

Protecting Shorelands as Part of the Hydroelectric Relicensing Process

A report for American Rivers and the Hydropower Reform Coalition

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INTRODUCTION

The public owns the nation's rivers. A hydroelectric dam owner's use of a river's waters as a free energy source is a privilege and not a right. This is the reason a hydropower dam owner must be licensed to operate on the public's rivers. The Federal Power Act establishes that the Federal Energy Regulatory Commission (FERC) may upon adequate review grant to non-federal hydroelectric dam owners a 30 to 50 year term license to operate. Upon termination of the original license the license must be renegotiated with the possibility of denial. These licenses are intended to ensure that utilities who use the publicly owned rivers to generate power do so while protecting and allowing for other public uses of our rivers.

Federal licensing regulations for hydroelectric dams require that the licensing authority, the Federal Energy Regulatory Commission (FERC), give equal consideration to hydroelectric power as well as energy conservation, protection of fish and wildlife, recreational opportunities, and the preservation of environmental quality. This equal consideration mandate requires FERC to consult with federal, state and local resource agencies. Relicensing also provides an opportunity for non-governmental agencies and citizens to participate in the process to determine how the publicly owned rivers will be used and what protection, mitigation and enhancement measures are needed to compensate for a hydro project's impacts.

Most hydro projects create impounded waters that vary from waters raised within the original riverbanks some distance upstream of the dam to extensive lake-like reservoirs. Though a river's waters are typically publicly owned¹, the dams and lands associated with a project are quite commonly not publicly owned property. The hydro project owner may own some or all of the reservoir shorelands. Today these lands are frequently desirable properties for second-home or residential development. Because the Federal Power Act recognizes that the impacts of a hydro project extend beyond the actual dam, powerhouse or high water mark of a project reservoir, it can require a hydro dam owner to develop and implement a shoreline management plan as part of the licensing process. The shoreline management plan should be a comprehensive plan to manage the multiple resources and uses of the projects' shorelines in a manner that is consistent with license requirements and project purposes, and address the needs of the public.

FERC has the ability to require shoreline land protection around project reservoirs to protect non-electric generation project benefits; but its application has been inconsistent. During relicensing the burden of establishing the need for shoreland protection such that natural resource, recreation and aesthetic benefits will be preserved frequently falls to the resource agencies, local government, non-governmental organizations and citizens.

Riparian or shorelands provide important recreational opportunities and support critical ecological functions. These include essential functions like maintaining stream flows, cycling nutrients, filtering chemical and other pollutants, trapping sediment runoff, absorbing and detaining floodwaters and maintaining fish and wildlife habitat. Shorelands also provide

¹ Water rights are governed by water law. In some states consumptive water rights may be granted to certain water user groups, but the water used in hydropower generation is typically not governed by this doctrine.

highly desirable recreational opportunities like water-based camping, hiking, fishing and wildlife observation (National Research Council, 2002).

This manual is designed to guide those interested in achieving shoreline land protection through the FERC relicensing process. It outlines the legal framework and strategies to develop a forceful case. The case studies show how thousands of very valuable shoreline and watershed acres have been protected during relicensing as part of protection, mitigation or enhancement requirements. This document does not cover exempt or federally owned hydro projects that are not licensed by FERC.

This manual assumes the reader has a general understanding of the relicensing process. Those wishing to learn more are referred to the Hydropower Reform Coalition (HRC) Relicensing Toolkit (<http://www.hydroreform.org/hydroguide/hydropower-licensing/citizen-toolkit-for-effective-participation>). FERC can be very process oriented, rejecting valid requests when their procedures are not followed. The challenge and opportunity is to make FERC's licensing process work for the larger public good and ecosystem's benefit. Success requires timely involvement at each step in the multi-year relicensing process. There is much work involved, but the gains can be very significant.

Rule, regulations and statutes can be quite transient. They can be modified through legislative actions or varying FERC, court, or other legal interpretations. The reader is encouraged to use this document as a primer, but to also obtain the most up-to-date versions of the rules and statutes.

CHAPTER 1 - THE NEED FOR SHORELINE PROTECTION

What are shoreline lands and why is it important to protect them? For purposes of this guidance document, shoreline lands are those lands surrounding an impoundment upstream of a hydropower project as well as lands along the affected river downstream of a project. Shoreline lands typically begin at the high water mark and extend outward a certain distance to protect the natural and aesthetic qualities of the impoundment or river. The interface between river and reservoir waters and the abutting terrestrial (riparian) land is ecologically sensitive. Fauna such as beavers, mink, muskrats, waterfowl, bald eagles and loons are highly dependent on this unique habitat. Unfortunately, the operation of many hydropower projects includes drastic and frequent changes in reservoir and river water levels to generate power. This can impact recreation, shallow water aquatic communities, and wetlands. Human activity on shorelines can impact water quality, erosion, wetlands, fish and wildlife habitat, recreational opportunities, aesthetics, and the visual values of the shoreline. Residential and commercial development, dock and marina construction, and high impact recreational activities are well-documented stresses to river resources and reservoirs.

Some of the recognized benefits from shoreline protection include:

- ◆ Water quality protection by vegetative buffers that filter sediment runoff and provide shade from the sun;
- ◆ The absorption and retention by the vegetation and soils of pollutants and nutrients before they enter the river;
- ◆ Provision for essential wildlife breeding, feeding and wintering habitat and migration corridors;
- ◆ Quality opportunities for recreation activities such as fishing, wildlife observation, hiking, and canoe-camping;
- ◆ Greater public access to our publicly-owned waters; and
- ◆ Protection of aesthetic and visual values.

When you request shoreline protection during the licensing process, FERC will require justification for the overall location, length and width (distance from high water mark) of the land buffer requested from the hydropower dam owner. Frequently protection of more than one resource is the goal, in which case the widest buffer is the desired one. A review of the literature illustrates that the width of a protective shoreline buffer can vary depending upon the resources at risk. Examples of recommended shoreline buffer zone widths for a variety of resources are listed in Table 1.

- ***FERC will require justification for the overall location of the shoreline buffer zone from the intervenor.***

Table 1
Examples of Buffer Zone Widths

Regulation / Guideline	Location	Protected Area Width ¹	Type of Protection	Reference
USFS land management system	national	200 feet	buffer zone based on criteria for recreation, setting, and experiences	USFS - Recreation Opportunity Spectrum Prescription
Recommended riparian forest corridor	Northeastern U.S.	300-600 feet	habitat protection for riparian plant and wildlife species	Peterson and Kimball, 1995 2
Recommended riparian forest corridor	Northeastern U.S.	500-1320 feet	aesthetic, noise, visual characteristics	Peterson and Kimball, 1995
USFS riparian forest buffer guidelines	national	50-150 feet	buffer zone for water quality protection	USFS, Riparian Forest Buffers: Function and Design for Protection and Enhancement of Water Resources, NA-PR-07-91, 1991
Shoreline Management Act and Regulations	Washington	200 feet	buffer zone for water quality, aesthetic, and wildlife protection	RCW 90.58 and WA Administrative Code 173-18
Rules for Riparian Management Areas	Oregon	50-200 feet	water quality, fish and wildlife, and hydrologic function protection	Oregon Administrative Rule 629-635-0000 thru 629-650-0040
Mandatory Shoreland Zoning Act	Maine	250 feet	restricts development within 250' of high-water mark of major rivers and lakes within organized towns	Maine Dept. of Env. Conservation 30-A MRSA
Comprehensive Shoreland Protection Act	New Hampshire	250 feet	regulates land use activities w/in 250' and requires a woodland buffer zone within 150' of high-water mark	NH Dept. of Environmental Services RSA 483-D
Minimum forested buffer zones	South Carolina	up to 300 feet	water quality, fish and wildlife habitat, recreation, aesthetics	SC Dept of Health and Environmental Control
Allagash Wilderness Waterway - inner restricted zone from edge of river	Maine	400-800 feet	to protect the natural character of the river corridor	State of Maine, Dept. of Env. Conservation
Appalachian Trail - protection corridor width from centerline of trail	Georgia - Maine	average of 500 feet	noise, visual, aesthetic	National Park Service National Scenic and Historic Trails
Distance from edge of water that plant and wildlife is dependent on river	Northern New England	up to 985 feet	plant and wildlife protection	Vander Haegen & DeGraaf, 1996 3
Vegetated buffer zone recommended to accommodate most songbirds		up to 656 feet	songbird protection	Stauffer and Best, 1980 4
Distance from edge of waterbody that large mammals depend on riparian resources	New England	up to 984 feet	large mammal protection	Noble, 1993 5
1. As measured from edge of water				
2. Peterson, Susan C. and Kimball, Kenneth D., A Citizen's Guide to Conserving Riparian Forests, River Network, Portland, Oregon, May 1995.				
3. Vander Haegen, W.M. and DeGraaf, R.D., Predation on Artificial Nests in Forested Riparian Buffer Strips, Journal of Wildlife Management, 60(3):542-550, 1996.				
4. Stauffer, D.F. and Best, L.B., Habitat Selection by Birds of Riparian Communities, Journal of Wildlife Management, 44:1-15, 1980.				
5. Noble, S.M., Evaluating Predator Distributions in Maine Forest Riparian Zones Using a Geographical Information System. MS Thesis, Univ. of Maine, Orono, Maine, 1993.				

