



United States Department of the Interior

FISH AND WILDLIFE SERVICE
3817 LUKER ROAD
CORTLAND, NY 13045

April 28, 2000

Lt. Colonel Mark D. Feierstein
District Engineer, Buffalo District
U.S. Army Corps of Engineers
1776 Niagara Street
Buffalo, NY 14207-3199

Attention: Ms. Margaret Crawford, Auburn, NY

Dear Colonel Feierstein:

The U.S. Fish and Wildlife Service (Service) has reviewed Public Notice 97-320-000 dated March 3, 2000. This is a multi-District Public Notice which your office is coordinating. The Public Notice numbers for the New York and Pittsburgh Districts are 1999-00640 and 199701186, respectively. The applicant, Millennium Pipeline Company, L.P., proposes to install an underground natural gas pipeline extending from an interconnection with TransCanada Pipelines LTD. in Lake Erie from the United States/Canadian border to landfall near Ripley, New York, and then across southern New York to Mount Vernon, New York. The pipeline facility would include 373 miles of 36 inch diameter pipe and 44 miles of 24 inch diameter pipe constructed through Chautauqua, Cattaraugus, Allegany, Steuben, Chemung, Tioga, Broome, Delaware, Sullivan, Orange, Westchester, and Rockland Counties, New York.

Approximately 86 percent of the on-land pipeline would be constructed within or adjacent to the existing right-of-way (ROW). Generally, construction would require a 75 foot wide ROW with some sections in wetlands proposed to be 200 feet wide to accommodate stream crossings. The applicant has indicated that a total of 423 acres of wetland would be impacted during pipeline construction, although the actual acreage has not been verified by the Army Corps of Engineers (Corps). The applicant proposes to permanently impact approximately 0.55 acres of waters of the United States located within the "Black Dirt" areas of the Town of Warwick, Orange County, New York. No mitigation has been proposed in the Public Notice to compensate for proposed impacts to waters of the United States. Most of the impacts are proposed to be temporary, although some permanent change of wetland type will occur. Approximately 39 acres of forested wetland, once impacted, would be converted to scrub-shrub or emergent wetland as a result of future maintenance of the pipeline corridor. The pipeline will cross a total of 296 perennial and 195 intermittent water bodies, including Lake Erie and the Hudson River at Haverstraw Bay.

Authority

This is the report of the Service and the Department of the Interior, in addition to comments submitted by the National Park Service under separate cover, submitted in accordance with the

provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.). These comments are for use in your determination of 404(b)(1) guidelines compliance (40 CFR 230), and in your public interest review (33 CFR 320.4) relating to the protection of fish and wildlife resources.

Federally Listed Threatened and Endangered Species

The Corps must consult with the Service under Section 7 of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) regarding any action that it authorizes, funds, or carries out that may affect a listed species. In consultation with the Service, the Corps shall utilize its authority to further the purposes of the Endangered Species Act in the conservation and recovery of listed species and the ecosystems on which they depend. Further, 50 CFR 402.02 states that the "effects of an action" to be considered during consultation include "direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action...." This correspondence will serve as the initial Section 7 consultation.

Previous correspondence between the Federal Energy Regulatory Commission (FERC), Millennium, and the Service indicated that the Bald eagle (*Haliaeetus leucocephalus*), a Federally listed threatened species; dwarf wedge mussel (*Alasmidonta heterodon*), a Federally listed endangered species, and; bog turtle (*Clemmys mehlenbergii*), a Federally listed threatened species are known to occur in the vicinity of the project. Copies of these documents were sent to the Corps.

Based upon new information, the Service has reason to believe that the Federally listed endangered clubshell (*Pleurobema clava*) and Northern riffleshell (*Epioblasma rangiana*) may occur within Cassadaga and Conewango Creeks. The Service recommends that the project impact area of these two creeks be surveyed by a qualified person to determine the presence or absence of these species.

The project's environmental documents should identify any direct, indirect, and cumulative impacts on all of the above species or their habitat, and include appropriate measures, if necessary, to protect these species and their habitat. This information should be forwarded to this office and it will be used to evaluate potential impacts on these species and their habitat, and to determine the need for further consultation under Section 7 of the Endangered Species Act.

