxygen levels high enough to support a healthy aquatic life in most of the pond; to watch that Trunk River keeps flowing and remains a viable herring run; to deal with questions regarding Pond nutrient loading from septic systems/fertilizer use in the watershed. **3) Pond Studies.** OPET wants to continue the long-term studies of the Pond that provide the basis for management plans of the pond and of land use in its watershed. This includes water sampling for the Falmouth Pond Watchers, monitoring of salinity, oxygen and fecal coliform counts in the Pond; observing changes in the ecology (animals, plants etc.) in and around the

### OPET SEEKS TO CONTRACT OMBUDSMAN / NEWSLETTER EDITOR

OPET seeks to contract with a person part-time who will perform two tasks. He/she would act as an ombudsman for Oyster Pond, regularly investigating activities in the Oyster Pond watershed that might affect the health of the pond. In addition, OPET needs assistance writing, editing, and mailing the newsletter twice a year. The Board estimates that the newsletter will take about 80 hours per newsletter. The ombudsman is expected to devote about 3 hours per week on average or about 160 hours per year. This is a one-year contractual position, which could be extended. The Trust prefers that the person contracted be able to accomplish both tasks. However, if it is not possible to find a person with both skill sets, OPET will consider splitting the tasks between two people. For the full job description, please visit the OPET web site at [www.opet.org/ombuds.html](http://www.opet.org/ombuds.html).

Interested persons should respond in writing, accompanied by a resume and an example of their writing, to: OPET, Inc. Barry Norris, 52 Landfall Falmouth, MA 02540, or email: [barry@gis.net](mailto:barry@gis.net)

pond. **4) Education/Outreach.** OPET's goal here is to inform the watershed residents of land/home use practices beneficial (or harmful) to the Pond, for instance in *The Watershed* newsletter. To encourage and support study of the pond in the various schools and the many educational and research institutions in the area. This is an ambitious mission. And it takes dedication to the cause and many volunteer hours to bring about. Aside from this program, there are the many administrative chores that need to be done. OPET has a very hard-working board of directors, and so far we have managed largely without any paid help. But the Board finds its effectiveness limited and has come to the conclusion that it is time to seek help. Please read our ad above and decide whether the advertised position is for you or for someone you know and contact us.



## News from the Watershed Area

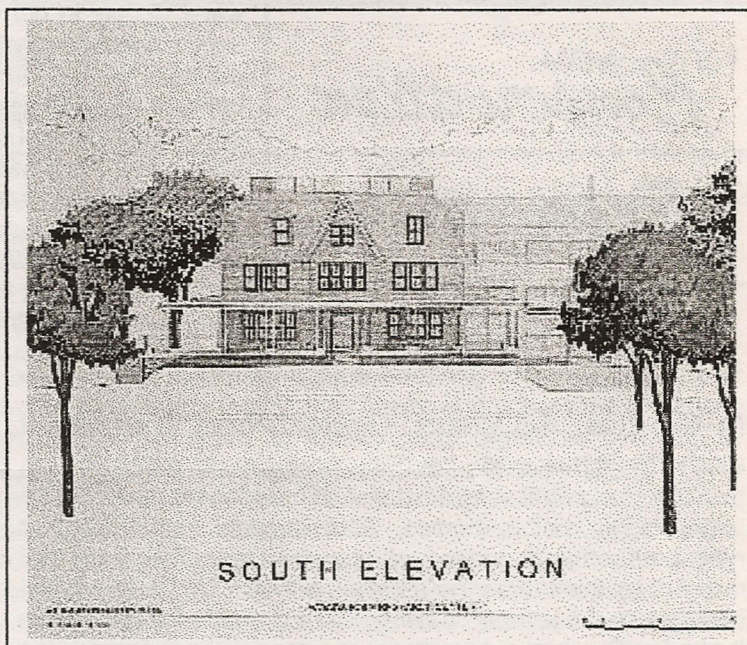
### Construction Underway at the Woods Hole Research Center

It isn't often that one can see daylight through the center of a building, but that has been the case for the last few weeks as the new home of the Woods Hole Research Center is now under construction across the street from Treetops. Dr. George M. Woodwell, director of the Center, kicked off the project during a groundbreaking ceremony on October 10. The construction is scheduled to be finished during the summer of 2002.

The exterior of the late 19<sup>th</sup> century house is being preserved because the old architectural design of the big white house on top of the hill seemed aesthetically appropriate for the neighborhood. The original "widow's walk" that had been capped several decades ago will be restored on top of the building. More information on the building's design and close-up pictures of the construction are available on the web at:

<http://www.whrc.org/education/ordway/journalset.htm>

In addition to this historic preservation, The Woods Hole Research Center is also dedicated to constructing a building that sets a standard for responsible stewardship of the landscape and the environment in the 21<sup>st</sup> century. The goal is to produce the energy that the building consumes and to avoid pollution of the surrounding environment, while also providing a comfortable and appealing workspace for the inhabitants. Heating and cooling of the building will be achieved with a state of the art groundwater source heat pump and super efficient insulation. All of the rooms are designed to maximize natural lighting, and the artificial lighting will be energy efficient. Solar panels on the roof will generate electricity. A de-nitrification system will reduce nitrate from sewage to avoid inputs of nitrogen into the groundwater that feeds Oyster Pond. Monitoring energy production and use and measuring the nitrogen content of the de-nitrification system will become part of the routine research of the Center. The goal is to



demonstrate that this type of construction is feasible and economically viable for others to copy.