FERC applies a simplistic formula approach to shoreline protection. Its regulations define a “200-foot buffer zone” or less, unless a site-specific case for a greater width buffer exists. While FERC establishes an arbitrary 200-foot buffer limit without defining its basis, FERC rarely accepts outright the more scientifically determined ‘standard’ buffer widths as outlined in Table 1. Therefore, the buffer widths in Table 1 are useful tools but only if supported by compelling, site-specific reasons. The length of a required shoreline buffer is procedurally even less clear in the relicensing process and licenses issued have varied from the total reservoir shoreline to no shoreline being protected.

- ***The strongest case one can make for the need of a protective shoreline buffer is to identify the location of specific water quality, ecological, aesthetic and/or recreational values. It is equally critical to quantify threats to these values.***

Describe, by actual location, where shoreline protection is essential for the protection of these resources over the tenure of the new license to be issued. If the resource is of local or regional significance, then make the case for protection. For example: is the land the last undeveloped major shoreline that provides a unique recreational and aesthetic opportunity, or harbors a critical wildlife habitat like a deer wintering yard? If residential or second home development is the threat, obtain the relevant zoning ordinances and calculate the theoretical residential or commercial build-out that could occur to demonstrate the magnitude of the development threat if the shoreline is not protected.

The relicensing process provides specific opportunities to request studies from the hydro operator that might identify or justify the need for shoreline protection, mitigation or enhancement. But be prepared for the dam owner to present a biased record in its studies and application. Dam owners rarely want to create a record requiring them to provide shoreline protection, particularly since they know the real estate potential they possess. FERC has an aversion to having licensing jurisdiction over shorelines, even though the mandate is part of its responsibility. FERC rarely challenges a license applicant’s data unless prodded, so be prepared to supplement and challenge poorly prepared and biased records presented by the project owner in the relicensing process.

CHAPTER 2 – LAWS, REGULATIONS AND LICENSE ARTICLES AFFECTING SHORELINE PROTECTION

You have a legal right to request shoreline protection during relicensing. Because this right operates within a legal framework, one must understand the licensing process's strengths and limits and how to apply this right effectively. This chapter outlines some of the underlying laws and regulations that empower you to request FERC to require hydropower project owners to protect buffers of shoreline. It also puts in context federal, state, and local laws and regulations relative to shoreline protection in the relicensing process. The laws and regulations in themselves guarantee little. For each project, achieving meaningful land protection requires the presentation of factual, site-specific justification that is related to the supporting legal framework. Do not assume that FERC or the licensee will do this on your behalf. It is important to understand how these laws and regulations can be used to intervene on behalf of shoreline protection.

2.1 FEDERAL POWER ACT

The Federal Power Act, along with its amendments, specifies provisions for the development of navigable waterways for hydroelectric power. It establishes the Federal Energy Regulatory Commission (FERC) for the purpose of issuing licenses for non-federal hydroelectric development projects. The Act includes provisions for shoreline management planning for licensed hydroelectric projects. Amendments in the Electric Consumers Protection Act of 1986 specifically requires FERC to give equal consideration between hydro development and energy conservation and the protection, mitigation and enhancement of environmental and recreational opportunities. Relevant sections include the following:

Equal Consideration - Section 4(e) of the Federal Power Act requires FERC to give "equal consideration to the purposes of energy conservation, the protection, mitigation of damage to, and enhancement of, fish and wildlife (including related spawning grounds and habitat), the protection of recreational opportunities, and the preservation of other aspects of environmental quality." This is an important provision of the act with regards to land protection because it gives FERC the authority to include conditions in the license that set aside lands for recreational development, establish buffer zones along project shoreline, protect visual and aesthetic values of project lands, or protect lands for wildlife habitat. If the project is located on or within any federal reservation this section also gives authority to the responsible federal land management agency to file terms and conditions that protect the reservation to be included in the project license. Federal reservations include National Forests, National Parks, Land and Water Conservation Fund Act lands, National Trails, Wilderness Areas, National Wildlife Refuges, and other public lands.

Comprehensive Plan - Section 10(a) of the act specifies that a hydroelectric project can be developed by an individual or corporation, or an agency of a municipality or state *provided* it is "best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce, for the improvement and utilization of water power, *for the adequate protection, mitigation, and enhancement of fish and wildlife...* and for other beneficial public uses including irrigation, flood control, water supply, and *recreational and other purposes...*". FERC requires project applicants to identify all applicable comprehensive plans developed by state and federal agencies and determine if the project will comply with these plans (18 CFR 4.38). See section 3.1.d for examples of these plans.

Fish and Wildlife Agencies - Section 10(j) requires FERC to solicit recommendations from the U.S. Department of Commerce's National Marine Fisheries Service, the U.S. Department of Interior's Fish and Wildlife Service and state fish and wildlife agencies. FERC has to address and then either accept or refute recommendations from these resource agencies relative to the protection, mitigation, and enhancement of fish and wildlife resources impacted by the project. Shoreline protection request adequately researched and presented by these resource agencies can be very effective at protecting lands. But such request must specify the resources that would be protected by such actions, for example an adequate buffer to protect a heron rookery, bald eagle nesting site, or wetland. If on-site protection is not practical, such as when reservoir level fluctuations degrade or eliminate wetlands, protection of off-site wetlands is a justifiable request. The scope and magnitude of agency recommendations relative to shoreline protection can vary from extremely well thought out and documented to being non-existent, superficial, poorly executed and unlikely to be incorporated by FERC. Section 10(j) is a potent tool, but only if properly executed. It can not be over-emphasized the need to work closely with natural resource agencies and have them make similar land protection requests, including providing them with supporting evidence for specific parcels to be protected relative to fish and wildlife resources. If they are passive, then do the work for them.

- ***Work closely with natural resource agencies in developing land protection requests.***

Compliance and Enforcement - Section 31(a) of the act requires FERC to investigate and monitor compliance with the license terms and conditions. It gives FERC the authority to assess civil penalties or revoke the license for noncompliance. This is an important provision for land protection as it requires FERC to ensure that shoreline management plans, wildlife management plans, and recreation plans required by the license are being followed. But remember that once licenses are issued, the public spotlight is removed. FERC's record in enforcing compliance of license required shoreline protection has been variable. FERC frequently grants extensions of time to implement license requirements or accepts requested amendments from the project owners. Watchdogging FERC and due diligence in monitoring Licensee requests to alter land protection requirements in its license are highly recommended.

2.2 FERC REGULATIONS

Specific regulations guiding implementation of the Federal Power Act can be found in the Code of Federal Regulations (CFR) Title 18 parts 1-399. Regulations may be changed by FERC following due process, so review the latest version of the CFRs. Not surprisingly, variable interpretation of the regulations by FERC has created an inconsistent history on how shoreline management and protection related regulations are implemented. How it will be interpreted in your case depends on how prepared and aggressive you are in the process. The more pertinent regulations that permit FERC to require a licensee to acquire or protect lands around a hydro project follow:

2.2.a Lands for Recreation -18 CFR 2.7

This regulation states that: "*reasonable expenditures by a licensee for public recreational development pursuant to an approved plan, including the purchase of land, will be included as part of the project cost... The Commission expects the licensee to assume the following responsibilities: (a) To acquire in fee and include within the project boundary enough land to assure optimum development of the recreational resources afforded by the project.*"

The key here is to understand that FERC can require the license applicant to either provide its own land or to include “reasonable” expenditures for purchasing sufficient land to assure optimum development of recreational resources. It is not mandatory for FERC to require a Licensee to prepare a shoreline management plan or actually protect certain lands. But FERC has an obligation if the proper evidence exists.

