



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

MAY 16 1994

Dr. John H. Zirschky
Acting Assistant Secretary (Civil Works)
United States Department of the Army
Washington, D.C. 20310

Dear Dr. Zirschky:

In accordance with provisions of the December 21, 1992, Clean Water Act Section 404(q) Memorandum of Agreement (MOA) between the Department of the Interior (Department) and the Department of the Army (Army), I am requesting your review of the Baltimore District (District) Engineer's decision to issue a Section 10/404 permit for the project described in Public Notice CENAB-OP-RS 89-1863-1.

The permit would authorize the applicant, Riddle Farm Associates, L.P., to excavate a 14-acre boat basin in the dry, with connections to tidal waters and associated mooring facilities in Worcester County, Maryland. The District has determined that the proposed project will directly affect 0.6 acre of tidal marsh and 6.3 acres of shallow water habitat. However, the boat basin is just one component of the Riddle Farm planned unit development that includes a 650-unit subdivision and two golf courses. The entire project area encompasses 995 acres and contains a 480-acre block of mature, contiguous forest, within which are an estimated 130 acres or more of nontidal wetlands. The District, however, did not recognize this important resource area in its jurisdictional determination, and has not evaluated impacts to this area in its permit decision. After review of the District's April 8, 1994, notification to the Fish and Wildlife Service (Service) and an analysis of project site values and impacts (enclosed), I have determined that this case warrants elevation in accordance with criteria found in Part IV of the 1992 MOA (Elevation of Individual Permit Decisions).

The project site is adjacent to Isle of Wight Bay, Worcester County, Maryland, and is bounded by Turville Creek to the north, Herring Creek to the east, and U.S. Rt. 50 to the south. The project area lies within Maryland's coastal bay ecosystem, and is within 3 miles of Assateague Island National Seashore and adjacent Chincoteague National Wildlife Refuge. Due to their landscape position between inland and marine environments, coastal bays contain unique habitats possessing diverse assemblages of aquatic life. Unfortunately, these bays are increasingly threatened by coastal development. In Maryland, the amount of development is most pronounced adjacent to Assawoman and Isle of Wight Bays. Specifically, of the four peninsulas bordering Isle of Wight Bay, the project area is contained on the only undeveloped peninsula.

Issuance of an Army permit for the Riddle Farm project will have a substantial and unacceptable adverse impact on the Maryland coastal bay ecosystem and forested wetlands, which I have determined to be aquatic resources of national importance. These aquatic areas are of critical importance to Department trust resources. Waterways adjacent to the project area are important nursery areas for summer flounder, weakfish, and blue crabs. Clams and oysters are also important resources in the Bays. Supporting an important commercial and sportfish industry, the migratory run of American eel elvers (Anquilla rostratum) in Turville and Herring Creeks is unsurpassed by any other stream in the State, leading to this area's recognition as an area of Critical State Concern.

Construction and use of the boat basin proposed as part of the project will result in significant impacts. Excavation and dredging will destroy valuable tidal marsh, eliminate an important buffer area between adjacent development and a large tidal marsh onsite, and alter the benthic community of Herring Creek. The proposed development is anticipated to increase boating activity in Herring Creek by as many as 250 boats per day. Trust resources are expected to be negatively affected by increased pollutant loading associated with this increase in boating, which will be exacerbated by the minimal water volume exchange and poor flushing of the creeks. Additional boating activity also will increase the level of human disturbance in the project area and adversely affect wildlife using tidal marshes along the creeks.

The approximately 480-acre contiguous mosaic of mature pine-hardwood upland and wetland forest within the project site is of critical importance to neotropical migrant songbirds for nesting and resting during migration. Research has shown that certain forest-dependent songbirds respond favorably to forested wetlands due to the greater abundance of insects and soil invertebrates in wetter habitats (Smith 1977, Petit et al. 1985). Furthermore, the wettest of the forested wetlands contained the most abundant and diverse breeding bird populations (Swift 1984). Given the project's location within the coastal bay ecosystem, the site is particularly important during migration as stop-over habitat. The project area is linked to this system by its proximity to Interior's Assateague Island National Seashore and Chincoteague National Wildlife Refuge, as well as several nearby State management areas and forests, since species that utilize established refuges also depend on adjoining patches of suitable habitat.

Forested wetlands and uplands, and the neotropical migrant songbirds that utilize these habitats, will sustain substantial and unacceptable impacts if the project is constructed as proposed. Although development plans are not final, the most recent plan indicates approximately 39 acres of forested wetland habitat will be filled or cleared. In addition, the development of this tract with 650 house lots and two 18-hole golf courses will destroy much of the forested land and fragment the remainder, reducing its breeding habitat value for area-sensitive species. Research conducted by the Department's Patuxent National Wildlife Research Center has shown that percentage decreases in populations of neotropical migrants exceed the amount of habitat affected.

It is the Department's position that impacts to the aquatic resources of national importance associated with the Riddle Farm planned unit development project can be reduced by avoiding impacts to aquatic resources located within the project site, including forested wetlands, and by providing navigable access at an alternative site within the project area or utilizing existing vacant slips in the project vicinity. Specific Department concerns that I feel warrant further evaluation are as follows:

