



New York & Long Island Field Offices

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2009



Conservation Planning Assistance *Energy Development in New York State*

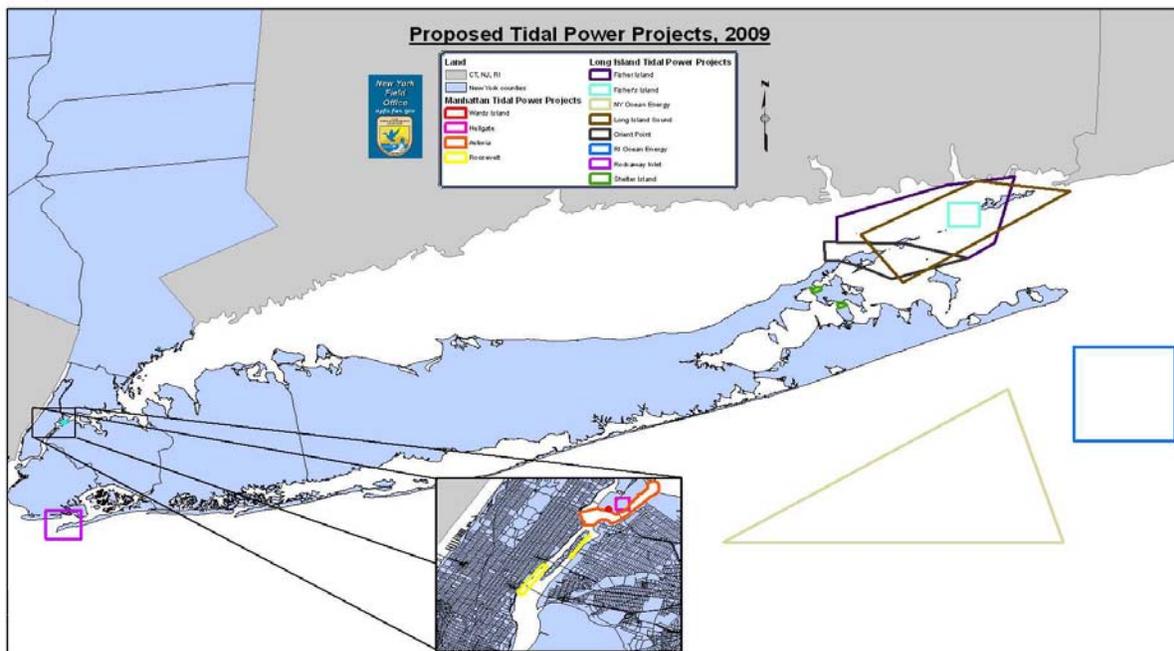
New York State has a high demand for energy and a need to deliver energy to high density population areas within the State. We also have a high potential for developing energy within our borders, particularly renewable energy, such as hydropower and wind energy. The U.S. Fish and Wildlife Service (USFWS) has the knowledge and responsibility to advise energy developers and communities on ways to minimize adverse impacts of energy development and delivery on fish and wildlife resources.

Energy Development in New York

- Hydroelectric
- Wind
- Tidal/Wave
- Natural Gas
- Nuclear
- Energy Transport

Tidal and Wave Energy

New on the horizon is an interest in developing tidal and wave energy. The Federal Energy Regulatory Commission (FERC) has issued or is considering issuance of about ten preliminary permits to explore this type of energy production in coastal areas and tidal rivers. The USFWS is working with prospective developers, such as at **Roosevelt Island**, to study the impacts of underwater turbines and other structures (such as wave energy converters) on fish, birds, and energy loss within aquatic ecosystems.



