US Northeast Hydro Region
Concord Hydro Office
4 Park Street, Suite 402
Concord NH 03301-6373

tel 603.225.5528
fax 603.225.3260
web www.transcanada.com

December 15, 2014

VIA ELECTRONIC FILING
Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

Re: TransCanada Hydro Northeast Inc.'s Initial Study Report – Response to Comments
Project Nos. 1892-026, 1855-045, and 1904-073

Dear Secretary Bose:

TransCanada Hydro Northeast Inc. ("TransCanada") is the owner and licensee of the Wilder Hydroelectric Project (FERC No. 1892), the Bellows Falls Hydroelectric Project (FERC No. 1855), and the Vernon Hydroelectric Project (FERC No. 1904). The current licenses for these projects each expire on April 30, 2018. On October 31, 2012, TransCanada initiated the Integrated Licensing Process by filing with the Federal Energy Regulatory Commission ("FERC" or "Commission") its Notice of Intent to seek new licenses for each project, along with a separate Pre-Application Document for each project.

TransCanada submitted its Initial Study Report ("ISR") for the three projects, as required by 18 C.F.R. §5.15(c)(1) on September 15, 2014 and in accordance with the one-year anniversary of the Study Plan Determination ("SPD") for non-aquatics studies[1]. The ISR

1 On August 27, 2013, Entergy announced plans to decommission its Vermont Yankee Nuclear Power Plant (Vermont Yankee) during the fourth quarter of 2014. Vermont Yankee withdraws its cooling water from and discharges it back to TransCanada's reservoir for the Vernon Project. Operation of Vermont Yankee has influenced Connecticut River water temperatures within the Vernon reservoir and downstream since the plant went into operation in 1972. Because the baseline environmental condition will change after 2014, TransCanada's proposed

meeting was held on September 29, 2014 in accordance with 18 C.F.R. §5.15(c)(2); and TransCanada submitted the ISR meeting summary on October 14, 2014 in accordance with 18 C.F.R. §5.15(c)(3). With this filing, TransCanada submits its response to comments on the ISR for the three projects, as required by 18 C.F.R. §5.15(c)(5). Comments were filed on October 14, 2014 by U.S. Fish and Wildlife Service, and by The Nature Conservancy.

If there are any questions regarding the information provided in this filing or the process, please contact John Ragonese at 603-498-2851 or by emailing john_ragonese@transcanada.com.

Sincerely,

John L. Ragonese
FERC License Manager

Attachment: Response to ISR Comments

cc: Interested Parties List (distribution through email notification of availability and download from TransCanada's relicensing web site www.transcanada-relicensing.com)

aquatic studies may have produced data not reflective of baseline conditions if they were conducted while Vermont Yankee was still operating. Because of this unusual circumstance FERC issued two study plan determinations, one on September 13, 2013, for non-aquatic studies not impacted by the closure of Vermont Yankee and a second on February 21, 2014, for aquatic studies.

TransCanada Response to Comments on Initial Study Report for the Wilder, Bellows Falls, and Vernon Hydroelectric Projects

Comments were submitted by the U.S. Fish and Wildlife Service (FWS) and by The Nature Conservancy (TNC) on October 14, 2014. The table below summarizes those comments and provides TransCanada's (TC's) response to each comment.

Commenter	Comment	Response
FWS	**Study 7 – Aquatic Habitat Mapping** The U.S. Fish and Wildlife Service (Service) has no comments on how the data were collected. However, we have requested that TC upload additional geodatabase files (in KMZ format) to stakeholders that provide more detail than the files originally uploaded. It is our understanding that data layers from other (related) studies also will be uploaded in a similar format (e.g., water level logger locations, tributary and backwater access sites, etc.).	Study 7 mapping data is not conducive for use in Google Earth (kmz format) since the study's habitat polygons contain over 40,000 vertices, more than Google Earth can handle. However, in response to requests for geodata in different formats, Study 7 data was uploaded in "layer packages" for use with the free ARCExplorer from ESRI on October 8, 2014. We do not understand what specific data FWS is requesting in terms of "files…that provide more detail…", nor what detail may be lacking that is of interest to FWS. However, we will continue to provide all data that we have available once it has been QC-ed and is ready for uploading to the online geo database. Water level logger locations and tributary and backwater site locations (all sites and those selected for Study 13) in kmz format, as requested was uploaded to the secure relicensing website (not the public site) on December 12, 2014 and the working group will be notified shortly. The geodatabase in both ArcGIS and in kmz (GoogleEarth format) including data available at the time of filing the ISR was also provided to the working group via email link to the database at the secure relicensing website.

