



August 25, 2014

VIA EMAIL

Jessica Pruden, National Marine Fisheries Service
John Warner, US Fish & Wildlife Service
Melissa Grader, US Fish & Wildlife Service
Caleb Slater, Massachusetts Department of Fish & Wildlife
Ken Hogan, Federal Energy Regulatory Commission

Re: FirstLight Hydro Generating Company, Relicensing of the Turners Falls Hydroelectric Project (FERC No. 1889) and Northfield Mountain Pumped Storage Project (FERC No. 2485), Study No. 3.3.6 - *Impact of Project Operations on Shad Spawning, Spawning Habitat and Egg Deposition in the Area of the Northfield Mountain and Turners Falls Project.*

Dear All:

FirstLight is preparing a revision to relicensing Study No. 3.3.6, *Impact of Project Operations on Shad Spawning Habitat and Egg Deposition in the Area of the Northfield Mountain and Turners Falls Projects.* After FirstLight filed its Revised Study Plan (RSP) on August 14, 2013, the National Marine Fisheries Service (NMFS) expressed concern that the shad egg collection efforts proposed in the study had the potential to adversely affect shortnose sturgeon. FirstLight responded to NMFS's concerns in a January 28, 2014 letter in which FirstLight proposed to replace the shad collection efforts with enhanced visual observations and splash counts of shad spawning, which would have no impact to shortnose sturgeon. The United States Fish and Wildlife Service (USFWS) subsequently indicated that alternative study plan modifications may be feasible to allow for shad egg collection while minimizing effects to shortnose sturgeon. The Federal Energy Regulatory Commission (FERC) therefore recommended, in its study plan determination issued on February 21, 2014, that FirstLight consult with NMFS, USFWS, Massachusetts Division of Fish and Wildlife (MDFW), and FERC staff on an amendment to the RSP that "would seek to avoid all effects to shortnose sturgeon."

At FirstLight's June 3, 2014 consultation meeting, USFWS and NMFS offered suggested modifications to FirstLight's field data collection that they felt would limit potential impacts to shortnose sturgeon. These included:

1. Avoiding towing nets within 2-km of the Montague reach between Rock Dam (river km 194) and the railroad bridge (rkm 192; located immediately downstream of the Deerfield River mouth),

John S. Howard

Director FERC Compliance
Chief Dam Safety Engineer

FirstLight Power Resources, Inc.
99 Millers Falls Road
Northfield, MA 01360
Tel. (413) 659-4489/ Fax (413) 422-5900/
E-mail: john.howard@gdfsuezna.com

where the greatest concentration of larval migrates would occur within a hydrographically turbulent reach;

2. Avoiding sampling in shallower water (< 2 m);
3. Using floats attached to nets to make sure towed nets remain at the chosen depths near the surface; and
4. Screening egg samples for the presence of shortnose sturgeon before the next sampling effort is made, and if shortnose sturgeon eggs, embryos, or larvae, are detected during screening of ichthyoplankton tows, ceasing all sampling and contacting NMFS immediately.

FirstLight initially felt such modifications could minimize potential impacts to shortnose sturgeon. However, in a July 14, 2014 email, NMFS indicated that FirstLight should conduct an analysis of the study, and in particular the sampling effort with the suggested modifications, on shortnose sturgeon. NMFS stated that “if [FirstLight] determine[s] that the proposed study is not likely to adversely affect shortnose sturgeon (i.e., that all effects will be insignificant and discountable and you do not anticipate any capture or collection), you should request our concurrence with that determination.”

After careful consideration of the proposed study modifications, FirstLight is unable to make a determination that the study is not likely to adversely affect shortnose sturgeon. In fact, for the reasons discussed below, FirstLight anticipates that it would capture and collect shortnose sturgeon larvae if it conducts shad egg sampling below Cabot Station, with or without the suggested modifications to the egg sampling effort.

Shortnose sturgeon spawning is well documented in the Connecticut River. The United States Geological Survey’s (USGS) Conte Lab researchers have conducted studies concluding that there is only one spawning site in the Connecticut River, at Montague below Cabot Station and at the Rock Dam at approximately river km 192 (Kynard et al. 2012). The Montague site was verified as a spawning area based on successful capture of sturgeon eggs and larvae in 1993, 1994, and 1995, that were 190 times the number of fertilized eggs and 10 times the number of embryos found at the downstream Holyoke site (Vinogradov 1997). Based on available information, shortnose sturgeon larvae generally rear at, or just downstream from, spawning grounds (Kieffer and Kynard 2012).

