March 13, 2003

Eric McLaughlin
Chairman, Falmouth Conservation Commission
Town Hall Square
Falmouth, MA 02540

RE: Management Options for Conservation Commission-owned Cranberry Bogs

Mr. McLaughlin:

As you know, between 1996 and 1998, the Buzzards Bay Project had met with the Falmouth Conservation Commission and Falmouth Bog Committee on several occasions to address concerns regarding pesticide release from town-owned bogs into the Coonamessett River. Members of both groups had expressed concerns that pesticides could not be applied to the bogs in accordance with pesticide label guidelines as required by federal pesticide regulations. These town-owned bogs are considered to be "flow through" or "open" systems because there is no separation between the bogs and the Coonamessett River, as well as one of the bogs on the Childs River. This lack of separation does not allow pesticides applied through the sprinkler irrigation system to be contained within the bogs. Instead, water (containing pesticides) from the bog flows directly into the river, which for some pesticides, is in violation of the label requirements. A situation such as this could result in fish and invertebrate kills in the adjacent Coonamessett River or Childs River[1].

The Buzzards Bay Project has estimated that only 10% of bogs in Massachusetts remain as "flow through" bogs, and to our knowledge, the Falmouth bogs are the only town-owned bog of this type remaining in Massachusetts. Under current Department of Environmental Protection's regulations (adopted in 1996, Renovation of Abandoned Cranberry Bogs, 310 CMR 23.00, attached), if bogs such as the Town of Falmouth bogs were ever abandoned, they could not be brought back into production without being hydraulically separated from streams/rivers and must utilize "tailwater recovery ponds" for pesticide control.

In 1996, the Buzzards Bay Project and the Falmouth Conservation Commission prepared a Section 319 non-point source pollution proposal to address this situation. In 1997, Massachusetts Department of Environmental Protection (DEP) awarded $70,000 to begin the process of separating the Coonamessett River from bog activities. This initiative would not only reduce pesticide transfer to the river, but would reduce fertilizer transfer as well. However, at that time, Ethylene Dibromide (EDB) was discovered in the river originating from groundwater contamination from the Massachusetts Military Reservation (MMR). Because of the uncertainty of the future viability of the bog, and clean-up schedule associated with the

[1] The tenant subsequently implemented a practice on the Childs River "Farley" bog where the river is diverted to a holding pond for a prescribed number of days to enable impoundment of irrigations waters containing pesticides in order to comply with pesticide label requirements.

MMR plume cleanup, DEP withdrew funding for the project. Information about this project can be found on the BBP's website at: www.buzzardsbay.org/falmouth.

In December 2003, the current lease on these bogs is due to expire. As a result, the Town of Falmouth is considering a number of management options for the bogs. This is appropriate, given the fact that the Conservation Commission is the owner of the bogs and is ultimately responsible for their proper operation and management. The Commission is of course also the key local board with the responsibility to protect the environment. Several options available to the town are described below. Of course, the town could consider different strategies for different bogs owned by the town.

Option 1: Restore the bogs to wetlands

Several state and federal programs are available to provide technical and financial assistance to restore the cranberry bogs to wetlands. One such program is through the US Department of Agriculture's Wetland Reserve Program (WRP). This program provides an opportunity for eligible landowners to receive financial incentives to enhance wetlands on agricultural land. In this case, the town could enroll all or a portion of the bogs into the program. The enrolled bogs would be taken out of production for a certain number of years (10, 30 or in or in perpetuity) and the wetlands restored. The amount of financial assistance (for restoration and taking the land out of production) will depend on the number of years the bogs are enrolled. With 65 acres of bog enrolled, the town could realize a far greater revenue than it has previously received through leasing of the land. The application form and fact sheet for this program is attached. The Town would need to first confirm with USDA that it is eligible for the program. Given the current market situation and potential demand for this program, the Buzzards Bay Project strongly recommends that the town submit an application to USDA as soon as possible, even if you feel the future of the Falmouth cranberry bogs is unresolved, to ensure consideration in the program.

In addition to the USDA program, the Buzzards Bay Project has considerable experience in wetland restoration projects. Several state and federal grant programs are available to fund this type of activity. The Buzzards Bay Project and/or Massachusetts Wetland Restoration Program can assist the Town of Falmouth in both developing the grant application and applying for the applicable state and federal permitting. Grant funds obtained could be used to develop site plans and designs used for the permitting. While federal programs often require matching funds, state or trust program grants can be used as match. The key funding programs that have been most active in Massachusetts's wetland restoration projects are:

- Massachusetts GROWetlands Grant Program
- Army Corps-EPA Coastal America Program
- US Fish and Wildlife Service, North American Waterfowl and Wetlands Office
- Massachusetts Environmental Trust
- USDA Wetland Reserve Program
- USDA Wildlife Habitat Incentive Program (WHIP) funds

Option 2: Continue traditional or organic cranberry bog production.

