Synthesis of Everglades Restoration and Ecosystem Services (SERES)

Critical Ecosystems Studies Initiative

Paul R. Wetzel
With contributions from SERES Team

Knowledge transfer from Scientists to Policymakers & Society:

Leave Knowledge at the Loading Dock

Policymakers & Society must put SCIENCE into a social context, pull out relevant information &

Key Tenet of Sustainability Scienc
Co-Production of Knowledge

Achieved with a process that is:

1. ***Credible*** **- through quality control of the research process**

2. ***Legitimate*** **- through inclusiveness and fairness**

3. ***Salient*** **- through common ownership of products and solutions**

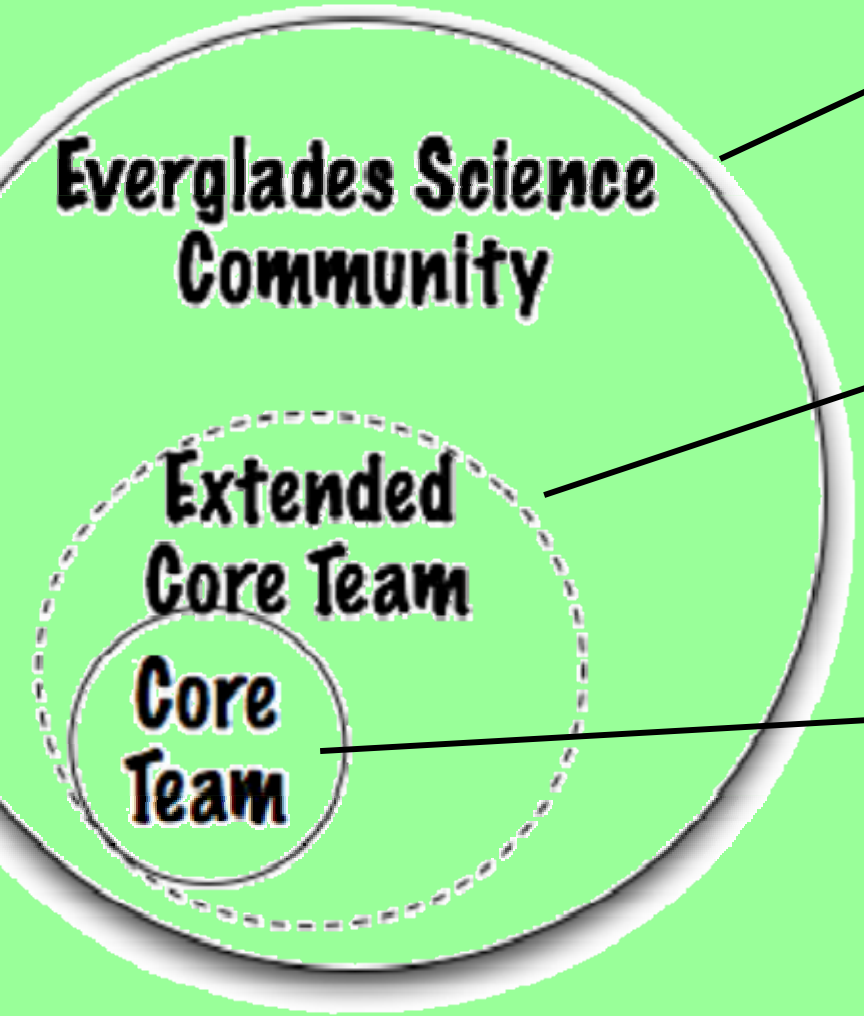
Project Objectives

Synthesize existing freshwater Everglades science relevant to management questions

Perform options analysis on a range of restoration scenarios

Summarize and convey scientific knowledg for use by policy and decision makers

How will we achieve co-production?



