



**STATE OF MAINE
BOARD OF ENVIRONMENTAL PROTECTION**

IN THE MATTER OF

LOCKWOOD HYDRO PROJECT)
#L-20218-33-C-N)
)
HYDRO-KENNEBEC PROJECT)
#L-11244-35-A-N)
)
SHAWMUT HYDRO PROJECT)
#L-19751-33-A-M)
)
WESTON HYDRO PROJECT)
#L-17472-C-M)



**TESTIMONY OF FRIENDS OF MERRYMEETING BAY
CHAIRMAN ED FRIEDMAN**



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JOINT EXHIBITS OF PETITIONERS

W/FOMB:

1. Requested language for modified water quality certifications.
2. DEP Consent Agreement and Enforcement Order against Benton Falls Associates.
3. Cited portion of the response to comments for the Water Quality Certification for Gulf Island-Deer Rips Hydro Project Water Quality Certification.
4. Quebec Declaration of Concern.
5. United States Fish and Wildlife Service (“USFWS”), 90-Day Finding On A Petition To List The American Eel As Threatened Or Endangered.
6. James McCleave, Simulation of the Impact of Dams and Fishing Weirs on Reproductive Potential of Silver-Phase American Eels in the Kennebec River Basin, Maine, *North American Journal of Fisheries Management*, 21:592 (2001).
7. DMR, Kennebec River Diadromous Fish Restoration Annual Report 2002, p. 63.
8. DMR, Kennebec River Diadromous Fish Restoration Annual Report 2001, p. 37.
9. Cited portion of the November 2004 Northern Sky News, which contains a quote by Gail Wipplehauser of the Maine Department of Marine Resources (“DMR”).
10. October 28, 2004 photographs by DMR of eels killed by turbines at Shawmut.
11. Photographs taken by FOMB of eels killed by turbines at Benton Falls dam.

12. Eel fecundity chart comparing USFWS and McCleave.
13. Laboratory data, QA/QC, and bar graph regarding contaminant analyses on eels killed at Benton Falls.
14. DMR, Kennebec River Anadromous Fish Restoration Annual Progress Report 2003, p. 5.
15. Photographs of mutilated out-migrating fish and eels at Shawmut, Burnham, Benton Falls and American Tissue dams.
16. DMR, Kennebec River Anadromous Fish Restoration Annual Progress Report 2004, p. 17.
17. Eel Protection Devices and Operations at the Rimouski River Hydroelectric Powerplant: A Win/Win Approach, by Guy Verrault and Jean Therrien for Parcs Quebec.
18. January 9, 2005 comments by Professor James McCleave.
19. May 8, 2006 letter from George LaPointe to Christopher Shaw of FPLE.
20. KHDG Exhibit B
21. USFWS map dated October 20, 2006 showing American Eel distribution and dam locations in the Merrymeeting Bay Watershed (Androscoggin & Kennebec Watersheds).
22. Water quality certification for Lockwood Hydro Project.
23. Water quality certification for Hydro-Kennebec Project..
24. Water quality certification for Shawmut Hydro Project.
25. Water quality certifications for Weston Hydro Project.
26. Aerial photographs of each dam.
27. Photograph of eel clogged turbine.

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**TESTIMONY OF FRIENDS OF MERRYMEETING BAY
CHAIRMAN ED FRIEDMAN**

1. I am the Chairman of Petitioner Friends of Merrymeeting Bay (“FOMB”). I submit this testimony in support of FOMB’s and Douglas Watts’ Petitions to modify the water quality certifications for the above-captioned dams so that the certifications will protect migrating fish and eels.

WHAT IS SOUGHT BY FRIENDS OF MERRYMEETING BAY

2. FOMB asks that all relevant provisions in the water quality certifications relating to fish and eel passage be replaced with the following language:

The dam operator shall provide immediate, safe and effective upstream and downstream passage for all indigenous migratory fish. For the purposes of this paragraph:

- a. “Immediate” means the date this certification is approved by the Board of Environmental Protection.
- b. “Safe” means that all fish migrating upstream can pass the dam and no fish migrating downstream are killed or injured by the dam.
- c. “Effective” means efficiently.

- d. “Fish” includes, but is not limited to, the American eel.

For convenience, I am setting out this proposed language in a separate document, attached as Exhibit W/FOMB-1.