- ***Make sure that development of a shoreline management plan becomes a requirement of the license.***

Be prepared to show how, why and where reasonable shoreline protection can be accomplished on reservoir and downstream river land that are directly related to the project, such as a tailrace fishery or boat take-out for a trip that originates at the dam. For economic reasons, most opportune and germane are lands owned by the Licensee or its subsidiaries. Do not be misled by the frequent falsehood that recreational resources are limited to boat launch or picnic table sites. The ambience and opportunities offered by an undeveloped shoreline can and frequently are a project “recreational resource.”

2.2.b Other Agency Consultation - 18 CFR 4.38 or 16.8

These regulations outline the requirements for applicants to consult with federal and state resource management and planning agencies and affected Indian tribes regarding the project's compliance with applicable comprehensive management plans. If FERC approved comprehensive plans exist that outline the need for shoreline protection relevant to the Project, make sure both you and the agencies bring them to the forefront in the process. If at all possible get the agencies to revise these plans in advance of relicensing to include project related shoreline protection needs. Also bring forth relevant local plans that may exist.

- ***Ensure that other agencies' plans, guidance, and rules relevant to shoreline protection are included in the process.***

2.2.c Project Boundary - 18 CFR 4.41(h)(2) and 4.51(h)(2)

These regulations require applicants to submit a map showing the project boundary enclosing all project works and other related features. Regulations 4.41(h)(2)(i)(B) and 4.51(h)(2)(i)(B) state that the project boundary around impoundments and reservoirs must be located no more than 200 feet from the normal maximum surface elevation except where additional lands may be required for public recreation, shoreline control, or protection of environmental resources.

You should request a copy of a map showing the project boundary and shorefront land ownership at the beginning of the process in the “Initial Consultation Document.” This map should also be part of the Licensee’s application submitted as Exhibit G later in the process and provide the following information:

“(2) Project boundary. The map must show a project boundary enclosing all of the principal project works and other features... The boundary must enclose only those lands necessary for operation and maintenance of the project and for other project purposes, such as recreation, shoreline control, or protection of environmental resources (see paragraph (f) of this section (Exhibit E)). Existing residential, commercial, or other structures may be included within the boundary only to

the extent that underlying lands are needed for project purposes (e.g., for flowage, public recreation, shoreline control, or protection of environmental resources)..."

This information should show you where the Licensee's lands are currently located. It provides guidance on what lands are in current project boundaries that may need additional protective mechanisms or those outside that should be protected. Use this information to develop site-specific land protection needs based on recreation and protection of environmental resource needs. Develop your case for shoreline protection to be multi-faceted, not single issue, whenever the facts permit.

2.2.d Environmental Report - 18 CFR 4.41(f) and 4.51(f)

These regulations require applicants of new and existing projects (respectively) to include an environmental report, Exhibit E, in the license application. Exhibit E must include descriptions of fish, wildlife, and botanical resources, historic and archeological resources, recreational resources and a report on land use. The report must also describe the impacts the project will have on these resources and any mitigation measures proposed. Applicants for new or major modified projects must include with the Exhibit E-

"A provision for a shoreline buffer zone that must be within the project boundary, above the normal maximum surface elevation of the project reservoir, and of sufficient width to allow public access to project lands and waters and to protect the scenic, public recreational, cultural, and other environmental values of the reservoir shoreline" 18CFR4.41(f)(7)(iii).

Applicants for existing hydropower projects must include-

"A statement including an analysis of costs and other constraints, of the applicant's ability to provide a buffer zone around all or any part of the impoundment, for the purpose of ensuring public access to project lands and waters and protecting the recreational and aesthetic values of the impoundment and its shoreline" 18CFR4.51(f)(6)(iv).

Relevant parts of Exhibit E studies and possible questions to pursue when developing a case for shoreline protection include:

- **Water Use and Quality:** Do the project waters meet state water quality standards that apply to the project, and if not, do activities on reservoir shoreline either contribute to the problem directly or cumulatively? Would further development of the shoreline increase an existing water quality problem or create one? For example are low dissolved oxygen levels or eutrophication an identified water quality problem in the reservoir?
- **Wildlife and Botanical Resources:** Has the applicant included in the Exhibit E a description of the impacts of the project on fish, wildlife, and botanical resources? Does a thorough inventory of wildlife and botanical resources exist? Are there federal or state listed rare and threatened species or exemplary ecological communities thriving on these shorelines? Do current project boundaries and resource management plans actually provide long-term protection of the wildlife and botanical resources identified? If not, how should they be modified to protect these resources? This is an excellent opportunity

to provide site-specific information on which and how much land should be protected, since FERC frequently seeks a site-specific rationale for land protection.

- **Historical and Archeological Resources:** Does the shoreline encompass Native American sites or other historical resources that development could threaten? Is a plan proposed to protect the required lands with an adequate buffer?
- **Geology and Soils:** Do areas with existing or potential erosion or slope instability influenced by reservoir water level manipulations or discharges exist along the reservoir or in impacted downstream reaches? Would changes in land-use further increase the problem?
- **Recreation Resources:** This category contains much opportunity for developing a case for shoreline protection. You should ask - is an undeveloped shoreline one of the key regional amenities for recreational pursuits such as boating, canoeing, camping, hiking and other recreation? How rare or threatened are undeveloped shorelines for recreation in the region? Has an adequate case been presented for the value and increasing rarity of recreation on primarily undeveloped shorelines?
- **Visual Resources:** Is one of the key visual and aesthetic values of the lands surrounding the project reservoirs the undeveloped shoreline? Is this resource identified and protected?
- **Land Use and Comprehensive Plans:** You should ask: is there an accurate depiction of uses of land and resources adjacent to the project using maps, air photos, and so on, that clearly delineate the land ownership, project boundary, and boundaries of public lands? Is the Licensee presenting clearly what shoreline lands they may own through either direct or indirect subsidiary holdings that are not currently in project boundaries? Has the Licensee not only identified relevant planning and zoning regulations to the shorelines, but also what the potential build out is under current zoning? Has the Licensee included an accurate analysis of costs and other constraints, to provide a buffer zone around all or any part of the impoundment, for the purpose of ensuring public access to project lands and waters and protecting the recreational and aesthetic values of the impoundment and its shoreline? Have they indicated that they cannot purchase additional shoreline to protect identified resources, when in reality their lands are held by another holding company within the same corporation?

2.2.e Overview

FERC has regulations under 18 CFR parts 4-125 that prescribe the types of information a licensee must provide in its application. However, FERC commonly accepts minimal information unless resource agencies or interest groups make a case for a more detailed record.

- *Make sure a complete, accurate, and proper record is created during the relicensing process for land protection.*

This is your opportunity in the process to request that the Licensee develop the appropriate information base that will be part of the license application record. Go to the study identification

and design meetings and make your request for relevant information and how it should be collected. Should the licensee fail to create or provide an adequate record, request it during the Additional Information Request stage (See Hydropower Reform Coalition Relicensing Toolkit). Research and present the information you put together. It cannot be emphasized enough to make sure a record evolves that illustrates:

- 1) How shoreline protection is essential to protect specific natural resource and recreation values; and
- 2) The development threats that may occur over the term of the license.

Whenever possible show reasonable, cost-effective alternatives to how the Licensee can meet shoreline protection goals. Otherwise, FERC may accept your argument for land protection but then deny your recommendations as being too costly under their “equal consideration” mandate which allows them to consider the cost effectiveness of protecting additional lands. Also, beware of the Licensee suggesting that public monies should be used to purchase needed land protection to meet the Licensee’s shoreline protection obligations. The Licensee should pay a portion of the cost associated with purchasing additional lands. The Licensee should not be paid for their immediate shoreline with public monies.

The following condensed example illustrates the impact a coalition of environmental organizations had on shoreline protection for a project in northern Maine. Recreational and land use data asked for during the Exhibit E process was not provided by the Licensee, but was subsequently provided by several environmental organizations in all relevant filings. FERC utilized much of the environmental organizations’ arguments in its Final Environmental Impact Statement and license to justify its requiring the Licensee to develop a conservation easement on all of the undeveloped lands it owned around the whole impoundment. Note the critical elements. The environmental organizations’ case quantitatively shows that 1) the Licensee’s argument for existing zoning does not provide sufficient lands protection, 2) considerable shoreline development is a threat, 3) the zoning laws can change over the course of the license, 4) a reasonable and cost effective alternative exists, and 5) that one of the project resources is especially at risk.

