

## **Neshanic Valley Golf Course: River-friendly Second Somerset County Park Commission golf course to be recognized as “River-friendly” in the Main Stem of the Raritan River Basin**

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- information provided by Andrew Hojnowski and Ed Highland from SCPC
- information provided from Kathy Hale and Tara Petti from NJWSA



The Somerset County Park Commission (SCPC) operates five golf courses, which are located on over 1000 acres of preserved parkland in Somerset County, New Jersey. On July 24, 2008, Neshanic Valley Golf Course was the commission's second golf course certified as “River-friendly” in the main stem Raritan River area. Neshanic Valley will celebrate its five year anniversary on September 3, 2009. It is a 36-hole golf course designed by Hurdzan/Fry and is situated on 485 acres of rolling farmland.

The golf course itself encompasses 315 acres and is surrounded by two 85 acre parcels that act as open space, preserving animal corridors and migration routes as well as buffer for the South Branch of the Raritan River. It is comprised of 27 championship golf holes, an academy nine, and learning center that includes a double-ended driving range, chipping facility, practice putting green and two practice holes. We also have a Callaway Performance Center located at the learning center that is the number one green grass account in the world. The River-friendly certification process began in 2005 and was streamlined by Kathy Hale and Tara Petti from the New Jersey Water Supply Authority (NJWSA) and by Neshanic Valley's dedicated staff.

The NJWSA was established in 1981 to operate and protect water supply facilities in the Raritan basin system. This system includes 11 waterways spread over 1100 square miles, serving 1.3 million residents in more than five counties. Development in the watersheds, compounded by the loss of wetlands and riparian buffers, has dramatically increased stormwater flows and non-point source pollution. This infringement not only poses a serious threat to our water quality, but wildlife and wetland species of plants and animals. In response to these threats the NJWSA, in conjunction with two local watershed associations, applied for and received a Targeted Watersheds Grant from the United States Environmental Protection Agency in 2003. Subsequently, the River-friendly Golf Course Program was developed to provide large landowners the chance to become local stewards. The certification process involves four major categories: Water Quality Management, Water Conservation Techniques, Wildlife and Habitat Enhancement, and Education and Outreach. Each category has, but is not limited to, one main goal set forth by NJWSA and is specific to each golf course.



Our main goal for water quality management was to limit fertilizer and pesticide runoff, as well as other potential pollutants in local bodies of water. A plan was already in place because of extensive studies that went into the design of Neshanic Valley. For example, bioretention areas were created at drainage outfalls to preserve water quality, but not limit or deny natural runoff into on-site and adjacent wetlands. A 10-25 foot buffer exists around each of the four man-made ponds and a minimum of 50 feet was maintained along all wetland areas (ESA)

and state-open waters.

There is a 500 foot buffer between the golf course and South Branch of the Raritan River which is our primary water source for golf course irrigation. The riparian buffer footage significantly slows and “filters” stormwater runoff and any pollutants it may carry. Other practices involved in our (IPM) water quality management program are:

- using slow release and organic fertilizers
- ensuring the proper timing of plant protectant applications
- using products with
  - low rates
  - low toxicity
  - short half lives
- establishing acceptable pest thresholds
- documenting and mapping “hot spots” that need treatment
- recycling grass clippings (clippings are collected on greens only)
- testing soils annually to determine nutrient requirements
- stocking grass eating carp in our ponds
- testing pond water annually.

In conjunction with water quality protection, the second category dealing with water conservation is equally as important. All irrigation water is taken from the South Branch of the Raritan River only if water flow is above a specific cubic feet per minute (cfm) determined by the state. Our only other source is harvesting runoff into holding ponds. No city or well water is used for golf course irrigation, minimizing depletion of groundwater reserves. Well over 75 acres of fescue has been established on this links-style course, none of which is irrigated. The irrigation system consists of a fully automated, computerized system equipped with a weather station to monitor site conditions and irrigate according to those conditions. Part circle heads are located along the perimeter of wetlands, ponds, cart paths and fescue areas to minimize overwatering. A water maze recycling system is located at the maintenance building, saving an estimated 500-1000 gallons of water per day during the season. This self-contained, closed system circulates and recycles water over and over, separating grass clippings and sanitizing the water.



maintenance building, clubhouse and learning center.

Other conservation techniques include:

- catching rainwater and using it for clubhouse plantings
- monitoring the irrigation system daily
- fixing and documenting leaks
- using wetting agents in conjunction with hand watering
- removing cattails manually, when more than 60% of pond is dominated
- installing sensors on all bathroom fixtures in



The third category pertains to wildlife and habitat enhancement. This was relatively easy because of Neshanic's environmentally friendly design. Two-thirds of the property is preserved open space consisting of wetlands, open waters, ponds, or fescue. A vigorous wetland restoration project took place in spring of 2007, removing invasive and undesirable plant species, and planting over 4,500 native plant species. Entry into these areas by workers and golfers is strictly prohibited and is conveyed by the starter, on the scorecard and thru signage on the

golf course. In fescue areas, blue bird houses were positioned strategically to serve a dual purpose. They encourage blue bird nesting sites and indicate where irrigation valve boxes are located, allowing us to quickly isolate an irrigation break. A wildlife inventory was created and is updated semi-annually to evaluate activity, number of eggs, locations, etc.



Other actions include:

- installing bat houses near the clubhouse to naturally control insect populations
- installing wood duck boxes along the river and in wetland areas
- placing five purple martin houses
- removing invasive species by hand



The final category pertaining to education and outreach is ongoing and must extend beyond golfers. This is, politically speaking, the most important category of the four. This process began three years ago with clubhouse displays and verbal communication detailing the certification program to our golfers and employees. As a result, the wood duck box installation was spearheaded by the park rangers and local eagle scouts. Yardage booklets were created describing, in detail, each golf hole and the significance of the area surrounding it. All golfers are informed about sensitive areas on the course by the

starter and on the score card. Throughout the entire certification process, status reports were given monthly at senior staff meetings and public meetings held with commissioners, freeholders and the local press. Our River-friendly golf course sign is proudly displayed at the main entrance and a plaque was placed inside the proshop, maintenance building and performance center. The local press issued a news release, with local and national superintendent associations also involved.





Not included in River-friendly goals or activities, but unique to Neshanic Valley is our ongoing *cultural resource* conservation program. During construction of the golf course three historical buildings consisting of a farmhouse, carriage house and Dutch barn were moved approximately ½ mile to an area adjacent to the golf course. The original site is preserved and marked as environmentally sensitive area to discourage curious golfers from entering the site. Step two of our program is to restore these structures to their original condition

and allow the public to view them.

The Somerset County Park Commission’s motto states that we are “committed to excellence in promoting stewardship of land and resources, providing outstanding recreational opportunities and leisure services, and fostering an environment which is service oriented and responsive to public needs”. We have achieved our goal of establishing Quail Brook and Neshanic Valley as River-friendly golf courses, but our job has just begun. Our long term objective is to have five River-friendly golf courses and five Certified Audubon Cooperative Sanctuaries. The prerequisites for Audubon are similar to those that the NJWSA set, so we look forward to pursuing certification and striving for only the highest standards.