- 1) The boat basin, as proposed, will have significantly greater impacts to the Department's trust resources than off-site options or alternative sites within the development. In addition to the availability of slips in the Ocean City area, we identified three on-site alternatives along Turville Creek. These alternatives will provide access to the Bays without impacting nontidal wetlands, will reduce impacts to tidal wetlands, and by eliminating the need for dredging in Herring Creek, likely will localize future channel dredging in a creek containing a public boat ramp. In their Statement of Findings, the Corps noted that the applicant was required by the Maryland Department of the Environment (MDE) to retain one of the alternative sites as a reserve for a sewage disposal system, and was therefore precluded from using the site for a boat basin. However, it is the Service's understanding that adequate land is available at the site to accommodate both a reserve area and boat basin.
- 2) The delineation of jurisdictional wetlands on the Riddle Farm property failed to include a substantial acreage of forested nontidal wetlands. This flawed delineation has caused the Corps to inappropriately limit its scope of analysis for the project to tidal wetlands on the site, and to fail to consider the substantial project impacts that will occur outside the jurisdictional areas. It is within the Corps' authority to revise wetland jurisdictional determinations when new information so warrants. Ample information now exists, including a wetland map of the property prepared by the State of Maryland showing extensive forested wetlands, to warrant a revision of the Corps wetland delineation.
- 3) The Corps has limited its consideration of impacts associated with the proposed project to the direct impacts resulting from the construction of the proposed Herring Creek boat basin and the associated dredging of navigational access and flushing channels. This limited scope of consideration precludes the evaluation of significant indirect impacts that will occur as a result of construction of the other components of the Riddle Farm subdivision (e.g., 650 houses, two golf courses, etc.), and is not consistent with National Environmental Policy Act regulations. The housing and golf courses will have significant adverse impacts on forested wetlands and uplands, and associated migratory bird habitats. The scope of impact analysis should be expanded to address impacts on the entire property stemming from construction of the Riddle Farm planned unit development.

In conclusion, I request that you take the following actions:

1. Instruct the District to complete a new, comprehensive wetland delineation covering the entire Riddle Farm property and exert jurisdiction pursuant to Section 404 of the Clean Water Act over all wetlands and other waters of the United States on the project site.
2. Instruct the District to require the applicant to implement one of the alternatives for providing boat access put forth by the Service and described in the enclosed material.
3. Instruct the District to expand the scope of impact analysis to include the secondary and cumulative effects of the project relating to construction of all components of the Riddle Farms planned unit development.
4. Direct the District to work with the Fish and Wildlife Service, the applicant, and interested agencies to design a development project that will minimize impacts to the Department's trust resources, and a mitigation plan to fully compensate for all unavoidable fish and wildlife resource losses. Should a permit be issued for the project, the mitigation plan must be made part of the permit with requirements for its implementation.

Enclosed is additional information to support the Department's concerns and recommendations relating to the proposed permit decision. I request your review of the decision by the District to proceed with permit issuance for the Riddle Farm project.

Sincerely,

/s/ George T. Frampton Jr.

Assistant Secretary for Fish
and Wildlife and Parks

Enclosures

**ASSISTANT SECRETARY FOR FISH AND WILDLIFE AND PARKS'
EVALUATION AND REQUEST FOR REVIEW**

RIDDLE FARM PROJECT

PROPOSED PROJECT

A 14-acre boat basin, as described below and in the Corps draft permit, and an associated 995-acre planned unit development are proposed for a site located adjacent to Herring and Turville Creeks, in West Ocean City, Worcester County, Maryland. The development includes 650 house lots, two, 18-hole golf courses, a sewage treatment plant using spray and/or drip irrigation to dispose of the effluent, several lagoons, and stormwater management ponds.

The project purpose is to provide mooring and access facilities for the proposed Riddle Farm community, as well as erosion control. Work proposed includes: 1) to excavate a 14-acre boat basin in the dry to an elevation of -4 feet mean low water (MLW) and deposit the resulting 203,000 cubic yards of material on uplands; 2) to hydraulically dredge a 4,810-foot long by 50-foot wide navigation channel to -4 feet MLW and a 1,170-foot long by 30-foot wide flushing channel to -3 feet MLW; 3) to deposit approximately 21,000 cubic yards of dredged material at an on-site upland disposal area; 4) to emplace 935 linear feet of low profile stone rip-rap extending 4 feet channelward of the marsh/water interface along the entrance channel of the basin; 5) to install 300 linear feet of low profile rip-rap extending 4 feet channelward of the marsh/open water interface and 745 linear feet of rip-rap adjacent to the flushing channel; 6) to construct a 25-foot long section of concrete bulkhead for a dry stack storage facility; 7) to construct a 25-foot wide concrete boat ramp in the basin extending 24 feet channelward of the mean high water (MHW) shoreline; 8) to install 210 linear feet of rip-rap in the basin extending 12 feet channelward of the MHW shoreline adjacent to the boat ramp and dry stack storage facility; 9) to construct three 8-foot wide by 120-, 150-, and 170-foot long floating piers with 6-foot wide by 66-foot long "T" heads for 50 community wet slips; 10) to construct a continuous 6-foot wide by 2,890-foot long walkway 21 feet channelward the of MHW shoreline around the basin perimeter including 41, 4-foot wide access piers of varying lengths; 11) to provide compensatory mitigation in the form of 3.4 acres of saltmarsh creation and 2.4 acres of saltmarsh enhancement.

PROJECT LOCATION

The 995-acre project site is adjacent to Isle of Wight Bay, Worcester County, Maryland. The project area is bounded by Turville Creek to the north, Herring Creek to the east, and US Rt. 50 to the south. The project area lies within Maryland's coastal bay ecosystem, and is within 3 miles of Assateague Island National Seashore and adjacent Chincoteague National Wildlife Refuge.

AQUATIC RESOURCES OF NATIONAL IMPORTANCE

Maryland's network of coastal bays, including Isle of Wight Bay adjacent to the project area, constitute aquatic resources of national importance. Coastal bays are characterized by their shallow depths, expansive wetlands and tidal flats, and their exceptional productivity of aquatic biota. The bays support a diverse assemblage of organisms, including 60 families and 115 species of finfish (Table 1), 17 species of mollusks and 23 species of crustaceans.

The high biodiversity of the coastal bays is due, in part, to their unique physical parameters and habitats that are a result of their landscape position between inland and marine environments. Maryland's coastal bays (Assawoman, Isle of Wight, Sinepuxent, and Chincoteague) also form a 35-mile long link in a chain of bays and sounds extending from New York to Florida. Their sheltered landscape position and linkage to southern systems allow species normally associated with the South Atlantic and Gulf of Mexico to inhabit the bays.