An excerpt from a submittal by the coalition:

‘The reservoir of concern is part of a nationally recognized multi-day backcountry canoe trip used extensively by the public (supporting documentation was provided). The Licensee should document the importance of this recreational resource and the role the impoundment’s undeveloped shoreline provides. Loss of access to the impoundment shoreline through development is the pivotal issue. The Licensee presents the case that the Maine Land Use Regulatory Commission’s (LURC) zoning regulations will protect the shoreline. LURC has provisions for the development of binding Lake Concept Plans developed voluntarily by the landowner (Maine’s LURC Amendment of the Comprehensive Land Use Plan - Adopted June 7, 1990). The Licensee has not submitted such a plan. Our calculations (calculations attached)) show 348 new residences under LURC zoning could be built on the owner’s impoundment reservoir lands, and this does not include the fact that LURC Zoning could be changed during the course of the 30 year license to permit further development. This would essentially privatize the shoreline, making it inaccessible to the public, and deter from its unique backcountry recreation

value. The Licensee's lands on these reservoirs have been through 3 different owners in the last few years, so the possibility of sell off and development is more than theoretical. A recent Northern Forest Land Council Study (attachment) shows that the majority of subdivisions in the region occur on waterfront. Finally, the Licensee owns the land, therefore the cost of protecting these critical lands is not cost prohibitive.'

The environmental organizations' efforts resulted in the project boundary being changed from the high water mark to 200 feet above the high water mark and a conservation easement around the impoundment being granted to the State of Maine.

2.3 LICENSE ISSUANCE

Once the Licensee has completed all necessary studies to FERC's satisfaction, FERC will issue a draft Environmental Analysis (EA) or Environmental Impact Study (EIS). The record provided in the Final EA or EIS document is FERC's record to rationalize the terms of the new license it issues. It is clearly in your interest to respond during the comment period of the draft EA or EIS, be it in the affirmative or the negative. If you agree with the sections relevant to shoreline management protection, then comment in the affirmative. If you believe the record being used is lacking or incorrect, present your case with specifics during the comment period as to why corrections should be made in FERC's issuance of its Final EA or EIS. Once the Final EA or EIS is issued, achieving change is much more complicated.

Understand that FERC is not required to include all proposals or recommendations described in an EA or EIS, only to give them "equal consideration". If there is agreement on what should be done for shoreline management and protection, the specifics are usually included and required in the license as a License Article. In contested shoreline management recommendations, FERC may accept or reject, in part or total, shoreline protection. When rejected, two common reasons given are: (a) the identified cost and need to balance this with the cost of other protection, mitigation or enhancement required is too costly, or (b) the need was not shown. Frequently FERC neither accepts nor rejects specific land protection requirement requests. Rather FERC will establish a need to address the issue further as a post license, shoreline buffer study article requirement.

Be aware that placing lands into the next license project boundary offers only partial protection. Following are excerpts from the Standard Land Use article included in all FERC licenses since 1980. Note the leeway it gives the Licensee to develop or dispose of lands within a project boundary unless you achieve more specific required protection. You should seek easements or other more certain protection.

"(a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee shall also have continuing responsibility to supervise and control the use and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article...

“(b) The type of use and occupancy of project lands and waters for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) noncommercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 watercraft at a time and where said facility is intended to serve single-family type dwellings; and (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline...”

“(c) The licensee may convey easements or rights-of-way across, or leases of, project lands for: (1) replacement, expansion, realignment, or maintenance of bridges and roads for which all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69 kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir...”

“(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 watercraft at a time and are located at least one-half mile from any other private or public marina; (6) recreational development consistent with an approved Exhibit R or approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from the edge of the project reservoir at normal maximum surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year...”

2.4 OTHER FEDERAL STATUTES AFFECTING SHORELINE PROTECTION

There are several federal laws and statutes outside of the Federal Power Act and the FERC regulations that a licensee has to address during the license process. When applicable these can be useful for developing a case as to why the licensee needs to protect lands surrounding a waterbody affected by a hydropower project. The major acts (which are implemented through other federal agency regulations and requirements) are summarized in Table 2.

Table 2
Major Federal Acts Affecting Shoreland Protection

Title	Major Requirements	Affect on Shoreline Protection	Limitations
Clean Water Act Section 401	Licensee must obtain water quality certification from state agency before FERC can issue a license. FERC cannot overrule State 401 requirements, unless it can show that they are not part of the state's water quality laws.	In addition to meeting water quality criteria and monitoring requirements, the licensee may also be required to meet conditions to prevent soil erosion and sedimentation including limiting impoundment water level fluctuations, and maintaining and revegetation of eroded riverbanks	Primarily relates to water quality and designated uses of the river.
Clean Water Act Section 404	Licensee may not dredge or fill in wetlands and other special aquatic areas without first obtaining a permit from US Army Corps of Engineers	In some hydropower licenses this has resulted in creation of new wetlands, maintaining vegetative buffers, and other land protection measures to offset impacts on wetlands.	Primarily affects new construction operations.
Coastal Zone Management Act	Licensee must obtain a notice of concurrence that the project is consistent with coastal zone management plans from state agency before FERC can issue a license.	Conditions required for consistency may include not only instream dam operations but also land management issues affecting riparian areas, water quality, and wildlife habitat.	Only applies within state designated coastal zones.
Endangered Species Act	Federal agencies determine if any listed species will be affected by project and require mitigation measures. FERC incorporates measures, including protection of critical habitat, into the license.	Listed species' habitats, including feeding and nesting grounds, migration corridors, and plant communities, can be protected from development and other human impacts.	Often results in "pockets" of protected lands around listed species habitats. May not be useful for watershed area protection.
National Environmental Policy Act	FERC is required to assess the environmental impacts of, alternatives to, and mitigation measures for hydropower projects before issuing a license.	Provides an opportunity for any interested party to provide comments, analysis, and suggest license conditions that protect shorelands from development.	FERC is not required to implement or include suggested conditions in license. Energy economics often outweighs land protection values.
National Historic Preservation Act	FERC must consider the affect that a hydropower project may have on any listed historic properties.	Conditions may be incorporated into the license that prevent development at or public access to sites of historic, religious, and cultural significance.	American Indian Religious Freedom Act and the Native American Graves Protection and Repatriation Act should also be considered.
The Wild and Scenic Rivers Act	FERC may not issue a license for any new hydropower project that would affect a designated river. Operations of existing projects must be consistent with the outstanding resource values of the designated river	Provides an opportunity for additional land protection conditions to be incorporated into relicenses	Only affects projects located on or proximate to designated rivers.
Wilderness Act	No new development is allowed within designated Wilderness areas and FERC may not issue a license for any project that would adversely impact a Wilderness area	Wider buffer zones may be required for projects near wilderness areas. FERC should be as stringent as applicable Wilderness area specifications.	Only affects projects located on or abutting designated federal Wilderness areas.

2.5 STATE AND LOCAL REGULATIONS

State and local zoning regulations, rules, and guidelines may offer riparian habitat protection by limiting shoreline development. Some state and local requirements can be useful for managing lands around state waters, but they are often ineffective at managing lands impacted by hydropower dams. Some requirements, particularly local zoning regulations may not protect shorelands adequately and may actually encourage development, as town budgets are often dependent on the tax revenue from these lands. In addition, state and local regulations will often change or be rescinded during the life of a FERC license, typically 30-50 years.

Many Licensees continue to present the false argument that local regulations and zoning provide sufficient shoreline protection, which you should challenge. In recently issued hydropower project licenses, FERC has clearly identified that state and local land regulations will not be incorporated into FERC licenses because they can be inadequate, changed over the time of the license, and the enforcement of non-federal requirements is out of FERC's jurisdiction. FERC has included the following or similar text in recent licenses.

“A licensee must hold all rights in project property necessary to fulfill project purposes, including the provision of public access to project lands and waters and the protection of aesthetic and natural resources. We (FERC) have consistently held that state and local zoning laws and ordinances are an inadequate substitute for a licensee's control of land for the area surrounding a project impoundment to fulfill such project purposes.”
(Wyman Project #2329, license issued 11/25/97).

