The State of Florida Ecological Report Card:
A Landscape-Level Design for Conservation

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Landscape Conservation Team
Florida Fish and Wildlife Conservation Commission
Agenda

- Background
  - Brief history of the project
- The Data
  - Conservation Assets
  - Indicators
    - Selection process
    - Evaluation process
  - Gap analysis
  - Setting Targets
- Report Card
  - Purpose
  - Development process
- Next Steps
Landscape Conservation Project - Background

- Landscape Conservation Cooperatives
  - Peninsular Florida LCC \rightarrow Landscape Conservation Team
- **Mission:** To foster landscape scale conservation to sustain natural and cultural resources for future generations.
- **Purpose:** To assess the status, trend, current and emerging threats, and limiting factors for Florida's natural and cultural resources by setting measurable conservation goals and tracking progress toward meeting those goals.
Landscape Conservation Project - Background

- State Wildlife Action Plan (SWAP)
- Critical Lands and Waters Identification Project (CLIP)
The Data
First Step - Conservation Assets

- Set of biological, ecological, and cultural processes identified as important for Florida’s current and future landscape
- Derived from SWAP and Cooperative Land Cover Map (CLC)
- PFLCC workshops held in March 2016 to decide on assets
## Conservation Assets

| 2. Hardwood Forested Uplands     | 11. Seagrass            |
| 3. High Pine and Scrub           | 12. Saltwater Marsh     |
| 4. Pine Flatwoods and Dry Prairie| 13. Mangrove Swamp      |
| 5. Freshwater Forested Wetlands  | 14. Estuarine/Marine System-wide |
| 6. Freshwater Non-forested Wetlands|                                  |
| 7. Lakes                        | 15. Connectivity (Version 2) |
| 9. Springs                      |
Second Step - Indicators

- Measurable expressions of desired conservation asset conditions
  - Quantifiable, biological, chemical, physical, or cultural attributes of a landscape

- Each indicator consists of three attributes:
  - **Measurable**: quantifiable characteristic of the landscape
  - **Metric**: unit of measure
  - **Target**: numerical endpoint of the attribute
Brainstorming workshops in 2016 and 2017

The goal: Identify established indicators already in use

Applied a set of criteria, including:
- Represents important attributes of the conservation asset to which it belongs
- Responds to environmental variation
- Responds to conservation and management actions
Indicator Evaluation Process

- Available spatial data
  - Region/state-wide
  - Consistency
  - Appropriate spatial and temporal resolution

- Measurable
  - Most appropriate metric given available data

- Monitoring
  - Monitoring/collected using standard protocol
  - Future monitoring
Indicator Evaluation Process

- Series of webinar workshops
  - Follow-up from brainstorming workshops
- Present findings of data evaluation
  - Expert/partner input
Indicator Evaluation Results

- Move forward with Target development

- Set aside for Version 2 of Targets - need more work for development

- Not suitable (right now) – insufficient data, not region-wide, no current monitoring process
Indicators - Example

- **Conservation Asset:** Coastal Uplands
  - **Indicator:** Nesting shorebirds (American Oystercatcher, Wilson’s Plover, Snowy Plover)
  - **Metric:** Number of breeding pairs
CT: Shorebird Nesting

American Oystercatchers 2015

Legend
- American Oystercatchers 2015
- County, FL

IBNB Regions
- Big Bend
- Northeast
- South
- Southwest
- Southeast

<table>
<thead>
<tr>
<th>IBNB Region</th>
<th>Minimum # pairs Plan*</th>
<th>Nests 2014</th>
<th>Nests 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northwest</td>
<td>75</td>
<td>79</td>
<td>82</td>
</tr>
<tr>
<td>Big Bend</td>
<td>110</td>
<td>20</td>
<td>38</td>
</tr>
<tr>
<td>Southwest</td>
<td>215</td>
<td>98</td>
<td>48</td>
</tr>
<tr>
<td>South</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Southeast</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Northeast</td>
<td>45</td>
<td>37</td>
<td>81</td>
</tr>
<tr>
<td>Totals</td>
<td>500</td>
<td>234</td>
<td>234</td>
</tr>
</tbody>
</table>

