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Date: 3 February 2004

To: Joint Standing Committees for Natural Resources and Inland Fisheries and Wildlife

From: DEP Invasive Species Program, DIF&W Staffs

Subject: Prevention and Control, Invasive Aquatic Species 2003 in review

Invasive aquatic plants and illegal fish introductions are cited by lake biologists as today's leading threats to the environmental quality of New England's inland surface waters. Plant invasions translate into social and economic burdens associated with lost recreation, degraded real estate values and escalating vegetation control costs. These costs amount to millions of dollars spent each year in Maine's neighboring states that face at least five already established aggressive nuisance plant species. Illegal fish introductions pose similar threats to both the diversity of Maine's inland fishery as well as to the vigor of Maine's outdoor sports industry.

As of this writing, Maine is contending with two plant problems—variable-leaf water milfoil (*Myriophyllum heterophyllum*) and hydrilla (*Hydrilla verticillata*). One previously undocumented pond, Shagg Pond, was added in 2003 to a list of 15 ponds or lakes infested with variable milfoil. Only one pond, Pickerel Pond, contains hydrilla. A detection of a third invasive species, curly-leaved pondweed (*Potamogeton crispus*), was reported in West Pond, Parsonfield, during mid summer 2003; however, the degree of its establishment cannot be determined until next spring.

Meanwhile, Maine's traditional fish invasion issues caused by the introduction of perch, smelt and smallmouth bass are now dwarfed by recent findings of more competitive alien species such as northern pike, black crappie and largemouth bass.

The mission of the Invasive Species Program is to reduce risks of introduction and further spread of these species in Maine's 6,000-plus ponds and lakes. The responsibility to carry out this mission is shared jointly with the Department of Environmental Protection and the Department of Inland Fisheries and Wildlife. We have sustained a high degree of public awareness of this issue and continue to enlist significant numbers of volunteer efforts to monitor lakes, inspect boats and offer outreach locally.

Jointly we continue to meet the established goals of the program while addressing new issues. Among them are increased requests from residents and users of lakes seeking assistance in managing established invasive plant problems. While providing increased support to respond to these requests, it is incumbent upon both agencies to also apply proportionately greater resources to prevent plant invasions--an option far more cost effective in the long term than mitigating established invasions.

As we share a joint responsibility to the Invasive Species Program our agencies have somewhat different yet complementary roles in the prevention and control of invasive species. Essential compliance with Maine invasive plant and illegal fish introduction laws are met through general outreach, direct boater interviews by wardens and enforcement.

The ultimate success in preventing the spread of invasive plant or illegal fish releases rests in compliance of persons who use Maine waters.

The following is a summary of the efforts of both agencies for the year 2003.

The DEP's 2003 at a glance:

Public Outreach, Education

Interagency Collaboration:

- Maine Department of Inland Fisheries and Wildlife (DIFW) distributed 75,000 copies of DEP's 2003 brochure *Your Boat Sticker and Maine...Together We're Fighting Aquatic Invaders* to town clerks, licensing agents, and elsewhere where Maine's Lake and Rivers Protection stickers are sold. This brochure was also distributed by way of DIFW's on-line fishing license and boat sticker internet sales program.
- DEP distributed 40,000 of these brochures statewide to lake associations, at courtesy boat inspections and to municipal officials.
- A preseason mailing of 60,000 postcards sent by DIFW, and co-written by DEP, invited last year's out-of-state inland anglers to return to Maine but leave the aquatic weeds back home. It also reminded visitors that the purchase of a Maine's Lake and River Protection Program sticker was an annual and not a one-time obligation.
- Aquatic invasive species information remains in the curriculum throughout DIFW's recreational safety program and in training materials for Registered Maine Guide examination.
- Maine Turnpike Authority (MTA) continued to distribute the *Clean Your Boat Before You Float* brochure to motorists towing boats through the York tollbooth. MTA also revised and rebroadcast a public service announcement reiterating Maine law that prohibits transport of invasive species.
- DEP furthered outreach to garden centers and pet stores. In collaboration with Maine Department of Agriculture (DAFRR), DEP culled a DAFRR database to identify 51 Maine retailers that sell live plants. DEP or DAFRR interviewed plant buyers at all stores in person, inspected inventories and acquired name of stores' suppliers. Five stores were found selling one or more invasive plants: Brazilian elodea (*Egeria densa*) (4 stores), Fanwort (*Cabomba carolinana*) (2 stores) and Parrot feather (*Myriophyllum aquaticum*) (1 store). *Hydrilla verticillata* was found hitchhiking on some oxygenating plants in one of the stores. Invasive plants found were labeled

merely as “oxygenating” plants or mislabeled entirely. Pet stores had small quantities of aquatic plants, garden centers sold large quantities.