- Contribute insight and experience
- Contribute to direction vision—managers, policymakers
- Responsible for directi cohesion, and product final products

SFC Team

Daniel Childers	Arizona State University
Rena Borkhataria	University of Florida
Stephen Davis	Everglades Foundation
Victor Engel	Everglades National Park
Evelyn Gaiser	Florida International University
Judson Harvey	U.S. Geological Survey
Thomas Lodge	Thomas E. Lodge Ecological Advisors
Fernando Miralles-Wilhelm	Florida International University
Melodie Naja	Everglades Foundation
Todd Osborne	University of Florida
Rosanna Rivero	Everglades Foundation
Michael Ross	Florida International University
Joel Trexler	Florida International University
Thomas Van Lent	Everglades Foundation
Paul Wetzel	Smith College

Project Approach

Define Key Questions

Engage managers on key question selection

Must be credible, salient, and legitimate

Must be addressable

Gather Information

- **Literature reviews**
- **Assembling data, models**
- **Contacting other scientists**

Analysis & Synthesis

- **Identify tools and metrics**
- **Perform option analyses**
- **Get review and input from Everglades Community**
- **Develop products**

Presenta Of Findir

- **Peer review**
- **Development & review of products throughout process**
- **Findings in a useful form**

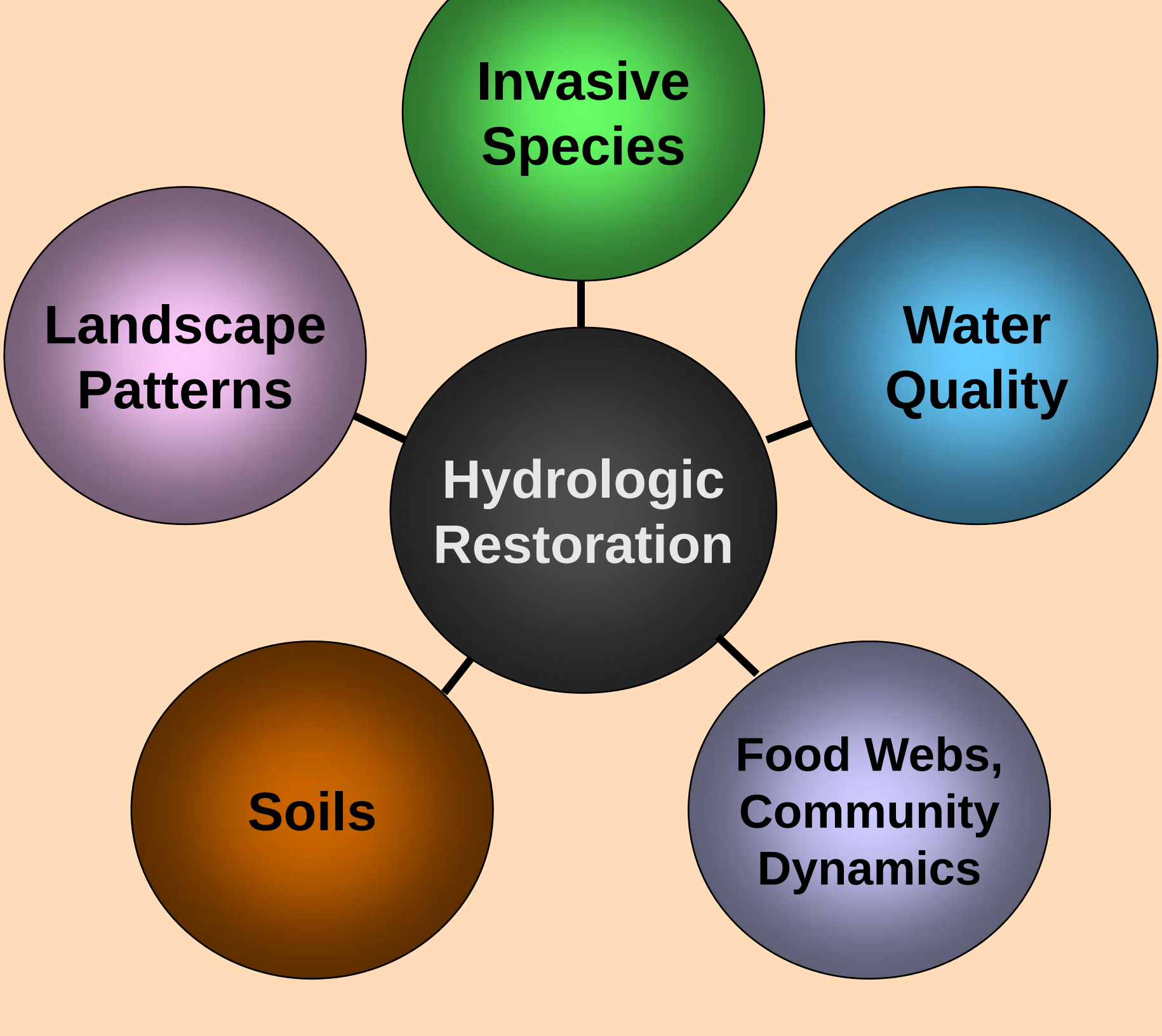
ES team met with Managers in March to develop key que
ngs with individual Policy makers on going