OVERVIEW OF WHY FOMB SEEKS MODIFICATION

3. Dams block migrating fish and eels swimming upstream, and with their turbines kill and injure fish and eels swimming downstream. The current water quality certifications do not require safe passage for fish and eels. They only require studies, which have been dragging on for nearly a decade and have not resulted in safe passage. Rather than literally study fish and eels to death, Petitioners ask that the Board simply require safe passage. This will protect important aquatic life, satisfy water quality standards, and force the dam owners to solve the problem.

4. FOMB’s Petition satisfies four of the bases – set forth in Ch. 2, § 27(C) - upon which a decision to modify can be based (only one is needed):

a. *The licensed activity poses a threat to human health or the environment.* The operations of the dams clearly threaten the environment because they kill and injure fish and eels and reduce their habitat.

b. *The license fails to include any standard or limitation legally required on the date of issuance.* The water quality certifications must assure that the Kennebec is suitable “as habitat for fish and other aquatic life.” 38 M.R.S.A. § 465(3) and (4). But the certifications do not do that because they allow fish and eels to be killed and injured.

c. *There has been a change in a condition or circumstance that requires modification of the terms of the license.* The U.S. Fish and Wildlife Service and National Oceanographic and Atmospheric Administration (NOAA Fisheries) have recently acknowledged that the population of American eel is in such decline that it is now under

consideration for inclusion on the Endangered Species List. There is now greater awareness of the consequences of no safe passage.

d. *The licensee has violated a law administered by the Department.* The licensees are causing a violation of water quality standards because they kill and injure fish and eels, and reduce their habitat.

5. I understand that the Department of Environmental Protection will likely take the position that the dam owners are looking in to the problem and that should suffice. The Petitioners believe that DEP has not addressed this situation adequately, and that it is unrealistic to expect DEP to now concede that.

OVERVIEW OF HOW PETITIONERS KNOW THAT DAMS KILL AND INJURE FISH AND EELS AND REDUCE THEIR HABITAT

6. There is extensive evidence that the four dams kill and injure fish and reduce their habitat. Later in my testimony I detail this evidence, but here is an overview:

a. The Maine Department of Marine Resources (DMR) has documented with studies and pictures eel deaths and injuries during downstream migration at Lockwood and Shawmut.

b. DMR has documented upstream passage problems for fish at the four dams in the department's Kennebec River Diadromous Fish Restoration Annual Reports. DEP has acknowledged that upstream "trap and lift" equipment at the dams have not worked for shad.

c. The U.S. Fish and Wildlife Service ("USFWS") has concluded that as a result of upstream migration blockage and turbines, eels have been especially impacted by hydropower dams, which are a substantial threat to the eel population as a whole. The population of the American eel is in such jeopardy that USFWS and NOAA Fisheries are currently considering whether to include the species on the Endangered Species List.

d. Studies by scientists around the world have established that eel mortality and injury rates from dams can be as high as 100% per dam.

IMMEDIATE, SAFE AND EFFECTIVE UPSTREAM AND DOWNSTREAM PASSAGE ARE REQUIRED BY WATER QUALITY STANDARDS

7. The water quality standards applicable for the four dams require that the Kennebec shall be of such quality that it is suitable for habitat for fish and other aquatic life, which is a “designated use.” Killing and injuring fish and eels and blocking their migration do not satisfy this standard.

8. Board and DEP precedent is clear that dam operations cause a violation of water quality standards when they kill or injure fish and eel, or destroy habitat. For instance, in 1999 DEP cited Benton Falls Associates for causing a violation of water quality standards on the Sebasticook River when on two days out of the entire migration season its dam turbines killed alewives migrating downstream. A copy of the DEP Consent Agreement and Enforcement Order against Benton Falls Associates reflecting this is attached as Exhibit W/FOMB-2. Another example is that in 2003 the Board required S.D. Warren to provide for upstream and downstream fish and eel passage at its dams on the Presumpscot in order to comply with water quality standards.

9. Just as the Board could not find that water quality standards are satisfied by a factory that kills or injures fish that pass by its outfall pipe, it cannot find that the standards are satisfied by dams killing or injuring migrating fish.

10. That the dam owners may be studying fish and eel passage now – after a century of operating and after nearly a decade of promising to study passage – does not mean fish and eels are no longer being killed and injured (they are) and does not mean habitat is unimpaired (it is). It only means that the problem has not been solved yet.