CHAPTER 3 –BUILDING A CREDITABLE CASE FOR SHORELINE PROTECTION IN THE RELICENSING PROCESS

There are two pathways to obtain protection of lands impacted by a hydropower project. Each method is effective for certain goals and during certain times of the licensing process. Arguably the most effective and flexible means of achieving shoreline protection is through negotiated settlement agreements with the Licensee. The settlement outcome must be supported by relevant resource protection documentation so that FERC will accept the terms of the settlement. FERC will also need this documentation when developing the Environmental Assessment (EA) or Environmental Impact Study (EIS) and to justify relevant license article conditions.

If a settlement is not achievable, then creating a convincing record with FERC during the licensing process is paramount. FERC may require specific shoreland protection in the license it issues, but more likely will take an intermediate step and order the Licensee to develop a Shoreland Management Plan as a license article condition. In simple terms this means that the outcome is pending further analyses. This can be cumbersome and more restrictive, but at times is the only way to move forward.

3.1 SHORELINE PROTECTION THROUGH THE FERC LICENSING PROCESS

Currently hydropower project owners are required to file a license application with FERC a minimum of two years prior to the expiration of the license for existing facilities or prior to construction of a new facility. A major component of the application is Exhibit E (described in Section 2.2.d) in which the applicant includes information on the environmental impacts of the project. The information contained in this submittal and other parts of the application is used by FERC when issuing its EA or EIS. There are many steps along this process in which the public can become involved and affect the outcome of the license. (See the Hydropower Reform Coalition Relicensing Toolkit for more detail.)

3.1.a Motion to Intervene and Additional Information Requests

There are several steps in the licensing process that allow involvement by other federal and state agencies, recreation and conservation organizations, and members of the general public. However it is important that interested parties first file a motion to intervene pursuant to 18 CFR 385.214 in order to become a formal party to the license proceedings and to receive all filings. An intervener may file comments, recommendations, and suggested terms and conditions for the license. A motion to intervene also informs the project owner that you are an interested party and opens the door for involvement in future settlement agreements and scoping sessions.

An intervenor may also file an Additional Information Request (AIR) which can be a very powerful tool to remedy data errors or omissions. Interested parties may submit an AIR, which if granted by FERC, can require the licensee to provide additional information on how project lands will be protected and threats or impacts mitigated. The AIR, however, must be substantiated with specific reasons why the additional information is necessary, how the AIR relates to the impacts of the project, how the results of any study will be used, and how the project and the results of your information request affect you.

3.1.b License Article Conditions for Protection, Mitigation, and Enhancement

A final license for a hydropower project will include license articles with conditions outlining the requirements that the licensee must comply with during the term of the license. FERC has developed many of the articles in a standard format to be used where appropriate in any license. License articles may also require recommendations from other state and federal agencies and organizations who have filed a motion to intervene. FERC makes the final decision on which articles are included in the final license. The following is a list of requirements relating to shoreline and riparian lands protection that have been included in license articles for hydropower projects:

- ◆ The licensee is required to control development through easements within a shoreline buffer zone around the impoundment.
- ◆ The licensee is required to replace or offset wildlife or wetland habitat that is adversely affected by the project.
- ◆ The licensee is required to protect the habitat of an endangered or threatened species found on project lands.
- ◆ The licensee is required to develop and implement a shoreline management plan.

3.1.c License Article Conditions for Studies and Monitoring

Sometimes effects that a hydropower project will have on development, species habitat, and increase in recreation are unknown at the time the license is issued. Therefore, FERC will frequently include conditions in a license that require the licensee to conduct studies and or monitoring and submit results to FERC annually or some other time period. It is far more desirable to have these issues completed when the new license is issued, but these conditions can be an effective tool for land protection by-

- ◆ Requiring the project owner to more accurately determine project impacts on a particular species and its habitat which may result in additional land protection; and
- ◆ Showing the gradual impacts of increased shoreline development over time such as degradation in water quality and recreationist's experience.

3.1.d Other Tools, Guidelines, and Requirements

Management plans of other federal, local, and state agencies can provide additional requirements, guidelines, and recommendations that may be included in the project's license. Comprehensive Plans that outline land protection needs, particularly if specific to the hydro project of concern, can be a valuable tool to justify land protection during relicensing. FERC currently lists over 800 comprehensive management plans from other agencies that meet their criteria for being considered during the licensing process. The latest version of this list is entitled *Revised List of Comprehensive Management Plans*, April 2008 and is available online at <http://www.ferc.gov/industries/hydropower/gen-info/licensing/complan.pdf>

Examples of plans that FERC may be required to consider are:

- ◆ Wildlife Refuge Management plans
- ◆ USFS - Forest Management Plans

- ◆ Best management practices for timber harvesting
- ◆ National Marine Fisheries Service management plans
- ◆ State water quality plans for river and "beneficial use" designation
- ◆ State and regional river management plans

3.2 SETTLEMENT AGREEMENTS

Thousands of acres of riparian forests, wetlands, and shoreline have been protected through the negotiated process of settlement agreements. In this process, a hydropower project owner who plans to obtain a new license in the near future engages all interested parties and stakeholders in negotiations prior to filing a license application with FERC. The parties work together to determine terms and conditions that will be put into the license or actions that the owner will take to protect lands and shoreline. No party will likely achieve 100% of their objectives in settlement, but it is frequently the best forum to work out an appropriate balance with the Licensee rather than all parties waiting for the FERC staff to determine the "appropriate balance." Innovation can also occur, such as proposing longer license terms in return for large-scale land protection or other mitigation.

Settlement agreements can be negotiated outside of the FERC licensing process or as part of FERC's alternative licensing process using procedures prescribed under 18 CFR 4.34(i). Typically, a settlement agreement is written to include all agreed upon terms and conditions and signed by all the involved parties. The settlement agreement is then submitted to FERC as part of the license application and part or all of it may be incorporated into the license. FERC may "approve" an entire settlement agreement but will only incorporate into the license those terms and conditions that are within its jurisdiction. Refer to 18 CFR 385.602 for procedural regulations regarding settlement agreements.

The benefits of settlement agreements include more creative methods of protection, more efficient licensing process, and less post-license appeals. Stakeholders have the opportunity to be directly involved in negotiations and are part of the consensus building required to reach a settlement. Try to make settlement agreement terms enforceable under FERC's authority. If aspects of the settlement agreement are outside of FERC's jurisdiction, then the only legal recourse available to stakeholders may be through the state court in the event that any of the parties fail to comply with the agreement.²

The types of shoreline protection that have been achieved and licensed through settlement agreements include:

- ◆ Determination of the project boundary prior to the licensing process which enables all parties to know what lands are under the control of the project owner;
- ◆ Designation of adequate widths for riverine protection corridors and shoreline buffer zones;
- ◆ Determination of land offsets for wetlands and other areas adversely impacted by the project;

² Many federal natural resource agencies are concerned about such enforcement because of their inability to sue in state court.

- ◆ Establishment of funds to finance restoration or replacement of riparian lands and wetlands;
- ◆ Development of recreation, land, wildlife, or habitat management plans for areas and species impacted by the project;
- ◆ Acquisition of additional lands for shoreline protection;
- ◆ Development of conservation easements on project lands; and
- ◆ Determination of points of public access for recreation purposes.

3.2.a Term and Perpetual Conservation Easements

Settlement agreements often include conditions for establishing protective easements on lands affected by the hydropower project. This method of protecting lands involves the purchase of land or development rights and the establishment of conservation easements. The hydropower project owner will forgo specific rights to project lands it owns or acquires for this purpose to a qualified conservation recipient such as a public agency, conservation organization, or land trust. The hydropower project owner usually enters into the conservation easement voluntarily as a part of a settlement agreement. Monies to endow the easement holder for its future legal monitoring obligations are also a common part of such arrangements.

An easement may be written to restrict development to the degree necessary to protect the significant resources of the property. For shoreline protection, conservation easements typically prohibit commercial and industrial development and limit or prohibit residential development. Building and roadway setbacks may also be established. Requirements for and limitations on recreational development may also be included.

Perpetual easements are written in perpetuity and are passed on to all subsequent owners of the property. Term easements are allowed only in some states and are written to last a specified period of years. The agency or organization that has been granted the easement is responsible for seeing that the conditions of the easement are met. This often includes monitoring the property on a periodic basis and maintaining written records of the visits. The grantee has the legal responsibility to require the property owner to rectify any violations of the easement. Clearly written, legally binding perpetual conservation easements that specifically outline allowable activities and uses are one of the most effective means of establishing long term land protection, especially when developed through a settlement agreement in which all stakeholders have been involved.

