Landscape Conservation Design in Eastern North Carolina/Southeastern Virginia

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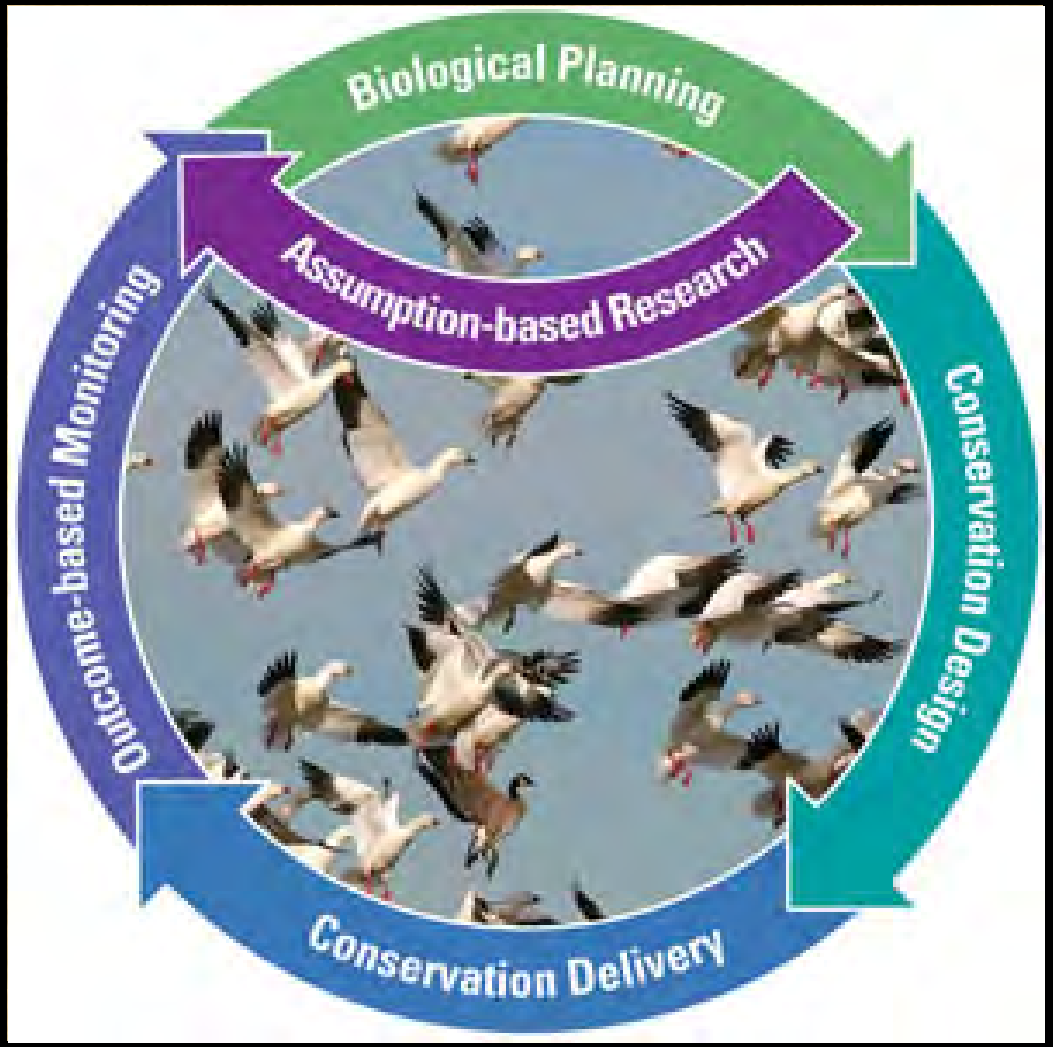
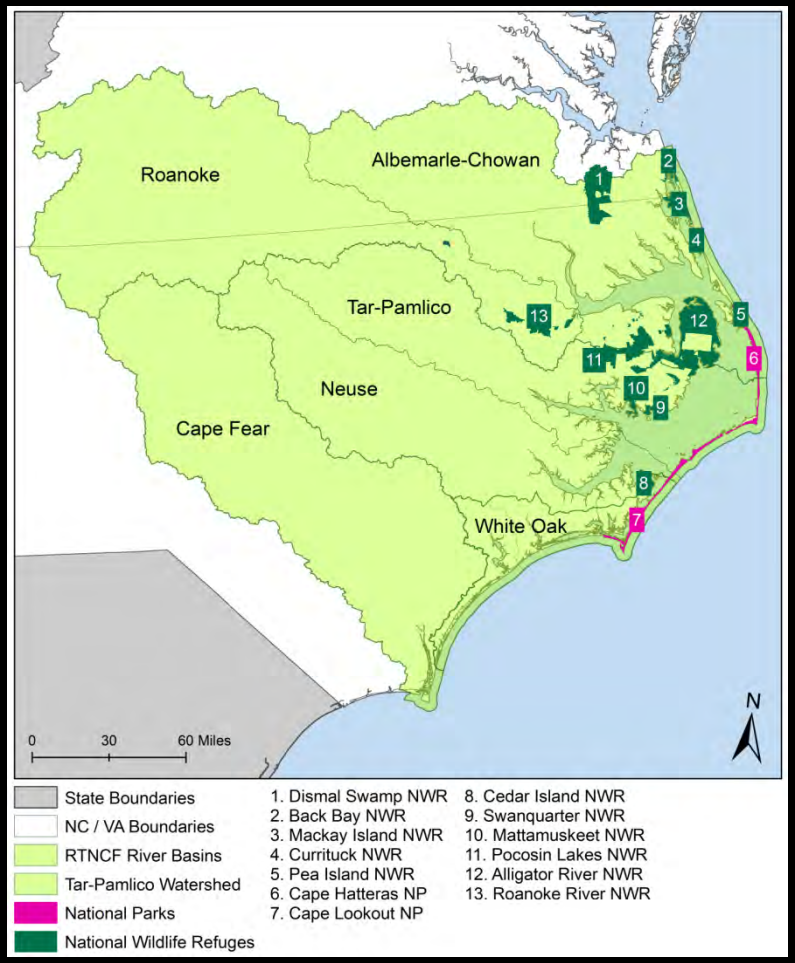
Presentation Goals