Snowy Plovers 2015

Legend
- Snowy Plovers 2015
- County, FL

IBNB Regions
- Big Bend
- Northeast
- Northwest
- South
- Southwest
- Southeast

<table>
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<tr>
<th>IBNB Region</th>
<th>Minimum # pairs Plan*</th>
<th>Nests 2014</th>
<th>Nests 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northwest</td>
<td>160</td>
<td>508</td>
<td>452</td>
</tr>
<tr>
<td>Big Bend</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Southwest</td>
<td>140</td>
<td>75</td>
<td>87</td>
</tr>
<tr>
<td>South</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Southeast</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Northeast</td>
<td>0</td>
<td>583</td>
<td>539</td>
</tr>
<tr>
<td>Totals</td>
<td>500</td>
<td>583</td>
<td>539</td>
</tr>
</tbody>
</table>

* FWC’s Species Action Plan for Four Imperiled Species of Beach-Nesting Birds, or IBNB Plan (FWC 2013a)
## Gap Analysis

<table>
<thead>
<tr>
<th>Conservation Asset</th>
<th>Indicator</th>
<th>Metric</th>
<th>Current Status</th>
<th>Proposed Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coastal Uplands</td>
<td>Nesting shorebirds</td>
<td># of breeding pairs</td>
<td>2018 # of breeding pairs: AMOY-118; SNPL-142; WIPL-146</td>
<td>Increase number of breeding pairs by 10% by 2030</td>
</tr>
</tbody>
</table>

AMOY = American Oystercatcher; SNPL = Snowy Plover; WIPL = Wilson's Plover
Step Three – Identifying & Setting Targets

- Searched for **established targets** for Florida set and tracked by conservation entities
- Conducted a **literature search** for targets
- **Asked the experts!**
  - Held workshops in 2019 for expert and stakeholder input on reasonable targets by 2030
The Report Card
Purpose

- Taking a lot of data and converting into something that is easily “digestible” by a wide range of people
- Something that clearly and concisely explains:
  - Current ecological condition of natural resources
  - What we want the condition to be
  - What we need to do/are doing to get there
Surveyed several other report cards for examples on their design and how they displayed the data.
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Gradient scale bar and scoring
Surveyed several other report cards for examples on their design and how they displayed the data

- Gradient scale bar and scoring
- Condition mark and Trend

**Condition:**
- **Good:** The condition goal is 75-100% met
- **Caution:** The condition goal is 26-74% met
- **Significant Concern:** The condition goal is 0 - 25% met
- **Unknown:** Not enough information to determine condition

**Trend:**
- **Improving:** The condition is getting better
- **No Change/Stable:** The condition is unchanging
- **Declining:** The condition is deteriorating/getting worse
- **Unknown:** Not enough information is available to state a trend

**Indicator**
- **Protected Status (acres)**

**Health Indicator**
- Overall Health of Mt. Tam
- Plant Communities
- Wildlife

**Condition & Trend**
- Moderate

**Confidence**
- High

- Moderate

- Low
Development

**Overall Status**

**COASTAL UPLANDS**

Coastal uplands are dynamic systems, with the coastline constantly changing. Beaches may be washed away during a storm, new inlets may appear between old inlets may close, widen, or migrate, sand dunes may build or erode, and sandbars may form seaward of the existing beach to create a new string of barrier islands. Coastal vegetation usually grows in zones that reflect each plant's adaptability to marine influences and a shifting substrate. Coastal uplands extend from the beach/hurt zone inland to maritime hammock before transitioning to the dominant inland vegetation type. The beach dune community is a predominantly herbaceous community of wide-ranging coastal specialists. Coastal strand, coastal grasslands, and keys cactus barrens are immediately inland from the beach dune. Coastal strand is the most commonly encountered community behind the herbaceous dune zone. Plant species found in coastal strand vary by coast and by barrier island. Maritime hammock is a rich subtropical forest, often with tropical species in the understory.