Signs:

- DEP distributed 86 of its general boat ramp/*Remove All Plants* signs statewide. Infested lakes were posted with special *this lake is infested* signs at boat ramps. Also given were signs to Pickerel Pond residents upon request to direct trailered boats from uncontrolled use of their private accesses to the gated/inspected public boat ramp.

Plant Sales:

- Twenty-one aquatic plant suppliers were contacted and informed of Maine’s invasive species law. Four northeast vendors supply most Maine stores. An internet search revealed 32 out of 53 on-line businesses sold invasive plants: Brazilian elodea (*Egeria densa*), Fanwort (*Cabomba caroliniana*) and Parrot feather (*Myriophyllum aquaticum*). Interstate (primarily internet) sales as well as in-state sales are a continuing problem.
- Six biological supply companies that market to school science teachers were contacted urging them to be aware of the difficulty in plant nomenclature. Scientific names applied to plants change over time; it is possible that yesterday’s formal scientific name can become tomorrow’s pseudonym for an invasive threat. A visible example of this is Brazilian elodea (*Egeria densa*) and its aliases *Anacharis sp.* and simply *Elodea sp.* Several other biological supply companies were newly identified and will be contacted in the coming year.
- A letter was mailed to 850 middle, junior and high school science teachers early in the school year alerting them to beware of invasive plant pseudonyms. Also, DEP-bylined articles were submitted to and published by the Maine Science and Teacher Association (MSTA) for inclusion in their listserver, newsletter, and web page as well as by the national Aquatic Gardeners Association for its quarterly. Maine DEP also hosted an invasive plant information display at the annual MSTA Conference.

Worth noting is the burgeoning market for exotic plants. Today, we have identified 11 problem plant species. The huge international market for imported ornamental and aquarium plants may introduce new, unrecognized problem species tomorrow.

Media and General Outreach:

- Continued print and electronic news coverage on a broad scope of invasive species as well as on specific topics such as Messalonskee Lake access and herbicide use in Pickerel Pond.
- As of this writing, producers for Maine Public Broadcasting's *Quest* are editing interviews with biologists and state officials representing Maine, New Hampshire and Vermont for an episode slated to be aired on 17 and 22 February 2004 in these states. *Quest* is a National Science Foundation-sponsored documentary series that reports on science issues affecting these three states.
- DEP distributed two bylined articles from its series, *In Our Back Yard*, discussing invasive plant prevention and native plant protection.
- Also distributed were copies of last year's *Clean Your Boat Before You Float* brochure at outreach opportunities such as Common Ground Country Fair and by community efforts at local boat ramps.
- Seventeen public speaking opportunities were used by DEP-ers throughout the state. Two more presentation requests to DEP were handled by biologists representing the Department of Conservation's Maine Natural Areas Program (MNAP). MNAP provided other presentations on aquatic invasive species as well.
- Public interest remains compelled by the topic of invasive species as seen at this year's Common Ground Country Fair. There, DEP-ers staffed a simple informational booth that featured a challenge to passersby: which of four jars—three containing native plants—held variable milfoil? Signage explained value of native plants and need to prevent movement of the variable milfoil. DEP-ers on hand reported exceptional interest in invasive species with many inquiries received both at and after the Fair.