- Share vision of landscape conservation at multiple spatial scales.
- Explore biological planning process being undertaken in Eastern North Carolina/Southeastern Virginia geography.
- Highlight fire as a strategy and threat.
- Engage broader conservation community.

Strategic Habitat Conservation = Landscape Conservation

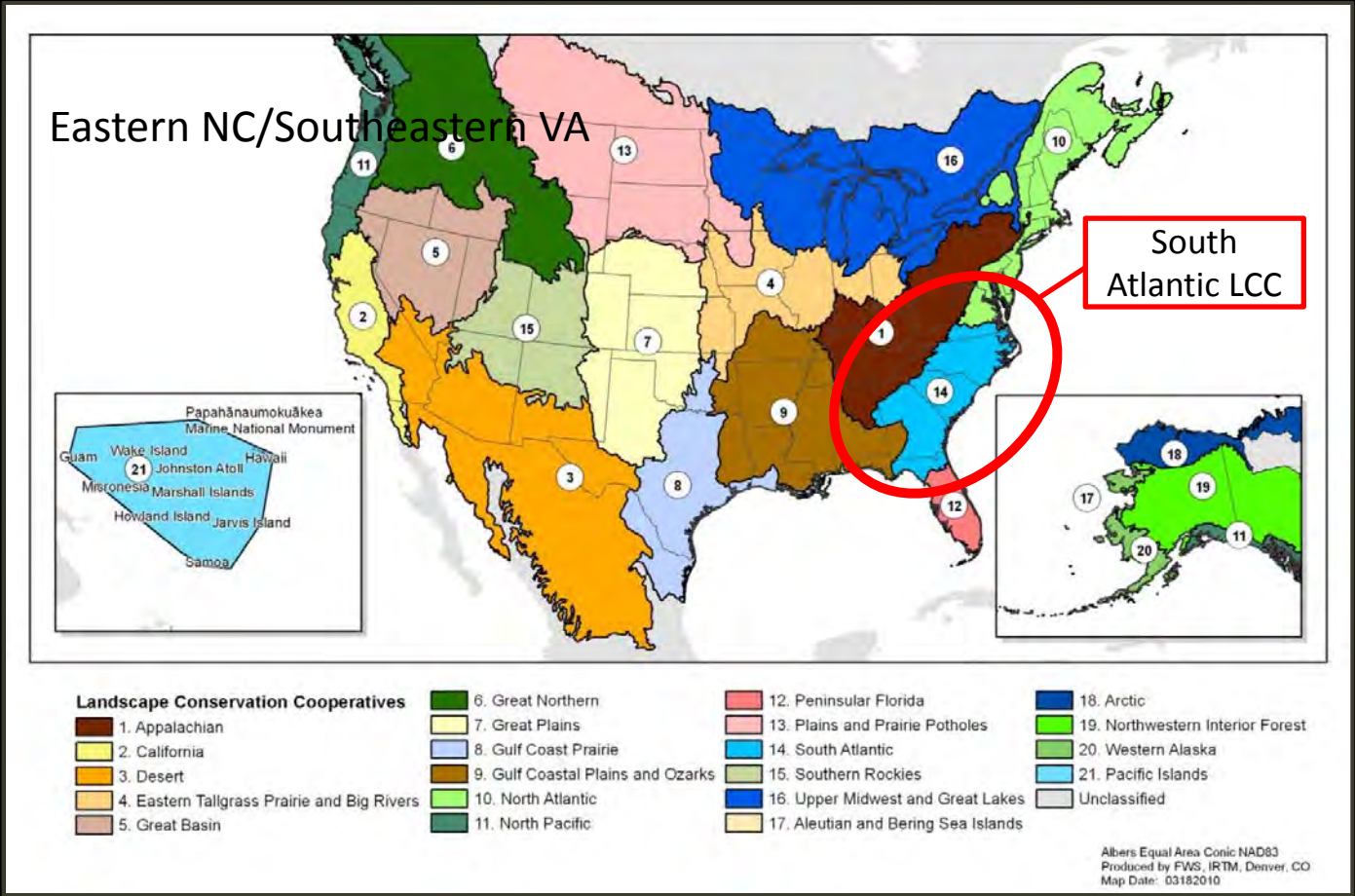


Eastern NC, Southeastern VA Strategic Habitat Conservation Team (ENCSEVA)



