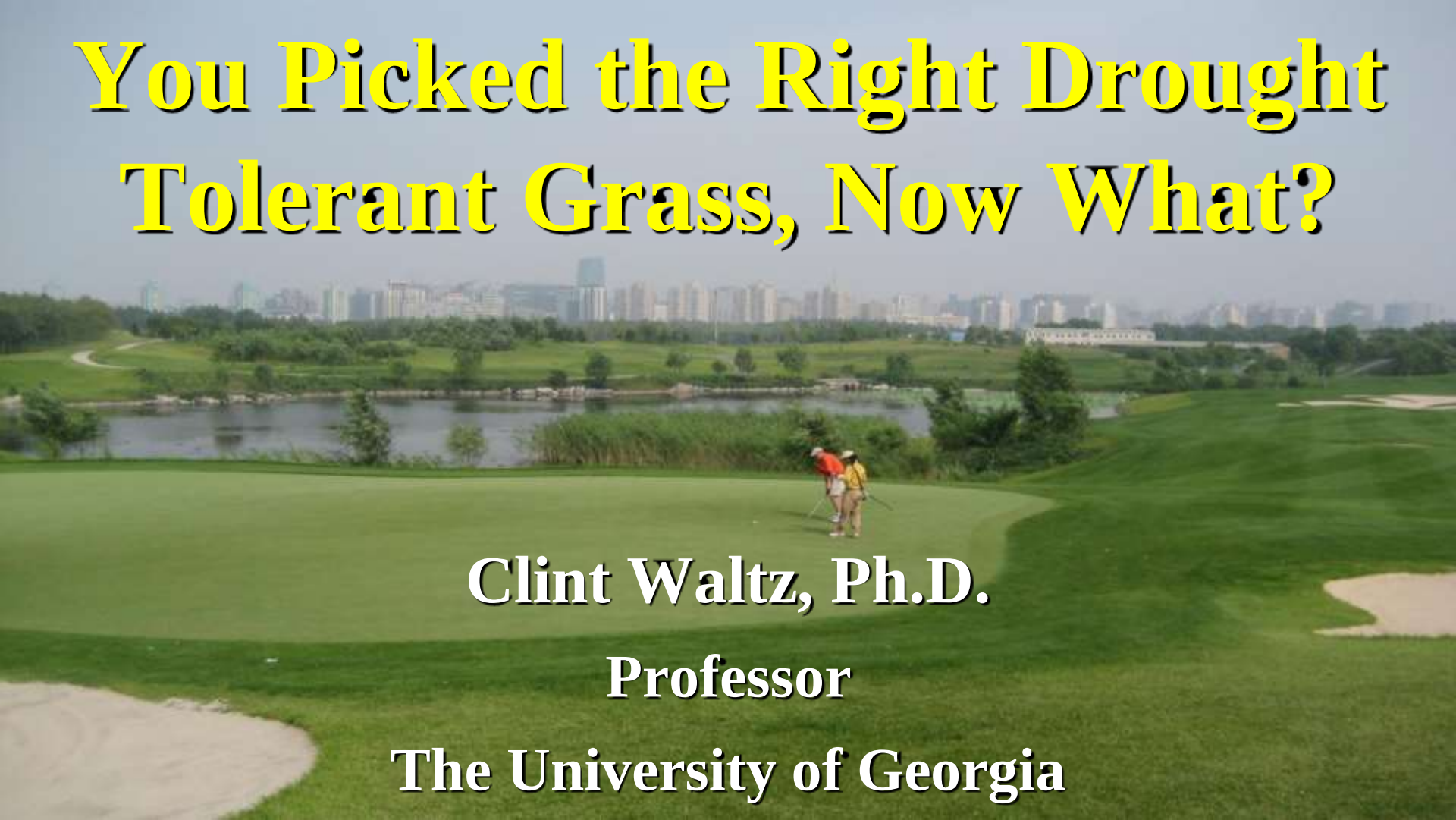
# You Picked the Right Drought Tolerant Grass, Now What?

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# Questions?