Boat Inspections

- Courtesy Boat Inspection has increased from 2,500 in 2001 to 6,500 in 2002 to greater than 10,000 in 2003.
- Lake Environment Association (LEA) administered \$50,000 of DEP pass-through funds to promote outreach by way of competitive cost-sharing grants. These grants expanded boat inspections/invasive plant prevention efforts from 14 (2001) to 27 (2003) municipalities and lake associations which do not face invasives. Other groups are reported to have conducted inspections at their own expense and without cost-share funding. LEA's effort also included pass-through funding of new public service

- announcements aired locally on radio and television to bring invasive plant awareness to Aroostook County.
- Courtesy boat inspections are integral to preventing new infestations in Maine. Under contract with DEP, LEA hosted 17 volunteer training sessions (eight held in-house at LEA, the rest on site). A subcontract with Congress of Lakes Associations brought five additional boat inspection training sessions for the first time to northern and eastern regions of the state.
- \$47,000 of direct grants administered by LEA resulted in paid inspections at Sebago Lake, Thompson Lake, Lake Arrowhead, Lake Auburn, Pickerel Pond, Pleasant Pond (Richmond), Pleasant Lake (Casco), and Messalonskee Lake. The objective of these paid inspections was to reduce risk of spread from infested lakes.
- Maine Department of Inland Fisheries and Wildlife announced it would move from warnings to the next level of compliance, enforcing Maine law with summonses upon finding evidence of boat ramp drive-offs with plants still attached to motor props, trailers, etc.

Monitoring

- The third season of Voluntary Lake Monitoring Program's Plant Patroller Monitoring program has now created a cadre of greater than 800 trained volunteers (350 trained in 2003) able to identify invasive plants statewide. These "citizen scientists" provide a core force for surveying boat ramps, dock and swimming areas and other areas of human use and potential plant invasion.
- Search for hydrilla in Lake Arrowhead. As part of a cooperative project between DEP and DOC, Maine Natural Areas Program also search lakes near Pickerel Pond for hydrilla. None outside of Pickerel Pond was found, fortunately.
- Ongoing DEP evaluation of infested lakes include Cushman Pond, Lake Arrowhead, Sebago Lake, Thompson Lake, Messalonskee Lake and Belgrade Stream, The Basin upstream from of Lake Auburn, Pleasant Lake (Casco) and Shagg Pond.
- Thanks to a grant from the Maine Outdoor Heritage Fund, Maine Natural Areas Program assessed aquatic plant communities statewide in 70 Maine lakes and created a first-cut analysis of lake vulnerability to exotic plant infestation. The 2003 field season was the second of the two-year project. Evaluation of this project will occur in 2004. Until this project, there existed little plant community data for Maine lakes.

Site Management

- DEP facilitated efforts of volunteers to remove variable milfoil by hand on Messalonskee Lake, Lake Christopher (Bryant Pond), Little Sebago Lake, Lake Arrowhead, Hogan Pond, Pleasant Lake (Casco), The Basin (upstream) of Lake Auburn and Balch Pond. DEP also contracted professional SCUBA divers for hand removal work in Sebago Lake State Park, Messalonskee Lake boat ramps (in Belgrade and Oakland) and Lake Arrowhead at Ledgemere Dam to reduce boat-plant contact.
- DEP began what is likely to be a two-year herbicide program for the control of hydrilla in Pickerel Pond. The 46-acre pond is the only one in Maine infested with this plant. Herbicide use is an extraordinary control option due to the aggressive nature of hydrilla. With this program comes a need to develop sustained community interest in non-chemical hydrilla controls for the coming years.
- Maine Department of Conservation, Portland Water District and DEP deployed navigational buoys to direct boat traffic away from heavily infested channels at Sebago State Park. DEP also purchased caution-yellow "Milfoil Area" buoys for eventual deployment by affected municipalities and lake associations.
- Under investigation are protocols for deployment of benthic barriers for 2004.
- The Commissioners of DIFW, DOC and DEP limited trailered use of the Route 27 ramp on Messalonskee to hours when a boat inspector was present to remove plants from boats and equipment leaving (and entering) the lake. Results of 2003 inspections show the plant transmission rate at this ramp (22 per cent launching or exiting, 43 per cent existing only) continues to be much greater than the statewide average (preliminary estimate of three per cent launching or exiting). Cost of these inspections in 2003: \$40 per boater visit.

Rapid Response

- DEP requested and received a U.S. Fish and Wildlife grant of \$60,000 to support development of rapid response capacities of both DEP and IFW. During winter 2003-2004, a contractor is working with DEP and DIF&W to establish rapid response protocol for use in 2004 field season.
- Prior to receipt of this award, DEP had already organized a cadre of professional SCUBA divers trained in hand removal of plants and had acquired nets and other equipment for containing plant fragments during hand removal efforts.