The shortnose sturgeon (*Acipenser brevirostrum*), which may also occur in the project area, and its habitat, are under the jurisdiction of the National Marine Fisheries Service. You should contact Mr. Stanley Gorski, Habitat and Protected Resources Division, Area Coordinator, National Marine Fisheries Service, James J. Howard Marine Sciences Laboratory, 74 Magruder Road, Highlands, NJ 07732, for additional information (telephone: 908-872-3037).

The Service has been in consultation with the FERC for their action on the pipeline. A biological assessment is required for Federal actions that are major construction activities. The information provided in the biological assessment and its evaluation of the potential effects of the action on listed species is used to determine the need for formal consultation. When a particular action involves more than one Federal agency, the consultation responsibilities may be fulfilled through

a lead agency which shall notify the Service of the designation in writing. Alternately, your agency may use the pending FERC biological assessment for your consultation or provide an independent biological assessment.

Below is a list of species of concern that are potentially within the project area. Species of concern (formerly known as Category 2 Candidate species) are being monitored throughout much of their range. Species of concern do not receive substantive or procedural protection under the Endangered Species Act; however, the Service does encourage Federal agencies and other appropriate parties to consider these species in the project planning process. The species and our recommendations to protect them are as follows:

1. Longhead darter (*Percina macrocephala*) - species of concern - is known to occur in the Great Valley Creek. A habitat evaluation should be conducted to see if appropriate habitat is in the vicinity of the crossing impact area. The habitat preferred by this species is a gravel or cobble substrate within a rapid flow with no backwater.
2. Bean villosa (*Villosa fabalis*) - species of concern - is known to occur in Olean Creek near the pipeline crossing. Based upon new information, this species is also known to occur in Cassadaga Creek. The crossing impact area should be evaluated for mussel beds. If the mussels occur within the crossing impact area, measures to avoid or minimize impacts should be described.
3. Green floater (*Lasmigona subviridis*) - species of concern - is known to occur up- and downstream of the pipeline crossing areas of Catatunk Creek and the Susquehanna River. Catatunk Creek should be evaluated for mussel beds. If the mussels occur within the crossing impact area, measures to avoid or minimize impacts should be described. Presently, a conventional bore crossing is proposed for the Susquehanna River crossing. If the conventional bore method for crossing the Susquehanna River fails, no work should be performed in the river which involves alteration of stream flow or substrate until the area is evaluated for mussel beds.
4. Yellow lamp mussel (*Alasmidonta marginata*) - species of concern - is known to occur up- and downstream of the pipeline crossing areas of Catatunk Creek and the Susquehanna River. Based upon new information, this species is also known to occur in Cassadaga Creek. These areas should be evaluated for mussel beds. If the mussels occur within the crossing impact area, measures to avoid or minimize impacts should be described.
5. Swollen wedge mussel (*Alasmidonta varicosa*) - species of concern - is known to occur in the Neversink River near the pipeline crossing. Measures taken to avoid impacts to dwarf wedge mussels will protect these species.

Impacts to Fish and Wildlife Resources

The Service recommends that authorization for the proposed work be denied based on the impacts of the project on fish and wildlife and their habitats. Specifically, the Service is concerned about the impacts of the proposed project on:

1. Haverstraw Bay, a Federally-identified Significant Coastal Habitat area,
2. wetlands and other waters of the United States, some of which could be avoided or minimized,
3. aquatic resources of streams within the pipeline corridor, and
4. aquatic resources of Lake Erie.

We further describe these resources and the impacts of the proposed project on these resources in the following sections.

1. Federal Significant Coastal Habitat Area

The proposed pipeline would cross 2.2 miles of Haverstraw Bay near Haverstraw, New York with an open cut, lay-barge crossing method. Haverstraw Bay is located in the northern most section of the lower Hudson River estuary. It is a designated "Hudson River Significant Tidal Habitat" (NYS DOS 1990), as well as "Significant Habitat of the New York Bight Watershed" (USFWS 1997).

Haverstraw Bay is located in the reach of the Hudson River where the fresh waters from the upper river mix with the marine waters of the Atlantic Ocean, producing brackish water habitats in the 0 to 10 parts per thousand salinity range. Primary (submerged aquatic vegetation and phytoplankton) and secondary (zooplankton, invertebrates, and fish) biological productivity is very high in this extensive shallow water habitat, and the area serves as a major nursery and feeding area for anadromous and estuarine-dependent fish species. This area is a major nursery area for striped bass (*Morone saxatilis*), white perch (*Morone americana*), American tomcod (*Microgadus tomcod*), and Atlantic sturgeon (*Acipenser oxyrinchus*) that spawn elsewhere in the Hudson. It is also a wintering area for the Federally listed endangered shortnose sturgeon. Waterfowl use of Haverstraw Bay is extensive during the spring and fall migration periods. Prominent waterfowl species include the mallard (*Anas platyrhynchos*), American black duck (*Anas platyrhynchos*), Canada goose (*Branta canadensis*), merganser (*Mergus* spp. and *Lophodytes cucullatus*), canvasback (*Aythya valisineria*), common goldeneye (*Bucephala clangula*), and scaup (*Aythya* spp.). The bald eagle, a Federally listed threatened species, winters on Haverstraw Bay (USFWS 1997).