Specific elements of conservation easements that aid in the protection of riparian lands include:

- ◆ Preventing development such as large commercial marinas or residential subdivisions around impoundment shorelines;
- ◆ Preventing human access to areas of nesting sites, wintering and feeding grounds, migration corridors, and other critical species habitat;
- ◆ Prescribing timber harvesting practices near impoundments, rivers, and wetlands; and
- ◆ Initiating land management practices that are conducive to particular wildlife and plant species.

3.2.b Trust Funds

It is not always possible to foresee all of the impacts that a particular hydropower project will have on project lands surrounding the impoundment or along river reaches. Many of these impacts may require mitigation or the purchase of additional lands for restoration or replacement. A hydropower project owner may, voluntarily or as the result of a settlement agreement, establish a trust fund for a specified purpose such as land protection to compensate for wetland or wildlife impacts caused by the project and not easily mitigated on-site. The owner may make a lump sum deposit or annual deposits into the fund, which is typically managed by a council made up of the owner and other interested parties. Disbursements from trust funds may be used to provide shoreline protection by:

- ◆ Purchasing additional lands for protection and mitigation; and/or
- ◆ Financing organizations or agencies to administer conservation easements.

3.2.c Off-site Land Exchanges and Purchases

A settlement agreement may include terms for the protection of lands not included within the project boundary. Off-site land protection may occur when negative impacts on project lands can not be mitigated on-site. The hydropower project owner may agree to protect other lands under its ownership but not associated with the project or the owner may agree to purchase additional lands not associated with the project. This can be an effective means of land protection as long as the lands being exchanged can provide adequate mitigation for associated project impacts. For example, if the project negatively impacts elk wintering grounds within the project boundary, then the project owner may choose to purchase or exchange off-site lands for mitigation. These off-site lands may be exchanged as long as they will benefit the same elk herd. Likewise, wetlands that are destroyed or degraded by project operations could be compensated for by protecting off-site wetlands comprised of similar species of flora and fauna expected to be found on the project lands.

CHAPTER 4 -- DEREGULATION AND PROJECT RELATED LANDS SALES: IMPLICATIONS FOR SHORELINE PROTECTION

Energy deregulation has significantly changed the landscape for land protection for many projects. Though FERC views 200 feet as an appropriate boundary to review for land protection during relicensing, in many cases the project boundary is only the high water mark with the Licensee possibly owning some or all of the shorefront lands. In theory relicensing is an opportunity to review the project boundary and possibly expand it to protect identified resource values. Knowing this, utilities with greater frequency are transferring their land ownership prior to the sale to a non-generating business entity. The utility in turn may claim they no longer own the lands around a project and could not afford to purchase them for shoreland protection. FERC and the states have been reticent to stop this “shell-game” practice. A number of NGOs have contended that the Licensee still has the obligation to protect shorefronts, especially when they sold these lands knowing their upcoming legal obligations. To date, there are no case studies that shed light or offer precedence over this practice. Following are some examples of land transfers in anticipation of potential licensing obligations. At this juncture, treat such lands as a viable and cost effective option for the Licensee to use to meet any shoreline protection obligations.

4.1 DUKE POWER COMPANY, CATAWBA RIVER, SOUTH CAROLINA - FERC PROJECT #2232

Duke Power, a subsidiary of Duke Energy, owns and operates 11 dams in the Catawba River basin under a single license. The company was last issued a license by FERC for this project in 1958, and the license comes up for renewal in 2008. Even before the original license was issued, Duke Power began transferring thousands of acres of project lands to another Duke Energy subsidiary, Crescent Land and Timber. Duke Power was required to develop a shoreline management plan; however, they do not have control over lands from the high water mark (as these are now owned by Crescent). Some lands have been donated to the state for use as a state park and currently some lands remain undeveloped. Crescent is actively marketing large tracts of land to be sold for timber harvesting and development. Concerned conservation groups in the area are researching ways of requiring Duke Power to purchase back shoreline and mitigate and protect other lands when its license comes up for renewal.

4.2 SOUTH CAROLINA ELECTRIC AND GAS, SALUDA RIVER, LEXINGTON COUNTY, SOUTH CAROLINA - FERC PROJECT #516

This project was issued a license in 1984, which included a review of the Shoreline Management Plan (SMP) every five years. This was the first license in which FERC incorporated a review of the SMP. FERC required South Carolina Electric and Gas (SCE&G) to include all lands under its ownership within 200 feet of the high water mark to be included in the project boundary. A 75-foot buffer zone was established within this 200-foot boundary which placed restrictions on vegetation clearing, prevented SCE&G from selling lands within this strip, and required public access within this zone. Since the issuance of this license, SCE&G had gradually been selling off project lands behind the 75-foot buffer and within the 200-foot project boundary. They are allowed to sell up to 50 acres per year. Local zoning does not require a minimum lot size, but recently SCE&G complied with pressure from the Department of Natural Resources and instituted a policy of requiring 100 feet of shoreline for a dock permit which had lead to lot widths of 100 feet or more. SCE&G recently proposed to donate to the state of South Carolina a 100-foot wide buffer zone along approximately 100 miles of shoreline, 4,000 acres for forestry and game management, and additional lands for a new state park. Under this arrangement,

SCE&G would receive tax credits for the donated lands and project lands beyond the 100-foot buffer would be removed from the project boundary. Negotiations have been halted at this time, but it is likely that a similar negotiated agreement will be part of SCE&G's license application. The project is due for license renewal in 2007.

4.3 CONNECTICUT LIGHT AND POWER, HOUSATONIC RIVER, CONNECTICUT RIVER, FERC # 2576 AND 2597

Connecticut Light and Power (CLP), formerly part of Northeast Utilities Company, owned a number of projects and reservoirs on the lower Housatonic River in Connecticut. It also owned considerable undeveloped shoreline acreage around several of the reservoirs, much of which was not in project boundaries. The land has significant real estate value. As part of energy deregulation in Connecticut, CLP assets were sold off to two separate parts of its parent Northeast Utilities Company: the regulated power distribution company went to Northeast Utilities, and the dams and generating units went to the unregulated Northeast Generating Company. The lands around the project but not in project boundaries were "sold" to Northeast Utilities. Now, during the projects' relicensing processes, Northeast Generating is arguing that it no longer owns the lands around the project not contained in the old project boundaries. It claims it cannot afford to buy them from the new owner: its own parent company Northeast Utilities.

CHAPTER 5 - CASE EXAMPLES

Significant shoreline lands protection has been achieved during the relicensing process in recent years. The following case examples illustrate the methods used to achieve land protection. The magnitude of lands protected in each of the examples presented below was significantly affected by the involvement of NGOs, state, local, and federal planning and natural resource agencies, as well as local citizens.

5.1 NEW ENGLAND POWER (NOW USGEN PG&E), DEERFIELD RIVER, VERMONT AND MASSACHUSETTS - FERC # 2323

Project Description: This project includes 8 power or storage dams, plus a pump storage project covered by a separate license. It is used for peak power production with a total capacity of 85 MW and influences over 66 miles of river. The original license contained over 18,000 acres in the project boundary. A comprehensive settlement was negotiated with 14 organizations and state and federal resource agencies in 1994.

Magnitude of Lands Protection: The settlement included the permanent protection from development of 18,350 acres through permanent conservation easements. Because the lands are both in Vermont and Massachusetts, the easement holders differ in each state, with the Vermont Land Trust holding the bulk of the lands in Vermont and a state agency to hold the lands in Massachusetts. An agreement was also worked out for the utility to provide an endowment to the easement holder to meet their long-term monitoring and enforcement obligations with the easement.

Mechanism of Protection: Permanent conservation easements that exclude development with agreed upon forestry, wildlife and recreation plans were used to protect the lands. Over 2,000 acres around the pump storage project were protected with a term easement with the conditions to be renewed upon relicensing of that project at its future relicensing date.

FERC Involvement: This was one of the earlier settlements and so FERC took a somewhat distant approach to it, only commenting on it through the final licensing process. There were several disagreements between the license issued and the settlement, which were worked out through post-license filings. The signing parties to the settlement and the dam owner worked together jointly to resolve the problems with FERC.