SOME OPPOSITION ARGUMENTS NEED TO BE DISPELLED

11. Some specious arguments have been raised repeatedly in this proceeding, and I anticipate that they will be raised again.

It Is Not True That FERC Renders This Proceeding Meaningless

12. The dam owners argue that once the Federal Energy Regulatory Commission issues a license for a dam, a water quality certification cannot be modified. They argue that water quality certifications are frozen in time for the length of a FERC license – which can be as long as 50 years. That would be an absurd result, and Maine law and this Board have recognized that absurdity. Maine law expressly provides that the Board may modify a water quality certification. 38 M.R.S.A. § 341-D (3). In addition, this Board has stated, in connection with another FPL Energy dam, that:

the Board may modify any water quality certification whenever it finds that, among other things, the approved activity poses a threat to the environment or there has been a change in any condition or circumstance that requires modification of the terms of the certification. Thus, the DEP already has statutory authority to re-open this WQC [water quality certification] to impose new conditions regarding eels as may be warranted in the future.

Attached as Exhibit 3 is the relevant portion of the response to comments for the Water Quality Certification for Gulf Island-Deer Rips Hydro Project Water Quality Certification, where the Board made this statement.

13. The dam owners also suggest that nothing will become of a modified water quality certification, so the Board might as well deny the Petitions. FOMB rejects this view of the Board as a powerless and ineffectual body. As the recent S.D. Warren Supreme Court case made clear, the State is responsible for safeguarding water quality standards and the aquatic environment.

14. There is nothing to prevent this Board, DEP, or even the Governor from requesting that FERC amend its licenses to the dam owners so that the licenses include modified water quality certifications. FERC and the licensees would then negotiate a

new license. It is speculative to insist that nothing will come from that process. In fact, as the State notes in footnote 24 on page 26 of its Draft Findings of Fact and Order for the first petitions for revocation, modification or suspension of water quality certificates for dams on the Androscoggin River filed by FOMB and Douglas Watts:

“All FERC licenses contain the following standard condition: “The Licensee shall, for the conservation and development of fish and wildlife resources, construct, maintain, and operate, or arrange for the construction, maintenance and operation of such reasonable facilities and comply with such reasonable modifications of project structures and operation, as may be ordered by [FERC] upon its own motion or upon the recommendation of the Secretary of the Interior or the fish and wildlife agency or agencies of any State in which the project or a part thereof is located, after notice and opportunity for hearing.” FERC Forms L-3, L-4, L-9, L-10, L-11, L-12, L-14, and L-15 (October 1075).”

15. In any event, the water quality certifications contain “reopener” clauses. With respect to eels, the certifications specifically state that because no consensus was reached on eel passage issues by June 30, 2002, DMR or the Maine Department of Inland Fisheries and Wildlife (IF&W) can petition FERC “to approve appropriate conditions relating to eel passage at the project.” If the Board determines that the water quality certifications must be modified in order to protect aquatic life and achieve water quality standards, DMR and IF&W could – and in all likelihood would - petition FERC to incorporate those modifications.

**It Is Not True That The Nearly Decade-Old
KHDG Agreement Prevents The Board From Doing Anything**

16. In granting this hearing, the Board already rejected the dam owners’ argument that the Kennebec Hydro Developers Group (KHDG) Agreement among dam owners, the Maine State Planning Office, IF&W, DMR, USFWS, the National Marine

Fisheries Service, and various non-governmental organizations (but not FOMB), made in connection with the removal of the Edwards Dam, prevents modification of the certifications. In any event, neither the Board nor DEP are signatories to the KHDG Agreement, and did not bargain away their statutory power to modify water quality certifications (nor could they have, even if they wanted to). Also, the KHDG Agreement contains the same reopener language that is in the water quality certifications.

It Is Not True That The Certifications Cannot Be Modified Until It Is Known Exactly How Safe And Effective Passage Will Be Provided

17. It is not Petitioners' burden to solve the fish and eel passage problems that the dam owners have created. It is the dam owners' burden.

18. The United States figured out how to put a man on the moon in a shorter period of time than the dam owners have had to fix the passage problem. There are many possible solutions that may work, and I detail some of these later in this testimony. But the bottom line is: a water quality certification cannot sign off on the dams killing and injuring fish and eels and destroying their habitat.