Given their climate and proximity to the ocean, Maryland's coastal bays are also highly desirable locations for human habitation and recreation. A development boom, beginning in the 1950's has caused the direct loss of wetlands for home construction, while bulkheading of shorelines has destroyed intertidal zones. These lands continue to be threatened by coastal development. Between 1973 and 1990, Worcester County experienced an 87% increase in the amount of land developed for low density residential purposes (0.2-2.0 dwelling units/acre) (Maryland Office of Planning 1991). These development pressures are concentrated adjacent to Isle of Wight, Assawoman, and Sinepuxent Bays. The degree of development is readily apparent in wetlands trend data. Statewide, Maryland's wetland resource has declined by 73% from historic levels (Dahl 1990). Between the mid-1950's and late 1970's wetland losses have been concentrated in the Eastern Shore, with inland wetland impacts in these counties representing 80% of the state-wide loss (Tiner 1987). Specifically, of the four peninsulas bordering Isle of Wight Bay, the project area is located on the only undeveloped peninsula.

Although aquatic resources within Maryland's coastal bays have been compromised by development and subsequent water quality degradation in recent years, the bays continue to be very productive and provide many hours of recreational enjoyment to thousands of summer visitors. Delaware's coastal bays are part of the Environmental Protection Agency's National Estuary Program (NEP). Maryland's coastal bays have been nominated for inclusion into the NEP due to their unique biota, development pressure, and importance to people and resources of the State and Nation. Their addition to the program has been delayed because funding has not kept pace with the program's rapid growth.

Water depths in the upper reaches of Herring and Turville Creeks are approximately -2 feet MLW. The biotic processes unique to such shallow waters include the high level of interface with fringing marsh (amount of

edge), and increased biotic processes with increased light penetration (more abundant and diverse benthic community). Recognizing these values and threats to their continued functioning due to high development pressures, private and governmental agencies recently sponsored the Marine and Estuarine Shallow Water Conference. One of the major outcomes of the conference was the recommendation for consistency in reviews of projects in shallow water systems and consideration of the cumulative effects of coastal development.

Several important fishery resources depend on these habitats. The bays are nursery areas for summer flounder, weakfish, and blue crabs, and also support hard clams and oysters. Unfortunately, habitat destruction due to development pressures around the bays has resulted in significant reductions in the distribution and abundance of these economically important commercial and recreational resources. A large commitment of Federal and State resources have been devoted to summer flounder restoration as well as other coastal species including weakfish.

Anadromous and catadromous fishes also depend on the bays. The migratory run of American eel elvers in Turville and Herring Creeks is unsurpassed compared to any other stream in Maryland (Wesche and Casey 1985), and is the primary reason for this area's recognition as an area of Critical State Concern in Worcester County's Comprehensive Development Plan. In fact, the elver run in Turville Creek is sufficiently strong that it is used to support repopulation efforts in other locations.

Extensive forested wetlands present on the Riddle Farm property also constitute aquatic resources of national importance. These wetlands, estimated to cover a minimum of 130 acres, were apparently overlooked by the Corps during its wetland delineation done in the late 1980's. Regardless of their jurisdictional status, the Service has concluded that these areas clearly are wetlands. The United States Geological Survey topographic map, and the Service's National Wetland Inventory map that cover the project site both identify substantial areas of wetland on the Riddle Farm site in addition to the tidal wetlands delineated by the Corps. The Soil Conservation Service's soil survey map documents the presence of very poorly drained Pocomoke soils over much of the site. Moreover, the State of Maryland has delineated the forested wetlands on the site and is reviewing an application for the proposed project through their nontidal wetlands program.

The forested wetlands on the site are part of a 480-acre block of pine-hardwood forest. This habitat block supports a trust resource, migratory birds, that is at risk from the proposed housing development and golf courses that are a part of the Riddle Farm development. Neotropical migrants are described as New World birds (raptors, shore birds, songbirds) that nest in the northern hemisphere and winter in Central or South America. Neotropical migrant songbirds occupy a variety of vegetation types. The preservation of forests, especially mature forests, however, receives the greatest attention because of their rarity and the amount of time they require to develop. Many neotropical migrants are sensitive to forest size, and are therefore more apt to occur in larger tracts of forest

than smaller ones (Anderson and Robbins 1981, Ambuel and Temple 1983, Blake and Karr 1984, Robbins et al. 1989). This relationship between species occurrence and forest size is well documented and has been best demonstrated in Maryland (Robbins et al. 1989). Concern over forest fragmentation and its impacts to wildlife have stemmed primarily from this relationship discovered in birds.

The 480-acre forested block on the property is large enough to accommodate most of the 19 forest interior breeding birds identified in Maryland, given that the minimum tract size required by these birds ranged from 10 to 750 acres, with an average requirement of 227 acres (Bushman and Therres 1988). Furthermore, the 480-acre forest block falls within the optimum size range for 11 of the 19 species: red-shouldered hawk, barred owl, hairy woodpecker, pileated woodpecker, Acadian flycatcher, red-eyed vireo, northern parula, Kentucky warbler, prothonotary warbler, Louisiana waterthrush, and scarlet tanager. This forested parcel is of special significance given that it is the largest contiguous forested tract remaining within Isle of Wight Bay's watershed.

Given the project's location within the coastal bay ecosystem, the site is particularly important during migration as stop-over habitat. In confirming the importance of coastal areas to migrating birds, a system of National Wildlife Refuges, as well as other Federal and State preserves has been established. Species that utilize established refuges also depend on adjoining patches of suitable habitat. The project area provides an important link to these established reserves because of its size and proximity to Assateague Island National Seashore and Chincoteague National Wildlife Refuge, as well as several State management areas and forests.