Commenter	Comment	Response
FWS	**Study 9 – Instream Flow Study** TC indicated that the proposed habitat suitability curves would be sent out to stakeholders for review and comment by mid October. To date, we have not received the suitability curves.	TC stated that we hoped to get draft habitat suitability curves sent out in October; and would provide them prior to a consultation meeting (as yet unscheduled). A draft habitat suitability curve document has been prepared and is undergoing internal review. It will be provided shortly to the working group via the secure relicensing website.
FWS	**Study 13 – Tributary and Backwater Fish Access and Habitat Study** In the ISR, TC states that initial site visits began in late July and continued into August and that final visits to all study sites would occur during late October. It is unclear how long each logger has been deployed. Those data should be provided, so that the Service can assess whether logger deployment has been sufficiently long to collect the required data. The Service raised this issue with TC at the September 29, 2014 ISR meeting and in response, NA [Normandeau] indicated that it would provide a table of the dates each logger was deployed.NA also expressed confidence that data sufficient to conduct analyses are being collected, due to extremely low flows during the logger deployment period.	Logger data and related analysis will be included in the draft study report that will be provided for stakeholder review in the winter of 2014/2015. We note that FERC's Study Plan Determination for aquatics studies (February 21, 2014) requires the final Study 13 report be filed by March 1, 2015.

Commenter	Comment	Response
FWS	**Study 17 – Upstream Passage of Riverine Fish Species** In the ISR, the three bullets under the Study Progress section are not relevant to this study (which calls for monitoring the fish ladders).	TC acknowledges the typographical error in the ISR for Study 17. Section 17.2 of the ISR - Study Progress should have listed the following tasks, which are in progress at this time: • Consult with Vermont Dept. of Fish and Wildlife on the licensing and use of Salmonsoft software. • Purchase computers and related equipment to run Salmonsoft • Train staff on the use of Salmonsoft.
FWS	**Study 22 – Downstream Migration of Juvenile Shad – Vernon** Under the Introduction section, TC states that the Revised Study Plan (RSP) was approved without modification. While the Federal Energy Regulatory Commission's Study Plan Determination (SPD) did approve Study 22 (which included hydroacoustic monitoring at a single location) without modification, the SPD also added a stand-alone comprehensive hydroacoustics study (Study 34), currently under appeal by TC.	TC acknowledges the comment, and notes that a separate Proposed Study Plan 34 was filed on September 15, 2014.
FWS	**Study 24 – Dwarf Wedgemussel and Co-Occurring Mussel Survey** At the ISR meeting, the Service requested a follow-up meeting specifically to discuss the Phase 2 Study Plan. On October 9, 2014, the Service, TC, Biodrawversity, and other stakeholders met. Based on the discussion that took place, the Service indicated at the end of the meeting that it would be modifying its Counter Proposal. Appendix A [of the November 14, 2014 FWS ISR comment letter] contains our Revised Counter Proposal for the Phase 2 Study Plan, in the format required pursuant to 18 CFR §5.9(b).	TC is reviewing the modified study counter proposal included in the agency's ISR comments, and will schedule additional consultation once this review is completed.