Development of Key Questions

Managers-Decision Makers focus
on questions of hydrology related to project
and economics

Scientists focused on function and
relationships in the Everglades

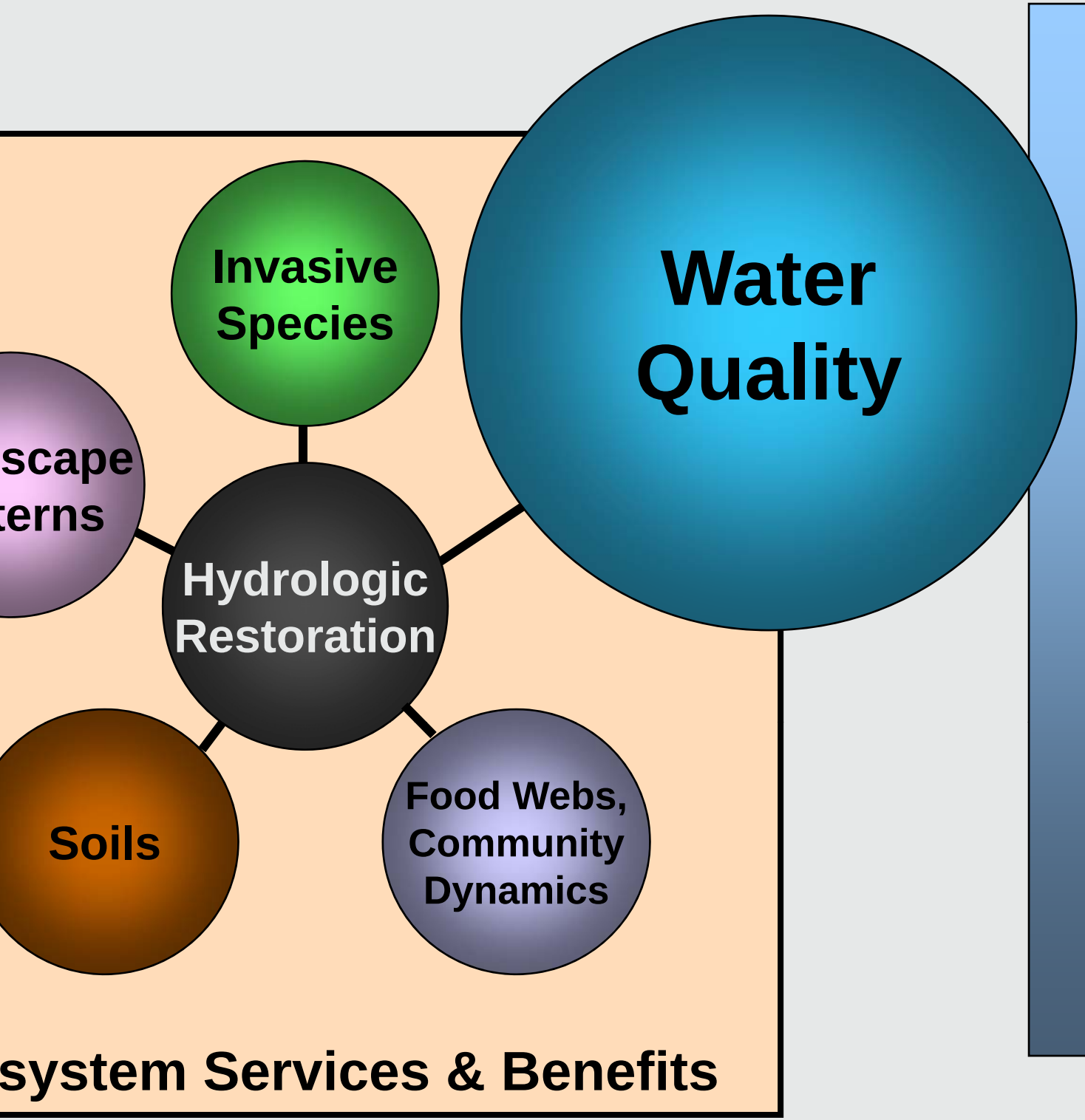
Science Managers ask questions in
all areas; especially about trade-offs and
prioritizing decisions