19. The Quebec Declaration of Concern, signed by eel researchers around the world on August 14, 2003, attached as Exhibit W/FOMB-4, states:

As scientists in eel biology from 18 countries assembled at the International Eel Symposium 2003 ... in Quebec, Canada, we unanimously agree that we must raise an urgent alarm now. With less than 1% of juvenile resources remaining for major populations, time is running out. Precautionary action (e.g., curtailing exploitation, *safeguarding migration routes* and wetlands, improving access to lost habitats) *can and must be taken immediately by all parties involved and, if necessary, independently of each other.*

(Emphasis added). Alex Haro, Ph.D. of the Department of the Interior, United States Geological Survey, Biological Resources and James McCleave, Ph.D. of the University of Maine are among the signatories to the Quebec Declaration.

**THE EVIDENCE THAT THE DAMS ARE KILLING
AND INJURING FISH AND EELS AND DESTROYING
THEIR HABITAT, AND HARMING THE ENVIRONMENT**

Out-migrating eels are killed in dam turbines

20. Between the ages of approximately 15 and 50, eels must migrate to the Sargasso Sea to spawn. Typically, many hydro-electric dams block eel out-migration. This petition deals only with four of the many on the Kennebec River. Dams are designed so most water flow, if not all, will pass through and spin turbine blades to generate electricity. While coarse trash racks (usually widely spaced steel bars) are installed to prevent trees and other large debris from impacting the blades, fish and eels are easily sucked through these and so are prone to injury or death. Estimates of eel mortality are as high as 100% per dam. The cumulative effects of multiple dams may quickly eliminate the spawning population.

21. Attached as Exhibit W/FOMB-5 is the USFWS 90-Day Finding On A Petition To List The American Eel As Threatened Or Endangered (“90-Day Finding”), 70 Fed. Reg. 38,859 (2005). The 90-Day Finding details the life history of the American eel at pp. 38,851-38,852. With respect to the harm dams pose to downstream migrating eels, the USFWS states in the 90-Day Finding:

We agree with the petitioners’ assertions that rivers with hydropower are a documented threat to female American eels as they leave the rivers to spawn and may be a threat to the species as a whole. Although hydropower turbines are on less than 7 percent of the rivers, this mortality may be playing a larger role as the population declines (because as the population declines, gravid females become a vital resource and a high percentage of these individuals are lost to hydropower turbines).

90-Day Finding, p. 38,859.

22. Eels are attracted to the current drawn by the turbines while typically migrating at night. University of Maine Professor James McCleave, in his study Simulation of the Impact of Dams and Fishing Weirs on Reproductive Potential of Silver-

Phase American Eels in the Kennebec River Basin, Maine, *North American Journal of Fisheries Management*, 21:592, 593 (2001), attached as Exhibit W/FOMB-6, established that eel mortality and injury (sublethal) rates can be as high as 100% per dam during downstream migration where dams are present.

23. A DMR study of downstream migration at Lockwood, reported in Kennebec River Diadromous Fish Restoration Annual Report 2002, p. 63, attached as Exhibit W/FOMB-7, found that despite the presence of a bypass, two of five radio-tagged eels migrated through the turbines “and were presumed to be injured or dead.” Turbine kills at Benton Falls have also been well documented by DMR. Attached as Exhibit W/FOMB-8 is DMR’s Kennebec River Diadromous Fish Restoration Annual Report 2001, p. 37, which reports Benton Falls kills. Gail Wippelhauser of the Department of Marine Resources stated in the November 2004 edition of Northern Sky News (the relevant portion of which is attached as Exhibit W/FOMB-9) that severe eel kills like the one at Benton Falls are “probably happening at every hydro facility on the East Coast that has a run of eels.” DMR studies of downstream migration in 2003 and 2004 failed and did not generate any data.

24. On October 28, 2004, DMR took photographs of eels killed by turbines at Shawmut. These photos, obtained from DMR, are attached as Exhibit W/FOMB-10. DMR personnel Skip Zink and Nate Gray are pictured in some of these. FOMB has also recovered dead eels killed by turbines at other dams. Attached as Exhibit W/FOMB-11 are photographs of eels FOMB recovered from below Benton Falls dam.

