

Upcoming Relicensing of Five Major Connecticut River Hydro Projects in MA, VT and NH

The U.S. Fish and Wildlife Service is collaborating with other federal and state agencies, as well as other organizations, on the upcoming 2018 relicensing of five hydropower projects. The five-year process began in early October. The projects collectively impact more than 175 miles of the river, which supports four endangered species and other sea-run fish, including American eel, American shad and river herring.

The Process and Projects

The licenses for five major Connecticut River Hydro Projects in Massachusetts, Vermont and New Hampshire all expire simultaneously in 2018.

The projects are:

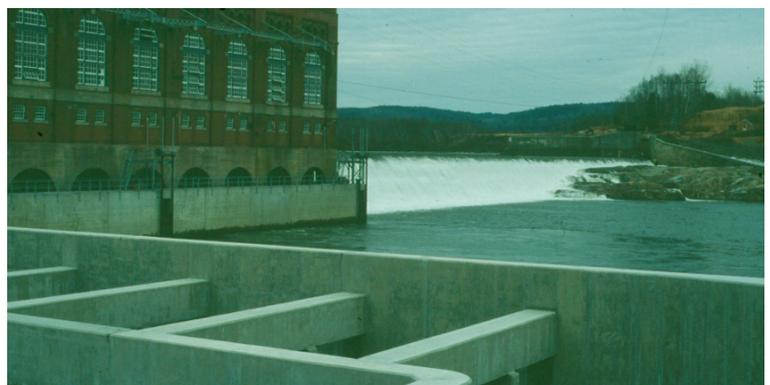
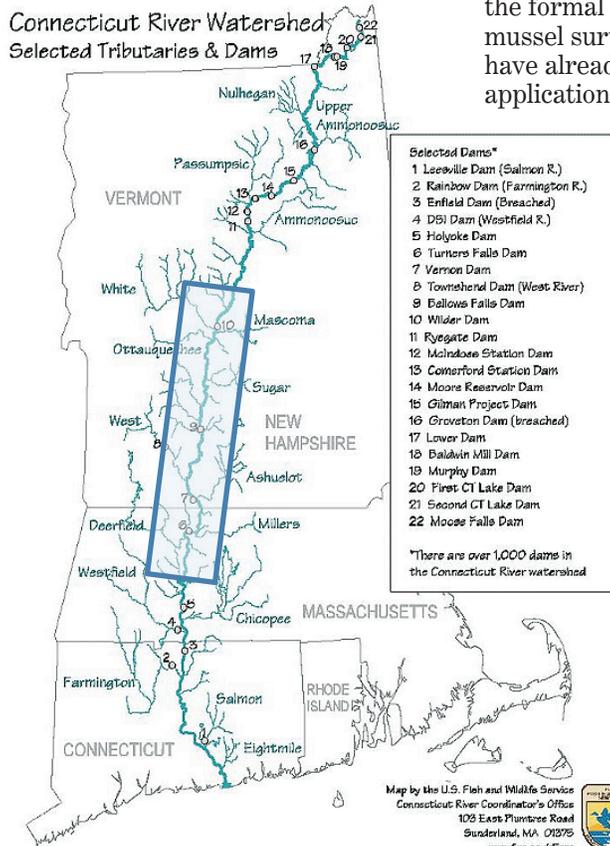
- Wilder – VT/NH
- Bellows Falls - VT/NH
- Vernon – VT/NH
- Northfield Mtn. Pumped Storage - MA
- Turners Falls – MA

These projects have a total generating capacity of 3,921 MW, equal to 30% of all the hydroelectric generation in New England.

The FERC relicensing process requires the start of relicensing at least five years before the expiration of the license but we expect discussions with licensees to start in 2012 or before. Due to the scope of important environmental issues, discussion with partners is undertaken well before the formal process begins. Initial mussel surveys with TransCanada have already been planned as a pre-application assessment.

The Five Hydro Projects up for 2018 Relicensing:

- Affect over 137 miles of the Connecticut River;
- Account for over 30% of the hydro generation in New England;
- Inundate over 110 miles of free flowing riverine habitat;
- Provide base flows and peaking power fluctuations that affect fish habitat, spawning and migration;
- Affect habitat for endangered dwarf wedgemussel, Jessup's milk vetch, and shortnose sturgeon, the threatened Puritan tiger beetle and state-listed species;
- Affect upstream and downstream fish passage for anadromous fish;
- Provide no passage measures for American eel; and
- Affect impoundment resources due to water level fluctuations.



Vernon Project and Fish Ladder – Connecticut River – VT/NH

Partners and other parties likely to be involved in the 2018 Relicensings:

- U.S. Fish and Wildlife Service
- National Park Service
- U.S. Environmental Protection Agency
- Massachusetts Division of Fisheries and Wildlife
- Massachusetts Department of Environmental Protection
- Vermont Agency of Natural Resources
- New Hampshire Fish and Game Department
- NH Department of Environmental Services
- Trout Unlimited
- Connecticut River Watershed Council
- Connecticut River Joint Commissions
- Vermont Natural Resources Council
- Appalachian Mountain Club
- USGS-S.O. Conte Andromous Fish Lab
- The Nature Conservancy
- U.S. Army Corps of Engineers
- U.S Geological Survey
- University of Massachusetts
- Local towns and cities
- First Light Power
- TransCanada

Project Operations

The four conventional hydro projects all operate in a daily peaking mode with wide fluctuations between minimum flow and full generation. All four impoundments fluctuate on a daily basis.

Northfield Mountain is located between Vernon and Turners Falls dams on the Turners Falls impoundment. It is a pumped storage project that pumps water up to an upper reservoir at night and generates at peak demand periods. This operation aggravates reservoir levels and flow fluctuations above and below Turners Falls Dam.

Operation of the sequence of projects and resultant discharges from Turners Falls also affect the operation of the Holyoke Project operations and reservoir and downstream resources, including Puritan tiger beetles.

Topics to Discuss:

- Minimum downstream river flows below each station that affect more than 40 miles of free-flowing Connecticut River;
- Flow fluctuations and ramping rates due to peaking power generation, which affects spawning of shortnose sturgeon and American shad below

Turners Falls;

- Reservoir fluctuations, including impacts on littoral zone communities and wetlands;
- Impacts to dwarf wedgemussel and Jessup's milk vetch from flow and pond fluctuations from the Wilder Project;
- Impacts to Puritan tiger beetles on Rainbow Beach above Holyoke caused by Turners Falls flow fluctuations;
- Upstream passage for shad at Turners Falls (if not addressed prior to relicensing);
- Upstream passage for American eel at all projects;
- Downstream passage of American shad and American eel; and
- Interrelationship of Vernon Project operations and the Vermont Yankee Nuclear Power plant.



Turners Falls Project - Connecticut R. - MA

U.S. Fish & Wildlife Service
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