Current Status: The license was issued in April 1997 and the conservation easements are in place.

5.2 INTERNATIONAL PAPER, ANDROSCOGGIN RIVER, MAINE -- FERC # 2375 AND # 8277

Project Description: Located on the Androscoggin River, the projects consist of 4 run-of-river dams with 33 MW of capacity. They are owned by International Paper and the power is used to operate its paper mill for the most part. International Paper was interested in trying the Applicant Prepared EA relicensing process and a successful collaborative team was developed. The collaborative team included nine environmental organizations and state and federal resource agencies. A settlement was signed in September 1997 and submitted as part of the application as the preferred alternative. It included the ability to increase generation at an undersized facility and support of a 50-year license.

Magnitude of Lands Protection: Over 1200 acres of company-owned land not within project boundaries on and around the project were protected from development, and another 180 acres at an upstream headwater storage reservoir (owned by another company) was purchased and added to a state park.

Mechanism of Protection: On the 1200 acres either a fee simple gift or a permanent easement – prohibiting development and to be administered by the Androscoggin Land Trust – were executed. The Land Trust was given the right to manage the lands for forestry with the proceeds going to the Land Trust to cover easement costs. Guidelines for forestry practices were agreed upon. The 180 acres with almost a mile of shoreline on Rangeley Lake, an upstream storage reservoir, were purchased and given to Rangeley State Park.

FERC INVOLVEMENT: FERC actively provided guidance in this proceeding. The land deals were developed as a separate sidebar agreement and were not included in the FERC license. However the land protection was executed promptly to provide comfort to all parties, since FERC would not be in a position to enforce them.

Current Status: The license was issued in 1998 with a 50 year term as negotiated.

5.3 FIFTEEN MILE FALLS, CONNECTICUT RIVER, NEW HAMPSHIRE AND VERMONT - FERC #2077

Project Description: The USGen PG&E operates three hydropower dams on the Connecticut River on the northern border of New Hampshire and Vermont. This project is one of the largest hydropower peaking projects in the region with a combined capacity of 369 MW. The project also receives water from multiple headwater storage reservoirs, which are not licensed. The settlement agreement was negotiated prior to and during the mandated project sale from New England Power to USGen PG&E due to deregulation laws. It was signed in September 1997 and submitted as the preferred alternative in an applicant prepared EA.

Magnitude of Lands Protection: The licensee agreed to protect almost 12,000 acres through permanent conservation easements to be co-held by The Nature Conservancy, Society for the Protection of New Hampshire Forests and Vermont Land Trust. A fund of up to \$500,000 to develop and endow the land easements was also established. Historic uses of low impact recreation and some logging will be permitted to continue. About one-third of the lands are in the project boundary and recognized by FERC in the license issued. The remaining lands were protected through a separate sidebar agreement. About one-quarter of these lands surround the unlicensed headwater reservoirs. A donation of 50 acres downstream of the project with significant conservation and recreation values was also donated. A river enhancement fund of up to \$17 million dollars (exact amount will depend on power sales by formula) was also created, a portion of which can potentially be used for additional land protection, providing it has a nexus with the project and its impacts. The parties agreed to support a 40-year license.

Mechanism of Protection: Motivated by a successful settlement with its Deerfield River project, the owner elected to try a settlement in this licensing also. A settlement agreement was reached with fourteen NGOs, state and federal agencies in September 1997.

FERC Involvement: FERC issued the license in April 2002 with a statement that it agreed with the settlement agreement; however FERC ruled it could incorporate some but not all of these

lands in the project boundary. This is not expected to effect the conservation easements. The settlement and license was negotiated through an Applicant Prepared Environmental Assessment (APEA) process with some coordination with FERC staff. In the draft EA, FERC excluded the river enhancement fund, but reinstated it in the final EA and license following protest from the signing parties.

Current Status: The license was issued in April 2002. The development and implementation of the fund and finalizing of the easement terms is currently in process.

5.4 CONSUMERS ENERGY HYDROPOWER PROJECTS, AU SABLE, MANISTEE, AND MUSKEGON RIVERS, MICHIGAN -- FERC PROJECT #2436 ET AL

Project Description: Consumers Energy operates 11 hydropower projects on three rivers in the lower panhandle of Michigan. The largest of these is the Foote Project located on the Au Sable River (FERC project number 2436). New licenses were issued for each of the projects on July 15, 1994 that incorporated conditions of a settlement agreement negotiated between Consumers Energy, the Michigan Department of Natural Resources, USFS, FWS, NPS, and the Michigan SHPO. As required in the license, Consumers Energy submitted three Land Management Plans, one for each river basin, which were approved by FERC on March 5, 1997.

Magnitude of Lands Protection: Over 11,000 acres of project lands are managed under the land management plans including 5,348 acres of federal lands located within the Huron/Manistee National Forest. The key features of the land management plans are:

- ◆ Establishment of a 200 foot buffer zone (measured from the high water mark) around each project reservoir except where lands are privately owned or recreation activities preclude 200 feet.
- ◆ Establishment of a 100 foot buffer zone where existing recreation development occurs.
- ◆ Establishment of a 660 foot secondary protection zone (as defined by USFS) within all project owned shoreline to protect potential bald eagle nest sites which prohibits land clearing, clear cutting, major construction, and other land use changes but allows for continued recreation use.
- ◆ Establishment of a 100 foot greenbelt between waters edge and campsites.
- ◆ Consumers Energy is required to allot \$1 million for shoreline and river corridor erosion control and is required to contribute \$575,000 annually to the State of Michigan Habitat Improvement Account.

Mechanism of Protection: Consumers Energy initiated the settlement agreement process in 1991 after initial meetings with resource agencies yielded little progress. After a year of negotiations a settlement agreement was reached and submitted to FERC. The agreement was incorporated into the license with few changes. Consumers Energy established the Manistee, Muskegon, Au Sable Coordination Team with representatives of the signing parties to implement the requirements of the agreement and license.

FERC Involvement: In its approval of the Land Management Plans, FERC states: "The management strategy would protect and enhance the visual quality of the shoreline of each impoundment and minimize the potential impact that unrestricted uses of these shorelines could have on riparian habitat and associated biota."

Current Status: In the Land Management Monitoring Report submitted March 30, 2001, Consumers Energy reports that several campsites have been relocated from the 100 foot buffer zone, there has been a 70% reduction in individual docks (replaced by group docks), and the wetlands inventory shows an increase in emergent wetlands. Consumers Energy conducts annual inspections of all leased properties to insure compliance with the goals of the Buffer Zone Management and Land Management Plans. There have been disagreements and rehearings on how funds should be spent and which mitigation projects are a result of effects caused by Consumers hydropower projects.

5.5 CITY OF SEATTLE, SKAGIT RIVER, WASHINGTON -- FERC PROJECT #553

Project Description: The City of Seattle owns and operates three hydropower dams on the Skagit River in northern Washington. The project is located almost entirely on federal lands primarily on the Ross Lake National Recreation Area. Disputes over flow regimes for fish passage, wildlife protection, and recreation issues led to a settlement agreement process that began in the late 1970's and resulted in a comprehensive package that was submitted to FERC in April 1991.

Magnitude of Lands Protection: This project utilizes approximately 19,300 acres of federal lands within the Ross Lake National Recreation Area. The settlement agreement, including the conditions that have been included into the FERC license, amounts to approximately a \$100 million dollar commitment to protect lands and wildlife. Seattle has agreed to spend \$17 million on securing and preserving wildlife habitat in the upper Skagit River and South Fork Nooksack river basins. Seattle will also spend millions of dollars on campgrounds, trails, and boat launches, an erosion control program, and a greenhouse to propagate native plant species.

Mechanism of Protection: A settlement agreement between the City of Seattle, USFS, NPS, FWS, several Indian tribes and environmental organizations was submitted to FERC in May 1991 and portions of this agreement were incorporated into the project license in 1996. Under these conditions, the city of Seattle has agreed to purchase lands for wildlife mitigation, fisheries enhancement, and recreation. Many of the lands are located within the Skagit River basin downstream of the project and are primarily riparian/slough habitat. The largest tract is located northwest of the project in the Nooksack River basin and is being managed for elk habitat. Lands purchased under this agreement have been incorporated into the project boundary as "project islands." A riparian corridor averaging 3/4 of a mile wide has been established along eight miles of the Nooksack River. The city of Seattle has agreed to keep all lands for the term of the license and future licenses and will give land management agencies first right of refusal to purchase lands if the city does not renew its license.

