season. Each course has a couple of guys trained to do this work. We have multiple courses with combinations of bermuda-bermuda and bermuda-paspalum greens and collar interfaces. Guys on the paspalum courses prefer using a McClane edger with its guide wheels.

We also use an Accuform manual edger/slicer. The crew says it seems to slide much easier along the slot on the bermuda courses. The bemudagrass courses for some reason don't require the same amount of edging. However I’ve heard that the guys with Celebration® collars edge weekly because it is so aggressive.

If we feel the need to spray out any encroaching grass on putting surfaces, we use a handy plastic T-shaped guide that we fabricated to help prevent any overspraying into the collars.
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We gave our engineers the ultimate challenge – design the greensmower that will redefine precision cutting. With the new Greensmaster TriFlex, they exceeded all expectations.

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Count on it.
There is a battle that takes place along putting green perimeters. The battle is over space and it occurs between the more aggressive rough-type bermudagrass (usually Tifway bermudagrass) against the green-type bermudagrass on golf course putting surfaces. This battle between the two turf types is generally termed “encroachment,” as the rough-type bermudagrass slowly encroaches onto putting surfaces over time.

There are no selective herbicides to remove rough-type bermudagrass from green-type bermudagrass putting surfaces and several strategies have been implemented to suppress encroachment including mechanical edging and using alternative grasses within putting green collars. However, the most common means of managing encroachment is to physically remove contaminated putting green perimeters and to replace the turf with greens-type bermudagrass. This usually entails removing the contaminated turf with a sod cutter and simply replacing it with commercial sod. However, there are several downsides to using commercial sod including costs, excessive thatch, soil layering, surface grain and soil settling in sodded areas, creating uneven surfaces.

An innovative form of regrassing putting green perimeters was implemented for the first time at Quail West Golf and Country Club in Naples several years ago. Contaminated perimeters were killed with Round-up (2 to 3 applications) several weeks prior to removal with a sod cutter. The cavity was slightly excavated and then replenished with a heavier rootzone mix (70 peat:30 sand). Putting greens were then core aerated (5/8” tines) and, instead of removing plugs, the cores were pushed into the new mix and rolled. The new perimeters generally require 6 to 7 weeks to completely establish and provide a much smoother and uniform surface than conventional sodding. Perimeter plugging also eliminates grain, since the plugs create a new stand of turf. Lastly, perimeter plugging saves money, since the grass is harvested on site.
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Apply less. Achieve more.
Mark Black, director of golf course and grounds operations at Quail West, and his staff have learned a few things over the years and offer the following suggestions:

- A pre plant fertilizer is not necessary as it gets buried under the plugs
- Try to install the plugs approximately 3/8” below the existing green edge and topdress new plantlets back up to the existing green surface. Wait until they are actively growing before beginning the topdress program
- Keep these areas moist, especially during the heat of the day
- Resist excessive rolling until plugs are established
- Do not turn mowers on the plugs
- Once you see root development, begin grow-in fertilizer program
- Do not spray Primo on plugs until fully established
- Spike as necessary

The area sprigged with greens plugs begins to green up and fill in.

Photo by Todd Lowe.

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Perimeter plugging has been successfully implemented on both golf courses at Quail West over the past eight years. Black has been quite pleased with the results although he credits the original concept to his staff and particularly Crew Leader Lacho Martinez. The plan is to plug perimeters every three years at Quail West, so that Tifway encroachment is kept at a minimum. In addition to plugging, the perimeter/collar interface is edged weekly during the growing season and Tifway runners are physically removed. Although this practice is labor intensive, it provides a nice look to the putting greens and another level of detail that golfers appreciate.

After six to seven weeks, the perimeters are completely grown in and are edged weekly during the growing season. Photo by Todd Lowe.

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Legendary greens and bunkers have one thing in common... they both began with the best soil.
Getting Back in Balance

Positive aspects of the new paradigm

By John H. Foy
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Over the past three or four decades, golf course maintenance has greatly benefitted from the American free enterprise system, technological advances, and abundant available resources. Along with a rapid increase in the number of golf courses in the United States, tremendous strides have been made in the level of course conditioning and quality provided at both private and daily-fee facilities. This certainly has been the case in Florida, and by the mid 2000s, there were more than 1200 golf courses and the standards of course conditioning and quality had been raised to new heights.

And then the bubble popped...

An economic recession and the collapse of the housing industry have been hard to golf in Florida because of its close ties with tourism and real estate development. However, in hindsight, it is now apparent that growth projections were overly optimistic and supply exceeded demand in many locations. A market correction and reduction in the supply of courses had been occurring as a normal function of the free enterprise system. The closing of golf courses is unfortunate, but necessary to get back in balance and having better utilization of the remaining facilities.