Invasive Species
Landscape Patterns
Water Quality
Hydrologic Restoration
Soils
Food Webs, Community Dynamics

Centerpiece of project

Basis and boundary conditions for other questions

How much storage needed to maintain target hydroperiods, depths, and flows restored Everglades



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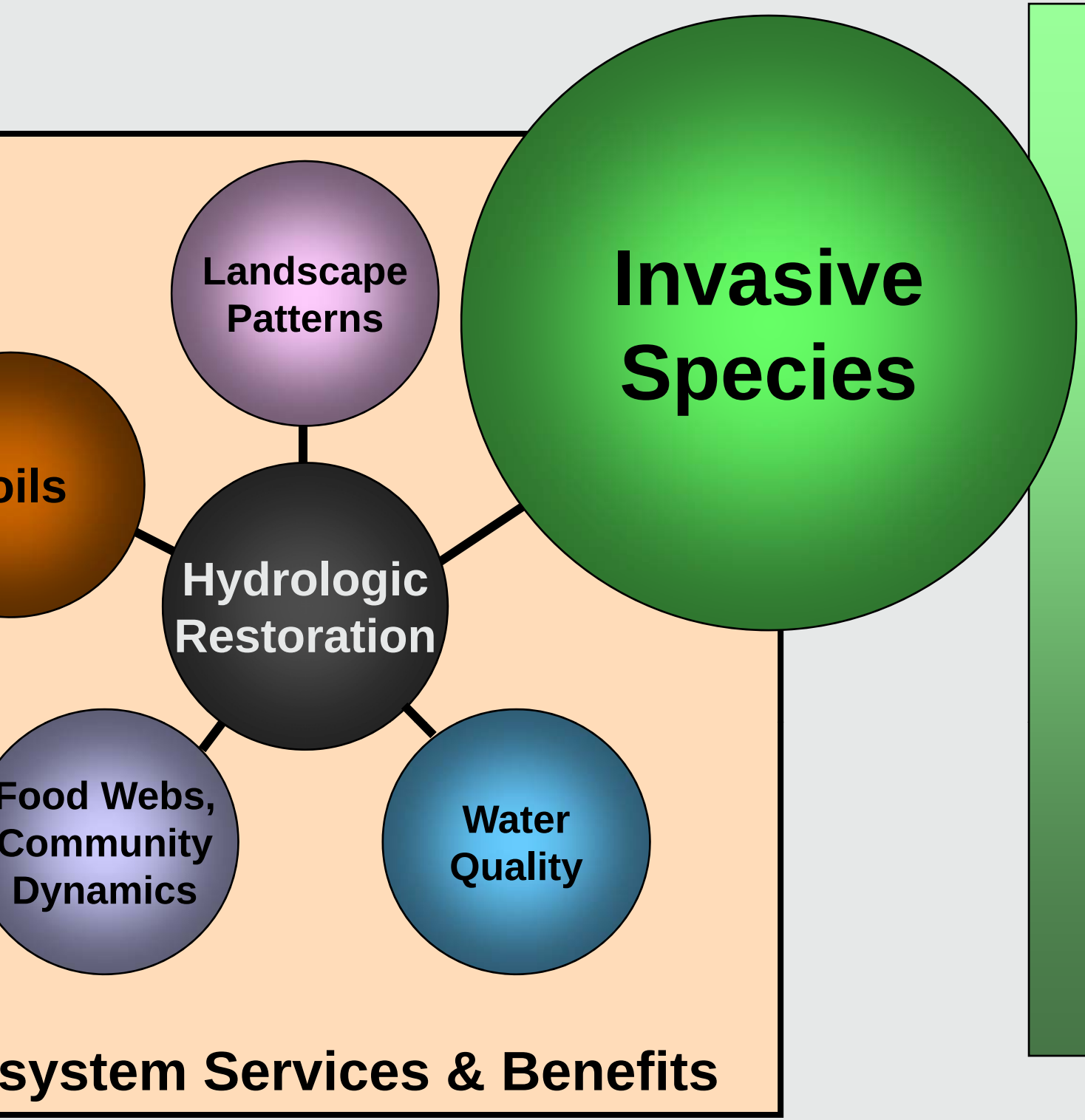
water flowing
the Everglade