However, shortnose sturgeon larvae have been collected much farther downstream, including at river km 120 on May 25, 2005 (Kleinschmidt 2008) and at river km 68 on May 3, 2006 (Kleinschmidt 2006). These shortnose sturgeon larvae were collected as part of general ichthyoplankton studies that filtered 100 m³ of water (6 minute tow). The larvae collected at river km 120 occurred where river depths averaged about 2-m and 0.6-m diameter plankton nets were towed close to the surface. The two larvae captured at river km 68 occurred where river depths averaged about 3-m and a 1-m diameter plankton net was towed close to the surface.

NMFS has prohibited sampling much further downstream of the Montague spawning site, without appropriate take protections in place, because of potential adverse impacts to shortnose sturgeon. In 2007, the United States Environmental Protection Agency (USEPA) requested that FirstLight sample ichthyoplankton at river km 148 as part of an assessment of the Mt. Tom Generating Station. NMFS was concerned that some shortnose sturgeon larvae may drift downstream from the Montague spawning grounds and be captured in ichthyoplankton nets in May and June. Thus, FirstLight did not conduct the requested sampling.

Based on the past collections of shortnose sturgeon larvae at river kms 120 and 68, as well as NMFS’s previous analysis that shortnose sturgeon larvae may be collected 44 river kilometers downstream of the Montague spawning and rearing grounds, FirstLight expects that capture and collection of shortnose sturgeon larvae may be likely to occur if it deploys ichthyoplankton nets as requested for Study No. 3.3.6

just downstream of river km 192 in May and June. For these reasons, FirstLight proposes to conduct the study as set forth in its January 28, 2014 letter, with no shad egg collection efforts. Instead, FirstLight will propose in its modified study plan, to be filed with the upcoming Initial Study Report, to replace shad collection efforts—which studies have shown are duplicative of visual observations of shad spawning—with enhanced visual observations and splash counts. FirstLight believes that this will fulfill the goals and objectives of the study without impacting shortnose sturgeon.

If you have any questions, please feel free to call me.

Sincerely,

A handwritten signature in black ink, appearing to read "John Howard". The signature is fluid and cursive, with the first name "John" being larger and more prominent than the last name "Howard".

John Howard

cc: Andrea Donlon, Connecticut River Watershed Council, via email
Katie Kennedy, The Nature Conservancy, via email
Karl Meyer, Environmental Scientist, via email
Don Pugh, Trout Unlimited, via email

Attachment: Literature Cited

Literature Cited

- Kieffer, M., Kynard, B. 2012. Spawning and Non-spawning Migrations, Spawning, and the Effect of River Regulation on Spawning Success of Connecticut River Shortnose Sturgeon Chapter 3 *in* Life history and behavior of Connecticut River Shortnose Sturgeon and other sturgeons. B. Kynard, P. Bronzi, and H. Rosenthal Editors. World Sturgeon Conservation Society: Special Publication #4. Norderstedt, Germany.
- Kleinschmidt Associates. 2006. Entrainment Report. Prepared for Connecticut Resources Recovery Authority. November 2006. 27 pp plus appendices.
- Kleinschmidt Associates. 2008. Annual Progress Report. Prepared for CEEMI. February 2008. 34 pp plus appendices.
- Kynard, B., M. Kieffer, M. Horgan, B.E. Kynard, M. Burlingame and P. Vinogradov. 2012. Seasonal Movements among River Reaches, Migration Strategies and Population Structure of the Divided Connecticut River Shortnose Sturgeon Population: The Effect of Holyoke Dam. Chapter 1 *in* Life history and behavior of Connecticut River Shortnose Sturgeon and other sturgeons. B. Kynard, P. Bronzi, and H. Rosenthal Editors. World Sturgeon Conservation Society: Special Publication #4. Norderstedt, Germany.
- Vinogradov, P. 1997. The impact of Holyoke Dam on shortnose sturgeon, *Acipenser brevirostrum*, spawning and migration. Master's thesis, Dept, Natuiral Resources Conser. Univ. of Massachusetts, Amherst, MA pp. 39