Commenter	Comment	Response
FWS	**Study 27 – Floodplain, Wetland, Riparian, and Littoral Vegetation Habitats Survey** According to the RSP, TC was to collect the following information with respect to the American bald eagle: • use data from the ongoing bald eagle breeding survey to characterize the known nest trees in the project area, including the location, condition, and conservation/protection status of parcels within 250 yards of the nest tree; and • map potential bald eagle winter roosting sites along the River. The ISR only discusses winter roosts. TC should provide an update on the status of the bald eagle nest characterization effort.	TC will provide study results including bald eagle nest characterization in the Study 27 study report, expected to be completed in early 2015.
FWS	**Study 34 – Requested Vernon Hydroacoustic Study** In the ISR TC notes under the Study Progress section that it developed a Proposed Study Plan (PSP) as directed by the Federal Energy Regulatory Commission in its SPD. The PSP was filed concurrent with, but separately from, the ISR. The Service has reviewed the PSP and submitted comments on it separately from this filing.	TC has reviewed FWS' comments on the Proposed Study Plan for Study 34. TC filed a response to those comments on November 26, 2014. We note that the requested study (identified as Study 34) is the subject of a Request for Rehearing filed by TC on March 24, 2014. FERC has yet to act on that request; however, FERC convened a technical meeting on November 20, 2014 to discuss methodological and technical issues related to obtaining the information requested for a Vernon Hydroacoustic Study in FERC's February 21, 2014 Study Plan Determination.

Commenter	Comment	Response
FWS	**2015 Studies Consultation** At the September 29, 2014 ISR meeting, TC noted that additional site selection consultation will occur by mid-November of 2014 for studies 6, 10, 11, 12, 14, 15, and 16. In addition, TC will work with Vermont Agency of Natural Resources staff to set up the SalmonSoft system that will be used to monitor the fish ladders in 2015.	Proposed site selection reports for studies 10, 11, 12, 14, 15, and 16 have been drafted and were provided to the working group on December 5, 2014 via email link to the documents on the secure relicensing website. Based on polls of availability (and subject to the Thanksgiving and Christmas/New Year's holidays), the consultation meeting has been scheduled for Wednesday, December 17th at the Fairfield Inn and Suites, White River Junction, VT. TC is working with VANR on Study 17 and the SalmonSoft system, and we appreciate VANR's assistance on this task. With regard to study 6, the study plan indicated that site selection for tributary sites and sites upstream of impoundments would be provided along with the detailed sampling and analysis plan, to VANR and NHDES, expected to be completed in January 2015. The selected sites will be shared with the working group at that time.

Commenter	Comment	Response
TNC	**Study 24 - Dwarf Wedgemussel and Co-Occurring Mussel Survey** In the Revised Phase 2 Study Plan for Study 24 (ISR Volume VI), TransCanada proposes to include co-occurring species in their assessment because of the low density of the federally- endangered dwarf wedgemussel (DWM), "with the intent to use co-occurring species as surrogates for dwarf wedgemussels and mussel habitat because dwarf wedgemussels can occupy all of the same water depths and habitat types as other species (p. 8)." We agree that collecting data on co-occurring mussel species will be very informative for understanding project effects on these species. However, the distribution and abundance of these co-occurring species, both locally and range-wide, preclude their use as surrogates for DWM. We cannot assume that these species share an identical habitat niche without empirical evidence supporting such a claim. Qualitative and anecdotal evidence is not a sufficient basis for such a major assumption, especially given the potential consequences on the long-term persistence of this species in the project-affected area. Unless proved otherwise, we must assume that habitat could be one of the limiting factors that have contributed to the endangered status of dwarf wedgemussel.	The study plan did not state that these species share an identical habitat niche. Neither the distribution, nor the abundance, of co-occurring mussel species precludes their use as surrogates for dwarf wedgemussels. The niches of each mussel species, which the scientific community has yet to fully understand, certainly overlap to varying extents and valuable insight can be gained by considering all mussel species in a community. This does not suggest that we use surrogates instead of a target species (in this case, dwarf wedgemussels); rather, the study plan focuses on dwarf wedgemussels and co-occurring species; develops HSI criteria for dwarf wedgemussels based on species-specific information; and attempts to understand project effects on dwarf wedgemussels and co-occurring species.