**Currently, what is the most important environmental issue confronting the turfgrass industry?**

- **Water-use Efficiency**
- **Don’t apologize for using water!**

# Water Conservation vs. Water-Use Efficiency

## Water Conservation

- Percent water reduction for all water users
  - ✓ Penalizes the most efficient

## Water-Use Efficiency

- Use of best practices to efficiently use water
  - ✓ Conservation occurs

# Questions?

**When it comes to having a real impact on water conservation, will it come from indoor or outdoor efforts?**

- ✓ What can be seen?
- ✓ What can be enforced?

# Realities

## Across the Country and around the World

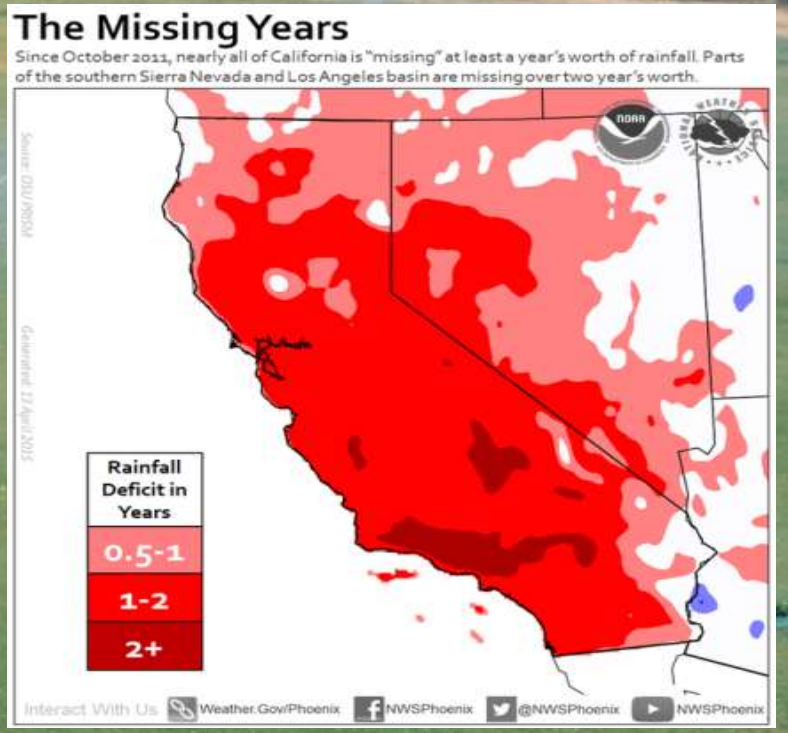
- Population is growing
- Resources are finite
- The public is clueless
- Toilet to tap was unheard of except in extreme circumstances
- Cyclical droughts worse than humanity has seen in the last 1,500 years

# Realities

## Across the Country and around the World

Brown orders California's first mandatory water restrictions: 'It's a different world' L.A. Now, April 1, 2015

California Golf Industry Braces for Big Cuts in Water Usages Golfweek, April 2, 2015



# Questions?

## Is “brown” the new “green”?

- Would that meet expectations?
- Who does that satisfy?
- As a professional, are you better than that?
- What are possible solutions?
  - ✓ Improved water-use efficiency
  - ✓ BMPs

# BMPs Approach

## Science-based

- ☆ Cutting edge science
- ☆ Evolve with time & knowledge

## Holistic

- ☆ All possible strategies are included

## Integration of new concepts

- ☆ Technology, devices, grasses, practices, etc.

# BMPs Approach

## Site-specific Management

- ✯ Flexibility for site to meet environmental goal
- ✯ Input is controlled – only when needed

## Dynamic / Flexible

- ✯ Over time on a specific site
  - ✓ Sites change with time
- ✯ Incorporation of new technology & concepts