Turbine Kills Adversely Affect The Eel Population As A Whole

25. Downstream-migrating eels from upper reaches of the watershed above dams are mostly females. When turbines kill eels, they kill mostly females, and thus threaten the eel population as a whole because eel reproduction is reduced. This is set forth in the

USFWS 90-Day Finding (Exhibit W/FOMB-5. p. 38,859), as I note above in Paragraph 21, and the Prof. McCleave article (Exhibit W/FOMB-6, at p. 593: “Mortality rate is positively related to eel length [citation omitted]. This puts female eels at particular risk because they are much larger than males [citation omitted].) Migrating females can grow as long as 5 feet and be several inches thick. A fecundity chart plotted by Woodlot Alternatives in Topsham comparing data from USFWS and McCleaves, is attached as Exhibit W/FOMB-12, showing that a female eel 3 feet long may carry between 8 million and 15 million eggs.

Turbine-Killed Eels Become An Available Source Of Contaminants To Other Wildlife

26. Eels are fatty and long-lived. As benthic feeders, dwellers and scavengers they are prone to bioaccumulating large doses of persistent organic pollutants. When mutilated by turbine blades these long sequestered contaminants are released back into the local environment available directly and indirectly, for fish-eating predators such as bald eagle, river otter, Atlantic salmon and snapping turtle. FOMB conducted a study of PCBs levels in Sebasticook River eels that were killed at Benton Falls and found that the PCB levels were shockingly high: in the 500 parts per billion (ppb) range. Attached as Exhibit W/FOMB-13 are the raw laboratory data from these killed eels submitted to Texas A&M for full contaminant analyses, Texas A&M QA/QC narrative and a bar graph of just the PCB concentrations from this study. In contrast to the high levels found in eel, the state toxicologist issues fish consumption advisories based on a cancer risk when fish tissue levels for PCBs are at 11 ppb.

Dams Block Upstream Passage of Native Migratory Fish

27. The adverse effects of dams are by no means limited to eels. Fish ladders, even if available, are not used by certain species, and then “trap and truck” becomes the method of choice for moving fish above the multiple barriers as is done at Lockwood.

Possible injury may result from trapping, pumping, handling, sorting, and trucking, as reflected in the Kennebec River Anadromous Fish Restoration Annual Progress Report 2003, p. 5, the relevant portion of which is attached as Exhibit W/FOMB-14. American Shad are extraordinarily sensitive and have not been found to enter the fish lift or trap. Even if the mechanical means of moving fish above any dam were risk free, it must be understood that these artificial methods do not come close to what nature had provided. To illustrate the inherent inefficiency one need look no farther than DMR's artificial passage through trap and truck, of 100,000-140,000 alewives at Fort Halifax on the Sebasticook. Without a dam the estimated 2 million fish population could be expected to migrate naturally upstream. With a dam present and the use of trap and truck, the present number of fish passed, according to a conversation I had with Nate Gray of DMR on January 8, 2007, might represent only 5% of the total run attempting to pass.

Dams Kill Out-Migrating Anadromous Fish

28. Fish that are transported to habitats above dams as part of the state's restocking efforts need to out-migrate. The only differences between eels and fish (alewives, shad, salmon and blueback herring) are that fish tend to be smaller and swim higher in the water column. Higher swimming depth means fish are more likely to find a sluiceway through the dam if provided for passage. Smaller size may reduce their odds of mortality from turbine passage, but in fact there have been massive kills of alewives observed at Shawmut, Benton Falls, Burnham and American Tissue dams and many of these have been young of the year small fish. Fish have been severed, exploded from the pressure changes and had their internal organs squeezed out. Examples of fish mortality (as well as eel mortality) are shown in photographs taken during various years by Doug Watts at the Shawmut, Benton Falls, Burnham and American Tissue dams, in Exhibit W/FOMB-15. As the state attempts to restock Atlantic salmon into the Sandy River,

which flows into the Kennebec, one of our major concerns is how returning adults and smolt will regain access to tidewater when they must successfully navigate all four subject dams, when none of which, it is my understanding, screen their turbines.

Turbine deaths are usually gruesome

29. Eels and other migrating fish may be injured and die a slow death, or may be severed in single or multiple places, or pinned between turbine blades or mutilated. The photographs in Exhibits W/FOMB-10, 11, 15 and 27 show this.

