

## Renovation Projects can Create Opportunities for Environmental Stewardship

How One Superintendent Used Existing Resources to Create a Great Golf Experience While Promoting Environmental Stewardship



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“And Mink Meadows is good. Measuring 3,185 yards from the blue tees, it flows like a big old Cadillac, smooth and wide, with gradual turning, gentle handling, graceful lines and a great window of the Cape from the top of the hill between 8 and 9.”<sup>1</sup> Jeff Blanchard’s reflections about Mink Meadows Golf Club as described on the

*Golf on Cape Cod* Web site are in part the result of a concentrated renovation to the course.

Mink Meadows Golf Club opened in 1936 and in 1995, the year I arrived at the course, renovation plans provided some unique opportunities. Those opportunities included the use of existing resources to create a great golf experience and to ensure sound environmental stewardship. The renovation’s focus was mostly about creating variety from one set of tees to the next.



Creating variety meant a lot of work on bunkers and tee enlargement, but also the expansion of a few greens. At the end of my first season we re-built two greens to improve playability and surface drainage. One green had settled into a “bowl” and experienced winterkill in the past. Better surface drainage allowed the water to be absorbed into the soil and into the ground water which minimizes runoff and standing water thereby helping to protect surface waters. In addition, the improved drainage would better allow the turfgrass to filter water, absorb nutrients, minimize disease risks, and would require less chemical input. The existing sod on these greens was stripped, stock piled, and then put back into place to avoid “new turf.” Also, sod was stripped off the practice putting green to use in the expansion of these two greens. This was done to match the existing turf as best we could.

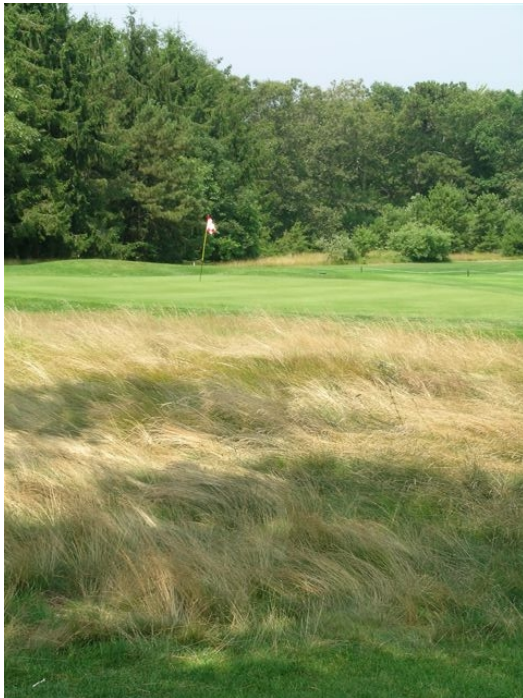
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<sup>1</sup> Blanchard, Jeff, “Golfing the Vineyard...Martha's Vineyard Serves Up A Four Course Feast”, *Golf on Cape Cod* Course Review, *Golf on Cape Cod*, <http://www.golfoncapecod.com/CourseReviewVineyard.php>, viewed on March 23, 2007

The next year we moved and enlarged the practice putting green. Turfgrass nurseries provided the turfgrass needed for the new playing surfaces. The nurseries were constructed out of existing soils because our greens are pushup style from 1936, where the greens' foundations are simply created by creating soil mounds from the existing soils removed during the golf course construction. The turf for the nurseries was created with aerifier cores from the existing greens, again to match the other original greens. One nursery was used for the practice putting green site. Another nursery was used to create a second green location for the sixth hole. This added variety from one nine to the next.

A third nursery still exists today and is used to cultivate turfgrass for the course. The use of existing turfgrass made the construction seamless and to this day it is hard to know which greens were worked on and which are original. In addition, the use of on-site nurseries and existing soils minimized the risk of invasive or unwanted species, minimized exposure to disease, reduced costs, and limited energy consumption associated with transporting turf onto the course from an outside source.