# BMPs Approach

**Involves the site manager**

**Values education, experience & training**

**Proactive & on-going**

**Consider all stakeholders**

- ✯ **Economic & site-use**
- ✯ **potential adverse impacts**

**Applicable on site-specific & State level**


Core Water
Conservation BMPs

# Water Conservation BMPs

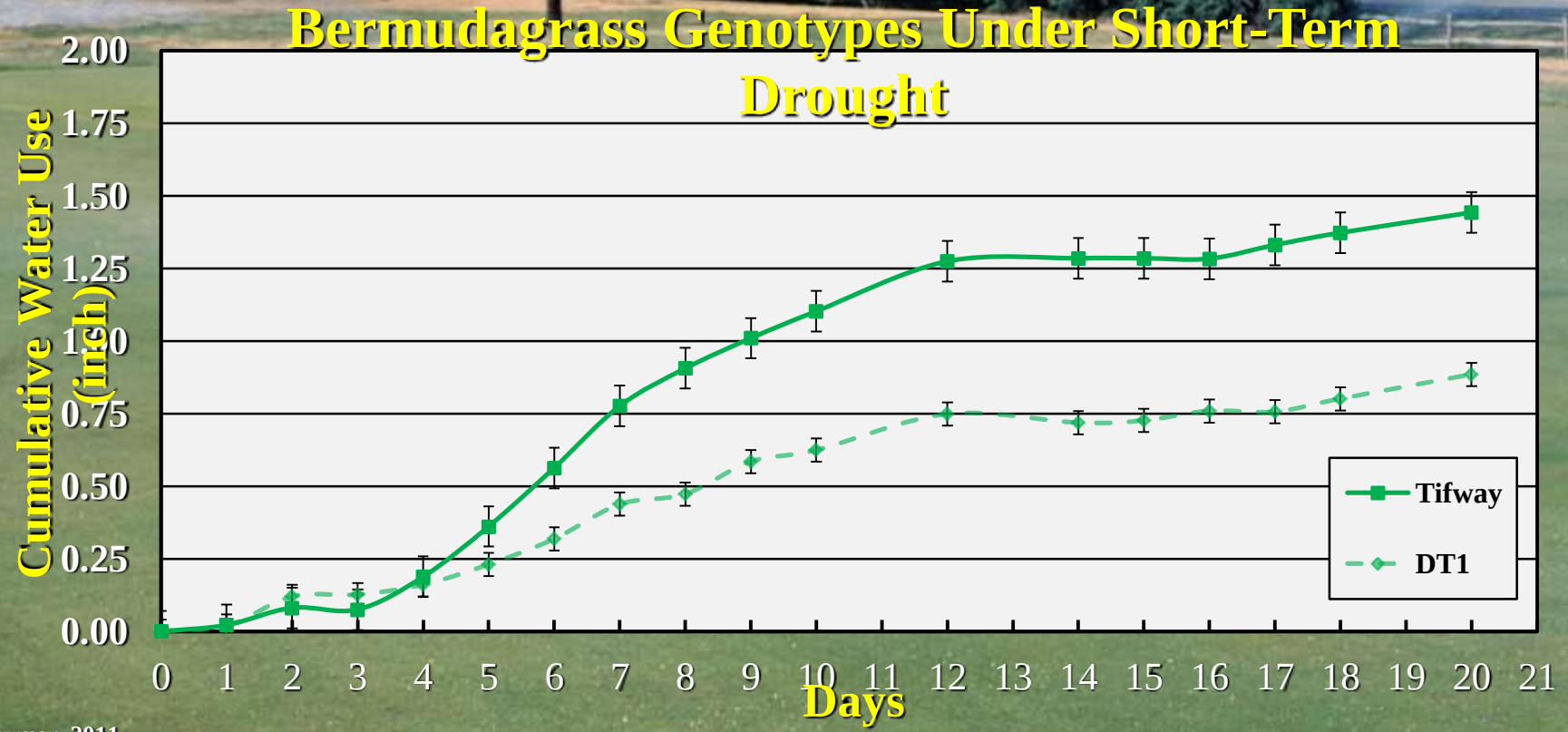
1. Plant selection & adaptation
2. Rootzone modification
3. Manage extrinsic stresses
4. Cultural practices to promote root growth
5. Irrigation system design

# Papa John's Approach

## Better Grasses Better Lawns

- ✭ TWCA – www.tgwca.org
  - ✓ Primarily seeded grasses
  - ✓ 13 trial locations
  - ✓ Relies on the 3rd party peer review of data
  - ✓ Turfgrasses that demonstrate a statistically significant water savings
- ☹ Warm-season species

# New Technologies




Raymer, 2011

# Water Conservation BMPs

1. Plant selection & adaptation
2. **Rootzone modification**
   - ✓ **Know the soil type**
3. Manage extrinsic stresses
4. Cultural practices to promote root growth
5. Irrigation system design