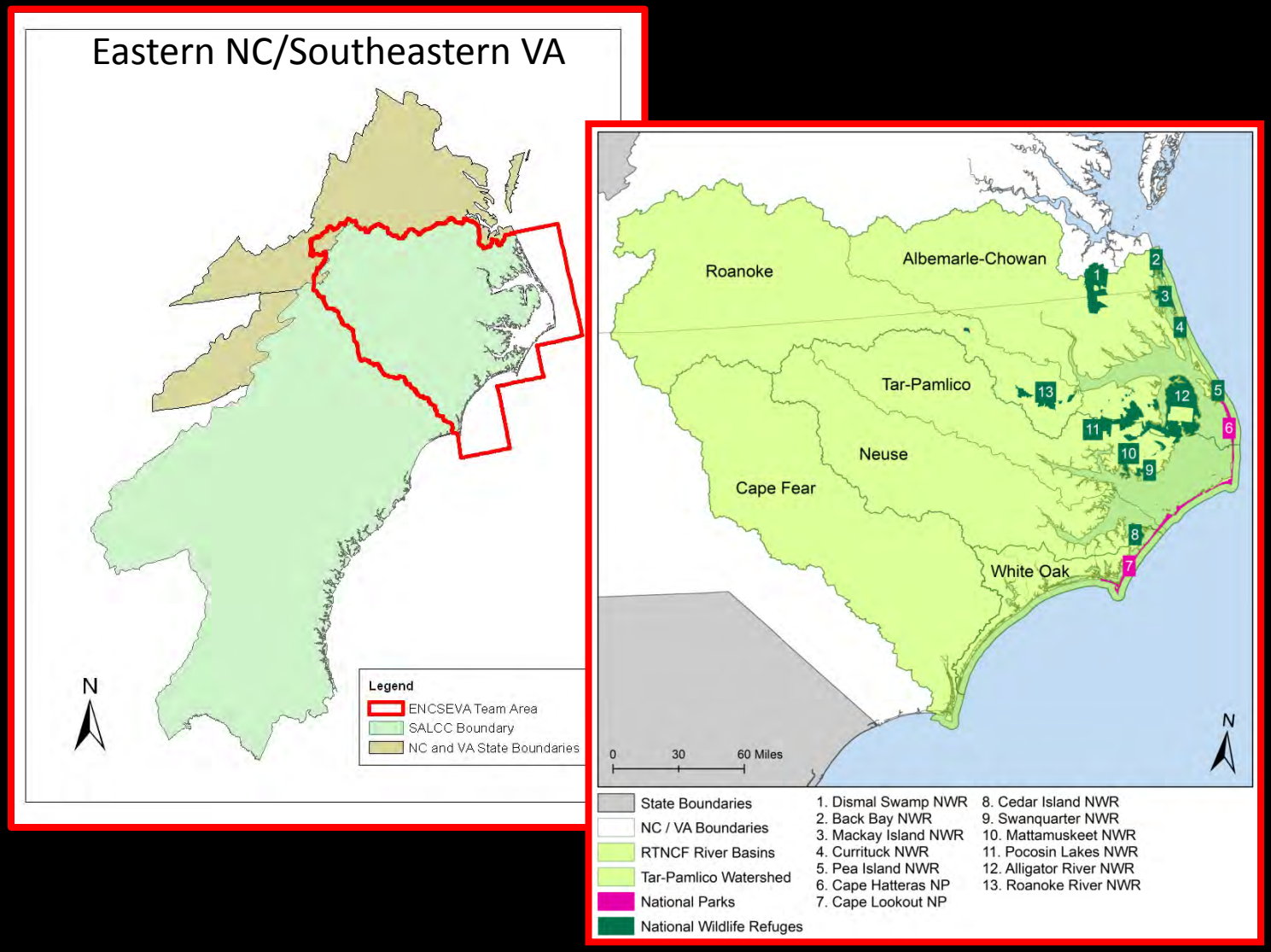
- A collaboration of DOI groups
- Northern third of the SALCC landscape
- Biological Planning - Currently writing a conservation plan
- Using the expert knowledge of local wildlife biologists, researchers, ecologists, hydrologists, to inform their plan
- Striving to collaboratively develop a Landscape Conservation Design.