The proposed pipeline crossing would require dredging of a section of Haverstraw Bay that has not previously been subjected to these impacts. The Service believes that dredging, in-river and shoreline construction in this section of Haverstraw Bay will result in impaired water quality, thereby adversely affecting fish and wildlife in the bay (USFWS 1997). The New York State Department of State also regards dredging of the shallows to be an incompatible habitat use within Haverstraw Bay (NYS DOS 1990). Suspended sediments can clog gills or other breathing structures of fish and benthic organisms, including mollusks and invertebrates, which may result in limited mortality. Most motile individuals will avoid areas of excessive turbidity, however, turbidity will adversely impact spawning by creating poor visibility and unsuitable substrate conditions. Increased turbidity can also disrupt foraging behavior of aquatic birds and mammals and disrupt existing benthic communities.

Traditionally, Hudson River pipeline crossings have been conducted at narrower river reaches, thereby minimizing impacts to aquatic habitat. The Service believes that there are reasonable alternatives to the proposed project which will enable the applicant to cross the Hudson River at a narrower section, including a potential crossing near the Tappan Zee Bridge. Cumulative impacts can result from the incremental succession of collectively significant actions taking place over a period of time. Thus, the cumulative impacts of multiple pipelines on Haverstraw Bay is a significant concern and should be considered in the project evaluation.

2. Temporary and Permanent Impacts to Wetlands and Other Waters of the United States

Absence of a confirmed jurisdictional determination

The Corps has not confirmed the wetland delineation for this project and the Service is concerned, based upon our review, that the wetlands and streams to be affected by the project have not been accurately delineated or characterized. The final determination of whether an area is a wetland and whether the activity requires a permit must be made by the appropriate Corps District Office unless a determination of navigability is made pursuant to 33 CFR 329.14, or EPA made a Section 404 jurisdiction determination under its authority. Our review of the project has revealed discrepancies between the boundaries and vegetation of wetlands identified by the applicant versus the boundaries and vegetation identified during our site visits and review of aerial photography and National Wetland Inventory maps. Also, not all streams that would be considered waters of the United States were indicated on the Construction Alignment Sheets (CAS), alignment topographic maps, or Table S of the Public Notice.

Table 3.5-2A, Summary of Wetlands Affected by Construction and Operation, provided with the Public Notice, documents the many complexes of wetlands within the project vicinity, but it does not provide a breakdown of total impacts to emergent, shrub/scrub, or forested wetlands. This information is needed to evaluate the overall impacts of the project and to determine the amount of mitigation required for impacts to wetlands. The Service recommends that the Corps provide a jurisdiction determination for this project, which includes identification of all waters of the United States within the project vicinity. This determination should include a summary of impacts to the various wetlands types and streams, including intermittent streams which have a defined bed and channel.

Wetland impacts

Fundamental to the U.S. Environmental Protection Agency Guidelines for Specification of Disposal Sites for Dredged or Fill Material (404(b)(1)) guidelines is the precept that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern. Once an accurate wetland delineation is approved by the Corps, the applicant should consider alignment modifications to minimize impacts to wetlands. This required avoidance and minimization of wetland impacts cannot occur in the absence of an accurate delineation. The Service considers a wetland impacted if it is filled, dredged, or had any of its functions altered or removed (i.e., wetlands mowed and trees removed from a forested wetland). The Service recognizes that it will not be practical to avoid all wetlands, but believes that some wetlands may

be avoided if the wetland edge is relatively close to the proposed alignment. An accurate delineation would also enable the applicant to minimize impacts to wetlands by selecting alignments with less long term impacts (i.e., crossing an emergent portion of the wetland instead of a forested portion).