Will hydrolog
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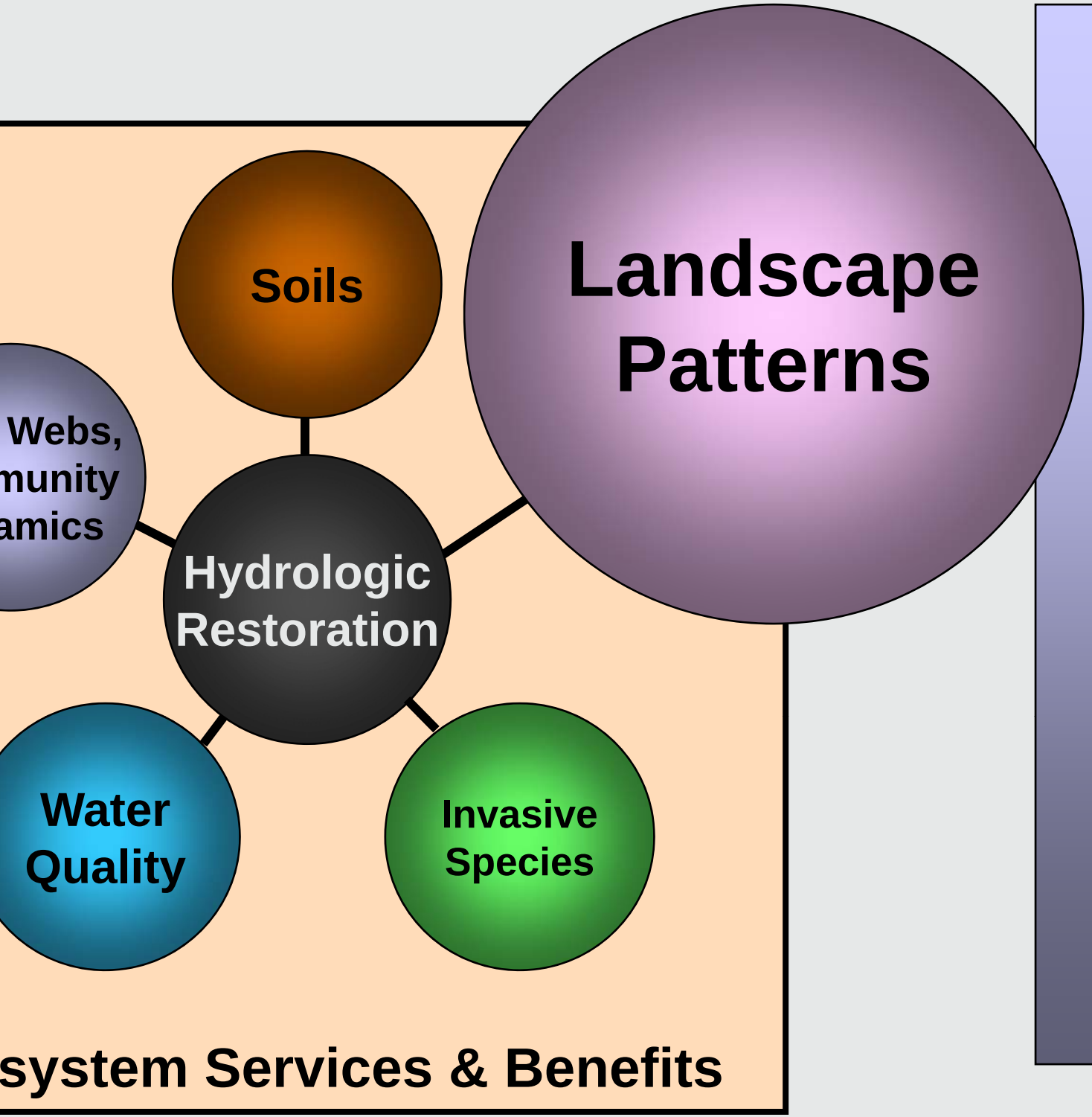
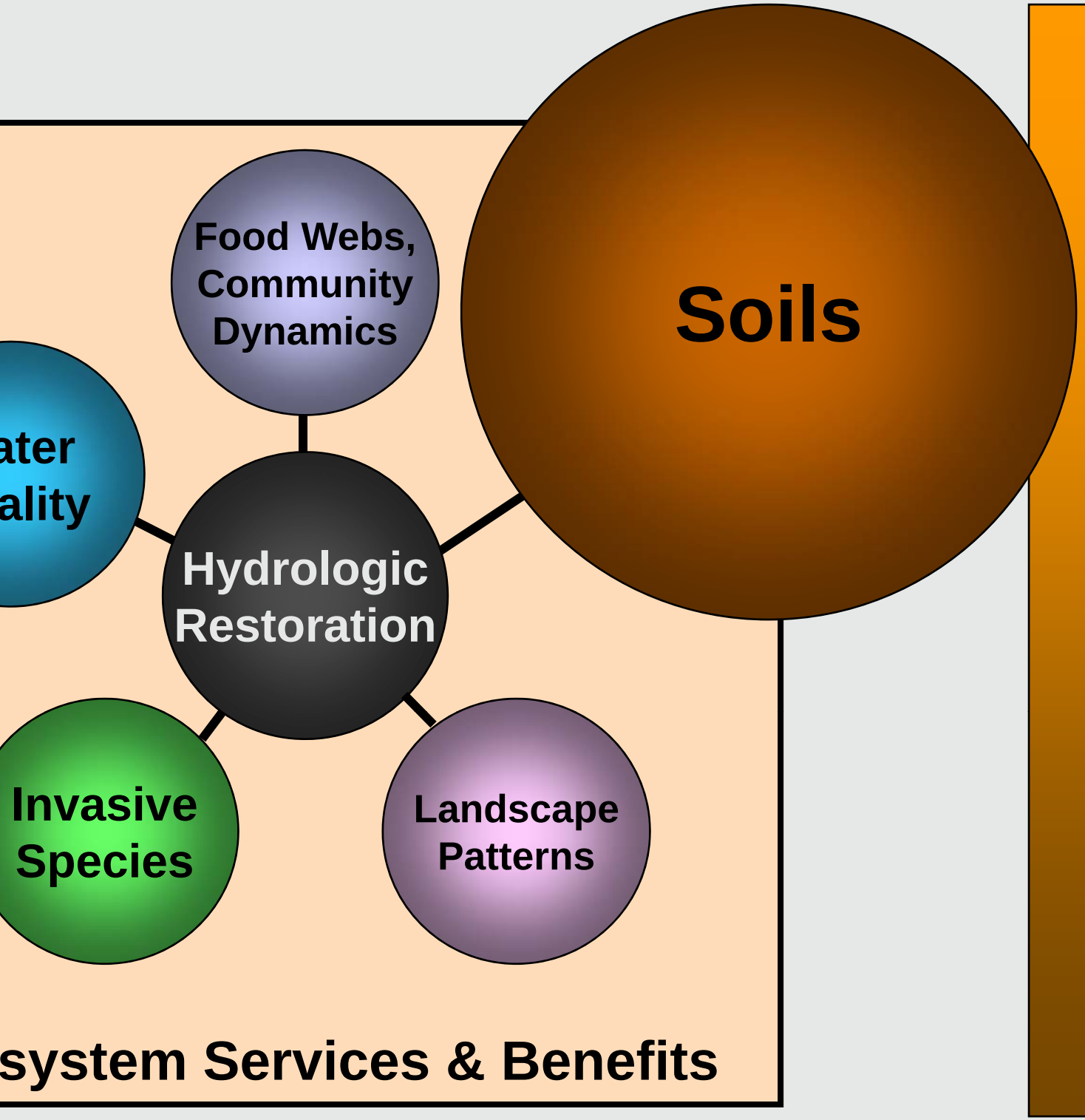