Commenter	Comment	Response
TNC	**Study 24 - Dwarf Wedgemussel and Co-Occurring Mussel Survey** TransCanada has also stated that survey sites and transects were selected based on known habitat suitability for DWM; e.g., "Six locations are proposed for the quantitative and qualitative surveys in 2014, including two locations with suitable habitat…" and "[Transects] will be placed within the depth range where mussels (especially dwarf wedgemussels) are more common…" Based on these statements, we have some concerns that there are additional unstated assumptions with regard to DWM habitat, and that these assumptions could possibly inhibit the evaluation of potential project effects on DWM. Specifically, we are concerned that site and/or transect selection has occurred based on undefined habitat characteristics that could potentially bias habitat suitability results. That is, if sites and transect locations are selected using a set of undefined habitat parameters, then study results will simply be reporting habitat suitability as it has already been pre-determined. If there are empirical data that describe DWM habitat suitability that are being used to define survey locations, these data need to be made explicit and available.	As TC has consistently stated, transect locations were selected based on a combination of factors: (1) dwarf wedgemussel presence or historic presence, (2) to be representative of a broader reach within which DWM were consistently found, (3) access to the site, and (4) conditions conducive to the types of sampling that was proposed. The proposed number of sites and transects per site were considered to be a representative number and reasonable amount of replication. The quantitative data collected in 2014 are just one of several sources of information being used to determine habitat suitability of dwarf wedgemussels, including: ▪ 2011 and 2013 mussel survey data within the project area (210 survey sites, about 180 where DWM were not found); ▪ 2014 quantitative data; ▪ Data from other studies in the Connecticut River and its tributaries conducted from 1990 to the present time; ▪ Other publications and relevant case studies from outside the region, on this species, similar species, and that might have tried similar types of suitability analyses; and ▪ Data from TC's other relicensing studies that are concurrent with the mussel study.

Commenter	Comment	Response
TNC	**Study 24 - Dwarf Wedgemussel and Co-Occurring Mussel Survey** Furthermore, in addition to stating that they already have some understanding of habitat suitability, TransCanada has stated that DWM is both a fluvial species and a generalist. We recognize that TransCanada has also agreed that DWM does not in fact exist everywhere (as the term "generalist" implies), and that there is research yet to be done to increase our understanding in this area; however, we want to emphasize the potential issues with using the term "generalist" loosely, as it is contradictory to other statements and could be misleading. It is possible that these apparent contradictions are related to undefined assumptions (as indicated above). In general, the issue of habitat suitability – what is known, how it is influencing site selection, and how this will influence the data used to evaluate habitat suitability – needs to be clarified.	Dwarf wedgemussels only occur in streams and rivers; therefore they are a fluvial species. They occur in a wide range of stream sizes, and occupy a wide range of habitat conditions within the streams and rivers in which they occur. This is why the term "generalist" has been used when describing their habitat preferences. Fluvial and generalist are not contradictory terms, and we fail to see how anyone could be misled by use of the term generalist. Certainly, the scientific community continues to try to gain a greater understanding of habitat preference and niche space of all mussel species. But the scientific community also recognizes that there may be parameters independent of habitat that may also influence the distribution and abundance of some species. In the study plan, habitat suitability criteria for dwarf wedgemussels will be defined using several data sources and expert review (see above).