**Indicators**

- **Nesting Shorebirds (th of breeding pairs)**
  - American Oystercatcher
  - Snowy Plover
  - Wilson's Plover

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Baseline 2018</th>
<th>Update 2019</th>
<th>Progress</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Oystercatcher</td>
<td>118</td>
<td>136</td>
<td>136</td>
<td></td>
</tr>
<tr>
<td>Snowy Plover</td>
<td>142</td>
<td>98</td>
<td>156</td>
<td></td>
</tr>
<tr>
<td>Wilson's Plover</td>
<td>146</td>
<td>211</td>
<td>151</td>
<td></td>
</tr>
</tbody>
</table>

The Florida Shorebird Alliance conducts yearly monitoring surveys of these species through survey routes at a statewide scale, then publish the results in a yearly report. The numbers in the table above represent the Minimum Number of Breeding Pairs for each species, and the target represents a 10% increase from each species respective baseline number.

**Secure Island Migration (acres)**

<table>
<thead>
<tr>
<th>Secure Island Migration (acres)</th>
<th>Baseline 2019</th>
<th>Update 2020</th>
<th>Progress</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blueprint Public: 21%</td>
<td>250,872</td>
<td>251,424</td>
<td>+552</td>
<td>+34,021</td>
</tr>
<tr>
<td>Other: 79%</td>
<td>250,872</td>
<td>251,424</td>
<td>+552</td>
<td>+34,021</td>
</tr>
</tbody>
</table>

This indicator represents protected acres along the coast that is inland from the predicted 1 meter sea level rise scenario that covers the Coastal Uplands conservation area. The protected lands were derived from the FPLA database managed by FWC. With these lands in a protected or conservation status, it is assumed that they will offer a secure path inland for the Coastal Uplands' native flora and fauna to migrate inland and away from consequences of climate change, such as sea level rise.
Florida has a diversity of forested wetlands (swamps). The type of swamp found in any particular place is the result of topography, soils, length of inundation and association with rivers and streams. The most common type of swamp in Florida is the cypress swamp, which occurs in all parts of Florida except the Keys. These regularly inundated wetlands form a forested border along large rivers, creeks, and lakes, or occur in depressions as circular domes or linear strands. Additional types of forested wetlands found in Florida include wet flatwoods, floodplain swamps and hydric hammocks. Wet flatwoods are found in flatlands with sand substrate and are seasonally inundated. They have a pine canopy with a sparse or absent mid-story and a dense groundcover of grasses, herbs, and low shrubs. Floodplain swamps are seasonally flooded wetland forests composed of a diverse assortment of hydric hardwoods which occur on the rich alluvial soils of silt and clay deposited along river floodplains, particularly in the Panhandle. Hydric hammocks occur on soils that are poorly drained or have high water tables.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Baseline 2017</th>
<th>Update 2018</th>
<th>Progress</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Little Blue Heron</td>
<td>-2.8</td>
<td>N/A</td>
<td></td>
<td>Stabilize at least one species, maintain others</td>
</tr>
<tr>
<td>Wood Stork</td>
<td>0</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prothonotary Warbler</td>
<td>-3.0</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swallow-tailed Kite</td>
<td>5.3</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Snowy Egret</td>
<td>0.4</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The baseline and updated numbers in the table above were derived from the Breeding Bird Survey long-term monitoring program - a compilation of yearly monitoring survey data conducted by volunteers through the U.S. Geological Survey. The numbers represent a single score of population abundance for each species. The data from years 1968-2017 were used and are specific to species populations in Florida. The metric refers to the number of species with either decreasing, stable, or increasing trends.
Next Steps
From Indicators to Implementation

Identify Conservation Assets

Define Limiting Factors

Review/Validate Indicators

Identify & Implement Conservation Actions

Identify Critical Areas

Identify "gaps"

Define Limiting Factors

Monitor

Develop Indicators

On the ground implementation of conservation actions!

Data & planning already available for Florida.

Track and demonstrate success using the targets!

Near Complete

Complete

Release Report Card
Thank you!...Questions?

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