MEASURES THAT ARE USED TO FACILITATE PASSAGE

30. Fundamental requirements of safe and effective passage are blocking access to turbines and guiding eels/fish towards an alternative pathway through or around dams. Some dams just have a turbine in the dam face and some dams have rather extensive forebays (picture the top of a funnel) extending upstream to help guide more water to the turbines. Eels in this case should be prevented from entering the forebay since it may be very difficult to exit.

31. Some dams have used a steel grate to prevent eel intake to the turbine (for example, the dam at Benton Falls, see Exhibit 2). This is not without its problems as eels are prone to death or injury from impingement as strong flows push them against the edge of the metal bars. Angling the grate can make something of a difference allowing water pressure to help the eels off the grate and if angled the right way, towards a passage way in the dam. Using a steel plate with holes punched in it (a “punch plate”) is an improvement as an excluding device since the eels body against the plate is distributed over a wider area and thus subject to less pounds per square inch of pressure that could lead to death by impingement. A punch plate combined with deep gate passage has been used with apparent success at the Ridgewood Hydro (formerly American Tissue) dam on the Cobbosseecontee Stream in Gardiner, as reflected in the Kennebec River

Anadromous Fish Restoration Annual Progress Report 2004, p. 17, the relevant portion of which is attached as Exhibit W/FOMB-16. An angled plate can provide good directional guidance toward a passage way and is a more slippery surface than a bar or rod edge facilitating a faster exit from the turbine area, using the water pressure, not fighting it. At the Rimouski River Hydroelectric Powerplant in Canada, an inclined 1cm. fine screen to block turbines and direct diadromous species to a bypass is used, along with air compressors to keep debris clear. This system works for both eels and smolts. Attached as Exhibit W/FOMB-17 is Eel Protection Devices and Operations at the Rimouski River Hydroelectric Powerplant: A Win/Win Approach, by Guy Verrault and Jean Therrien for Parcs Quebec, a government agency, describing the system.

32. Eels are benthic in nature and so it is generally assumed that a deep gate or opening in the dam for them to pass is more likely to be found and used with minimal delay. There is some evidence that eels in migration may travel extensively in the mid depths and so a surface passage that extends a goodly distance in depth may also pass some eels. Attached as Exhibit W/FOMB-18 are comments to FOMB by Professor James McCleave, dated January 9, 2006, reflecting this. Eels may be injured by a fall on the downstream side of a passage so attention should be paid to this as well in designing a solution.

33. Shutting down turbines at night during eel migration season will also facilitate downstream passage if an alternative pathway is provided. Damariscotta Mills dam and several on the Presumpscot River are examples of dams that have made this choice. Prof. McCleave's comments, Exhibit W/FOMB-18, also reflect this.

RESOURCE AGENCY ACTIONS ARE INEFFECTIVE

34. In a letter of comment to Christopher Shaw of FPLE on May 8, 2006

regarding then-proposed downstream eel passage measures, attached as Exhibit

W/FOMB-19, DMR Commissioner George LaPointe criticizes the proposal and states:

MDMR is concerned that controlled spill via bypass gates will not be an effective measure for downstream eel passage, and that significant injury or mortality to eels will occur unless additional measures are taken. In September and October, river flow exceeds hydraulic capacity only 5-15% of the time at the Weston and Shawmut projects and 40-50% of the time at the Lockwood Project. **If migrating eels are randomly distributed in the river, then eels will pass through the turbines at Weston and Shawmut 85-95% of the time and through the turbines at Lockwood 50-60% of the time** (emphasis added). We note that both FPL Energy and MDMR have observed eel mortalities below the Shawmut Project.

And yet despite this acknowledgement that proposed downstream passage plans will be ineffective at preventing turbine entrainment, DMR had “no comment” on the DEP compliance orders that differ from conditions commented on only in that FPLE proposes some radio telemetry studies beginning in 2007. Note the following series of emails:

-----Original Message-----

From: info@dougwatts.com [mailto:info@dougwatts.com]

Sent: Tuesday, December 05, 2006 1:36 AM

To: Murch, Dana P

Subject: Maine DMR comments

Hi Dana,

Could you send me the letter (or email) that Maine DEP wrote to Maine DMR in July or August requesting written comments on the Sept. 14th Compliance Order for downstream eel passage at Weston, Shawmut, Hydro Kennebec and Lockwood? Ed Friedman and I have asked DMR for a copy of their written response and both Gail Wippelhauser and Nate Gray have told us they are not aware of Maine DMR providing any written comments on this Compliance Order. I think there might be some crossed wires here, so I am trying to re-establish the paper trail for my records. The first place to start would be the letter from Maine DEP to Maine DMR in July/August containing the draft downstream eel passage Compliance Order and requesting comments on it. If Maine DMR failed to provide a written response to you on that draft Order, it would be helpful if you could confirm this, as I know from past experience (ie. Messalonskee) that sometimes Maine DMR does not give you written responses even when you request them. If this is the case, this information would be helpful.