Scales of Conservation



Landscape Conservation Cooperatives

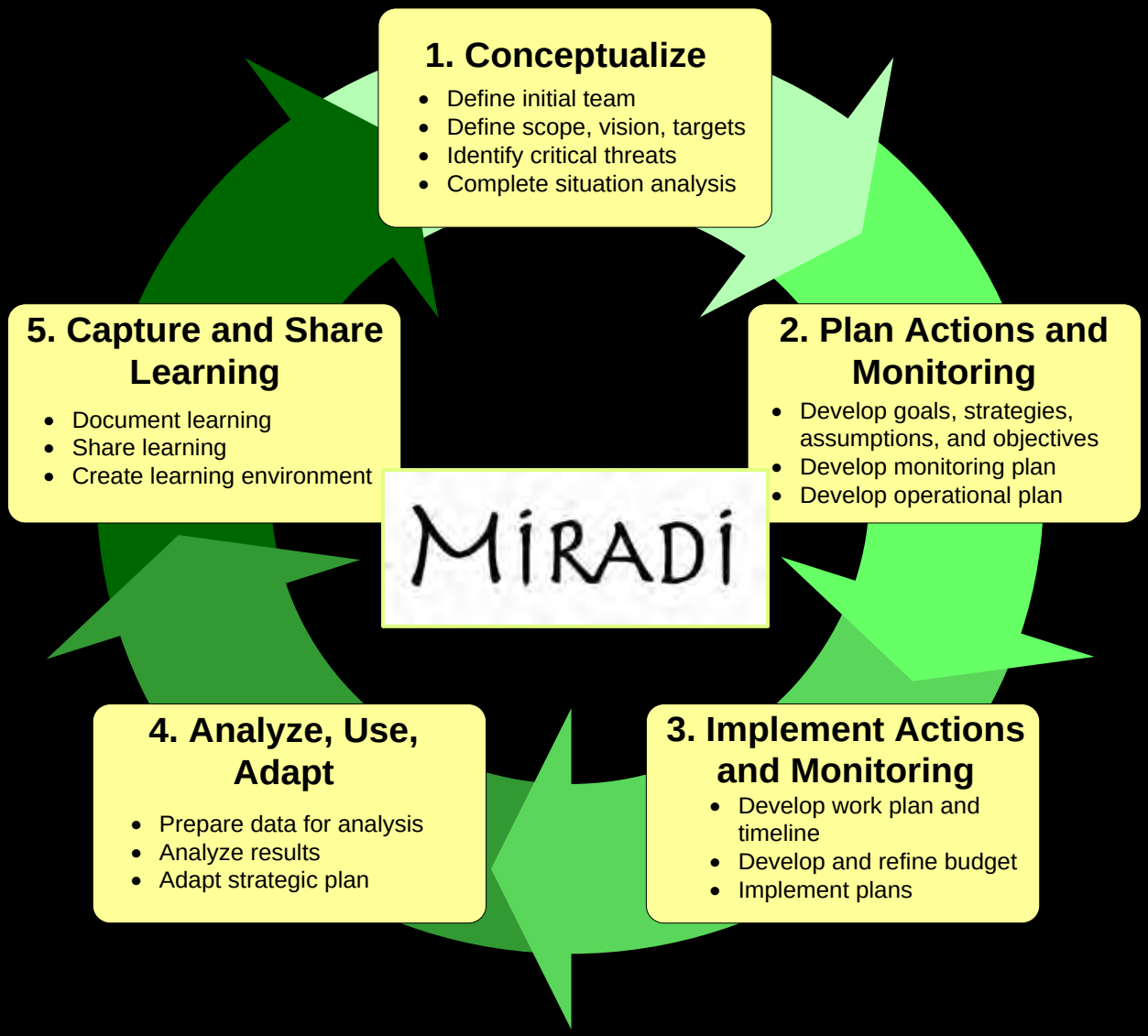
Scales of Conservation



Comprehensive Strategic Habitat Conservation Plan

- What is success and how will we recognize it?
- What are the targets of conservation focus and the threats?
- How do we prioritize strategic actions given the threats?
- How should we prioritize research to help support our targets?

Method & Tool: Open Standards for the Practice of Conservation



Step 1. Conceptualize

- Define team
- Define scope, vision, targets
- Identify critical threats
- Complete situation analysis

Step 2. Plan

- Develop goals, strategies, assumptions & objectives
- Develop monitoring plans
- Develop operational plan

Step 1: Conceptualize (expert elicitation workshops)

Selecting Conservation targets – what and what condition?

- Conservation Targets: A limited suite of species, communities, and ecological systems that is the focus of conservation and chosen to represent and encompass the full array of biodiversity found in a project area. They are the basis for setting goals, carrying out conservation actions, and measuring conservation effectiveness.

- Threats: Anthropogenic activities that negatively impact a target – can be either direct or indirect.

ENCSEVA Conservation Targets

Wetlands

- Wet Pine savannas
- Isolated Ephemeral wetlands
- Swamp forests
- Peatlands pocosins
- Freshwater marshes
- Natural lakes & lakeshores

Riverine Systems

- Diadromous Fish
- Resident Aquatic Species
- Riparian Forested Communities
- Headwater Streams

