



Better Turf for Better Golf

# TURF MANAGEMENT

from the USGA Green Section

## GEOGRAPHY INFLUENCES TURFGRASS ADAPTATION IN WEST

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THE LISTING of species of turfgrasses adapted to a few broadly defined zones in a region as large as the West will be subject to many exceptions. Zones of adaptation are modified primarily by elevation inland and the ocean's influence along the coast. As an example, *Poa annua* is difficult to maintain all season in the Sacramento Valley (sea level), while at Lake Tahoe (elevation 6,000 feet) it can be managed as a true perennial. The difference lies not in north and south or east and west but in elevation.

Actually there are only three main zones in the entire West. First, a natural warm-season grass area. Second, a natural cool-season grass area. Third, an overlapping zone where both warm and cool-season grasses do well.

The third zone is the most difficult to pinpoint, because we find Bermuda growing in Walla Walla, Wash., and annual bluegrass growing in San Diego, Cal. This is a north-south distance of more than 1,000 miles. When we compare coastal areas, we know that warm-season grasses will grow in Vancouver, B.C., and that we can go far beyond the Mexican border before we find areas where *Poa annua* cannot be maintained on a year round basis. Our

main troubles occur when we try to push the cool-season grasses too far south in the inland valleys and the warm-season species too far north.

As a case in point, we would hardly advise growers in Walla Walla to go overboard on Bermudagrasses and Zoysias and, conversely, we often wonder why many of our southwestern inland courses have gone overboard on bentgrass. Ecologically speaking, it isn't sound, regardless of what may be accomplished under good management. Rather than try to grow Bermuda in the North and bentgrass in the interior valleys of the South, we favor the approach of using improved, adapted grasses for each area.

### **Northwest Coastal Area**

**PREDOMINANT SPECIES:** Natural fescue-bent-annual bluegrass-perennial ryegrass country. Fescues gradually are passing out of the picture on all but rough areas. Demand for closer cut and frequent watering has encouraged bent and annual bluegrass to predominate on tees and fairways as well as on greens.

**PLACE OF IMPROVED GRASSES:** Zoysias and Bermudas are not worthy of consideration for golf course use in this area. Merion bluegrass adapted climatically but not

suted unless soil acidity is corrected by use of dolomitic lime. Hard fescue, Alta and Ky-31 have merit for rough areas where drought tolerance is desired. Any of the improved stolonized creeping bents deserve every consideration for use on greens.

**NEEDED FOR THE FUTURE:** Breeding and selection work on annual bluegrass (really a perennial in this area) to develop disease resistance and finer texture. Seed production of annual bluegrass. A vigorous, wear-resistant strain of red or Chewings fescue that will take a close, fairway height of cut. Greater consideration of creeping bents in preference to colonial bents for putting greens. Breeding and selection for improved perennial ryegrasses and shade bluegrasses.

#### ***Inland Empire***

##### ***East Oregon-Washington and Idaho***

**PREDOMINANT SPECIES:** Kentucky bluegrass, bents, fescues and annual bluegrass do well. Annual bluegrass and bents are eliminating fescues and Kentucky bluegrass on close cut fairways and tees.

**PLACE OF IMPROVED GRASSES:** Zoysias and Bermudas have little place because of the short summer season. Merion bluegrass should do well on fairways and tees. Congressional bentgrass or the Arlington-Congressional mixture should prove popular on greens because of snowmold resistance. Toronto or Cohansey bentgrass will do a good job of keeping out annual bluegrass. As along the northwest coast, hard fescue, Alta and Ky-31 have merit for drought-tolerant roughs.

**NEEDED FOR THE FUTURE:** Special emphasis on snowmold resistance in all greens. Drought tolerance of prime importance for winter desiccation as well as summer irrigation requirements.

#### ***Rocky Mountain***

##### ***Montana, Wyoming-North Colorado,***

##### ***Utah and Nevada***

**PREDOMINANT SPECIES:** Natural Kentucky bluegrass region where turf is not mowed too closely. Demand for closer cut is encouraging annual bluegrass and bents. Both bent and annual bluegrass do well on greens and tees.

**PLACE OF IMPROVED GRASSES:** Season is

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## **COMING EVENTS**

**1954**

**Dec. 6-8:**

Oklahoma Turfgrass Conference, Stillwater, Okla. Dr. Wayne Huffine.

**Dec. 13-15:**

Texas Turfgrass Conference. College Station, Texas. Dr. Ethan Holt.

**1955**

**Jan. 16-21:**

26th National Turfgrass Conference and Show. St. Louis, Mo. (Jefferson Hotel). Agar Brown.

**Feb. 7-11:**

One Week Turf Course, Rutgers University, New Brunswick, N. J. Ralph E. Engel.

**Feb. 14-17:**

Penn State Turf Conference, Pennsylvania State University, State College, Pa. H. B. Musser.