Thanks.

Doug Watts

Doug, in response to your Dec 5 email (copied below): The email exchange between DEP and DMR on KHDG downstream eel passage plans is pasted below. Also attached is my file memo re: proposed timing of downstream eel passage studies. I am copying

this email to DMR, the BEP's attorney, and the attorneys for the involved dams.

Dana Murch

From: Murch, Dana P

Sent: Tuesday, August 22, 2006 1:58 PM

To: Wippelhauser, Gail

Subject: KHDG Downstream Eel Passage

Gail, what is your schedule for making comments to DEP on the proposed plans for downstream eel passage at the Lockwood, Hydro-Kennebec, Shawmut and Weston Hydro Projects?

Dana

From: Wippelhauser, Gail

Sent: Tuesday, August 22, 2006 2:03 PM

To: Murch, Dana P

Subject: RE: KHDG Downstream Eel Passage

Waiting to hear from George.

Gail

From: Wippelhauser, Gail

Sent: Friday, August 25, 2006 10:43 AM

To: Murch, Dana P

Cc: Sarah A. Verville

Subject: RE: KHDG Downstream Eel Passage

Dana and Sarah:

I finally was able to meet with George this AM. DMR has no comments on the proposed plans for downstream eel passage at the Lockwood, Hydro-Kennebec, Shawmut, and Weston projects. Thanks for your patience.

Gail Wippelhauser

Marine Resources Scientist

Maine Department of Marine Resources

#21 State House Station

Augusta, ME 04333

Phone: 207-624-6349

Fax: 207-624-6024

email: gail.wippelhauser@maine.gov

From: Murch, Dana P

Sent: Monday, August 28, 2006 11:27 AM

To: Wippelhauser, Gail

Cc: Sarah A. Verville ; Blasi, Carol

Subject: RE: KHDG Downstream Eel Passage

Gail, this is to confirm our telephone conversation of this morning during which you confirmed that "no comments" means that DMR has no objections to the proposed plans for downstream eel passage at the subject projects.

Thank you for your input on this.

Dana

From: Wippelhauser, Gail
Sent: Monday, August 28, 2006 11:26 AM
To: Murch, Dana P
Subject: RE: KHDG Downstream Eel Passage
Dana:

Correct. DMR has no objections to the proposed plans for downstream eel passage at the subject projects.
Gail

As the email trail illustrates, Maine DMR signed off on the Compliance Order in late August, and in doing so ignored their May, 2006 detailed, written objections to the same proffer of voluntary measures. This is remarkable in that the final one sentence "approval" does not reference DMR's detailed objections and concerns from May or provide any credible, empirical reason why DMR believed in August 2006 that everything they said in May 2006 was suddenly wrong and/or unimportant.

35. The Lower Kennebec River Comprehensive Hydropower Settlement Accord commonly known as the KHDG Agreement, details in its Exhibit B; requirements for eel and fish passage studies. Concern with possibly voiding this agreement has been repeatedly cited by resource agencies as grounds for their inaction on pressing the passage issue and yet in multiple places of the text (Section G3 and Section G5) there is explicit allowance for this course of action. *"If consensus is not reached on either upstream passage location or downstream passage measures by June 30, 2002, any party shall be free to petition FERC to amend any license to insert appropriate terms and conditions."* (G3). In the event that DMR does not receive necessary funding for studies, Section G5 states that earlier sections regarding eel passage will become null and void and that *"...any party may petition FERC to amend any license regarding upstream and downstream passage of eel."* It also makes clear that if eel passage sections are found null and void that *"...all other provisions of this Agreement remain in full force and effect."* Simply put, there appears no basis in fact for the belief that the KHDG agreement will fall apart if the State petitions FERC to amend a license. Relevant pages

of this document are included as petitioner's Exhibit W/FOMB-20. Resource agency inaction illustrates the need for regulatory agency intervention.

