The Nature Conservancy's Fire Monitoring Protocol in Florida

Zachary A. Prusak
Florida Fire Manager
1. Betty and Crawford Rainwater Perdido River Nature Preserve
2. Gulf Coastal Plain Ecosystem Partnership
3. Apalachicola Bluffs and Ravines Preserve
4. Northeast Florida Program
5. Lake Wales Ridge Program
6. The Disney Wilderness Preserve
7. Florida Keys
Three-tiered Approach:

• Fire behavior observations
• Immediate post-fire, first order effects
• Long-range monitoring
Fire Behavior Observations

• Hard to quantify
• Need qualified fire crew to record observations
• All crew are fire behavior observers!
## THE NATURE CONSERVANCY - FUEL, WEATHER & FIRE BEHAVIOUR OBSERVATION

**Preserve:**

**Unit:**

**Observers:**

**Date:**

<table>
<thead>
<tr>
<th>Time</th>
<th>Dry Bulb</th>
<th>Wet Bulb</th>
<th>RH</th>
<th>Wind Speed</th>
<th>Wind Dir</th>
<th>State of Wx</th>
<th>Cloud Type</th>
<th>Fuel Model</th>
<th>1 Hr Fuel Moisture</th>
<th>Fire Type</th>
<th>Flame Length</th>
<th>Rate of Spread</th>
<th>Location</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**State of Weather**

- Clear (<0% cloud cover)
- Scattered (10-50% cover)
- Broken (60-90% cover)
- Overcast (>90% cover)
- Foggy
- Drizzling
- Raining
- Showering
- Thunderstorm in progress

**Cloud Type**

- 1 - cumulus
- 2 - alto cumulus
- 3 - cirrus

**Fuel Model**

- 1 - Improved pasture
- 2 - Pine/wiregrass sandhills, cutthroat seeps
- 3 - tallgrass seasonal ponds
- 4 - scrubby flatwoods; oak scrub
- 5 - young shrubs
- 6 - palmetto and gallberry, w/o overstory
- 7 - palmetto flatwoods
- 8 - live oak sandhills
- 9 - turkey oak sandhills
- - other
First Order Fire Effects

- Standard post-burn observations, such as:
  - scorch height by class
  - char height by class
  - burn severity, by class (substrate and understory)
Long-Term Monitoring

• Specific management questions
• Can create project-specific forms, procedures, etc.
Tiger Creek Preserve

- Track management effectiveness in reducing hardwood cover, increasing perennial grass cover and rare species frequency

- Understand diversity across xeric upland habitats and conditions most favored by rare species
<table>
<thead>
<tr>
<th>Preserve</th>
<th>Burn Unit</th>
<th>Date</th>
<th>Observers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comm type codes:</td>
<td>X-coord</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sandhill – SH</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scrub – SC</td>
<td>Y-coord</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scrubby flatwoods – SCFL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yellow Sand Scrub – YSC</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Within 5 m radius circle

#### Herb/graminoid cover
1= 0-5, 2= 6-25, 3= 26-50, 4= 51-75, 5= 76-100%

#### Lichen/moss cover
1= 0-5, 2= 6-25, 3= 26-50, 4= 51-75, 5= 76-100%

#### Bare ground cover
all visible bare ground regardless of overlying vegetation
1= 0-5, 2= 6-25, 3= 26-50, 4= 51-75, 5= 76-100%

#### Bare ground (Jay Watch)
includes herbaceous cover <13 cm tall and litter: clear to sky 1=<20%, 2=20-50%, 3>=50%

#### Litter cover
all visible litter regardless of overlying vegetation
1= 0-5, 2= 6-25, 3= 26-50, 4= 51-75, 5= 76-100%

### Within 10 m radius circle

#### Turkey oaks >3m abundance
A= 0, B= 1-5, C= 6-25, 3= 26+

#### Turkey oak >1-3m abundance
A= 0, B= 1-5, C= 6-25, 3= 26+

#### Mean ht of all live hardwoods and palms
1= <1m, 2= 1-2m, 3= >2m

#### Live hardwood cover >3m
excludes palms
1= 0-5, 2= 6-25, 3= 26-50, 4= 51-75, 5= 76-100%

#### Live hardwood cover <3m
excludes palms
1= 0-5, 2= 6-25, 3= 26-50, 4= 51-75, 5= 76-100%

#### Palm cover
all heights
1= 0-5, 2= 6-25, 3= 26-50, 4= 51-75, 5= 76-100%

#### Live pines >1-3m abundance
record total no. by species: longleaf= LL, slash= SLP, sand= SP

#### Live pines <1m abundance
record total no. by species: longleaf= LL, slash= SLP, sand= SP

#### Species of Concern

\[\text{...}\]
Tiger Creek Preserve
2007 Fire Effects Monitoring Results
for Unit CH8
Percent Cover of Hardwoods >3m

Legend
- management unit
- Cover of Hardwoods >3m
  - 0-5%
  - 6-25%
  - 26-50%
  - 51-75%
  - 76-100%
Tiger Creek Preserve
2007 Fire Effects Monitoring Results for Unit CH8
Percent Cover of Herbs/Graminoids, Bare Ground, and Litter
Questions?