Habitats adjacent to coastal bays have been found to contain greater bird densities and species richness than seaside coastal zones or interior regions within southern New Jersey and the Delmarva peninsula (Mabey et al. 1993), an area within which the project is centrally located. The investigators attributed the importance of coastal areas as stop-over habitat, at least partially, to large numbers of migrants resting in the early morning after a nighttime crossing of large expanses of open water, such as the crossing of Delaware Bay from Cape May, New Jersey, during autumn. This long-term study documented 19 neotropical migrants at a sample site 1 mile from Riddle Farm in habitat similar to that found at the project site but smaller in size (Table 2). In addition, during a recent visit to areas contiguous with the project site, 37 bird species were documented, including red-eyed vireo, ovenbird, and pine warbler (Table 3).

Research has shown that certain forest-dependent songbirds respond favorably to forested wetlands due to the greater abundance of insects and soil invertebrates in wetter habitats (Smith 1977, Petit et al. 1985). Furthermore, the wettest of the forested wetlands contained the most abundant and diverse breeding bird populations (Swift et al. 1984). Additionally, some of the species most dependent on moist woods are also species most susceptible to forest fragmentation, such as Acadian flycatcher, hooded warbler, ovenbird, and red-eyed vireo.

SUBSTANTIAL AND UNACCEPTABLE IMPACTS TO AQUATIC RESOURCES OF NATIONAL IMPORTANCE

If authorized as designed, the Riddle Farm development will result in substantial and unacceptable individual and cumulative impacts to aquatic resources of national importance. Proposed mitigation is insufficient to reduce project impacts below the "substantial and unacceptable" threshold.

Construction of the marina basin will result in the loss of 0.6 acre of high value tidal salt marsh. Approximately 6.3 acres of productive shallow water habitat in Herring Creek will be dredged to provide access to the basin. Additional secondary impacts will occur due to increased boating activity as well as pollutant loading.

Compensatory mitigation proposed to offset tidal marsh losses would include creation of 1.4 acres of tidal marsh in a fringe along the boat basin shore, 0.3 acre of tidal marsh creation adjacent to the flushing channel, 0.07 acre of tidal marsh creation at the basin entrance, 1.7 acres of tidal marsh creation from uplands adjacent to Perch Gut, and 2.4 acres of tidal wetland enhancement at three sites adjacent to Perch Gut. Although this acreage of compensatory mitigation may seem to offset direct impacts, habitat values of several fragmented mitigation wetlands will not approach values of the tidal marsh to be lost. The habitat value of the fringe tidal marsh within the boat basin will be negligible because of the high level of human disturbance that will be present around the basin. In addition, fringe marsh creation does not offset the loss of habitat values afforded by interior marsh that will be lost from boat basin construction.

Mitigation for dredging 6.3 acres of shallow water habitat is not proposed, except for a time-of-year restriction for fish spawning. The loss of the benthic community and alteration of the shallow water habitat will substantially reduce productivity in the dredged areas. Because it is difficult to compensate for dredging impacts, minimization is preferred.

The wooded wetland and associated upland area at the site of the proposed marina basin on Herring Creek serve as a buffer between developed land outside of the project area and the expansive tidal marsh at the confluence of Herring and Turville Creeks. Constructing a boat basin with surrounding house lots at the Herring Creek location will remove this buffer and interject a great deal of disturbance into what is presently a relatively undisturbed site. This will result in a functional loss of marsh important to waterfowl and wading birds.

The proposed marina is anticipated to increase boating activity in Herring Creek, Isle of Wight Bay, and its remote tidal waters by as many as 250 boats/day. The increased boating activity, and increased non-point source pollution from the planned unit development, will have significant adverse effects on water quality. Trust resources dispersed throughout the Bay, such as anadromous and catadromous fish nursery areas, are expected to be negatively affected by the increase in pollutant loading associated with the Riddle Farm project.

The water quality impacts of the proposed boat basin and residential development project will cumulatively affect this stressed system. As noted previously, Maryland's coastal bays have experienced tremendous growth in recent decades. Marina development is extensive along Isle of Wight Bay, while in the immediate project vicinity, Ocean Pines development is proposing an additional 208 slips on Manklin Creek and a 200-boat dry stack storage facility on Turville Creek. The cumulative impacts of developments surrounding the coastal bays have had a severe effect on the health of the total system (Univ. of Maryland System 1993). The University of Maryland report notes that the Turville Creek complex has one of the highest loading rates in the coastal bays ($29.7 \text{ g N/m}^2/\text{yr}$) even though there are no point sources. In addition, water quality has been degraded by agricultural runoff and inputs of treated sewage. Water quality is most compromised in the upper bays (Assawoman and Isle of Wight) where flushing rates are limited, and the largest amount of shoreline development and dead-end canals exist. This lack of adequate flushing is expected to encourage the persistence of pollutants from both boating and runoff from the development.

These water quality perturbations have been manifested in declines of species of economic and recreational importance. Some of the most notable harvest declines are for oysters, hard clams, alewives, hickory shad, striped bass, and American eels. At the project site, eel runs in the Turville Creek drainage were adversely impacted by agricultural ditching, but are now recovering. In addition, elevated levels of fecal coliform have resulted in the closure of Herring and Turville Creeks to shellfish harvest (Christoffers 1990).

The physical character of the Bays will be compromised by the operation of boats in shallow waters and associated channel dredging. Boating will lead to increased turbidity levels and shoreline erosion will be exacerbated throughout the coastal bays. An increase in boating is likely to increase the amount of human disturbance to waterfowl and shorebirds. This is especially true of harassment by shallow draft vessels that are proposed for mooring in the boat basin. The operation of jet skis and run-abouts, vessels that are able to access shallow headwaters, may significantly reduce or preclude occupancy of marshes and creeks by waterbirds.

In addition to the direct and indirect impacts to the waterways, the Riddle Farm development will cause significant adverse impacts to forested wetlands and uplands important to migratory birds. Given past losses of forest within the coastal bay ecosystem (a loss of 3%/year in Worcester County between 1973-1990, Maryland Office of Planning 1991), the additional loss of forested wetlands resulting from project construction represents substantial and unacceptable impacts to aquatic resources of national importance.