Mitigation for Unavoidable Wetland Impacts

Once provided with documentation of an adequate alternatives analysis and minimization of impacts, mitigation for residual wetland impacts by creating or restoring wetlands in the vicinity of the proposed wetland loss should be required. Any permanent wetland impacts should be mitigated through the creation or restoration of wetlands at ratios of 1:1 (1 acre created for every 1 acre lost) for open water/emergent wetland, 1.5:1 for shrub/scrub wetland, and 2:1 for forested wetland. The Service recommends that post-construction monitoring be conducted to identify unanticipated permanent wetland impacts and that mitigation be required as described above.

The proposed project will also impact the functional values of wetlands, by temporary physical disturbance and the permanent conversion of one wetland type to another type. The Service is concerned about the conversion of forested wetland to emergent and scrub-shrub wetlands. Forested wetlands provide important breeding and forage areas for migratory birds, amphibians, reptiles, and aquatic mammals. For example, there are higher densities of breeding birds in forested wetlands than upland forests (Newton 1988). The creation of open corridors through forested areas may enhance habitat for edge species such as white-tailed deer, but will adversely impact forest interior species such as the ovenbird. Opening up the canopy of a forested wetland may alter the temperature and moisture regimes that are particularly important for amphibians and may also encourage the influx and spread of invasive plant species. Mitigation should be proposed for changes in wetland functional value caused by the proposed project.

The magnitude of this project makes it difficult to provide all mitigation within the ROW. Therefore, the Service suggests that the impacts to watersheds be mitigated within that watershed as close to the impact as possible. The Service should be part of an interagency team established to develop appropriate mitigation projects.

3. Impacts to Streams as a Result of Pipeline Construction and Maintenance of ROW

The Service is concerned about the impacts of the project on streams, particularly the effects of project activities on water quality and physical disturbance of habitat. A jurisdictional determination for all streams is required to assess measures to avoid and minimize potential cumulative impacts to watersheds. The proposed project may affect stream habitat by removing riparian vegetation, altering streambeds, and causing erosion of stream banks. Riparian vegetation can intercept sediment, nutrients, pesticides, and other material in surface runoff and reduce nutrients and other pollutants in shallow subsurface flow. Woody vegetation in buffers provides food and cover for wildlife, helps lower water temperature by shading the water body, and slows out-of-bank flood flows. In addition, the vegetation closest to the stream or water body is a source of litter and large woody debris that is an important nutrient and cover source for aquatic organisms (NRCS 1997a).

The proposed project may alter stream morphology in the vicinity of stream crossings, contributing to unstable stream conditions. This instability may result in increased erosion or aggradation along and within the stream, contributing to turbidity. Sedimentation induced through hydrological modification or as a direct result of the deposition of unconsolidated dredged or fill material may clog riffle and pool areas, destroy habitats, and create anaerobic conditions. A limited amount of fish mortality can be expected to result from gill damage caused by increased turbidity levels. Most motile individuals will avoid areas of excessive turbidity, however, turbidity will adversely impact spawning by creating poor visibility and unsuitable substrate conditions. Excessive sediment deposition on active spawning areas would result in destruction of fish eggs and larvae. Increased sedimentation would also disrupt existing benthic communities.

Once the applicant demonstrates that they have effectively identified and minimized stream impacts, mitigation for residual stream impacts needs to be determined. Mitigation for these impacts could be in the form of streambank fencing, conservation easements on stream buffer areas, or restoration of a degraded section of creek within the same watershed, as described previously for the wetland impacts. The Service should be part of an interagency team established to develop appropriate stream mitigation projects.

In addition, the Service recommends that the following streams should have biological and physical sampling pre- and post-construction as mitigation for temporary impacts to waters of the United States. These streams were selected based upon recommendations made by New York State Council of Trout Unlimited, The Nature Conservancy, and the Service's evaluation of importance. They are: Chautauqua Creek, Cassadaga Creek, Olean Creek, Genesee River, Borden Creek, Cutler Creek, Sing Sing Creek, Catherine Creek, Catatonk Creek, West Branch Delaware River, Roods Creek, Laurel Creek, Travis Brook, Sands Creek, Bear Brook, East Branch Delaware River, Abe Lord Creek, Bouchoux Brook, Pea Brook, Hoolihan Brook, Ten Mile River, Neversink River, Wallkill River, and Sawmill River. This sampling would include identifying stream morphology at the proposed crossing or at the same location of the NYSDEC required calibrated stakes placed to evaluate sediment erosion, and deposition. This information can be used to determine the impact of different crossing techniques on various stream types.