Estuarine Systems

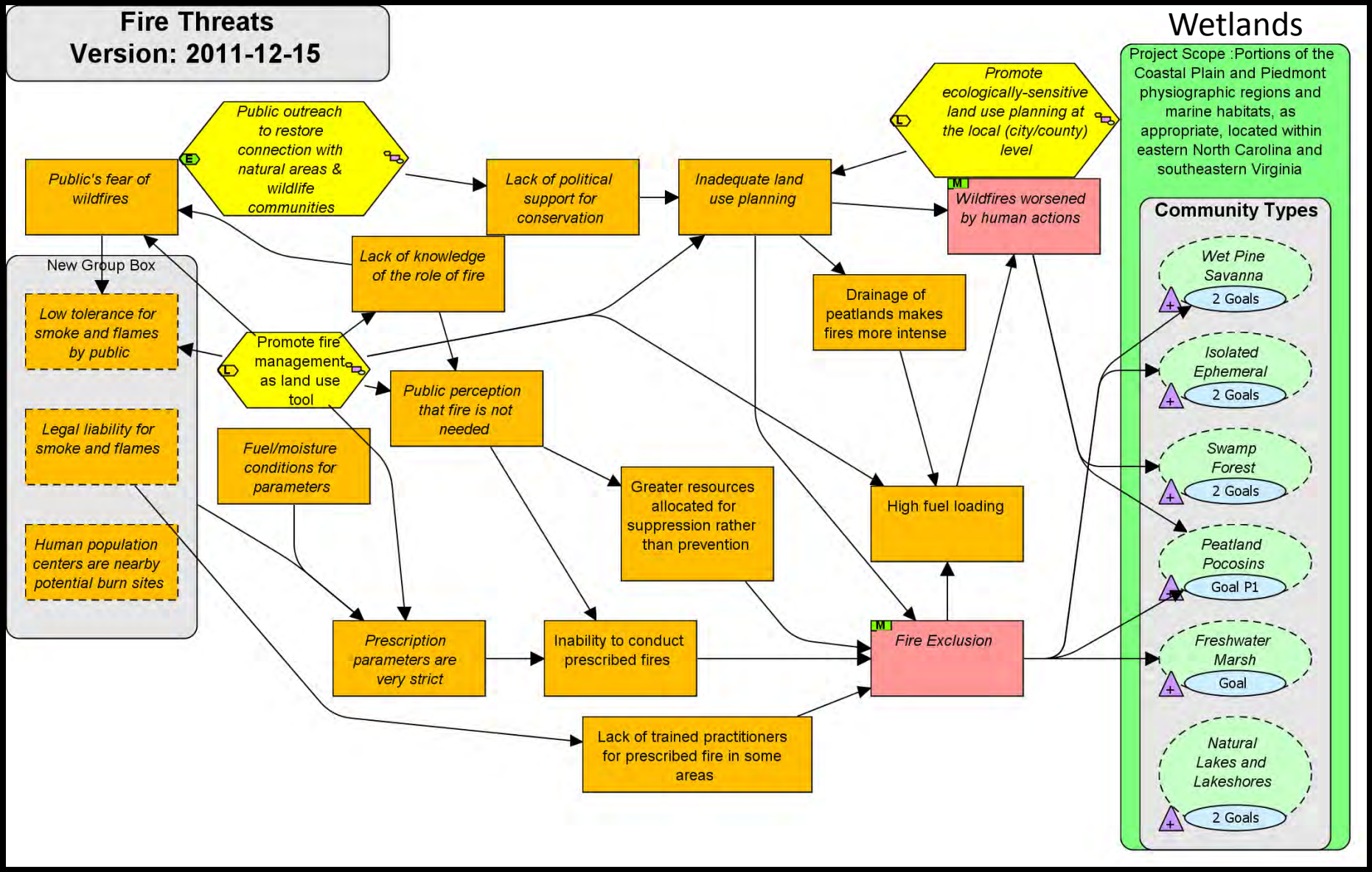
- Submerged Aquatic Vegetation
- Shell Bottom
- Estuarine wetlands
- Natural shorelines
- Estuarine Dependent Species

Uplands

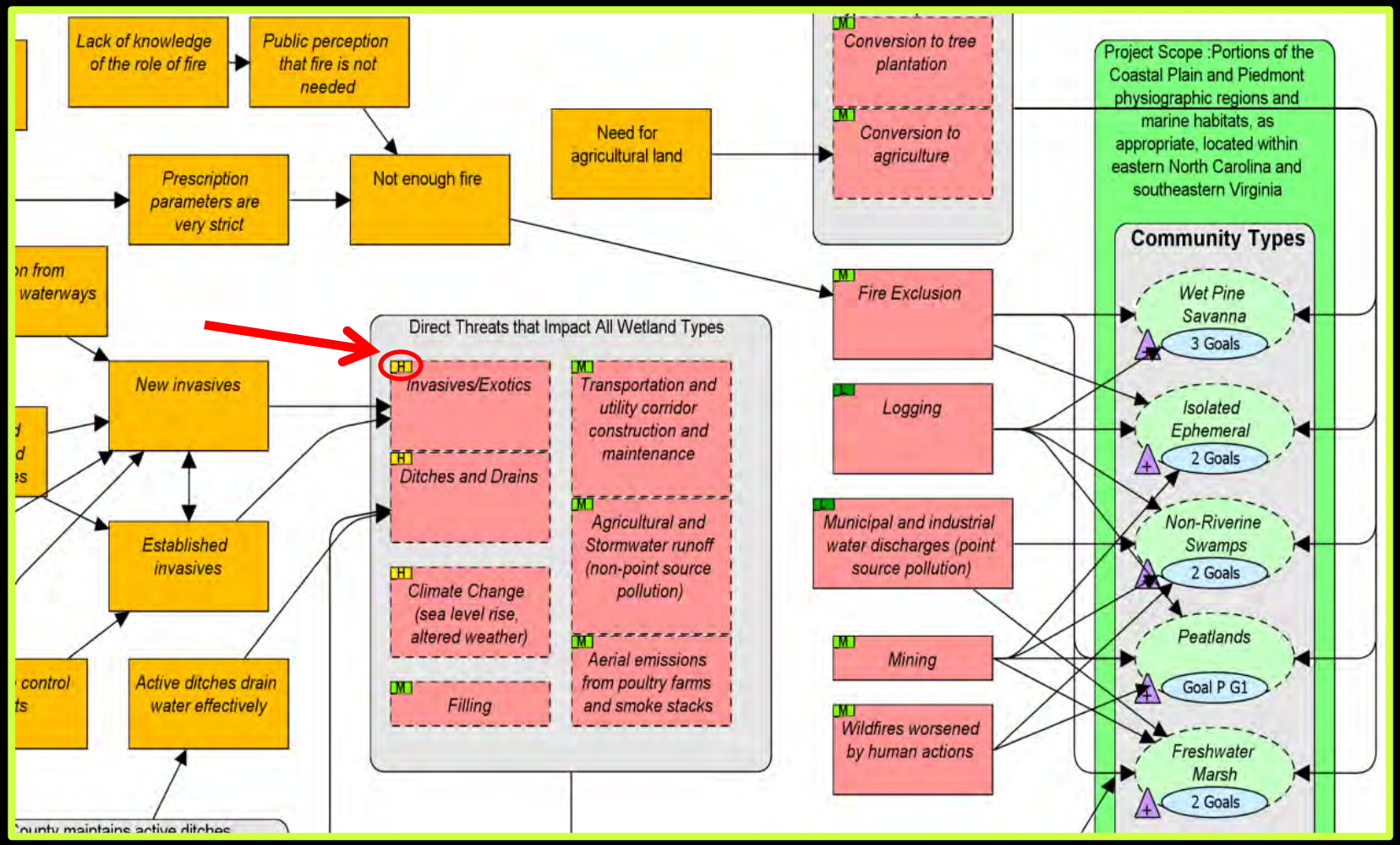
- Longleaf pine
- Oak-hickory forests
- Mesic forests
- Granitic outcrops & glades
- Xeric hardpan woodlands
- Early successional habitats