Commenter	Comment	Response
TNC	**Study 24 - Dwarf Wedgemussel and Co-Occurring Mussel Survey** In comments to TransCanada regarding their Proposed Phase 2 Study Plan for Study 24, TNC suggested that because DWM are so rare, and because they were found at only 31 locations in the systematic sampling protocol that was undertaken in 2011 and 2013, that TransCanada should collect habitat data at all 31 sites to maximize our understanding of this rare species. In response, TransCanada stated that the number of locations where DWM were found was "irrelevant". We are unsure what this statement means, as elsewhere TransCanada has asserted that DWM are rare and patchily distributed in the project-affected area. It is not clear how TransCanada can determine a patchy distribution if the number of locations where DWM were found is irrelevant. To make the conclusion that DWM are rare and patchy, the proportion of sites where DWM were found would need to be relevant, as well as where these sites were located in the study area. We are concerned that TransCanada's statements may be reflective of a survey protocol that is different from what we understood it to be. We understood that the DWM survey was based on a systematic sampling design. For a systematic survey, a study area is divided into equal portions (the "sites"), and each of these sites is sampled equally. However, TransCanada also has not clearly defined the specific spatial unit for the sites, so we are therefore unsure of the actual survey design. [TransCanada did state at one point that a "location" is "within ~400 meters"; however, if this were the spatial unit of the systematic sampling design, TransCanada would have had to sample over 400 sites, and there has been no mention of randomization in site selection.]	The statement of irrelevance was misunderstood. The actual locations, the abundance of dwarf wedgemussels and co-occurring mussel species, and habitat conditions at these 31 sites are certainly relevant. What was irrelevant was the actual number of sites where dwarf wedgemussels were found, as these 31 sites were representative of/occurred within approximately 34 miles of the Connecticut River where dwarf wedgemussels were found. If the study design for the 2011 and 2013 surveys had focused only on areas where prior studies had documented dwarf wedgemussels, then the sampling density would have been higher, the number of sites with dwarf wedgemussels would have been higher, yet the known range of dwarf wedgemussels in the project-affected reach would have been the same. For this reason, the fact that dwarf wedgemussels occur along approximately 34 miles of the river is more relevant than the fact that they were found at 31 locations.

Commenter	Comment	Response
TNC	**Study 24 - Dwarf Wedgemussel and Co-Occurring Mussel Survey** Furthermore, TransCanada asserted that within the 34 miles of river where DWM were found, they "could be found at most locations if survey duration was long enough." We also do not understand how this statement is consistent with the statement about DWM's patchy distribution. A population cannot be both patchily distributed and found at most locations within an area. This apparent contradiction will need to be rectified for these data to be used to evaluate potential project effects on DWM.	Mussels can be patchily distributed and widespread—these concepts are not contradictory. "Patchiness" can occur over broad scales of space and time. We re-assert that within the approximately 34 miles of the Connecticut River in the project-affected reaches where dwarf wedgemussels have been documented to occur, dwarf wedgemussels can be found at most locations if enough time is spent searching. At a larger scale, this population might be considered continuous, whereas on a smaller scale, mussels are patchily distributed and sometimes difficult to detect. Most of the surveys in 2011 and 2013 were comprised of 1-2 person-hours. Longer duration searches (e.g., 3 – 6 person hours) would give biologists an opportunity to search a large area and detect discrete patches of dwarf wedgemussels that could be missed during shorter surveys.

Commenter	Comment	Response
TNC	**Study 24 - Dwarf Wedgemussel and Co-Occurring Mussel Survey** TransCanada goes on to say in reference to the 31 sites where DWM were detected that "there is nothing particularly special about the sites, and habitat was quite homogeneous among them." Given the previous discussion with regard to undefined habitat parameters and the potential for biased sampling, we believe this statement is unfounded. Furthermore, we assert that every location where a rare endangered species is located has some kind of informational value. In any rare species analysis, habitat data are limited, and it is therefore critical to include as much information as is available. TransCanada has recognized that DWM are not located everywhere and research remains to be done to increase our understanding in this area; it follows that the grounds do not exist to make an independent judgment call on the informational value of a site. Understanding why DWM are located at these 31 sites, and none of the others, is extremely important for ensuring the long-term persistence of this federally-endangered species.	Some of this language is taken out of context. The statement of "there is nothing particularly special about the sites" was intended to place the appropriate focus on the fact that dwarf wedgemussels were found along 34 miles of the Connecticut River in the project-affected reach. The 31 survey sites were selected to be representative of broader reaches. We agree that the 2011 and 2013 surveys provided valuable information on distribution, abundance, and habitat of dwarf wedgemussels and co-occurring species. TC made no judgment call on the informational value of these sites, as the commenter suggests; in fact, all of these data (among other data) will be used to develop habitat suitability criteria for dwarf wedgemussels and other species, and were used in the site selection process for quantitative sampling. We understand the primary concern of the commenter to be whether all 31 sites deserved additional sampling efforts. However, TC felt that it was more appropriate to focus on a smaller number of representative locations within the 34 miles of the Connecticut River where dwarf wedgemussels were documented to occur, rather than going back to all 31 sites where dwarf wedgemussels were found.