FERC Involvement: Although FERC approved the settlement agreement, many of the terms and conditions of the agreement were not included as conditions in the new license issued by FERC in 1995. Of particular concern to the negotiating parties was the exclusion of the wildlife management agreement in which Seattle had agreed to utilize \$17 million for securing and preserving wildlife habitat. FERC asserted that conditions, which addressed lands outside of the project boundaries, were not enforceable by FERC and should not be included in the license. After a lengthy appeals process, FERC reconsidered, citing reasonable arguments on the interrelatedness and interdependence of every element in the settlement. FERC then issued an

Order on Rehearing in June 1996, modifying the license to include the original recreation and wildlife agreements.

Current Status: So far, Seattle has purchased 8,129 acres of private land for wildlife mitigation and 62 acres for fisheries mitigation.

5.6 WISCONSIN ELECTRIC POWER CO. - WILDERNESS SHORES SETTLEMENT AGREEMENT MICHIGAMME RIVER, AND PAINT RIVER, MICHIGAN; MENOMINEE RIVER, MICHIGAN AND WISCONSIN -- FERC PROJECT # 1980, # 1759, ET AL

Project Description: Wisconsin Electric Company (WEC) owns and operates eight hydropower projects located in the Upper Menominee River basin in Wisconsin and Michigan. The projects have a combined output capacity of 61.1 MW. The basin is forested and sparsely populated.

Magnitude of Lands Protection: Approximately 18,116 acres of lands within the project boundary and over 5,000 acres outside of the project boundary are included in land management provisions for these hydropower projects. Stipulations for old growth forests, bald eagle habitat, riparian buffer zones, soil erosion, and timber harvesting are addressed in the Settlement Agreement and FERC license and include:

- ◆ WEC must deposit \$145,000 annually to a mitigation enhancement fund to enhance the natural resources of the upper Menominee River
- ◆ 1,366 acres of land given in perpetual easement to Wisconsin DNR
- ◆ Riparian Buffer Zone established 200 feet out from water's edge that protects approximately 300 miles of shoreline. The first 150 feet from shoreline prohibits any timber harvesting and is designated a natural succession area. The next 50 feet allows for selective harvesting but no clearcutting.
- ◆ WEC will retain ownership of and manage 4,000 acres of wilderness along Menominee River for old growth and biodiversity and will not be developed
- ◆ A riparian corridor will be established along rivers to be managed for old growth and public access. Land adjacent to the corridor can have limited development that meets a high standard of environmental and aesthetic quality.

Mechanism of Protection: A landmark settlement agreement was reached between WEC, Michigan DNR, Wisconsin DNR, NPS, FWS, River Alliance of Wisconsin, Michigan Hydro Relicensing Coalition, and others in 1997. The agreement separates lands owned by WEC into "project lands" and "non-project lands". The stipulations for project lands have been included in the FERC license conditions and are enforceable by FERC. The stipulations for non-project lands are enforceable by a court of appropriate jurisdiction as agreed to in the Settlement Agreement.

FERC Involvement: FERC issued 8 new licenses on January 12, 2001 that incorporate "relevant" sections of the Settlement Agreement. The incorporated terms relate to lands within the project boundary over which FERC has enforcement jurisdiction. FERC incorporated the stipulations of the Settlement Agreement almost verbatim into the license.

Current Status: There have been several requests for rehearing since the licenses were issued primarily concerning fishery and minimum flow issues. Several resource management plans are due to FERC in the next 6 to 12 months.

5.7 CITY OF TACOMA, COWLITZ RIVER, WASHINGTON, - FERC #2016

Project Description: The city of Tacoma owns and operates two dams on the Cowlitz River in Washington. The two lakes associated with the dams inundated approximately 14,000 acres of primarily undeveloped forested lands.

Magnitude of Lands Protection: The major components of the settlement agreement include:

- ◆ All project lands owned by Tacoma will be managed for wildlife habitat by the Washington DFW.
- ◆ Tacoma will pay \$3 million to acquire approximately 1,900 additional acres of lowlands and wetlands for wildlife habitat.
- ◆ Tacoma will acquire all timber harvesting rights over a 30 year period on approximately 4,000 acres and will replant and restore these lands for wildlife habitat.
- ◆ Tacoma will pay \$250,000 annually to Washington DFW for the operation, maintenance, and restoration of project lands.

Mechanism of Protection: The city of Tacoma has had a close working relationship with the Washington Department of Fish and Wildlife (DFW) and has voluntarily funded employee and equipment costs for the DFW in exchange for assistance with its comprehensive habitat management programs since the early 1980s. In conjunction with preparation for its relicensing application, Tacoma entered into a settlement agreement for wildlife habitat management on its project lands with DFW and the U.S. Fish and Wildlife Service, which was later approved by FERC.

FERC Involvement: Tacoma's existing license expired on December 31, 2001 but FERC had already stated in its June 12, 2001 draft EIS that conditions of the settlement agreement will be incorporated into the final license.

Current Status: According to the Cowlitz Wildlife Area annual management report issued on April 27, 2001, Tacoma currently owns approximately 13,940 acres of project lands which are managed by the Washington DFW. These lands are divided into 6 management units and include narrow buffer zones around each lake. Riffe Lake has almost no development around its steep inaccessible shoreline and is managed primarily for eagle, osprey, and other wildlife. Mayfield Lake is interspersed with some recreational facilities and managed primarily to maintain its current state and for a large population of Canadian geese.

5.8 GEORGIA POWER COMPANY, SAVANNAH RIVER BASIN, GEORGIA AND SOUTH CAROLINA - FERC PROJECT # 2354 ET AL

Project Description: Georgia Power Company operates six hydropower developments on three rivers located within the Savannah River basin. Dam 5 at the North Georgia Hydropower project forms the Tugalo Lake on the Tugalo River, which runs the border between Georgia and South Carolina. The Chattooga River is designated as a National Wild and Scenic River, and the

Tallulah River flows through the Tallulah Gorge is highly treasured for its recreational and scenic values. The projects have a combined generating capacity of 168 MW.

Magnitude of Lands Protection: Georgia Power leases approximately 3,000 acres of project lands in the Tallulah Gorge to the Georgia Department of Natural Resources (GDNR) through a fifty-year conservation easement for \$1.00 per year. GDNR will establish a state park in the gorge. Georgia Power is also required to donate \$300,000 to GDNR for trail maintenance and other operational costs. In addition, Georgia Power manages shorelines within 75 feet of the reservoirs for residential construction and erosion control.

Mechanism of Protection: FERC approved the use of project lands for a conservation easement through an order issued in 1995. The order not only established the Tallulah Gorge State Park but also prohibits logging or development within the gorge. The conservation easement was incorporated into the FERC license in 1996 by reference to the Final Environmental Impact Statement. FERC and Georgia Power recently entered into a Programmatic Agreement to determine methods for managing residential construction within the project boundary and 75 feet from the edge of the reservoirs.

FERC Involvement: See above.

Current Status: The conservation easement is in effect and GDNR has constructed and operates the Tallulah Gorge State park. Georgia Power was involved in negotiations with the State of South Carolina for a conservation easement on approximately 1,200 acres along the Tugalo River. Negotiations were unsuccessful because Georgia Power offered a 50-year conservation easement while South Carolina requested an easement in perpetuity.

INFORMATION RESOURCES

GUIDANCE DOCUMENTS

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National Research Council. March 2002. *Riparian Areas: Functions and Strategies for Management*. National Academy Press. Washington, D.C.

WEBSITES

Federal Energy Regulatory Commission
<http://www.ferc.gov>
General information and links to other sites.

FERC's Elibrary Document Search Engine
<http://www.ferc.gov/docs-filing/elibrary.asp>
All electronically-available documents filed with FERC.

Federal Register and Code of Federal Regulations
www.access.gpo.gov or <http://www.archives.gov/federal-register/cfr/>
Latest versions of federal regulations

Hydropower Reform Coalition
<http://www.hydroreform.org>

A coalition of more than 100 conservation and recreation organizations across the country dedicated to reforming the operations of hydropower dams for improved public benefits and enhanced environmental health for our nation's rivers.

American Rivers

<http://www.americanrivers.org/>

A 30-year old non-profit national river conservation organization dedicated to restoring and protecting America's rivers.