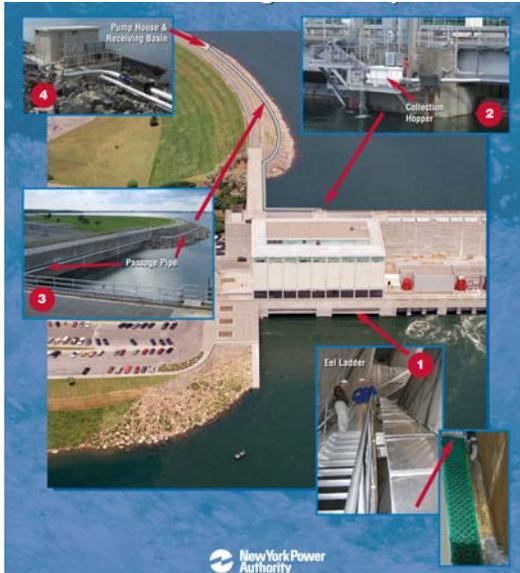
Wind Energy Projects Wind energy has generated much interest from developers due to Federal tax incentives, a State renewable portfolio standard, and the desire for diverse energy sources. We are currently tracking the progress of wind power projects for at least 107 sites throughout the State. The USFWS is working closely with developers to ensure that the potential impacts of wind turbines on birds and bats are understood and minimized via thoughtful design and siting of wind facilities. To date, 13 wind energy projects have been built in eight counties.



Nuclear Energy

There are currently 4 operating nuclear power plants (with 6 reactors) in New York – **Indian Point** on the Hudson River, and **Ninemile 1 & Ninemile 2, Ginna, and Fitzpatrick**, located on Lake Ontario. A third reactor, **Ninemile 3**, is currently proposed. Nuclear power plants, particularly those using open cycle water circulation methods such as Indian Point, have the potential to entrain and impinge hundreds of thousands of fish and other organisms. The Service works with the Nuclear Regulatory Commission to encourage adoption of newer technologies and other forms of mitigation to reduce these impacts.

Hydroelectric Power Generation



There are over 170 licensed hydroelectric projects in New York, encompassing nearly 220 power plants, many with multiple turbines. An additional 20 projects (with 30 total developments) have been proposed. Every major river basin in New York has been dammed to produce hydroelectric energy, and over 60 individual rivers and creeks have been harnessed for electric power production. The USFWS works closely to ensure that existing hydroelectric projects are relicensed with appropriate fish and wildlife mitigation measures such as flows through dewatered reaches, reduced impoundment fluctuations to benefit wetlands, and fish passage and protection. For proposed projects, we work to ensure that they are



properly sited and include state-of-the-art designs to minimize impacts to fish and wildlife and their habitats.

Natural Gas Development and Transport

It has been reported that a huge field of natural gas is present within the **Marcellus Shale Formation** which lies in the southern portion of New York State. Efforts to extract that resource have been initiated by several companies, however, concerns about potential impacts to ground and surface water have temporarily halted gas production until questions have been addressed. The Service also has concerns about potential impacts to wildlife habitat, injury or death to fish and wildlife from extraction, and contaminants exposure. We are looking to gather more information about the effects of construction, operation, and decommissioning of these gas wells on fish and wildlife.



There is a growing need to deliver natural gas to the New York City metropolitan area. This has led to the development of projects, such as the **Millennium Pipeline**, a natural gas pipeline that was constructed over 250 miles of New York State, impacting 200 acres of wetlands, crossing over 500 streams, and with the potential to adversely impact listed species such as the bog turtle and dwarf wedge mussel.



Two liquid natural gas (LNG) terminals are proposed in offshore New York areas – the **Broadwater LNG** and **Safe Harbor LNG** facilities. These proposed projects have the potential to entrain and impinge large numbers of fish and disturb or destroy benthic habitats. The USFWS is advising energy delivery developers on ways to minimize and mitigate for impacts to fish and wildlife resources by means such as altering pipeline routes or methods and altering flows or screening to reduce entrainment and impingement of fish.

Electrical Energy Transport

There has been a call by some to build more electric transmission lines from upstate areas to the New York City metropolitan region in order to relieve transmission congestion and satisfy demand. While most of the generating sources are currently located in upstate areas, it is anticipated that additional generating sources will be developed near the city in the future. Electric transmission line rights of way can have negative effects on wildlife. Loss and fragmentation of habitat is common. Avian line strikes and electrocutions are also prevalent. One 200-mile transmission line proposal, the **New York Regional Interconnect Project**, would extend from Utica to Orange County. The Service will work with the project sponsors in the project siting phase to avoid and minimize sensitive wildlife areas.

