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The buoyed green at Coeur d'Alene Resort is a heck of a hazard—and an excellent testing tool for environmentally sensitive course management.

Superintendent John Anderson positions himself at the controls of Coeur d'Alene Resort and GC's famous floating green like a skipper at the wheel of a cruise ship. Anderson jokes that he would love to move the green while golfers are in their backswings and aiming for the pin on the No. 14 hole—as if the island green on the Idaho course wasn't hazardous enough.

Anderson kiddingly boasts that he's the only superintendent in the world with the power to move the 4-million pound green in minutes from 150 yards to 170 yards from the tee. He's right, unless Superman is a superintendent.

While Coeur d'Alene's 15,000-square-foot island, which includes rough, bunkers and trees in addition to the 7,000-square-foot green, is regarded as one of the most extraordinary and picturesque holes in golf, it's a challenge for Anderson and his crew to maintain for obvious reasons. Remember, you have to haul your equipment along with yourself when you ferry by boat to the green to maintain it.

But Anderson, regarded by his peers as a dedicated and hard-working superintendent, enjoys the challenge of keeping up the green. A devout golf course environmentalist, Anderson also allows the floating green to be used for research purposes. In fact, the USGA and Washington State University are funding a study to determine the amount of nitrates filtering through the green after fertilization.

Anderson sits next to a water-sampling machine within the floating hole and explains how it draws water from a plastic membrane lining that captures the moisture draining from the green. The water samples are collected every three weeks and analyzed for nitrates.

While nitrates can't seep from the floating green into Coeur d'Alene Lake because of its self-contained construction, the study is being used to show how nitrates can affect ground water on regular land greens.

"The water is clean," Anderson reports. "It's great to get verification that these programs are working and are environmentally safe."

The study also determines how much water is used on the green.

Continued on page 64
Continued from page 63

“Everything that goes through the green is pumped back to shore through an umbilical cord into the monitoring well,” Anderson explains. “A flow meter determines how much water we put on the green, how much water is lost to evaporation and how much water is wasted. We check those readings daily.”

For Anderson, the water sampling program is of great personal interest. He has been at Coeur d'Alene for nearly five years and proudly admits to practicing an environmentally sound golf course maintenance program.

Anderson says the Audubon Cooperative Sanctuary Program, which he joined about eight years ago, changed the way he manages a golf course. He subscribes to Audubon’s philosophy that courses can co-exist as features of nature, not foes.

Anderson says he only uses a small amount of pesticide on the Coeur d'Alene course. He relies more on frequent and light topdressings to maintain the course. “You can have a championship course maintained to the highest quality and still have sound environmental practices,” Anderson contends.

Editor's Note: This article is a print companion to a segment in the latest edition of Golf & Environment videomagazine and is part of a content partnership between Golfdom and EPIC of Wisconsin.

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<tr>
<th>Issue</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Daily Fee/Public</td>
</tr>
<tr>
<td>02</td>
<td>Semi-Private</td>
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<tr>
<td>03</td>
<td>Private</td>
</tr>
<tr>
<td>04</td>
<td>Resort</td>
</tr>
<tr>
<td>05</td>
<td>City/State/Municipal</td>
</tr>
<tr>
<td>06</td>
<td>Other Golf Courses (please specify)</td>
</tr>
</tbody>
</table>

2. **Which of the following best describes your title?**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Golf Course Superintendent</td>
</tr>
<tr>
<td>14</td>
<td>Assistant Superintendent</td>
</tr>
<tr>
<td>16</td>
<td>Owner/CEO</td>
</tr>
<tr>
<td>17</td>
<td>General Manager</td>
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<tr>
<td>18</td>
<td>Director of Golf</td>
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<tr>
<td>19</td>
<td>Green Chairman</td>
</tr>
<tr>
<td>07</td>
<td>Golf Course Architect</td>
</tr>
<tr>
<td>08</td>
<td>Golf Course Developer</td>
</tr>
<tr>
<td>10</td>
<td>University/College</td>
</tr>
<tr>
<td>11</td>
<td>Others Allied to the Field (please specify)</td>
</tr>
</tbody>
</table>

3. **What are the types of turf on your:**

<table>
<thead>
<tr>
<th>Area</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Greens</td>
<td>Bent</td>
</tr>
<tr>
<td>B. Tees</td>
<td>Bermuda</td>
</tr>
<tr>
<td>C. Fairways</td>
<td>Zoysia</td>
</tr>
</tbody>
</table>

4. **What is your facility’s annual maintenance budget?**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>$1,000,001-$2 Million</td>
</tr>
<tr>
<td>02</td>
<td>$750,001-$1 Million</td>
</tr>
<tr>
<td>03</td>
<td>$500,001-$750,000</td>
</tr>
<tr>
<td>04</td>
<td>$300,001-$500,000</td>
</tr>
<tr>
<td>05</td>
<td>$150,001-$300,000</td>
</tr>
<tr>
<td>06</td>
<td>Less than $150,000</td>
</tr>
</tbody>
</table>

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   03 O 30 Private
   04 O 40 Resort
   05 O 50 City/State/Municipal
   06 O 55 Other Golf Courses

   (please specify)

2. Which of the following best describes your title? (fill in ONE only)
   13 O 10 Golf Course Superintendent
   14 O 15 Assistant Superintendent
   15 O 20 General Manager
   16 O 35 Director of Golf
   17 O 55 Architect/Engineer
   18 O 60 Research Professional
   19 O 90 Golf Course Builder