The development of the parcel with 650 house lots, two 18-hole golf courses, and 43 acres of freshwater lakes will severely fragment the 480-acre tract of pine-hardwood forest (including an estimated 130 acres or more of forested wetlands not delineated by the Corps). Although engineering design work and development plans are not final, the most

current development plan available (September 1993) indicates 39.3 acres of direct impacts to nontidal forested wetlands. These will result from construction of golf course fairways, lakes, house lots, roads, and the marina basin. Construction of these facilities will reduce the forested block's breeding habitat value for area-sensitive birds.

Additionally, the remaining forest will be severely fragmented, and the minimum area requirements will not be met for certain species. Thus, in addition to the direct habitat loss resulting from the conversion of forest to houses, roads, and fairways, the remaining forest may no longer be suitable for many species it once supported. For example, a 50% reduction in forest area may reduce the probability of occurrence of populations of area-sensitive birds by much more than 50% (Robbins et al. 1989). These secondary impacts can only be minimized by retaining the contiguity of smaller forested blocks throughout the project area.

A substantial impact to the Department's trust resources will result from the Corps failure to amend a flawed jurisdictional determination that did not recognize 130 acres or more of forested nontidal wetlands. The presence of nontidal wetlands has been verified through ground-truthing Maryland Department of Natural Resources wetland maps and field observations by Service personnel. Because of the decision not to revisit its jurisdictional determination, the Corps is not exerting the Federal control and responsibility necessary to adequately address all project impacts to Federal trust resources and to take all appropriate and practicable steps to minimize impacts to aquatic ecosystems (i.e., the forested wetlands).

ISSUES RELATED TO PERMIT ISSUANCE

1. AVAILABILITY OF ALTERNATIVE LOCATION/DESIGN FOR THE MARINA

The Department has concluded that siting a boating access facility on or adjacent to Turville Creek, or using existing off-site boat mooring facilities, are alternatives to the proposed boat basin that would have less adverse impact on the aquatic ecosystem.

In a letter dated February 2, 1994, the Service identified Turville Creek as a more appropriate area to provide access to navigation. Alternatives for a boating access facility along Turville Creek include a boat basin using a portion of the racetrack site, a "semi-basin" located just downstream of the racetrack, or a community pier. Siting a boat basin adjacent to Turville Creek would not impact nontidal wetlands. Tidal wetland impacts at the Turville Creek sites would be smaller in extent, and would not involve the more valuable "interior wetlands" such as those at the Herring Creek site.

Dredging of Turville Creek has been proposed in the past to service an existing public boat ramp. Riddle Farm's proposal to dredge 5,980 linear feet of Herring Creek would primarily serve the proposed boat basin. The Department is unaware of any plans to dredge Herring Creek in the future in

the absence of the proposed project. Thus, approval of the proposed project ultimately will result in the dredging of both Herring Creek and Turville Creek. However, implementing any of the alternatives recommended by the Department would reduce dredging impacts by localizing such impacts to Turville Creek.

Also, disturbance to wildlife utilizing the large tidal marsh adjacent to Herring Creek would be reduced by locating boat mooring facilities adjacent to Turville Creek. By constructing a basin, semi-basin, or a community pier, boaters whose ultimate destination is Isle of Wight Bay, will be diverted away from the large tidal marsh at the confluence of Herring and Turville Creeks. Furthermore, alternatives to the proposed Herring Creek basin will avoid the loss of a forested buffer that could serve to shield marsh dwelling wildlife from human disturbance associated with the development.

In their Statement of Findings, the Corps noted that the racetrack site on Turville Creek was not a practicable alternative because the applicant was required by the Maryland Department of the Environment (MDE) to retain this area as a reserve for a sewage disposal system. However, the MDE groundwater discharge permit indicates that only a portion of this site is necessary for wastewater treatment. Therefore, the remaining land could be used to access a community pier or down-sized boat basin.

2. DELINEATION OF NONTIDAL WETLANDS

The Department has concluded that the delineation of jurisdictional wetlands on the Riddle Farm property failed to include a substantial acreage of forested nontidal wetlands. This flawed delineation has caused the Corps to inappropriately limit its scope of analysis for the project to tidal wetlands on the site, and to neglect the substantial project impacts that will occur outside the limited jurisdictional areas.

During the period 1986-1988, the Corps apparently provided a wetland delineation to the applicant that indicated nontidal wetlands were limited to three small areas, totaling approximately 1 acre on the Riddle Farm property. A comprehensive wetland delineation procedure apparently was not performed, since application of the Corps 1987 delineation manual clearly would have resulted in a determination that much of the forested area on the site was jurisdictional wetland.

On March 29, 1990, the Corps confirmed the previous wetland delineation in writing without re-evaluating it using specific delineation procedures. Application of the 1989 interagency delineation manual in use at that time also would have shown much of the forested area to be jurisdictional wetlands.

On February 10, 1992, the Corps validated the old delineation until March 29, 1995. Once again, the Corps elected not to use the wetland delineation procedures that were in place at that time (i.e., the 1987 Corps delineation manual) to ensure that the wetland delineation was accurate.

Thus, despite ample opportunity to conduct a delineation of wetlands by employing accepted wetland delineation procedures in either the 1987 or 1989 wetland delineation manuals, the Corps has not performed or required a comprehensive and defensible delineation of wetlands on the Riddle Farm property.

As previously stated, the wildlife resources that utilize the forested areas on the property are of national and international significance. In cases where such resources are at stake, it never should be too late for the Corps to correct mistakes that imperil Federal trust resources. In fact, Corps of Engineers Regulatory Guidance Letter (RGL) 90-6 (August 14, 1990) addresses this circumstance. The RGL states that, "...this guidance does not impair the Corps discretion to revise wetland jurisdictional delineations when new information so warrants." As discussed below, ample information exists to warrant a revision of the wetlands delineation for Riddle Farm.