The Woods Hole Research Center, which employs about 40 people, is dedicated to linking scientific research to public policy with respect to prudent management of the environment. The Center's scientists work primarily on topics related to global warming and deforestation of the Amazon rainforest and of the Russian Far East. Research also focuses on re-growing forests in central Massachusetts and Maine and on changing land use patterns here on Cape Cod. With the construction of this new building, the day-to-day workings of the Center become part of the research and part of the institution's mission.

*By Eric Davidson*

*Eric A. Davidson is a Senior Scientist at The Woods Hole Research Center and Vice-President of OPET.*

### OPET Announces Prize for the Falmouth Public Schools Science Fair

In an effort to encourage junior high and high school students to adopt Oyster Pond as a topic for their science fair project, the OPET board of directors voted to create a prize for the best project pertaining to Oyster Pond and its surrounding watershed. The student with the winning project will receive a prize of \$200. The same general criteria for judging projects that are used for other science fair projects will apply, but one additional criterion for this prize is that the project must address biological, chemical, or physical properties of Oyster Pond or its watershed.

Mr. Dave Berglund, the science fair coordinator and a science teacher at Falmouth High school, welcomed the news of this new prize: "I am sure that students here at FHS will be interested in a study of Oyster Pond. With the large number of students entering projects in the fair, we are always looking for more awards to give." The prize will be awarded at the science fair in March 2002. Students are encouraged to view our web site ([www.opet.org](http://www.opet.org)) for ideas about projects and to contact OPET members who might be willing to provide advice.



# Focus on Conservation Restrictions

**Fact:** Leakage of nitrates and phosphates ("nutrients") from septic systems in developed watershed areas is the main culprit in causing deterioration of the water quality in our lakes, ponds, estuaries and embayments. Since traditional septic systems (including Title V) have been designed primarily to remove pathogens (bacteria, viruses, etc.) and since nutrient-removing systems are still being tested and are more expensive, the best way now to safeguard the health of a pond is to limit the number of septic systems in the pond's watershed area. With current real estate prices, it is prohibitively expensive for OPET to buy vacant land in the watershed for conservation. But there are other ways in which land can be protected from development. One such way is for landowners to place a **Conservation Restriction** on their buildable property. This has a number of advantages for the landowner. OPET is ready to assist any landowner who wants to take this avenue.

## In the past 4-5 years, Oyster Pond Watershed and its environs

have experienced a mini-boom in building. Lots that stood vacant for decades now feature large, highly visible homes. This rampant growth in our neighborhood and, indeed, all over the Cape threatens what many of us think of as the essence of Cape Cod -- its natural beauty -- and it is easy to feel frustrated and helpless to stem the tide. For some homeowners, especially those whose homes are built on two (or more) adjacent, buildable lots, a legal tool known as a conservation easement is available, which can permanently restrict the use of property and thereby limit (or prevent) future development.

What exactly is a conservation easement? As stated in an article, by Mark Robinson, featured in Salt Pond Areas Bird Sanctuaries' Y2000 annual report: "A conservation easement is a legal agreement between a landowner and a land trust (a private, nonprofit conservation organization) or government agency that permanently limits a property's use in order to protect its conservation values." The 300 Committee is such a land trust in Falmouth.

When the use of the land is restricted, its assessed market value decreases, resulting in several financial benefits to the owner: 1) a permanent reduction in property taxes on the parcel; 2) a federal income tax deduction in the year the easement is set up, equal to the difference in the land's value before and after the restrictions are applied; and 3) a reduced value of the property when it passes into the estate of the owner upon his/her death. Because of the dramatic appreciation of land values on the Cape in the past twenty years, this benefit helps keep property ownership within a family,

rather than it having to sold to pay estate taxes. Conditions of conservation easements are reasonably flexible, allowing an owner to specify the desired degree of privacy and types of usage allowed. Public access may or may not be allowed, for example.

A conservation easement is complex enough legally and financially that any owner considering such a move would want to consult his/her lawyer. There is a variety of related ways to achieve land protection, of which at least two are relatively simple ways to protect extra lots from future development.

One of these is to make an outright gift of the property to a qualified land trust (e.g., The 300 Committee): in this case the full current fair market value may be deducted (with limitations of the federal tax code) from income for federal income tax purposes,\* whereas if the land were sold, capital gains taxes would almost certainly be due. Another simple way to limit future development on your property applies to homes built on more than one lot that, individually, are considered undersized in today's current zoning, but which have grandfathered development rights.

Suppose your home is on a piece of property, 3/4 acre in size, and you own an adjacent lot of the same size. Because of grandfathering, those lots are both buildable in the future, even though current zoning is more restrictive. It is possible, and simple, to execute a legal document effectively combining the two lots into one, in perpetuity. Because the market value of the empty lot is decreased, the property's assessed value for tax purposes is reduced: a financial benefit to the owner.

\* Briefly, the limitations are: for real property gifted to a qualified non-profit, as opposed to a cash gift, in a single year one can deduct an amount equal to 30% of that year's adjusted gross income, while additional cash donations can take the donor's charitable deductions for the year up to 50% of income. Unused portions of a deductible gift may be carried forward to future tax returns for 5 years. You could make additional charitable gifts in cash of another \$20,000 each year, for a total of \$50,000, or 50% of income.

## Want to learn more about permanently protecting land you own against future development?

Call The 300 Committee (508-540-0876) for their booklet "Conservation Options: A Landowner's Guide." It is a thorough introduction to the subject. Please also contact OPET's board, as we want to stay apprised of all such activities in our watershed. We may be able to help guide you through the process as well. If we work together and plan ahead, our watershed can remain as beautiful forever as it is now!

--By Mindy Hall 508-289-2599 [mhall@whoi.edu](mailto:mhall@whoi.edu)