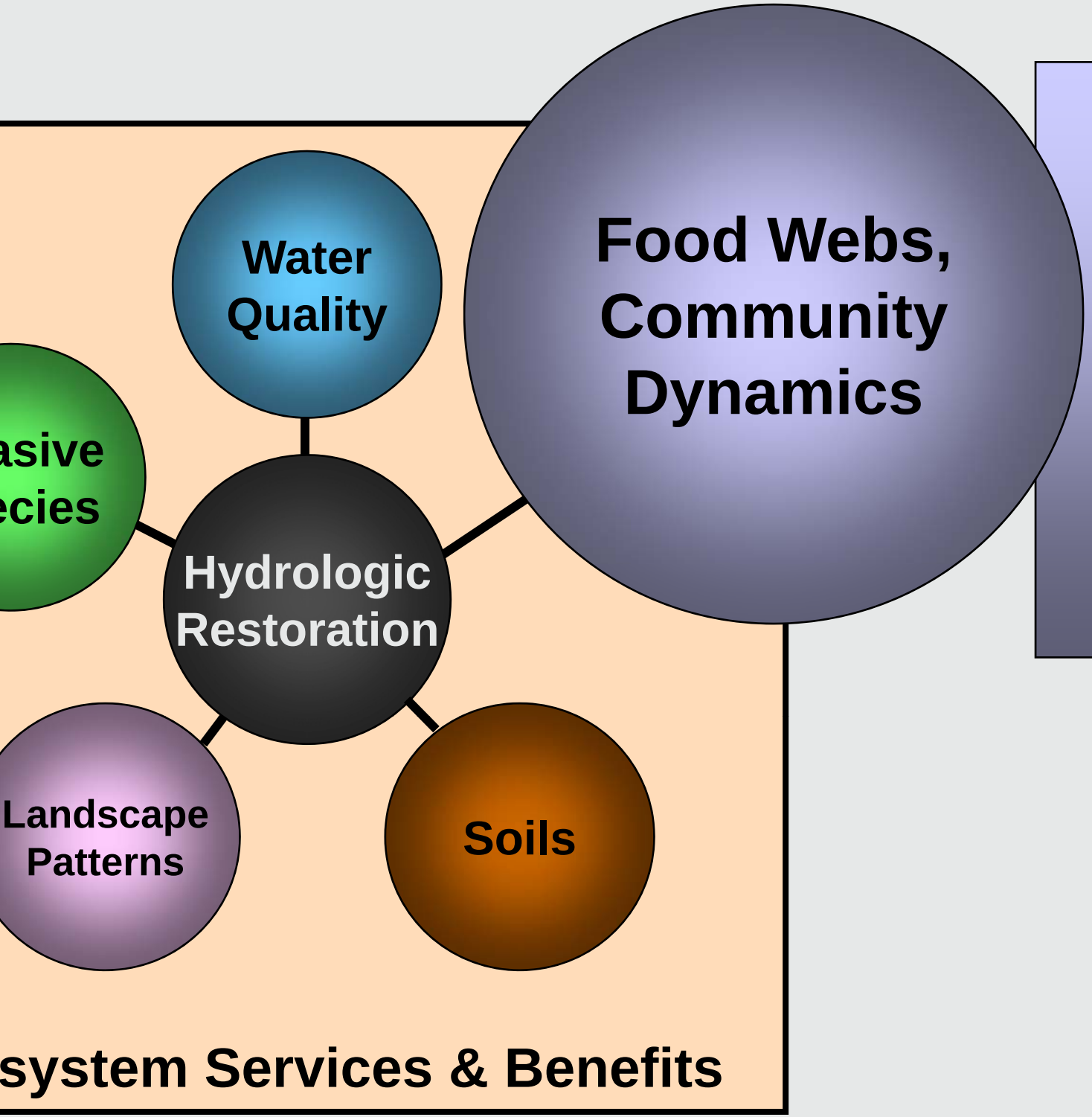
What will hap
to tree islan
ridges and
sloughs if th
hydrology in
Everglades
restored?