The State of Maryland's Department of Natural Resources has produced a wetland delineation of the Riddle Farm property. While some adjustments to the delineation may still be made, the delineation shows approximately 132 acres of nontidal wetlands on the site. In addition, the Service recently visited sites adjacent to, and contiguous with the site, and documented the presence of wetlands that meet the criteria for jurisdictional wetlands in accordance with the 1987 Corps delineation manual. The data sheets used to make these determinations can be provided at your request. Finally, it is our understanding that the Environmental Protection Agency's (EPA) concerns about the project were resolved only when the applicant agreed to work with EPA and the State to address impacts to the nontidal wetlands on the Riddle Farm parcel (EPA 1993).

It is our understanding that, as of April 1994, the developer neither owns the property, nor has prepared final site plans. In addition, because the State of Maryland is now reviewing an application for the Riddle Farm project, including those portions of the project to be located in nontidal wetland areas, the applicant is continuing to work with the State to comply with the requirements of the Nontidal Wetlands Program.

Given the magnitude and importance of the aquatic resources at risk from construction of the proposed Riddle Farm development, it is critical that the Corps re-delineate wetlands on the property and expand its scope of analysis to the entire site. Moreover, since the applicant has accepted regulation of the nontidal wetlands on the site through the State's permitting process, and apparently is still revising project plans, a revised Corps wetland delineation should not be viewed as inequitable.

3. SCOPE OF ENVIRONMENTAL IMPACT ANALYSIS

The Corps has limited its consideration of impacts associated with the proposed project to the direct impacts resulting from the construction of the proposed Herring Creek boat basin and the associated dredging of navigational access and flushing channels. This limited scope of consideration precludes the evaluation of significant indirect impacts that

will occur as a result of construction of the other components of the Riddle Farm subdivision (e.g., 650 houses, two golf courses, etc.).

The Corps Environmental Assessment for the Riddle Farm Associates application (April 8, 1994) properly describes all work to be done on the entire property under the "Project Description" section. The discussion in this section clearly demonstrates that the proposed boat basin is merely one component of the Riddle Farm planned unit development, which also includes a large housing development, two golf courses, and lakes and ponds.

The Corps Environmental Assessment for the project acknowledges that the boat basin and associated work will result in some degree of secondary impacts to the project area, including the forested areas on the site, but fails to assess the effects of these impacts on fish and wildlife resources. The Department finds that the Corps has not adequately addressed the indirect impacts of the Corps permit action. The proposed basin is an integral part of the Riddle Farm development. The presence of the basin will significantly effect the pattern of land use on the remainder of the property, including location and density of housing units. As discussed earlier in this document, the housing and golf course components of the entire Riddle Farm project will have significant adverse impacts on forested wetlands and uplands, and associated neotropical migratory bird habitats.

The Department has concluded that the scope of impact analysis for the Riddle Farm project has not been properly defined, and should be expanded to address impacts on the entire property stemming from construction of the Riddle Farm planned unit development.

RECOMMENDATIONS

The Department recommends the following actions:

1. The District should complete a new, comprehensive wetland delineation covering the entire Riddle Farm property and exert jurisdiction pursuant to Section 404 of the Clean Water Act over all wetlands and other waters of the United States on the project site.
2. The District should require the applicant to implement one of the alternatives for providing boat access put forth by the Service and described in this evaluation.
3. The District should evaluate all direct, secondary and cumulative impacts of all components of the 995-acre Riddle Farm planned unit development.
4. The District should work with the Fish and Wildlife Service, the applicant, and interested agencies to design a development project that will minimize impacts to the Department's trust

resources, and a mitigation plan to fully compensate for all unavoidable fish and wildlife resource losses. Should a permit be issued for the project, the mitigation plan must be made part of the permit with requirements for its implementation.

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Table 1

**SPECIES LIST (PARTIAL)
MARYLAND'S COASTAL BAYS**

Sharks, Skates and Rays

- Odontaspidae - Sand Tiger Family
 - Odontaspis taurus* - Sand Shark
- Carcharhinidae - Requiem Shark Family
 - Negaprion brevirostris* - Lemon Shark
 - Carcharhinus milberti* - Sandbar Shark
 - Mustelus canis* - Smooth Dogfish Shark
- Lamnidae - Mackerel Shark Family
 - Cetorhinus maximus* - Basking Shark
- Sphyrnidae - Hammerhead Shark Family
 - Sphyrna zygaena* - Smooth Hammerhead Shark
- Squalidae - Spiny-Dogfish Family
 - Squalus acanthias* - Spiny Dogfish
- Rajidae - Skate Family
 - Raja eglanteria* - Clearnose Skate
- Dasyatidae - Stingray Family
 - Dasyatis americana* - Southern Stingray
 - Gymnura micrura* - Smooth Butterfly Ray
- Myliobatidae - Eagle Ray Family
 - Myliobatis freminvillei* - Bullnose Ray
 - Rhinoptera bonasus* - Cownose Ray

Fishes

- Elopiidae - Tarpon Family
 - Elops saurus* - Ladyfish
- Anguillidae - Freshwater Eel Family
 - Anguilla rostrata* - American Eel
- Congridae - Conger Eel Family
 - Conger oceanicus* - Conger Eel
- Clupeidae - Herring Family
 - Clupea harengus* - Atlantic Herring
 - Alosa aestivalis* - Blueback Herring
 - Alosa pseudoharengus* - Alewife
 - Oplethronema ogitrum* - Atlantic Thread Herring
 - Brevoortia tyrannus* - Atlantic Menhaden
 - Dorosoma cepedianum* - Gizzard Shad
- Engraulidae - Anchovy Family
 - Anchoa mitchilli* - Bay Anchovy
 - Anchoa hepsetus* - Striped Anchovy
- Umbridae - Mudminnow Family
 - Umbra pygmaea* - Eastern Mudminnow
- Esocidae - Pike Family
 - Esox americanus* - Redfin Pickerel
- Synodontidae - Lizardfish Family
 - Synodus foetens* - Inshore Lizardfish
- Cyprinidae - Minnow and Carp Family
 - Notemigonus crysoleucas* - Golden Shiner
- Batrachoididae - Toadfish Family
 - Opsanus tau* - Oyster Toadfish
- Gobiesocidae - Clingfish Family
 - Gobiosax suttonus* - Skilletfish
- Lophidae - Anglerfish Family
 - Lophius americanus* - Goosefish
- Gadidae - Codfish Family
 - Urophycis regia* - Spotted Hake
 - Urophycis chuss* - Red Hake
- Ophidiidae - Cusk Eel Family
 - Ophidion morynorum* - Striped Cusk Eel
- Exocoetidae - Flyingfish Family