Barrier Islands

- Barrier Island landforms
- Sea turtle nesting habitat
- Maritime vegetated communities
- Barrier island dependent birds


Fire Threats
Version: 2011-12-15
Wetlands
Project Scope :Portions of the Coastal Plain and Piedmont physiographic regions and marine habitats, as appropriate, located within eastern North Carolina and southeastern Virginia
Community Types
Wet Pine Savanna
2 Goals
Isolated Ephemeral
2 Goals
Swamp Forest
2 Goals
Peatland Pocosins
Goal P1
Freshwater Marsh
Goal
Natural Lakes and Lakeshores
2 Goals
Public outreach to restore connection with natural areas & wildlife communities
Promote ecologically-sensitive land use planning at the local (city/county) level
Public's fear of wildfires
Lack of political support for conservation
Inadequate land use planning
Wildfires worsened by human actions
Lack of knowledge of the role of fire
Drainage of peatlands makes fires more intense
New Group Box
Low tolerance for smoke and flames by public
Promote fire management as land use tool
Public perception that fire is not needed
Legal liability for smoke and flames
Fuel/moisture conditions for parameters
Greater resources allocated for suppression rather than prevention
High fuel loading
Human population centers are nearby potential burn sites
Prescription parameters are very strict
Inability to conduct prescribed fires
Fire Exclusion
Lack of trained practitioners for prescribed fire in some areas

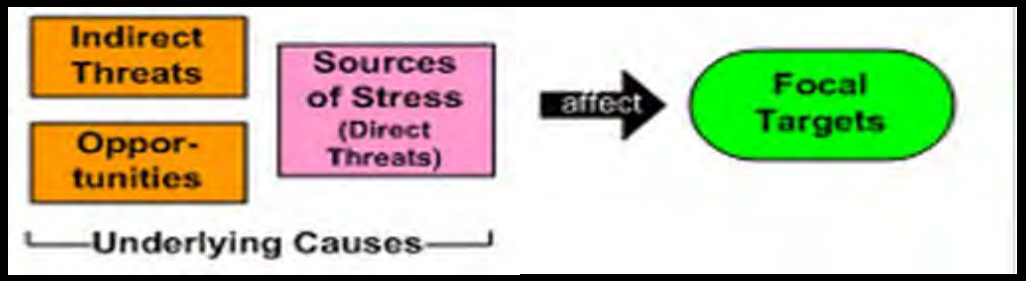
Ranking threats (ENCSEVA landscape)



Step 2: Plan (expert elicitation workshops)

- Target goals - how much and by when
- Develop strategies – how to reduce threats and support targets
- Develop results chains – describes assumptions inherent within strategies (i.e. If I do this then I will reduce a threat/ support a target