Changes were also made to non-irrigated turf areas that would improve water conservation, reduce mowing, minimize chemical inputs and improve the course's natural appearance. Non-irrigated turf areas were allowed to grow to full height. Traditionally, these areas had been mowed a couple of times in the spring until they went dormant. These areas contain a lot of fescue and little bluestem. Now, they have become a prominent feature on the course. We constantly tweak the shape and size of these areas in an effort to balance the aesthetics and speed of play. We have moved irrigation out of these areas to try and keep them thinner and more playable. This overall, reduces water usage and keeps it only where we want coverage.



coverage.

Also, newer irrigation technology has been added to improve irrigation efficiency and water conservation. In 1995, there were seventeen electromechanical clocks controlling the irrigation system. The clocks have now been replaced with seven solid-state controllers, radio controllers, and a central computer. The watering times are based upon the evapo-transpiration data, which is generated from an on-site weather station that has soil moisture, temperature, and leaf wetness sensors. Sprinklers have been changed to the new adjustable height main nozzle, which helps with the constant wind and improves irrigation efficiency. The irrigation system is in a constant state of upgrade with the addition of technology and new heads to improve and/or change

One of our biggest accomplishments includes the reduction of chemical inputs on our largest turf areas. After two seasons of a preventative fungicide program on greens, tees and fairways we changed operations to include a Bioject system. It was used exclusively on tees and fairways for the first two to three seasons. The tees were ok, but suffered from dollar spot damage in August, which is a time when the tees were already worn down from a busy summer. Since then, we

have treated them sparingly 2-3 times per season as necessary. The fairways have responded better and have not received a fungicide treatment since September of 1997. The Bioject has been used exclusively on the fairways since it first came out.

In conjunction with this change, we began hosing the dew off the turfgrass on a daily basis and changed our fertilizer program several times. Our goal is to fertigate and use organics on a monthly basis as opposed to a season-long application. In order to avoid potential run-off, these applications are timed to avoid rainy weather. For many years the Bioject system was used as a separate injection cycle. The bacteria would brew every day and then we would perform a three-minute syringe cycle rain or shine. However, after a drought during 2002 it was discovered that we have salt-water intrusion in our irrigation well. Since that time we have tried various methods of application to avoid over using our well to limit the salt intrusion potential. Because of the salt issues, applications may not be made for a year, but will remain fungicide free.

Obtaining support of golfers is important to success when making changes that impact the areas of play. A few highlights from our management practices include:

- Greens maintenance practices are standard including aerification, nutrient management, and pest control.
- Practices limit inputs everywhere else.
  - We have only treated fairways for white grubs twice in twelve seasons, choosing instead to spot treat or simply live with damage from skunks and crows.
  - We seed the areas of damage and the players are understanding and appreciative of the approach that we would rather seed a few areas than blanket spray entire fairways with an insecticide.
  - We are now seeing an increase in annual bluegrass weevil (*Hyperodes*) in fairways. We have only treated one entire fairway curatively, but did not see enough damage anywhere else to warrant a spray. We are exploring a biological approach to removing annual bluegrass in our fairways.
  - When gray leaf spot started to arrive in this area, the risks were explained to the board. We decided since we do not spray fungicides now - why spray them to save the perennial rye? We agreed to a plan that would not disrupt the prime season and we would get aggressive after Labor Day.

Limiting the inputs we use is only one way in which to achieve this goal. Other accomplishments include:

- Installing a chemical storage building.
- Adding a mix and load pad with a recycling sump.
- Upgrading our underground storage tank long before the regulatory deadline and have since gone to an above ground vault for both gas and diesel.

- A couple of years ago the landowners association finally received permits to dredge a pond adjacent to the course and that was being swallowed by Phragmites. It took 5 years of studies to get the permits. In conjunction with the Army Corps of Engineers, we participated in a research trial on-site where we set up three side-by-side plots. One plot had the plants mowed and covered with black plastic, one had them physically removed and the last was sprayed a couple of times per year with Glyphosate. The entire area had to have extensive assays of plant and animal life done. All of this was to save the pond. It is a shallow body of water and is not used specifically for golf course operations, but was being overrun with an invasive species.



It is impossible, in my opinion, not to have an overall approach to maintenance and keeping the health and well being of the environment as a primary focus. Changing your entire way of thinking comes naturally when your focus becomes the health of the environment around you. The board truly believes we are the stewards of our environment and our entire operation is geared towards protecting the natural setting we have.