- Hyperhamphus unifasciatus* - Halfbeak
- Belontiidae - Needlefish Family
 - Strongylura marina* - Atlantic Needlefish
- Cyprinodontidae - Killifish Family
 - Cyprinodon variegatus* - Sheepshead Minnow
 - Fundulus heteroclitus* - Mummichog
 - Fundulus majalis* - Striped Killifish
 - Fundulus diaphanus* - Banded Killifish
 - Fundulus luciae* - Spotted Killifish
 - Lucania parva* - Rainwater Killifish
- Antherinidae - Silverside Family
 - Meridia meridia* - Atlantic Silverside
 - Meridia beryllina* - Inland Silverside
 - Membras martinica* - Rough Silverside
- Fistulariidae - Cornetfish Family
 - Fistularia tabacaria* - Bluespotted Cornetfish
- Gasterosteidae - Stickleback Family
 - Apeltes quadracus* - Fourspine Stickleback
 - Gasterosteus aculeatus* - Threespine Stickleback
- Syngnathidae - Pipefish and Seahorse Family
 - Syngnathus fuscus* - Northern Pipefish
 - Syngnathus floridae* - Dusky Pipefish
 - Hippocampus erectus* - Lined Seahorse
- Percichthyidae - Temperate Bass Family
 - Morone saxatilis* - Striped Bass
 - Morone americana* - White Perch
- Serranidae - Sea Bass Family
 - Centropristis striata* - Black Sea Bass
 - Myxeroperca microlepis* - Gag
- Centrarchidae - Sunfish Family
 - Lepomis gibbosus* - Pumpkinseed
 - Erseocanthus glaucus* - Blue Spotted Sunfish
- Priacanthidae - Big Eye Family
 - Priacanthus armatus* - Big Eye
 - Priacanthus alta* - Short Big Eye
- Pomatomidae - Bluefish Family
 - Pomatomus saltatrix* - Bluefish
- Carangidae - Jack Family
 - Caranx hippos* - Crevalle Jack
 - Caranx latus* - Horse-eye Jack
 - Selene setapinnus* - Atlantic Moonfish
 - Selene vomer* - Lookdown
 - Caranx chrysos* - Blue Runner
 - Trachinotus falcatus* - Permit
 - Selar crumenophthalmus* - Big Eye Scad
 - Trachinotus carolinus* - Round Pompano
- Lutjanidae - Snapper Family
 - Lutjanus campechanus*
- Gerreidae - Mojarra Family
 - Eucinostomus argenteus* - Mojarra
- Haemulidae - Grunt Family
 - Orthopristis chrysoptera* - Pigfish
- Sparidae - Porgy Family
 - Stenotomus chrysops* - Scup
 - Lagodon rhomboides* - Pinfish
- Sciaenidae - Drum Family
 - Cynoscion regalis* - Weakfish
 - Menticirrhus saxatilis* - Northern Kingfish
 - Leiostomus xanthurus* - Spot
 - Micropogonias undulatus* - Reef Croaker
 - Pogonias cromis* - Black Drum
 - Bairdiella chrysoura* - Silver Perch

Sciaenops ocellatus - Red Drum
Cynoscion nebulosus - Spotted Sea Trout
 Ephyppidae - Spadefish Family
Chaetodipterus faber - Spadefish
 Chaetodontidae - Butterflyfish Family
Chaetodon ocellatus - Spotted Butterflyfish
 Labridae - Wraasse Family
Tautoga onitis - Tautog
Tautoglabrus adspersus - Cunner
 Mugilidae - Mullet Family
Mugil cephalus - Striped Mullet
Mugil curema - White Mullet
 Sphyraenidae - Barracuda Family
Sphyraena borealis - Northern Sennet
Sphyraena barracuda - Great Barracuda
 Uranoscopidae - Stargazer Family
Astroscopus guttatus - Northern Stargazer
 Blennidae - Blenny Family
Chasmodes bosquianus - Striped Blenny
Hypoclinemus nazari - Feather Blenny
 Ammodytidae - Sand Lance Family
Ammodytes americanus - American Sand Lance
 Gobiidae - Goby Family
Gobiosoma boeck - Naked Goby
Gobiosoma ginsburgi - Seaboard Goby
Microgobius thalassius - Green Goby
 Scombridae - Mackerel and Tuna Family
Scomberomorus cavalla - Ring Mackerel
 Stromateidae - Butterfish Family
Peprilus triacanthus - Butterfish
Peprilus alepticus - Harvestfish
 Triglidae - Seabroin Family
Prionotus evlani - Striped Seabroin
Prionotus carolinus - Northern Seabroin
 Bothidae - Lefteye Flounder Family
Paralichthys dentatus - Summer Flounder
Paralichthys oblongus - Fourspot Flounder
Scopelogadus aequalis - Windowpane Flounder
Eropus microstomus - Smallmouth Flounder
 Pleuronectidae - Righteye Flounder Family
Pseudopleuronectes americanus - Winter Flounder
 Soleidae - Sole Family
Trinectes maculatus - Hogchoker
 Cynoglossidae - Tonguefish Family
Symphurus plagiata - Blackcheek Tonguefish
 Balistidae - Leatherjacket Family
Balistes capricornis - Gray Triggerfish
Monacanthus hispidus - Plainhead Filefish
Aluterus schoepfi - Orange Filefish
 Tetraodontidae - Puffer Family
Spheroides maculatus - Northern Puffer
Spheroides naphalis - Southern Puffer
Lagocephalus laevis - Smooth Swellfish
 Diodontidae - Porcupinefish Family
Chilomycterus schoepfi - Striped Burrfish
 Mollidae - Mola Family
Mola mola - Ocean Sunfish