Can marl pra
and hydrolog
restoration
coexist?



What will be effect of hydrology a water flow carbon balan peat accreti and subsiden

Will the Evergl be a carbon so or sink as clim changes?



Will hydrolo
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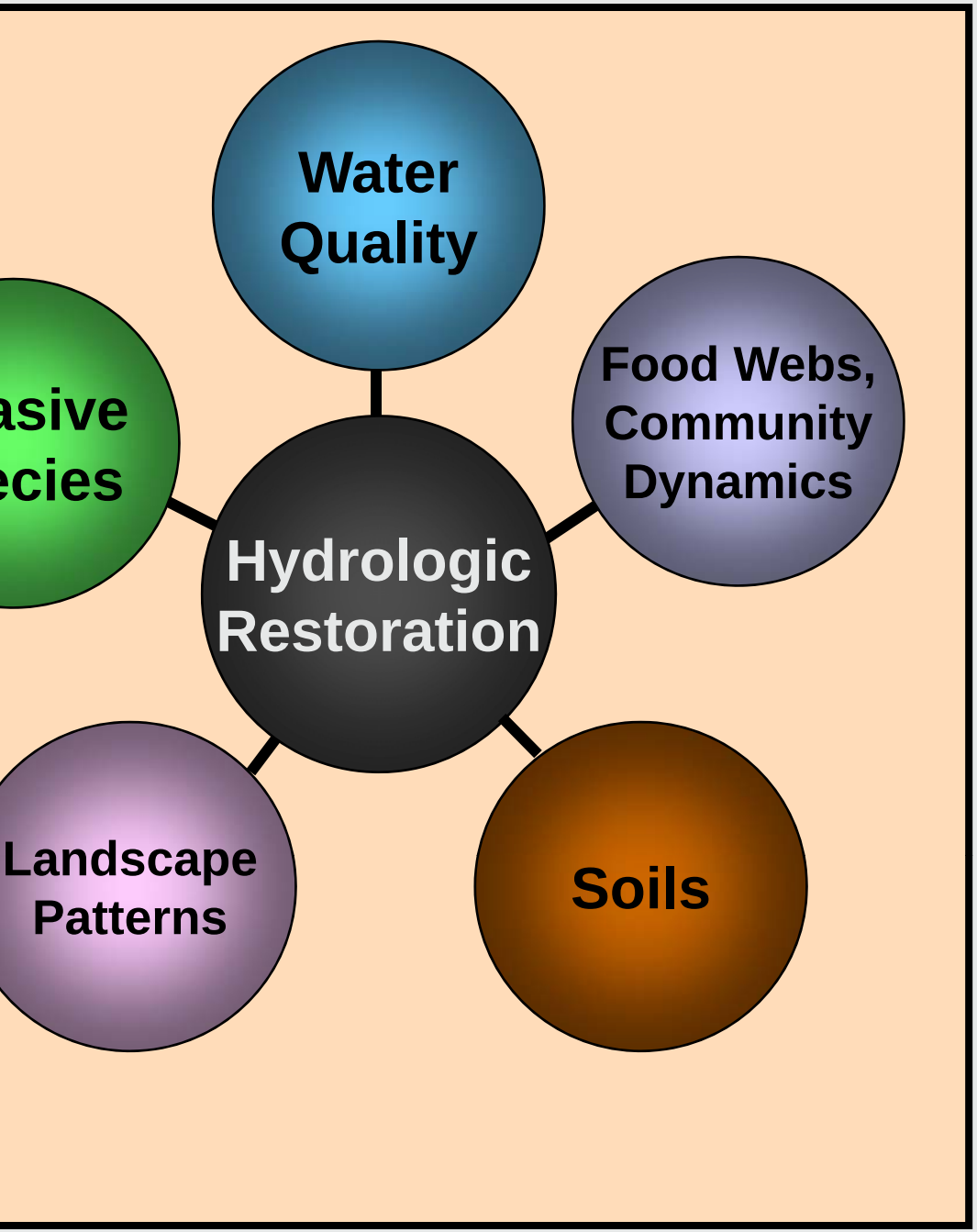
upper troph
levels?



Key questions answered in context of–

Ecosystem Services and N Benefits

Ecosystem Services & Benef

Please give us your input

We seek:

- Feedback on key science management questions from your agency to guide our synthesis effort
- Input on process and products that are most useful
- Suggestions for external advisor of this project

Summary of Key Questions

Water storage needed?

Better to have more water of poor quality or less water that is cleaner?

Effect of restoration on tree islands, ridge & sloughs, and wet prairies.

Effect of hydrologic restoration on upper trophic levels?

Effect of hydrology on carbon balance and peat elevation?

What economic benefits & ecosystem services result from restoration?

Effect of climate change and exotic species on Everglades restoration?