3. What are the types of turf on your:
   A. GREENS
      25 O 1 Bent
      26 O 2 Bermuda
      27 O 3 Rye
      28 O 4 Other (please specify)

   B. TEES
      29 O 1 Bent
      30 O 2 Bermuda
      31 O 3 Rye
      32 O 4 Fescue
      33 O 5 Other (please specify)

   C. FAIRWAYS
      34 O 1 Bent
      35 O 2 Bermuda
      36 O 3 Rye
      37 O 4 Fescue
      38 O 5 Zoysia
      39 O 6 Other (please specify)

4. What is your facility’s annual maintenance budget?
   40 O A More than $2 Million
   41 O B $1,000,001-$2 Million
   42 O C $500,001-$1 Million
   43 O D $500,001-$750,000

   44 O E $200,001-$500,000
   45 O F $150,001-$300,000
   46 O G Less than $150,000

5. If you work for a golf course, how many holes are on your course?
   01 O 9 02 O 18 03 O 36+

6. Are you the person responsible for golf car purchasing/leasing?
   O A Yes  O B No

7. Are you directly involved in purchasing decisions for your facility?
   O A Yes  O B No

7A. If yes, which of these products do you specify, buy or approve?
   56 O A Aerators (pond)
   57 O B Architectural Services
   58 O C Batteries
   59 O D Biostimulants
   60 O E Construction Services
   61 O F Chain Saws
   62 O G Course Accessories
   63 O H Cultivation Equipment
   64 O I Drainage Supplies
   65 O J Erosion Control
   66 O K Fertilizers
   67 O L Fungicides
   68 O M Generators
   69 O N Golf Cars

   70 O O Grinders/Sharpeners
   71 O O Insecticides
   72 O O Irrigation Systems
   73 O O Irrigation Parts
   74 O O Landscaping
   75 O O Lubricants
   76 O O Mowers
   77 O O Range Supplies
   78 O O Pumps/Stations
   79 O O Rakes

   80 O O Sand
   81 O O Safety Products
   82 O O Seed
   83 O O Snow Equipment

   84 O O Trees
   85 O O Uniforms
   86 O O Utility Vehicles
   87 O O Weather Systems
   88 O O Wetting Agents
At first glance, the “bio islands” at the Roaring Fork Club in Basalt, Colo., fly in the face of some of today’s tidy course management standards. These undisturbed land bodies located throughout the course have a scraggly, wild look to them. The wildflowers growing within the bushy islands bloom year round and may seem more suited to the side of a highway than a well-manicured golf course.

But the 27 acres of bio islands are spread throughout the course for a reason — a good reason. They are a breeding ground and natural habitat for many species of birds and insects — critters which happen to feast on the many pests that invade the course. The bio islands and their function enable the maintenance staff to cut down on pesticide use.

“We’re highly into integrated pest management, our pesticide use is minimal, and we intend to keep it that way,” says Bob Clarkson, Roaring Fork’s superintendent.

The bio islands are the brainchild of Jerome Osentowski, a permaculture consultant in Basalt, Colo., who believes in integrating plants, animals, landscapes, structures and humans into systems where the product of one element serves the needs of others.

“The idea is to maximize the diversity of the habitat by using plants that have an innate symbiotic relationship with each other, which means they can provide for their own needs,” he
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The colorful bio islands are home to the “good” bugs and birds.

Continued from page 69

says. “As a result, everything is thriving. We’re bringing the age-old protective concept of hedgerows onto the golf course."

The bio islands provide shelter, food and nesting habitats for a number of beneficial insects, frogs and small garden snakes that prey on the turf’s enemies. For example, a dozen varieties of tiny, beneficial wasps help control pest insects. One of the most active, the trichogramma wasp, attacks the eggs of the cutworm moth as well as 200 other caterpillar pests. Three different types of dragon flies eat mosquitoes. Weevils munch on Plumus and Canadian thistles, while starlings devour cutworms.

The “good” bugs and birds are a welcome addition to a golf course that prides itself on a solid integrated pest management program. “We went through last summer without a pesticide application on the greens,” a proud Clarkson says.

Careful consideration was given to the shrubs selected for the bio islands so they would attract desirable birds and insects, but not nuisance wildlife, Clarkson says. Twenty different native species of shrubs were selected, including gooseberries, Nanking cherries, alpine currants and native plums.

Eight thousand shrubs and 2,000 trees line the fairways, while 18 different varieties of annuals and 12 types of perennials create carpets of wildflowers. The club combined the chosen plants with existing plants and shrubs.

The bio islands are designed to provide their own fertility. The diverse plant life includes clovers, birds-foot trefoil and lupin, which provide nitrogen for the cosmos and purple coneflower. Similarly, on the shrub level, the mountain mahogany and buffaloberry provide nitrogen for surrounding shrubs.

Clarkson says the course also serves as a living laboratory for university researchers interested in examining the potential use of natural methods to control pests.

Golfers will enjoy the bio islands for several reasons, including their function and look. The bio islands also aren’t a bad place for a golfer to shank a ball.

“If a golfer hits a ball into the bio islands, he or she can pull some cherries off a tree to munch on,” Osentowski says.

Guyette is a free-lance writer from Cleveland.