Commenter	Comment	Response
TNC	**Study 24 - Dwarf Wedgemussel and Co-Occurring Mussel Survey** An additional reason to sample all 31 sites is to confirm a claim that TransCanada made in the Phase 1 Study Report, that DWM "appear to occur only in surveyed areas of the Connecticut River where water level fluctuations are minimal or non-existent." If in fact DWM are limited to certain areas of the project-affected area because of project operations, as this statement suggests, all locations where DWM are present should be included in the habitat analysis to rule out other factors that may be characterizing DWM distribution. In further defense of not collecting data at all 31 sites, TransCanada asserts that subsampling is a commonly-accepted practice. We agree with this statement; however, subsampling is generally restricted to application where particular data types are not limited, and effort needs to be reduced for the sake of practicality. Furthermore, 31 sites out of 210 total sites is already a significant subsample, especially given the rarity of this species and given that TransCanada has stated it will not conduct additional sampling at sites where DWM were undetected.	Again, the commenter's repeated focus on the 31 survey sites where dwarf wedgemussels were found during the 2011 and 2013 surveys, rather than on the broader reaches (34 miles of the river) in which they were found, seems misguided. "All locations where DWM are present" is also a dangerous interpretation of existing data, as absence can never be proven because results are always conditional on effort, and it is very likely that dwarf wedgemussels are present in many more locations than they were actually found or even searched for. We re-assert that the focus should be the 34 miles of the river within which dwarf wedgemussels were consistently found, and TC feels that this is a commonly accepted scientific practice, and appropriate to subsample within such a large area.

Commenter	Comment	Response
TNC	**Study 24 - Dwarf Wedgemussel and Co-Occurring Mussel Survey** TransCanada also states that collecting quadrat data at each site will add to the unoccupied data set since DWM will not be detected in every quadrat. We think that this is a valid point; however, if this is one of the intentions of the study design, transects placed longitudinally in the channel limits the breadth of data that could be used for this purpose. In large river systems with large macrohabitat units, habitat diversity is greater laterally across the channel (bank to bank) than it is longitudinally. Furthermore, DWM data collected in longitudinal transects are not as compatible with habitat data collected for the hydraulic and instream flow habitat models (Studies 4 and 9, respectively), as would be data collected in lateral transects.	TC is not refuting the assertion that bank-to-bank transects are more effective at capturing habitat variation than longitudinal transects. Part of the reason that longitudinal transects were proposed was to maintain consistency with the dwarf wedgemussel monitoring that was conducted in the Connecticut River at long-term monitoring sites in the project-affected reach from the late 1980s to early 2000s (Sumner Falls, Cornish Covered Bridge North and South, Horseback Ridge, Route 5 Cemetery, and Wilgus State Park). Also, by orienting transects longitudinally, it allowed the sampling to occur within the habitat where dwarf wedgemussels were more consistently found during all prior studies. Based on recent discussion with stakeholders, and in light of the FWS revised counter-proposal (November 14, 2014), TC is now considering re-surveying lateral (bank to bank) transects during the 2015 field season. We also note that the quantitative (quadrat) sampling completed in the Cornish Covered Bridge to Chase Island reach in 2014 was bank-to-bank. It was only the 20 transects that were oriented longitudinally.