Developing strategies & results chains



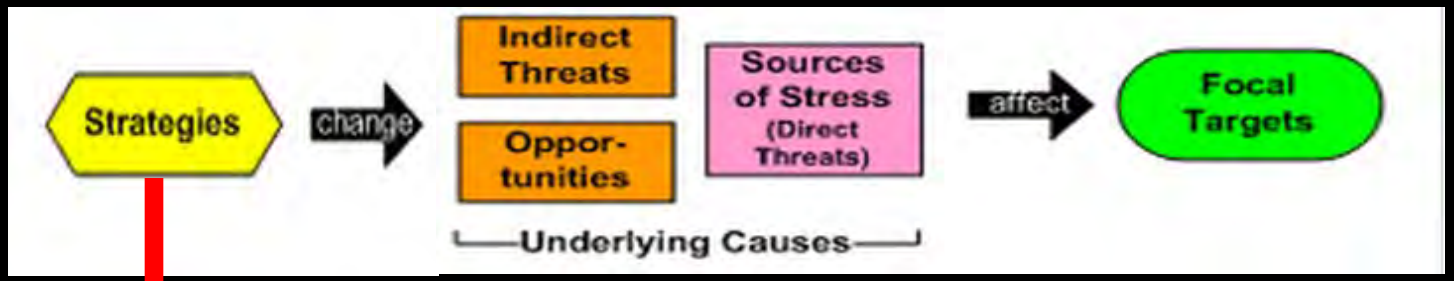
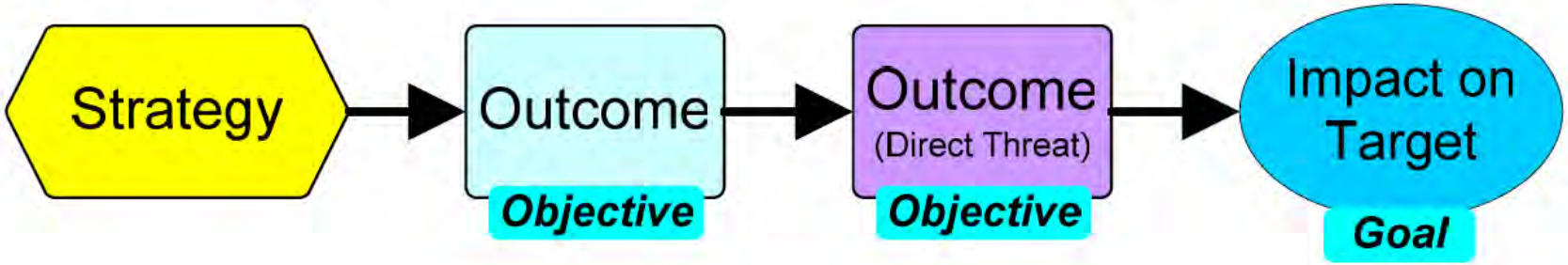
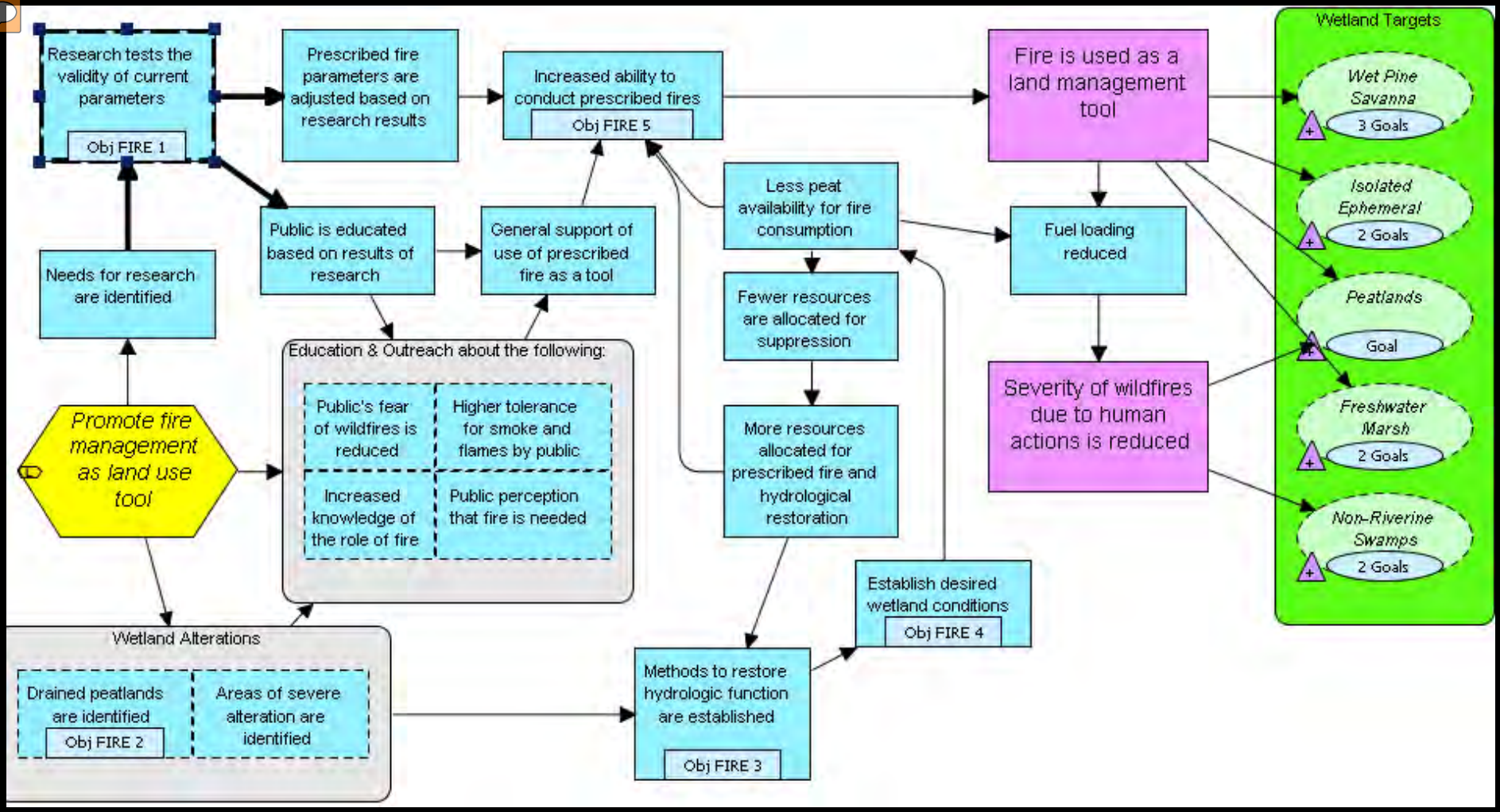