4. Lake Erie

The proposed pipeline will cross 93.5 miles of Lake Erie, 33 miles of which are within waters of the United States. The proposed method for crossing the lake uses conventional underwater construction by mechanical jetting and by directional drilling at the shoreline. Jetting will be a 24 hour, 7 day a week operation. The entire trenching operation will take approximately 6 months to complete. Based upon calculations for a trench 6.5 to 10 feet deep, bottom habitat approximately 600 feet in width would be impacted by the jetting operation within Lake Erie, resulting in impacts of about 6800 acres of lake bottom with measurable deposition ranging in thickness from 1 to 20 inches of material. Within U.S. waters, this would amount to approximately 2400 acres of deposition. There will be a turbidity plume around the work area, with the duration of the plume after pipeline installation dependent on the sediment composition and lake conditions. In addition, there will be 4,000 cubic yards of bentonite and 2,000 cubic yards of spoil released into the lake with the directional drill methodology proposed.

Lake Erie supports the second-largest sport fishery on the Great Lakes, and its walleye fishery is generally considered one of the best in the world (Wittman 1998). It also provides important resting and foraging habitat for migratory birds. Lake Erie is the shallowest of the Great Lakes which makes it the warmest and most biologically productive lake.

The Service is concerned about the impacts from pipeline construction on Lake Erie. These impacts include increased turbidity, increased sedimentation, fish migration disruption, and fish and wildlife mortality due to leaks. Increased turbidity and sedimentation during a six month period in Lake Erie would cause disruption of benthic fauna for an entire year class within the project vicinity. Turbidity and the interruption of benthic habitat by the trench may affect the natural migration of Lake Erie fish that occurs as water temperatures change throughout the year. The Service's Louisiana Ecological Services Field Office has conducted a natural resource damage assessment for natural gas pipeline leaks. Their assessment indicated that leaks have caused no obvious impact in some instances, but evident mortality of waterfowl, *Amphiuma* spp., alligators, and benthic invertebrates in other cases. The mortalities appeared to be caused by the release of an oily condensate that accumulates in the pipelines, especially as a pipeline ages. According to information provided in the FERC draft Environmental Impact Statement, ice scour could be expected over about 75% of the pipeline route (FERC 1999). This makes the pipeline susceptible to ruptures or punctures from ice which could impact fish and wildlife.

Traditionally, pipeline companies have avoided crossing Lake Erie, avoiding impacts to this lake. The Service believes that there is one practicable alternative to the proposed Lake Erie crossing with less impacts to waters of the United States would be a crossing at or near Grand Island. Successful directional drilling of pipelines has been performed in this area, thereby avoiding impacts to waters of the United States. Cumulative impacts can result from the incremental succession of collectively significant actions taking place over a period of time. Thus, the cumulative impacts of multiple pipelines on Lake Erie is a significant concern and should be considered in the project evaluation, including the potential for impacts as the pipelines age.

Additional Measures to Reduce Potential Impacts to Fish and Wildlife Resources

The applicant should also minimize impacts to waters of the United States by the following measures:

1. Employ a third party inspector that will report directly to NYSDEC and the Corps.
2. Survey wetland and stream contours prior to clearing and construction. Use this information to restore streambeds and wetlands to original contours.
3. Institute temporary erosion control measures prior to disturbance of soil except where impracticable; otherwise these measures should be installed promptly after initial disturbance of the soils. Temporary erosion control measures should be maintained during construction and be maintained until revegetation has occurred.
4. Restore wetland crossing areas and 100 foot buffer zones, except for temporary access roads, to pre-existing contours and grades within 48 hours of backfilling the trench.