# Water to Wet to a Depth

# Water Conservation BMPs

## 4. Cultural practices to promote root growth

- ✓ Moderate nitrogen fertility
- ✓ Proper mowing heights
- ✓ Employ cultivation practices
- ✓ Manage pest problems

# What is the objective?

**Increase soil volume for use of water & nutrients!**

**Roots**

# Optimize Plant & Soil Factors

## Light

- ✓ Maximize
- ✓ Air drainage

## Temperature

- ✓ Cool-season species (50° - 75° F)
- ✓ Warm-season species (75° - 95° F)

## Soil pH

# Fertility During Drought

## Nutritional

- ✓ Do not “over feed”
- ✓ Soil test
- ✓ Optimize soil pH
- ✓ Moderate to low nitrogen
- ✓ Adequate soil potassium
- ✓ Consider the most efficient water use
  - Wait till dry to apply and water-in

# Mowing Strategies

## Stress Periods

- Raise mowing height
- Walk mow
- Clean-up & Perimeter – every other day
- Solid rollers
- Remove groomers & brushes

# Question?

## To aerate or not aerate?

# Water Conservation BMPs

6. **Allow soil & plant factors dictate irrigation**
   - ✓ Water when grass needs water
   - ✓ Wet only the root zone
7. Use non-potable water / reclaimed water
8. Irrigate in early morning
9. Perform an irrigation audit
10. Install rain shutoff sensors

# Probe Guidance

## Water Potential

- ☆Tensiometers

## Volumetric Water Content

- ☆TDR & Capacitance Probes

# What is your drought plan?

## Reductions (examples)

- ✓ 10% – no irr. for range & road sides
- ✓ 20% – reduce irr. of large areas by 10% more

## Countermeasures (examples)

- ✓ Raise height of cut
- ✓ Stop mowing
- ✓ Reduce traffic
- ✓ Increase hand watering

# Too Little

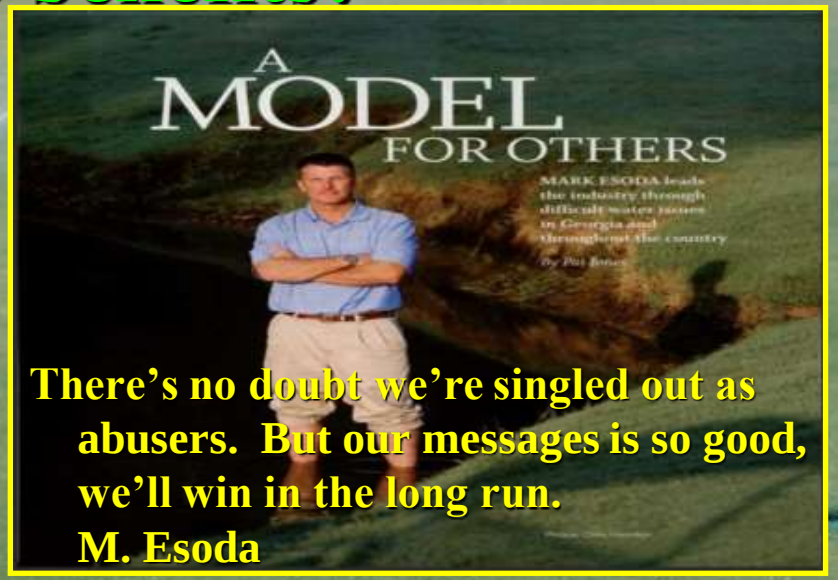
# Too Much

# Just Right

# Questions?

**How does the turfgrass industry change its image and accentuate the benefits?**

- ✓ Communication
- ✓ Continued stewardship
- ✓ Continued education
- ✓ Sound science
- ✓ Best Management Practices (BMPs)




There's no doubt we're singled out as abusers. But our messages is so good, we'll win in the long run.
M. Esoda

# Education & Outreach

## Who do you need to reach?

- Staff
- Golfers
- Neighbors
- Public

- Be an advocate – you have a great story to tell

# Get Started NOW!

## Benefits

- ☆ It is the right thing to do and you probably already do more than you think.
- ☆ Proof that you are doing more than most brings credit and acceptance.
- ☆ Good business – saves money, makes money, stay in business.

# Thank You


## Visit

## www.GeorgiaTurf.com