Figure 1. The Basic Components of a Results Chain





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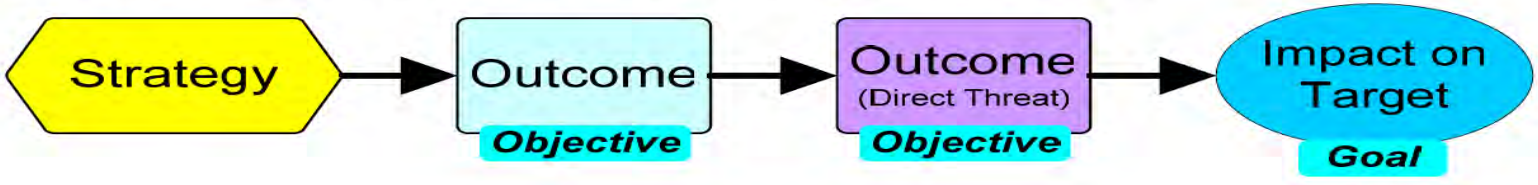


Objectives and indicators listed for Fire Strategy:

Promote fire management as land use tool

Objectives	Indicators
Objective FIRE 1. Management-based studies, with realistic and testable assumptions are developed on 5 selected sites to improve validity of parameters for prescription burns.	• Studies are implemented on 5 sites
Objective FIRE 2. All peatlands (contains organic soils) within ENCSEVA ecoregion are mapped and ranked based on level of alteration or degradation. Ranking criteria based on level of alteration (drainage).	
Objective FIRE 3. Develop a restoration plan for prioritized lands. As part of this restoration plan, funding sources will be identified in order to complete the work.	
Objective FIRE 4. Establish desired wetland conditions for prioritized wetlands/Peatlands. Desired wetland conditions will be monitored based on short and long-term objectives on an annual basis and managed appropriately to meet management objectives.	
Objective FIRE 5. Hydrology restoration efforts, habitat objectives and outreach, prescribed burns as an accepted and effective management tool will increase by 20%, annually until such point that fire has been introduced to all applicable wetland sites. Then the introduction of fire will be based on scientifically determined natural fire return intervals.	

Selecting KEAs & Indicators

Wetlands

Peatlands
pocosin

KEA: Fire Regime

Low intensity, surface burns which result in a shifting mosaic of vegetation as well as facilitating the regeneration of other species

KEA: Hydrology

A hydrologic regime with minimal alterations

Indicator: Fire intensity & extent

Poor: Significant ground fire (catastrophic) resulting in the burning of significant amounts of peat **OR** complete fire suppression resulting in high fuel loading

Fair: Some ground fire, <70% of prescription objectives met

Good: Low intensity surface fires, 70-90% of prescription objectives met

Very Good: Low intensity surface fire, 90% of prescription objectives met

Indicator: Ditching

Poor: Extensively ditched & drained

Fair: Some ditching or alteration of site

Good: Minimal alteration

Very Good: Natural hydrology with no alteration

OR

Poor: >70% of site(s) are effectively ditched

Fair: 30-70% of the site(s) effectively ditched

Good: <30% of the site(s) effectively ditched

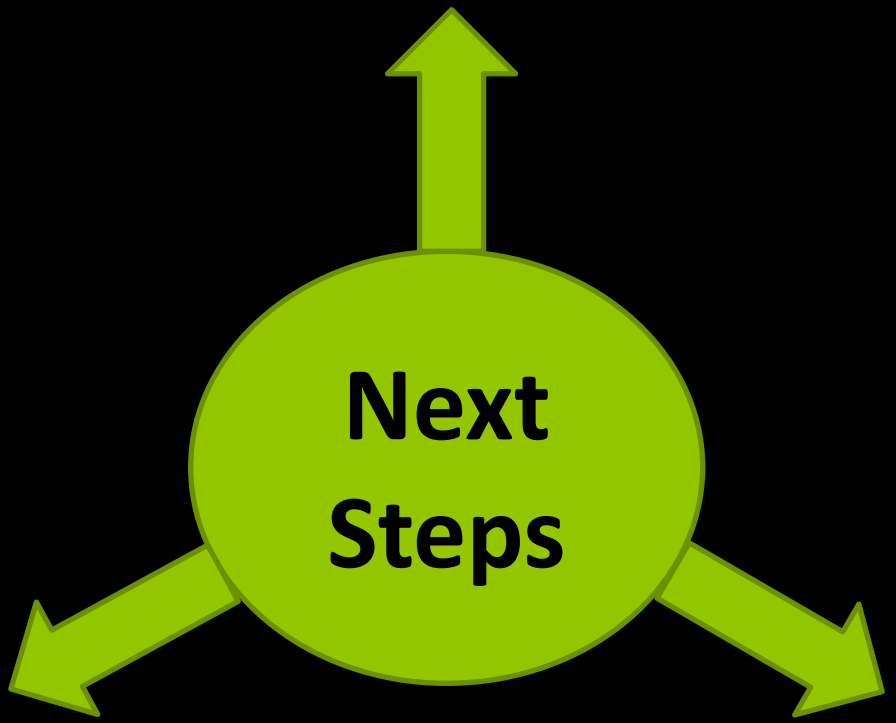
Very Good: Ditches restored (none present)

Monitoring Plan

Conclusions:

- Process defined focus for conservation across the landscape at meaningful scales.
- Process identified threats, drivers & strategies to address threats within an adaptive management framework
- Process created a foundation to support a strategic & comprehensive conservation plan
- Plan will enable conservation community to report success at local and eco-region scales
- Plan will support and be supported by adaptive Landscape Conservation Design(s) at multiple scales.
- Plan is but a means to an end…

Evaluate emergent trends and prioritize actions across the ENCSEVA landscape



Refine/ develop quantitative goals for targets

Refine indicators/ report metrics across scales

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