5. Clearly identify the boundary of all environmentally sensitive areas prior to initiation of construction, using brightly colored fencing or silt fencing. Each boundary will also be identified with a clearly legible sign, that can be read from a distance of 30 feet, as an "environmentally sensitive area." An environmentally sensitive area could be a wetland, stream, potential protected species location, or other area that would require restrictive construction techniques and/or activities.
6. Confine grubbing within a wetland to the immediate area of the trench. Equipment shall be operated on removable mats to reduce soil disturbance and compaction within wetlands, unless impracticable.
7. Restore all stream crossing areas, except for temporary access roads, to preexisting contours and grades to a distance of 50 feet from edge of stream within 24 hours of backfilling the trench.
8. Establish a streambank buffer in which restricted vegetation maintenance is employed, using the NRCS Conservation Practice Standard 391A for riparian forest buffers as a guide.
9. Develop a restoration plan for stream crossings which includes the planting of willows and other stream stabilization shrubs. Millennium should attempt to preserve root wads from willows removed from the construction work area. These root wads could be used for stream stabilization within the watershed in which the trees are removed.
10. Any open cut (dry or wet) stream crossing shall not be initiated in the event of a National Weather Service weather forecast that contains a 40 percent or greater chance of precipitation that may affect the area, unless the environmental inspector authorizes the work to begin. The environmental inspector must document the weather conditions in the vicinity of the crossing and the upstream watershed. Environmental inspectors must keep a log of all authorizations and at all times make the log available for NYSDEC and Corps' inspection. In the event that an unforecast rainfall event occurs, after a crossing has begun, Millennium shall, upon receiving the approval of the 3rd party inspector, proceed to work on a 24 hour basis in order to complete the crossing as quickly as possible.
10. Monitor the status of all open cut (dry or wet) crossings 24 hours per day until the crossing has been completed and the stream and stream banks have been restored. In the event of any potential or actual failure of the crossing, Millennium must have adequate staff and equipment available to take necessary steps to prevent crossing failures.
11. Monitor the status of all completed stream crossings after the first major rainfall event (more than ½ inch of rain in 24 hours) for streambank stability and sedimentation at the sediment stakes. The Corps and NYSDEC should be notified in the event of bank erosion or sedimentation.

12. Keep sediment filter bags and traps at least 25 feet from any water body and inspected at least every 4 hours, unless it is determined that more or less frequent inspection is warranted.
13. Conduct instream backfilling, for all open cut wet ditch trenches, in such a manner to reduce the amount of resuspension of sediments into the water column. Millennium must substitute clean gravel or other suitable material as backfill if the environmental inspector determines that the excavated material contains an excessive amount of fine grained material. Backfill material shall be released from construction equipment as close to the streambed surface as possible. Backfill material should be discharged from below the water surface.
14. Provide for safe passage or portage of navigational boaters or canoeists at all stream crossings designated by the NYSDEC. Such safety measures must provide an adequate upstream warning that is readily understandable by all travelers.
15. Ensure that equipment crossings are constructed in such a way that soil cannot fall into water bodies through cracks in the crossing structure, over the edge of the crossing structure, or at the banks. All equipment crossings shall be installed and removed within the time restriction for stream work as determined by NYSDEC. If Millennium proposes to maintain an equipment bridge during the timing restriction, Millennium must coordinate with the Corps and NYSDEC and document on the CAS that a span structure will be used and the duration of use.

Clearing crews will not drive equipment through water bodies without placing a temporary crossing in the same location as the "permanent" equipment crossing.

Determine whether there are birds on any waterbody where blasting will be employed prior to blasting. There shall be no blasting if birds are on the water within 500' of the blasting area. The Service suggests that the applicant investigate the feasibility of using deterrents for birds, to keep them away from work areas with blasting.

18. Limit open trench construction to no more than 30% of the proposed trenching within a watershed at one time. This is to reduce the potential for water quality impacts in the event of a rainfall.
19. Recreate seep areas along steep slopes within the ROW. Seeps are moist soil areas used by salamanders, turkey, grouse, deer, and other wildlife.
20. On steep slopes, only woody plants greater than 15 feet in height should be removed and removal should be accomplished by hand to maintain slope integrity. Examples of such slopes include Chautauqua Gorge, Erwin Hollow Creek valley, and Basket Creek valley.
21. Plant warm season grasses native to the Northeast, where applicable. Warm season grasses grow in the summer when cool-season grasses are inactive. They are

drought resistant, winter hardy and adapted to sandy, infertile soils. These grasses contain more nutrients than cool-season grasses and provide suitable breeding habitat for ground-nesting birds. Examples of warm-season grasses include: big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparius*), switchgrass (*Panicum virgatum*), Indian grass (*Sorghastrum nutans*), and broom-sedge (*Andropogon virginicus*). This could enhance wildlife use of the ROW.

22. Use conservation mowing practices in areas where warm season grasses were planted to enhance wildlife use and wherever else is possible. These may include practices such as minimizing mowing to every two to three years, raising mower blades to six inches or greater, avoiding night mowing, or using flushing bars.
23. Plant and maintain shrub strips at the edge of forested areas and at 500' intervals within the ROW. This will provide cover and habitat diversity, facilitate wildlife passage across the ROW. This may reduce off-road vehicle disturbance within the ROW.