**Feb. 21-24:**

Cornell Turf Conference, Ithaca, N. Y. John F. Cornman.

**Mar. 7-9:**

1955 Midwest Regional Turf Conference. Purdue Memorial Union, Lafayette, Ind. Dr. W. H. Daniel.

**Mar. 9-11:**

Minnesota Turf Conference, Curtis Hotel, Minneapolis, Minn. Roy W. Nelson, Secretary. Minnesota Golf Course Superintendents Association, 2621 Jersey Ave., Minneapolis, Minn.

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too short for Bermuda and Zoysias. Merion bluegrass has tremendous potential on fairways and tees. Toronto, Cohansey, Arlington and Congressional bentgrasses are decided improvements over other bents for use on greens.

**NEEDED FOR THE FUTURE:** Drought tolerant species to combat winter desiccation. Improved annual bluegrass. Grasses with high resistance to alkaline soils in some sections.

#### ***California Coast North from Santa Maria***

**PREDOMINANT SPECIES:** Natural fescue, annual bluegrass, bent, perennial ryegrass area. Because of more equitable climate patches of Bermuda and meadow fescue may be found doing well. Bent and annual bluegrass predominate on all but rough areas.

**PLACE OF IMPROVED GRASSES:** Zoysias and Bermudas are in the experimental stage; they may show merit eventually on open sunny tees at clubs where play is heavy. Merion is a definite improvement over common bluegrass. More experimentation needed with tall fescues and hard fescue for roughs. Stolionized improved bents should be far superior to Seaside for putting greens.

**NEEDED FOR THE FUTURE:** Improved ryegrasses and annual bluegrasses. Vigorous wear-resistant species for teeing areas and green collars. Emphasis on drought tolerance in all selection work.

#### **Northern California Valleys**

**PREDOMINANT SPECIES:** Entering solid Bermuda territory, although Kentucky bluegrass and meadow fescue appear equally well adapted. Considerable bentgrass present in Bermuda fairways. Greens are universally Seaside bent with considerable annual bluegrass during cooler weather.

**PLACE OF IMPROVED GRASSES:** Considerable success has been associated with use of U-3 Bermuda for tees. Merion bluegrass also is well adapted and is a definite improvement over common Kentucky bluegrass. Zoysias haven't been adequately tested, although they show some promise for tee and fairway use on low budget courses. Red and Chewings fescue do very poorly when grown alone in open sun. Little future is seen for the types now available. Alta and Ky-31 do well on rough areas, and are the most drought tolerant of any cool-season grasses tested to date.

**NEEDED FOR THE FUTURE:** Source of annual bluegrass for overseeding Bermuda fairways and tees to provide year-'round color. More heat resistant strains of bentgrass for greens. On-the-course experimentation with strains like Arlington and Cohansey which are the best hot weather bents now available.

#### **Los Angeles-San Diego**

**PREDOMINANT SPECIES:** In this area you can find any of the well recognized turfgrasses grown in the country. Eventually Bermuda gets the upper hand on fairways and tees. Greens predominantly Seaside bent and annual bluegrass.

**PLACE OF IMPROVED GRASSES:** Kentucky bluegrass, including Merion, has not held up satisfactorily at UCLA. Other test plots in the vicinity show Merion to be a good permanent species and far superior to common bluegrass. All improved creeping bent strains show proven superiority over Seaside bent at the UCLA Turf Plots. The Arlington-Congressional mixture has been especially good. Tall fescues show considerable promise on roughs and banks. Red and Chewings fescues not permanent enough for golf course use. Zoysias very much in the experimental stage. Have been disappointing to date.

**NEEDED FOR THE FUTURE:** Improved Bermudas along the line of wear resistance, winter color, and finer texture. U-3 is the only improved strain that has been adequately tested. It shows superiority over common Bermuda. More salt tolerant grasses are needed in the San Diego area, especially bents for the greens. Natural area for meadow fescue and the field for improvement is wide open. Research on smog resistant grasses should receive emphasis.

#### **Hot Desert Areas Imperial Valley and Lower Elevations in Southwest**

**PREDOMINANT SPECIES:** Explained simply with one word: Bermuda. Many courses have switched to bent for greens although it is a touch-and-go proposition to hold bent all summer. Furthermore the cost of maintaining bent on a year-'round basis can reach astronomical proportions. Ryegrass universally used each fall to overseed Bermuda base on greens, fairways and tees.

**PLACE OF IMPROVED GRASSES:** Tremendous future for improved Bermuda strains on greens. Zoysias have not been adequately tested. Their future, due to establishment problems where Bermuda is so vigorous, appears doubtful.

**NEEDED FOR THE FUTURE:** More experimental work with colonial bent and annual bluegrass to overseed Bermuda greens, tees and approaches. A source of annual bluegrass seed. Bermuda resistance to the "ground pearl" and "Rhodesgrass scale." On-the-course experimentation with improved putting-green Bermudas.