DIF&W's 2003 at a glance:

Public Outreach, Education

Signs:

- DIFW staff, working cooperatively with a number of NGO's, prepared and installed appropriate signage re smallmouth bass in the Rapid River, the Kennebec River, the West Branch of the Penobscot River and several other lakes and ponds.

Media and General Outreach

- Region G fisheries personnel prepared and delivered a presentation to the DIFW Advisory Council on the history of the introduction, spread, impact and management of muskies in the St. John River system.
- Fisheries staff in all Regions continue to utilize available media in disseminating information to the public on the dangers illegal introductions pose to our native fish populations.
- Region B fisheries personnel participated in a DIFW-sponsored public meeting re the impact of Northern pike on the landlocked salmon fishery of Long Pond and the possible mitigation of these impacts.
- The DIFW "Outdoor Partners Program" attended nearly 70 public events in 2003 providing information and answering question about the invasive species program.
- DIFW reprinted the Operation Game Thief reward card that promotes a \$2000 reward for information regarding the illegal introduction of fish species.
- Invasive species information was placed in DIFW fishing and boating lawbooks and other publications.
- Invasive species information was placed in the form of advertisements in a number of Maine outdoor journals.
- DIFW staff provided invasive species information at the Augusta, Bangor, and Presque Isle Sportsman shows and the Fryeburg Fair.

Education and Training

- DIFW fisheries personnel participated in two workshops regarding the status of the effort to minimize the impact and control the spread of smallmouth bass in the Rapid River and associated waters.
- Fisheries staff attended a week-long workshop, sponsored by the USFWS, on the use of pesticides for the control of invasive fish species.
- DIFW staff attended a 2-day workshop on the control of aquatic nuisance species in the Northeast.

- DIFW safety instructors taught recreational safety courses to over 10,000 students in 2003. The invasive species education information was provided to all students across all of the safety programs.
- Training updates regarding the invasive species program were provided through instructor workshops at 12 sites in 2003 with over 300 instructors attending.
- DIFW safety staff attended a number of boat shows and health and safety fairs providing invasive species educational material.

Rapid Response

- Region F fisheries personnel are investigating the first report of Northern pike in the Penobscot River drainage (Pushaw Lake, Orono, etc.).
- DIFW personnel participated in the preparation and submission of a successful grant application to obtain funds for the development of DEP's Rapid Response Plan for the control of invasive aquatics.
- DIFW personnel have participated in the ongoing development of a draft Rapid Response Plan for the prevention and/or extirpation of invasive aquatic organisms, including fish.
- Region A fishery personnel are investigating the occurrence of Northern pike in Sebago Lake. The staff has actively sought and pursued leads on the occurrence of this and other invasive species in Regional waters.
- At the request of the DIFW, the Army Corp of Engineers surveyed Lower Fish River Falls and prepared a report on the usefulness of this feature as a barrier to the upstream migration of invasive fish species.
- Region B fisheries staff continued evaluating the status of an illegal introduction of Northern pike in Webber Pond, Bremen.
- DIFW proposed legislation designed to discourage further illegal introductions through increasing the penalties for the possession and transportation of live fish and for the illegal stocking of fish. The legislation, LD 1635, was passed by the Legislature and signed by the Governor in 2003.
- Region A fisheries biologists cooperated with DEP in the chemical reclamation of Pickerel Pond in Limerick to remove hydrilla, an invasive aquatic plant.
- Region D fisheries staff are investigating the reported occurrence of two nonnative fish species, a catfish and a sunfish, in a private water in that Region.