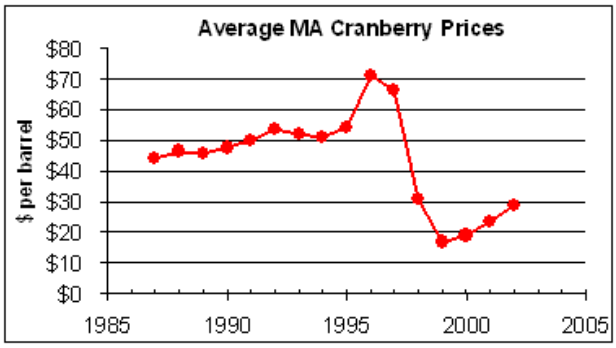
Under the existing regulations, the Town of Falmouth "flow through" bogs are "grandfathered," and are allowed to operate in their current configuration and are not required to meet modern design standards for pesticide control (such as bypasses and tail-water recovery ponds). However, given the fact that the principal mission of the Conservation Commission is to protect wetlands and water quality, the Commission no doubt has the desire to immediately implement these modifications should the town desire to continue cranberry production. Without proper control, many pesticides used on cranberry bogs can adversely impact fish and invertebrates (see attached sample pesticide information). In Appendix A, a list of pesticides used on the Falmouth bogs by the leaseholder, along with some label information, is provided.

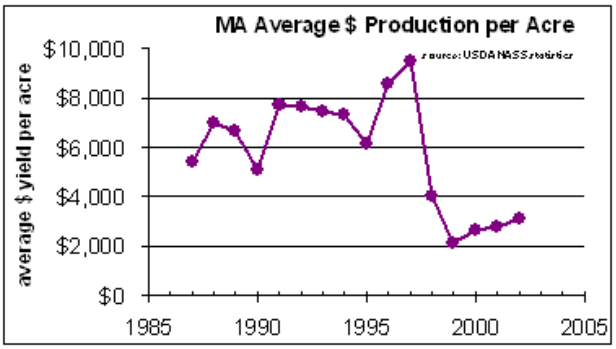
To assist the Town in controlling pesticides the USDA Natural Resources Conservation Service (NRCS) can provide technical and financial assistance under their Environmental Quality Incentives Program (EQIP). The types of practices could include tail water recovery ponds and bypass canals. EQIP funds could pay for up to 75% of the installation costs. It is important that the Conservation Commission actively participates and selects designs that best meet the interests of the town, and not delegate this decision to the leaseholder.

Another option for keeping the bogs in cranberry production would be for the town could require the cranberries to be "organic". To be certified as organic, the operator would need to stop the use manufactured fertilizers and pesticides for a period of three years. With likely lower production rates and non-organic cranberry prices, profit by the operator may be reduced during this period. Thereafter, the operator could be NOFA (Northeast Organic Farmers Association) certified as organic, and higher prices could be realized for the cranberries because of organic product demand. The town or its lessee would also have to pay for testing and NOFA application. More information on organic farming certification can be found at www.nofamass.org.

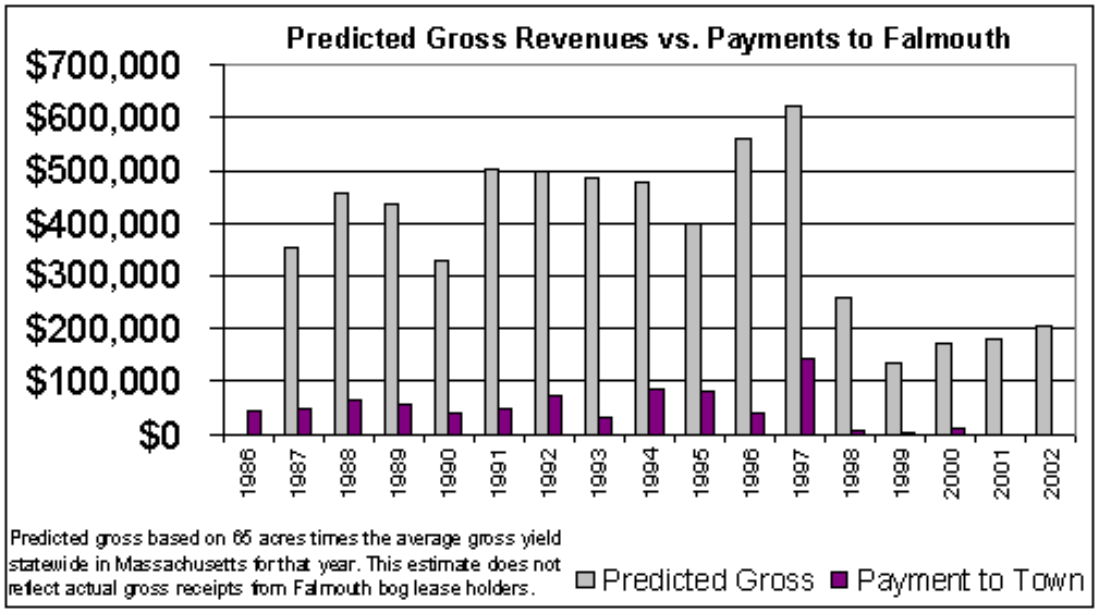
Under either option 1 or 2, the Town could also subdivide the single family home on one of its properties and either rent or sell it to generate additional revenues. The Town would also need to work with the Massachusetts Department of Conservation Services on properties purchased with state grant funds. Please note that for the town-owned cranberry bogs purchased with state Self-Help Grant funds for open space protection, such as those found in Falmouth, income generated from the bogs is required to be placed in an interest bearing Conservation Trust account for conservation and town open space and habitat protection per the town's agreement with the Massachusetts Executive Office of Environmental Affairs.

