When Are Golf Greens Stable?

By Karl Danneberger

Of special interest when discussing stability is Poa annua putting greens. Initially established to desirable turfgrass specie(s), these greens changed to Poa annua from disturbances either environmentally or biologically (pests, and management). As Poa annua greens, they exhibit high resiliency and resistance to change.

When Poa annua greens are disturbed by pests and environmental or management stress, the greens often return to their predisturbance state. In other words, when Poa annua dies, it is a good bet that Poa annua will return. These greens also exhibit a high degree of resistance. Anyone who has tried to convert Poa annua greens to creeping bentgrass knows what I'm talking about.

The final component that's important in community stability is the environment. Either on a global or local level, communities or species that exhibit adaptation or characteristics within a narrow range of environmental conditions are considered to be dynamically fragile, while those adapted to a range of conditions would be considered dynamically robust. Although Poa annua is found globally, greens managed at current levels exhibit a more fragile nature. Greens managed well within the desirable environmental conditions do well and are desirable; those on the fringes of environmental adaptability are at greater risk.

Finally, I would say that the relationship between the complexity of a community and its inherent stability in a global sense is not always clear. It may vary with the exact nature of the community — in our case a putting green and how it is damaged, and from a scientific perspective the way stability is assessed. However, with many ecological systems the overall tendency for stability to increase comes with decreasing complexity.

Karl Danneberger, Ph.D., is Golfdom's science editor and a Ohio State University turfgrass professor.