Monitoring

- Region D fisheries personnel worked cooperatively with a variety of NGO's including FPL, Rangeley Lakes Guides Association and Trout Unlimited. This collaborative effort surveyed aquatic habitat, fish populations and the fisheries in the Rapid River and associated waters. Also studied were the movements of brook trout and smallmouth bass in this system in order to prepare a draft management program for controlling the effects of the smallmouth bass population on the brook trout fishery. It is the objective of this program to prevent the spread of smallmouth bass into other waters in the drainage and to identify and protect the unique genetic characteristics of the river's brook trout population.
- DIFW has promulgated rules permitting the taking of Northern pike through the ice on Long Pond. Region B staff will evaluate the efficacy of this rule change in reducing the impact of pike on the pond's salmon fishery.
- Region G fisheries staff are evaluating the effectiveness of the chemical reclamation of Durepo Lake to remove illegally stocked largemouth bass, a major threat to the pond's brook trout population.
- DIFW's Fisheries Division is in the process of updating fish species occurrence in the surveyed waters of Maine to provide a baseline for tracking the spread of invasive fish species in the state.

Maine Warden Service Invasive Species Enforcement

- Prior to the start of the 2003 boating season discussions were held with Warden Service supervisory staff to establish the most efficient way for game wardens to continue educating and step up enforcement of the laws enacted to prevent the spread of invasive species. In the late summer of 2001, and the entire boating season of 2002, game wardens conducted inspections at boat ramp sites throughout the state. These inspections were designed to educate the public regarding the invasive species program, the Lake and River Protection Sticker Program. Game Wardens expressed that a lack of steady flow of boats at launch ramp sites even during "peak times" created an inefficiency in the use of their time, and suggested that less time be allotted to actual ramp inspections, and more emphasis be placed on contacts with boaters on the water. On the water contacts allowed for higher frequency of boaters being checked for compliance with the Lake and River Sticker requirement, and a chance to educate a broader group of boaters that use a particular body of water.
- Prior to the busy boating season getting underway an enforcement directive was sent to all game wardens calling for stepped up enforcement of the invasive species regulations. The following paragraphs are excerpts from the directive:

“Our charge this summer is to step up the enforcement for non-compliance with the Lake and River Protection sticker and the transportation of any aquatic plants on boats, boat trailers, and associated equipment. After last season we discussed the efficiency of our time spent at boat launch sites. It was determined that spending time at boat launches at peak times of launching and taking boats out of the water was time well spent, but extended times at boat launches could be better spent on the water contacting boaters, and continuing the education process through our regular boating and fishing patrol activities.”

“There are a number of waters in southern and central Maine that contain infestations of variable leaf milfoil. Wardens having such infestations in their patrol area should pay close attention to boats leaving those sites and should be prepared to take enforcement action against those that fail to comply with cleaning their boats, trailers, and equipment before leaving the launch site. The same consideration needs to be made as boats are launching; enforcement action needs to be taken against those that launch a boat with attached aquatic plant material.”

“During this fiscal year we have three game warden positions funded by Lake and River Protection money as well as capitol allotment for the purchase of new boats. Education and enforcement of the laws pertaining to invasive species should become part of your routine patrol for fishing and boating related activity.” (Colonel Timothy Peabody 7/3/03)

- During the 2003 boating season wardens responded to several specific complaints of bodies of water where non-compliance with the Lake and River Protection sticker was noticed by other boaters. Non-compliance with boating registration requirements is one of our number one boating violations, which would suggest that the same rate of violation would be expected for display of a current Lake and River Protection Sticker. Language in the current law would not allow a warden to charge a person for failure to display a Lake and River Protection Sticker if a summons had been issued for another violation, creating an inaccurate view of the compliance rate.
- In 2003 game wardens checked 15,254 boats for compliance with Maine’s Lake and River Protection Sticker Program and all other boating regulations. 29,037 persons were checked for compliance with fishing regulations. Game Wardens use this as an opportunity to answer questions from the public and to encourage compliance with invasive species regulations.
- In 2003 Maine Game Wardens wrote (7) summonses, (105) warnings, and answered (45) complaints of non-compliance with the Lake and River Protection Sticker. Wardens issued (3) warnings for transporting aquatic plants.

- Game Wardens attended a number of lake association meetings as guest speakers, and included key points of the invasive species program as part of their presentations.
- The Warden Service Investigative Division continues to monitor information and investigate leads of illegal introductions of fish species into Maine waters.
- Budget reductions in FY/04 eliminated the (6) additional game warden positions that were to be filled this year. The personal service funding from the Lake and River Protection Fund was used to avoid layoff of 6 additional game warden positions in FY/04 and FY/05.