In Central to South Florida, there has long been a high concentration of superbly maintained courses that were well supported by the large number of people who come for the winter season. Accommodating expectations and demands of low-handicap golfers has always been a challenge, but over the past 10 years this challenge has been successfully met.

An additional – and some respects more difficult – challenge during the winter has been meeting expectations for wall-to-wall lush green and highly manicured turf and landscape plantings. Here too, the challenge was successfully met, but it required higher inputs of fertilizer, water pesticides and labor hours and practices, such as winter overseeding. Yet, with a decline in private club membership, rounds played, and in turn having to reduce operating costs, a more agronomically balanced and economically sustainable course management approach has been mandated.

In hindsight, the degree of over-manipulation for cosmetic purposes is easy to recognize. A case in point would be excessive nitrogen fertilization to bermudagrass in the central to southern parts of the state during the fall, winter and early spring in order to provide a lush and dark green color. Cutting back on fertilization because of budget reductions has resulted in the grass not being quite as green, but a dense and healthy turf cover through fairways and rough areas can still be provided.

Also, with less succulent shoot growth, fairway lies are actually better, the roughs not as penal, and the turf still has good wear tolerance. Additional benefits of more
Judicious nitrogen use are a slower rate of thatch accumulation, lower water use rates, and drier, firmer course conditions.

Better management of irrigation and water use is another positive aspect of a sustainable course-management approach.

It is not a criticism, but a fact, that golfer demands for lush green turf have at times resulted in over-irrigation of Florida courses. This is especially true at courses where large-acreage overseeding programs were being conducted. However, there has been a significant decline in the number of courses where winter overseeding is practiced because of the need to reduce costs. Again, while the grass might not be as green, better year-round course conditions are being provided.

With the necessity to reduce labor costs, cutting staff size and overtime hours has been necessary at many courses. In turn, this has required reducing the frequency that some routine tasks are performed. Backing off course grooming and manicuring during the summer off-season may not be popular, but it has become a common compromise for ensuring that necessary basic agronomic programs can be performed. Furthermore, it is finally being realized and accepted that not all bunkers do have to be raked every day. This is a great example of where cost savings can be achieved and at the same time the very common problem of very soft bunker sand minimized.

Given the economic circumstances that now exist, every aspect of golf course maintenance must be closely scrutinized and some changes in long-time standard operating procedures made. Yet, staying focused on sound agronomics; it will be possible to stay in balance and continue to provide appropriate and good quality course conditions.

John H. Foy is the director of the Green Section’s Florida Region and is always striving to keep things in balance and focused.

Challenging economic circumstances still exist for many Florida golf courses, but with focusing on sound agronomics, good quality conditions can still be provided. The grass just may not be as green.
A wildflower is a flowering plant that grows in a natural, uncultivated state. In most cases, they are able to grow and flourish in difficult conditions, establishing and re-establishing with ease while remaining virtually pest and disease free. These strong survival characteristics and increased market availability have led to more golf courses using both seasonal and perennial wildflowers.

Their use can reduce the typical maintenance needs that would be required for seasonal annual color, provide an interesting alternative to high maintenance turf areas, and enhance the habitat for valuable pollinators.

Pollination is the act of transferring pollen grains from the male anther of a flower to the female stigma. It is the goal of every living organism, including plants, to create offspring for the next generation. Plants produce offspring by making seeds and flowers are the tools that plants use to make their seeds. Seeds are produced when pollen is transferred between flowers of the same species.

Flowers rely on vectors such as wind, water, birds, insects, butterflies, bats and other animals to get pollen from one flower to another. Pollinators are the animals or insects that transfer the pollen from plant to plant although typically pollination is the unintended consequence of an animal’s activity on a flower.

Pollinators are usually eating or collecting pollen for their nutrition, or are sipping nectar from the flower when pollen grains attach to the animal’s body. So, when the animal visits another flower for the same reason, pollen can fall onto the stigma of another flower and can result in successful reproduction of the flower. See USDA/US Forest Service at www.fs.fed.us/wildflowers/pollinators for more information on this topic.

It is important to think of wildflowers as food for these important pollinators. Without pollinators, the human race and all of earth’s terrestrial ecosystems would not survive. Some plants are self pollinators, or can be pollinated by the pollen moving by way of wind or water, but overwhelmingly our crop plants around the world require pollination by animals. We cannot live without pollinators. Improving and enhancing their survivability can be achieved by incorporating wildflowers into your golf course and community landscapes.

Like any other project, wildflower beds require planning for best success. Consider these three important factors when thinking of using wildflowers on your property: seed choices, planting locations and timing of planting.

**Seed Choices**

Wildflower seed is becoming increasingly available, as its popularity has increased. Determining what is best for you can be made easier by speaking to a reputable seed supplier. Researching the Internet