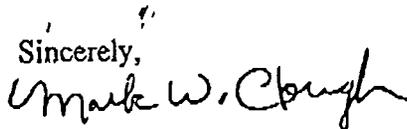
Recommendations

Based upon the available information, the Service recommends that authorization for the work, as currently proposed, be denied. This recommendation is based on an evaluation of the probable impacts to fish, wildlife, and their habitats, including cumulative impacts. It is the Service's position that the project will encourage the degradation of fish and wildlife habitats, and that the public benefits do not clearly exceed the public losses with respect to fish, wildlife, their habitats, and the public enjoyment and use thereof.

In light of the comments discussed in this letter, it is the opinion of the Service that the proposed project may result in substantial and unacceptable impacts to aquatic resources of national importance as defined in paragraph one, Part IV of the 1992 Memorandum of Agreement (MOA) between the Department of the Interior and the Department of the Army regarding Section 404(q) of the Clean Water Act. As outlined in part IV, Section 3 of the MOA, please have your staff contact my office in order to resolve any outstanding issues during the 25 day period following the closure of the Public Notice comment extension period.

Once the requirements of Section 7 of the Endangered Species Act have been fulfilled, the Service would reconsider this recommendation if the applicant takes measures as defined above to (1) avoid the Haverstraw Bay and Lake Erie crossings, (2) demonstrate avoidance and minimization of wetland and stream impacts, (3) provide appropriate mitigation for unavoidable permanent and temporary impacts to waters of the United States, and (4) follow measures recommended to minimize the impacts of pipeline installation and maintenance on fish and wildlife resources.

Please contact Diane Mann-Klager at (607) 753-9334 if there are any questions regarding this letter.

Sincerely,


ACTING FOR

David A. Stilwell
Field Supervisor

Literature Cited:

FERC. 1999. Millennium Pipeline Project: draft Environmental Impact Statement (FERC/EIS-0123D), Federal Energy Regulatory Commission, Office of Pipeline Regulation, Washington, DC.

Newton, R.B. 1988. Forested Wetlands of the Northeast. University of Massachusetts at Amherst. Environmental Institute pub. No. 88-1.

NRCS. 1997a. Conservation Practice Job Sheet: Riparian Forest Buffer (Code 391), United States Department of Agriculture, Natural Resources Conservation Service, Washington, DC.

NRCS. 1997b. Conservation Practice Standard: Riparian Forest Buffer (Code 391A), United States Department of Agriculture, Natural Resources Conservation Service, Washington, DC.

NYSDOS. 1990. Hudson river Significant Tidal Habitats: A guide to the Functions, Values, and Protection of the River's Natural Resources. New York State Department of State, Division of Coastal Resources and Waterfront Revitalization, Albany, NY.

Wittman, S. 1998. The Fish of Lake Erie. University of Wisconsin Sea Grant Institute.
http://www.seagrant.wisc.edu/communications/greatlakes/GlacialGift/lake_erie.html

USEPA and Environment Canada. 2000. Lake Erie Lakewide Management Plan (LaMP) U.S. Environmental Protection Agency, Great Lakes National Program, Chicago, IL.

USFWS. 1997. Significant Habitats and Habitat Complexes of the New York Bight Watershed. U.S. Department of the Interior, Fish and Wildlife Service, Southern New England - New York Bight Coastal Ecosystems Program, Charlestown, RI.

cc: all parties
FERC, Washington, DC
Columbia Gas Transmission, Binghamton, NY (R. Hall)
NYSDEC, Albany, NY (J. Cooper)
NYSDEC, Latham, NY (K. Schneider)
NYSDEC, Delmar, NY (P. Nye)
NYSDEC, New Paltz, NY (T. Kerpez)
COE, Buffalo, NY (M. Crawford)
COE, Troy, NY (H. Firstencel)
NMFS, Milford, CT (D. Rusanowsky)
NMFS, Highlands, NJ
EPA, Chief, Marine & Wetlands Protection Branch, New York, NY
DOI, Boston, MA (J. Stolfo)
NPS, Upper Delaware Wild and Scenic River, Beach Lake, PA
NPS, Appalachian National Scenic Trail, Harpers Ferry, WV
NPS, Boston, MA
USFWS, PAFO, State College, PA
USFWS, Wallkill River NWR, Sussex, NJ