FOMB HAS STANDING

36. FOMB is a non-profit organization dedicated to protecting the ecological, aesthetic, historical, recreational and commercial values of Merrymeeting Bay. FOMB works to preserve and protect ecosystems of Merrymeeting Bay through education, land conservation, research, advocacy, and membership events. The geographic area of concern for FOMB is the mid-coast Maine riverine delta consisting of the Kennebec and other rivers. FOMB has over 400 members who use and enjoy these rivers, including me. I and other FOMB members are concerned about the declining American eel population and threats to eels and fish in the Kennebec, and FOMB has long been active in eel and fish issues from both educational and advocacy standpoints.

37. A healthy Kennebec is of economic and personal importance to me. As a long-time Maine guide with a kayaking business along Merrymeeting Bay I have conducted kayaking tours and instruction in the Bay, Kennebec and Androscoggin Rivers since the mid 1980s. I have also conducted tours by skiff and provided interpretive guiding services for various groups such as Maine Audubon and Mid-Coast Senior College on charter boats out of Bath coming up the river. Services I conduct on the Bay and rivers are a significant part of my business. The wholesale slaughter of eels and other migratory fish by dams adversely affects my livelihood which is based in large part on a healthy population of native fish present in this unique system. At times my clients and I may fish in the Bay, and again, an absent or impaired fish population deprives or diminishes this right. When dams mutilate out-migrating eels, high levels of contained toxins are released back into this relatively closed ecosystem and the problem of contaminated fish is perpetuated. When we intercept and kill the eels we impair our river

clean up process that would improve if the eels were allowed to leave intact. So, we find that indeed another beneficial role of eels is that they have the potential to help clean our rivers of historical burdens of toxic contamination. If we let them.

38. Personally, I have been on the Steering Committee or Board of Friends of Merrymeeting Bay since 1993 and been Chair since 1996. I have been involved in fishery restoration issues on the Kennebec and Androscoggin Rivers during this entire period. I have a BS in Environmental Science from SUNY Empire State College. My experience includes that as a wildlife researcher for USFWS working on such species as caribou, sea otter, insects, arctic char, various birds and snow shoe hare. At FOMB I have had extensive work in the areas of contaminants relating to pulp mills, pesticides in schools, and mercury amalgams. Innovative FOMB projects during my tenure have included the use of aerial photography to study land use and vegetation changes over time, the development of a caged mussel biomonitoring program in the Kennebec and Androscoggin to monitor effects of pulp mills, and a circulation study of water flow in Merrymeeting Bay and its six tributaries utilizing remote drifters, GIS data logging, radio tracking and animations. I have initiated the permanent protection efforts for hundreds of acres of riparian habitat along the Bay and tributaries all of which are critical to the diadromous subjects of this petition. I consider myself qualified to address all the topics covered in here.

ADDITIONAL INFORMATION

39. Attached as Exhibit W/FOMB-21 is a USFWS map dated October 20, 2006 showing American Eel distribution and dam locations in the Merrymeeting Bay Watershed (Androscoggin & Kennebec Watersheds).

40. I am attaching as Exhibits W/FOMB- 22, 23, 24 and 25 the water quality certifications for the Lockwood, Hydro-Kennebec, Shawmut and Weston dams,

respectively, aerial photographs of each dam as Exhibit W/FOMB-26 and as Exhibit W/FOMB-27 a photo of a turbine clogged with eels. This, along with being a particularly gruesome cause of death, can, during migration season, be a frequent cause of “brown-outs” (as related to Maine Senator Dennis Damon of Trenton by a constituent who had worked in a hydro facility). I am only attaching the relevant portions of the DMR anadromous fish restoration progress reports because the full reports are too voluminous.

41. I have tried to avoid giving testimony that overlaps with Douglas Watts’ testimony. I incorporate by reference Mr. Watts’ petition, testimony and exhibits, the initial FOMB petition (that addresses both Kennebec and Androscoggin Rivers) that I assume is already part of the record and the second Androscoggin petition (Andro 2) that is in possession of the Board and all parties of record.

I declare this ___ day of January, 2007 under the penalty of perjury that the above is to the best of my knowledge true and correct.

Chair, Friends of Merrymeeting Bay