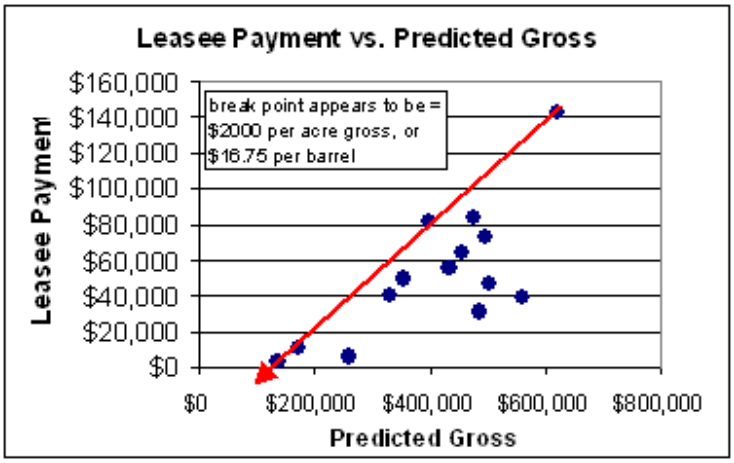
In addition to options discussed above, the Buzzards Bay Project has put together some information on the potential future revenues from cranberry production. As the Conservation Commission is aware, the market value of cranberries in the United States has dropped dramatically during the past 5 years. In the figures below, we show cranberry prices per barrel, and average annual gross revenues per acre of bog in Massachusetts (data gathered from USDA statistical reports on state crop production and revenues). As shown, annual gross income yield for cranberry bogs in Massachusetts was as high as $9,000 per acre in 1997, but has dropped down to $2,000 to $3,000 per acre in recent years. Although prices have been recovering somewhat for the past several years, average bog yield may not recover to over $6,000 per acre because of greatly increased land in production in Wisconsin, Canada, and elsewhere. There are even concerns about the entry of China into the cranberry market (http://www.cranberrystressline.com/editorial_101602.html).





The loss in cranberry market value is reflected in payments to the town by its current leaseholder as shown in the figures below. Note that the predicted gross revenues is based on average Massachusetts yields and do not necessarily reflect actual production in the Falmouth bogs. Payments by the leaseholder in 1998, 1999, and 2000 were negligible because of EDB contamination of the bog. In addition, payments to the town were based only on wet pick production, and not dry pick production, which can vary from year to year.





Despite the limitations of the data shown above, when plotted as shown in the graph to the left, it makes clear that the town can expect little or no payments when bog production and prices result in prices of less than $2,000 per acre. This value is consistent with other reports that the "break even" yield for the average bog operator is in the $2,000-$3,000 range.

We hope you find this information useful. If the Buzzards Bay Project can be of further assistance, please do not hesitate to call me.

Sincerely,

Joseph E. Costa, PhD
Executive Director

cc. Board of Selectmen

Appendix A. Pesticides used on Falmouth Cranberry Bogs circa 1998-2001. Pesticides requiring impoundment holding time cannot be applied to flow through bogs without water controls.

Draft information under review, information may not be complete. 3/13/03

Name	O.Spray Code	Application	Rest. Entry (hrs)	impoundment holding time, days	do not apply to surface waters	Use
Roundup	320	Wiping	6		TRUE	Herbicide
Cosoron	300	Ground applied				Herbicide
Terranil	582	Sprinkler	48	3	TRUE	Fungicide (fairy ring)
Carbamate	540	Sprinkler				Fungicide (fruit rot) = "Ferbam"
Sevin 805	222	Sprinkler	12		TRUE	Insecticide
Sevin XLR	221	Sprinkler	12		TRUE	Insecticide
Lorsban 4E	180	Sprinkler	24	5	TRUE	Insecticide
Dithane DF	567	Sprinkler			TRUE	Fungicide
Orthene 75S	270	Sprinkler	24		TRUE	Insecticide
Champ	520	Sprinkler				Fungicide (fruit rot)
Devrinol	310	Ground applied				herbicide (grasses)
Bravo	581	Sprinkler	48	3	TRUE	Fungicide (fruit rot, upright dieback)
Diazinon	211	Sprinkler	24	3	TRUE	Insecticide
Diazinon	209	Sprinkler	24	3	TRUE	Insecticide
Kocide	520	Sprinkler				Fungicide (fruit rot)