Cnidarians

Physalia physalis - Portuguese Man-O-War
Rhopilema verrilli - Mushroom Cap Jelly
Cyanea capillata - Lion's Mane Jelly
Chrysaora quinquecirrha - Sea Nettle
Aurelia aurita - Moon Jelly

Molluscs

Crassostrea virginica - American Oyster
Anquitecton tridens - Bay Scallop
Busycon carica - Knobby Whelk

Busycon cancellatum - Channelled Whelk
Nastella ponderosa - Ponderous Ark
Anadara cuneata - Blood Ark
Mercenaria mercenaria - Hard Shell Clam
Spatula solidissima - Atlantic Surf Clam
Mulinia lateralis - Dwarf Surf Clam
Crepidula corax - Convex Slipper Shell
Nassarius vitreus - Mud Snail
Polinices duplicatus - Lobed Moon Snail
Urosalpinx cinerea - Oyster Drill
Loligo pealii - Long-Finned Squid
Lolliguncula brevis - Brief Squid
Littorina irrorata - Marsh Periwinkle
Cucumaria pulcherrima - Sea Cucumber

Echinoderms

Asterias forbesi - Forbes Asterias Star
Ophiasteria brevispina - Short Spined Brittle Star
Arbacia punctulata - Purple Sea Urchin

Crustaceans

Callinectes sapidus - Blue Crab
Ovalipes ocellatus - Lady Crab
Cancer irroratus - Rock Crab
Libinia emarginata - Spider Crab
Libinia dubia - Spider Crab
Uca pugnax - Mud Fiddler
Uca pugilator - Sand Fiddler
Neopanope texana sayi - Mud Crab
Eurypanopeus depressus - Flat Mud Crab
Rithropanopeus harrisi - Mud Crab
Hexapanopeus angustatus - Narrow Mud Crab
Panopeus herbstii - Mud Crab
Pagurus longicarpus - Hermit Crab
Pagurus pollicaris - Hermit Crab
Squilla empusa - Mantis Shrimp
Parasquilla setacea - Brown Shrimp
Portunus gibbesi - Portunid Crab
Portunus spermatorius - Portunid Crab
Emerita talpoida - Mole Crab
Ocypode quadrata - Ghost Crab
Libinia setacea - Sand Shrimp
Palaeomonetes spp. - Grass Shrimp
Callinassa atlantica - Mud Shrimp

Merostomata

Limulus polyphemus - Horseshoe Crab

Reptiles

Melanimys centrata concentrica - Diamondback Terrapin
Caretta caretta - Atlantic Loggerhead Turtle
Dermochelys coriacea coriacea - Atlantic Leatherback Turtle
Chelydra serpentina serpentina - Snapping Turtle
Chrysemys picta-picta - Eastern Painted Turtle

Mammals

Phoca vitulina - Harbor Seal
Tursiops truncatus - Bottlenose Dolphin

Table 2

Neotropical migrants observed at survey point nearest Riddle Farm during 1991 fall migrant study (Mabey et al. 1993). Survey point is within 1 mile of Riddle Farm.

L	Great-crested flycatcher
L	House wren
S	Ruby-crowned kinglet
L	Gray catbird
S	Brown thrasher
L	White-eyed vireo
L	Red-eyed vireo
L	Nashville warbler
L	Northern parula warbler
L	Black-and-white warbler
L	Black-throated blue warbler
L	Magnolia warbler
L	Yellow-rumped warbler
L	Prairie warbler
S	Pine warbler
L	Ovenbird
L	Common yellow-throat
L	Yellow-breasted chat
L	American redstart

19 species observed

(L=long-distance migrants; S=short-distance migrants)

Table 3

List of birds observed near Riddle Farms on 4/29/94 by Gregory Gough

SPECIES	SITE		
	EAST	SOUTH	OTHER
Turkey Vulture			XF
Northern Bobwhite		X	
Laughing Gull	XF	XF	
Ruby-throated Hummingbird	XC		
Red-bellied Woodpecker	X	X	X
Downy Woodpecker	X	X	
Hairy Woodpecker	X		
Northern Flicker	X	X	
Great Crested Flycatcher	X	X	
Purple Martin	XF		XF
Barn Swallow	XF	XF	
Eastern Kingbird		X	
Blue Jay	X	X	X
Fish Crow	XF	XF	
Carolina Chickadee	X	X	
Eastern Tufted Titmouse	X	X	
Carolina Wren	X	X	X
House Wren	XD		
Blue-gray Gnatcatcher		X	
Wood Thrush	X	X	
American Robin		X	
Gray Catbird		X	
Northern Mockingbird	XD	XD	
Red-eyed Vireo	X	X	
Yellow-rumped Warbler		X	
Pine Warbler	X	X	X
Ovenbird	X	X	X
Common Yellowthroat		XD	
Northern Cardinal	X	X	
Summer Tanager		X	
Blue Grosbeak	X	XD	
Indigo Bunting	X		
Chipping Sparrow	X	XD	
White-throated Sparrow		X	
Common Grackle	X	XF	XF
Brown-headed Cowbird	X	X	X
House Finch		XD	
American Goldfinch	X	XD	XF

KEY

X-SEEN OR HEARD IN WOODS
 XF-FLYING OVER WOODS
 XD-SEEN OR HEARD OUTSIDE OF WOODS
 XC-COURTSHIP DISPLAY OBSERVED
 EAST-AREA CLOSE TO HERRING CREEK
 SOUTH-AREA PARALLELING ROUTE 50
 OTHER-AREA SOUTH OF ROUTE 50