Commenter	Comment	Response
TNC	**Study 24 - Dwarf Wedgemussel and Co-Occurring Mussel Survey** We are also concerned with early reports that imply that even fewer DWM were detected per unit effort in 2014 compared to 2011 and 2013. This is either a reflection of a true population decline over a very short period, or it may be reflective of seasonal differences in detection rates. In earlier discussions, TransCanada has asserted that they are highly effective at detecting DWM if it is present at a site. However, it is not unusual for detection probabilities to change due to seasonal factors. Because TransCanada is not estimating detection probability of DWM, we suggest that sampling is repeated at a time of year when DWM detection has been demonstrated to be highest in order to increase DWM detection rates.	The 2014 study, as opposed to the 2011 and 2013 studies, focused on transects which necessarily meant that fewer DWM would be found; however, detections per unit effort were not dissimilar. Sampling in 2014 was completed at a time, and under environmental conditions, when detection probability was high.

Commenter	Comment	Response
TNC	**Study 24 - Dwarf Wedgemussel and Co-Occurring Mussel Survey** The Revised Phase 2 Study Plan for Study 24 states that "mussel densities (mussels/m^2) will be computed from both transect and quadrat data" (p. 8). However, it is not clear whether this means the data will be pooled, or that separate calculations will be made for transects and for quadrats. If pooled data are to be used, we suggest also providing the densities for each method. This section of the Revised Phase Study Plan also states, "Total population size (with variance estimates) of each species will be computed from quadrat data…" (p. 8). This should state "relative abundance" instead of "total population size" because population size cannot be determined with these methods. Further in this section, the Revised Phase 2 Study Plan states, "Logistic regression will be used to relate two response variables (species presence and species density) to key predictive habitat parameters" (p. 8). Logistic regression may be used with species presence because it is a binomial variable, but cannot be used to evaluate count data (density). Rather, Poisson regression should be used to relate count data to predictive habitat parameters, since count data do not have a normal distribution, a required assumption for linear regression.	Separate calculations will be made for transects and for quadrats. Total population size, with variance estimates, can be estimated from the quantitative (quadrat) study that was completed in the reach from Cornish Covered Bridge to Chase Island. Relative abundance can be estimated for each of the 20 transects. We concur with the comment on logistic versus Poisson regression.
TNC	**Study 24 - Dwarf Wedgemussel and Co-Occurring Mussel Survey** TransCanada has stated that members of the aquatics working group will have access to the confidential version of the 2013 study report; however, TNC only received a link to the TransCanada website, which provides access to the public version that omits the survey data	TC provided the privileged data to a limited set of stakeholders (not the entire working group) on August 15, 2014 and again on October 9, 2014 which included distribution to TNC. If TNC is having difficulty viewing the geodatabase please let us know and we will assist.

Commenter	Comment	Response
TNC	Study 24 - Dwarf Wedgemussel and Co-Occurring Mussel Survey In light of the concerns highlighted above, TNC finds that the proposal submitted by USFWS improves upon TransCanada's Revised Phase 2 Study Plan for Study 24 in terms of the ability of the plan to meet the original goals of Study 24. Specifically: The USFWS proposal to deliberately sample habitat across a range of DWM density classes will greatly improve the potential for defining habitat suitability criteria for this species (Goal 1, Objective 3 of Study 24). It will not be possible to evaluate habitat suitability of DWM and further evaluate project effects (Goal 2, Objective 5 of Study 24) if the only sites used for the analysis are low-density sites. The sampling design of the USFWS proposal is explicit and deliberate, and less subjectivity is required for selection of locations for sites and transects. A statistically- sound and repeatable study design used to determine density and habitat suitability for DWM (Goal 1, Objective 3 of Study 24) needs to be as explicit as possible with regard to how sites are selected and data is collected. In the USFWS proposal, transects are placed perpendicular to the current, which increases the range of habitat parameters that may be used to evaluate habitat suitability for DWM. An adequate range of habitat parameters across a range of DWM densities is critical for sound habitat suitability criteria that will be used to determine project effects on DWM and their habitat (Goal 1, Objective 3 and Goal 2, Objective 5 of Study 24).	It is not clear which FWS counter proposal the commenter is referring to. FWS filed a revised counter proposal on November 14, 2014 along with comments on the Initial Study Report (the same date as TNC filed their comments). As indicated above, TC is reviewing the revised counter proposal and plans to schedule additional consultation on that proposal.