Alternative Turf Species for Reducing Water Use and Mowing

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Sustainable Turf Grass Management Workshop
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River-Friendly Turf Species
Most Desirable Characteristics

• Low water-using
• Reduced mowing frequency
• Competitive against weeds
• Reasonably priced or cost effective
• Also:
  ➢ Tolerant of foot traffic
  ➢ Green year-round – minimal dormancy
Paradigm Shifts?

• Availability and cost of water
  ➢ Rip out lawns, plant W.E.L.?
• Air quality – increasing issue
• Pesticides & fertilizers in creeks
• Can we adapt to the trade-offs?
  ➢ Winter or summer dormant period
  ➢ Increased initial cost → lower cost later
  ➢ Eco-marketing
Alternative Turf Species

‘UC Verde’ buffalograss

*Carex* spp.

Calif. native grasses
‘UC Verde’
Buffalograss
‘UC Verde’ Buffalograss
Released in 2003

- Bred for Calif. climate by UCD researcher
- Grows to 4-6” tall; spreads only by stolons
- Infrequent mowing: 2-3 wks. to once a year
- Winter dormant where frosts occur
- Water use: 50-75% less than tall fescue and blue-grass, 40% less than bermudagrass
- Disease, insect resistant → less chemical use
- Few or no seedheads - very low pollen count
- Available through Florasource, Ltd.
‘UC Verde’ Buffalograss Planting Scheme
July Planting, Fresno

UC Verde Plugs

2 weeks

4 weeks

6 weeks
Graduate School of Management, UC Davis

‘UC Verde’ Buffalograss

Sept. 2009

June 2010

Feb. 2011
Carex Species Used for Turf

- C. praegracilis  Clustered field sedge
- C. pansa     Sand-dune sedge
- C. texensis  Catlin sedge

-better for shade?

Sedge family (like nutsedge) – triangular stems & seeds
Choose Alternative Turf Species

Carex pansa and C. praegracilis

C. pansa often shorter than C. praegracilis, but natural variations occur
Carex praegracilis
Mowed or Not Mowed

May overwhelm an area
Carex Turf Species
Characteristics

- Native throughout U.S. and Calif.
- Taxonomy is ambiguous; much variation
- Most in trade from dunes in Central Calif.
- Very drought tolerant
- Use plugs - inconsistent stands from seed
- Summer dormancy – stays green with irrig.
- Subject to rust disease in wet winters
- Available through Hedgerow Farms, Native Sons, Hartland Nursery, etc.
C. pansa Lawn Planting

2 months

4 months

6 months
Rust on Carex

C. pansa  C. praegracilis
Calif. Native Grass Turf

- Relatively new concept; still developing
- Very drought tolerant
- Less mowing required, or none at all
- Generally more expensive
- Available in seed, plugs, and sod
  - Pacific Coast Seed, Delta Bluegrass Co., Hedgerow Farms, etc.
% purity x % viable / 100 = % PLS

Example:
98% purity X 85% viable / 100 = 83% PLS
So 1 bulk lb. of seed = .83 PLS lb.

Therefore...
It takes 1.2 bulk pounds to equal 1 PLS pound
Calif. Native Grasses for Turf
Seeding Rates – More Testing Needed

- Seeding rate: 1.5 to 3.0 PLS lbs./1,000 sq. ft.
  (D. Gilpin, Pacific Coast Seed Co.)
  - High rate for closer mowing & filling in quicker
  - Higher rate for larger seeds
Number of Seeds per Pound of PLS*

*Source: Pacific Coast Seed Co.
Ballpark Costs for Turf Materials

Variability: Lawn size, rate, spacing, company, etc.
Turf Demonstration

Goals

• Compare 3 species/blends…
  - Tall fescue / Kentucky bluegrass blend
  - ‘UC Verde’ buffalograss
  - *Carex praegracilis / Carex pansa* (sedge) mix
• …under 3 irrigation treatments
  - 80%, 60%, and 40% ET
• Evaluations:
  - Mowing frequency, clipping weights, visual evaluations, and amount of water used
Turf Demonstration
Goals

• Compare Calif. native grasses
  - Seashore bentgrass (*Agrostis pallens*)
  - Hall’s bentgrass (*Agrostis hallii*)
  - Molate red fescue (*Festuca rubra ‘Molate’*)
  - Tufted hairgrass (*Deschampsia caespitosa*)
  - June grass (*Koeleria macrantha*)
  - Blue grama (*Bouteloua gracilis*)

• Evaluations
  - Mowing frequency, clipping weight, visual
Preparing the Site
2010

April

May

June
Compost, Nozzles, and Borders
Sod – Tall Fescue Blend
All planting – Sept. 23, 2010
‘UC Verde’
Buffalograss

Spreading
(stolons)
Carex

C. pansa  C. praegracilis

Spreading (rhizomes)
Native Bentgrass Spp. *Agrostis*

- A. *hallii* (plugs)
- A. *pallens* (seeded)

Spreading (rhizomes)
**Festuca rubra ‘Molate’**
Molate Red Fescue

- Fine texture, upright growth
- Tolerant of many soils
- Native of coastal areas
- Inactive (dormant?) in Central Valley heat
Bouteloua gracilis
Blue Grama

- Large component of grass prairies
- Used in landscapes
- Clumping and spreading
- Fully dormant in winter
Koeleria macrantha
Junegrass

- Tufts of narrow bluish-green blades
- Low-maintenance turf
- Does not tolerate heavy, wet soils
- Not suitable for high-traffic uses
Clipping Weights by Date
Lbs./1,000 sq. ft.

Lbs./1,000 sq. ft.

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<th>Date</th>
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Cumulative Clipping Weights
Lbs./1,000 sq. ft. (Oct. 2010 – Jan. 2011)

Lbs./1,000 sq. ft.

Fescue sod
Agrostis pallens
Agrostis hallii
Molate fescue
The Meadow

Native Preservation Mix

Native Mow-Free Mix
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