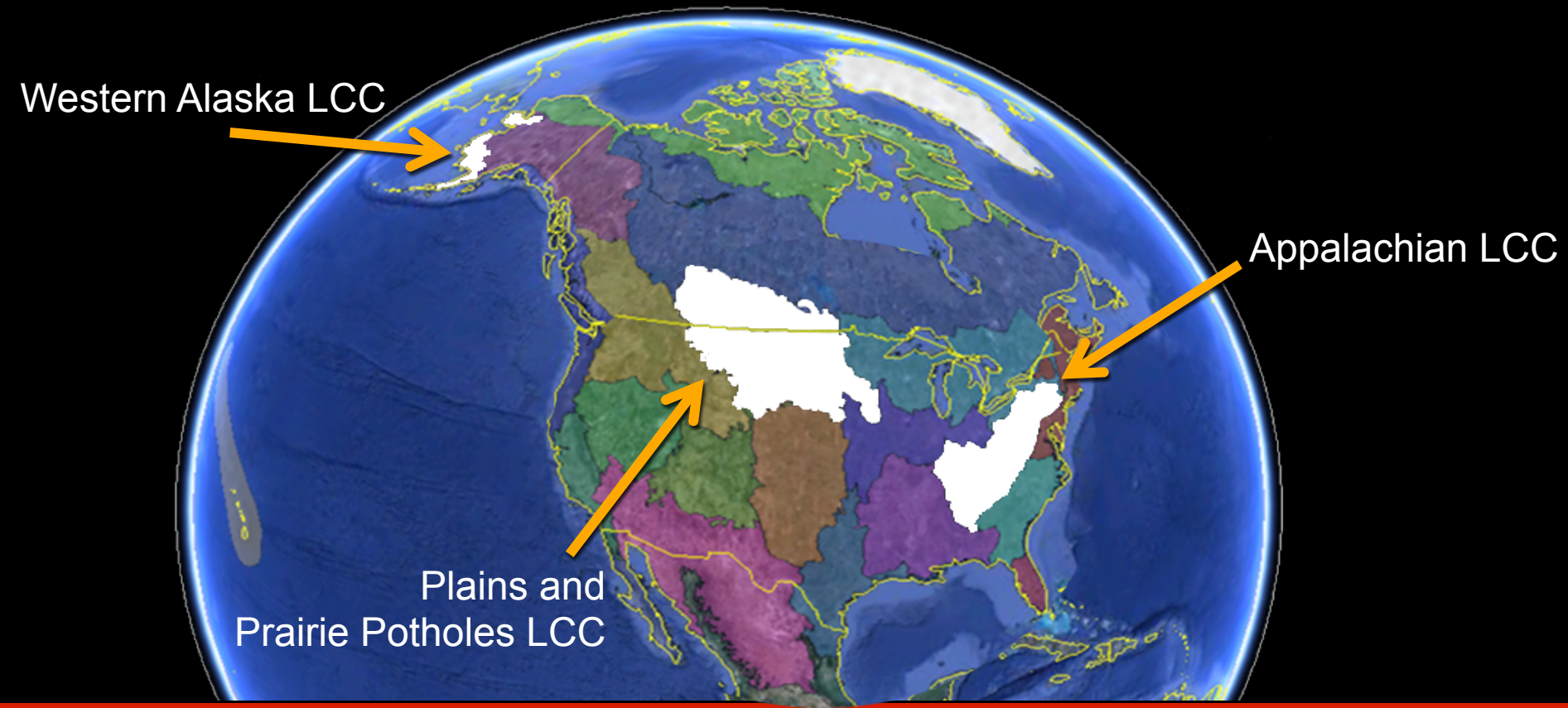
LCC Scope:
from Identify Science Needs,
to Address Immediate Needs,
to Deciding on Future Actions.

Three Cases Studies on the Process & Evolution



Karen Murphy (WAK LCC Coordinator) & Session Moderator

Landscape Conservation Cooperatives (LCCs)

Decision-Makers – Staff - Partners - Stakeholders

Committee level — Decision-Making / Oversight

Exec. subComm — Sub-committee of the main Committee with expedited decision making authority

Staff /Team level — Staff to Coord / Implement LCC operations

- **Coordinator**
- **Science Coordinator**
- Communications; GIS / Data Mgmt; Socio / Cultural; Ecologist / Biologist;

Partnership at large -level — Partners with some expected input to LCC processes or products

- **Managers**
- **Researchers**

TechGroup level — (Technical) Groups established to address specific topics or issues

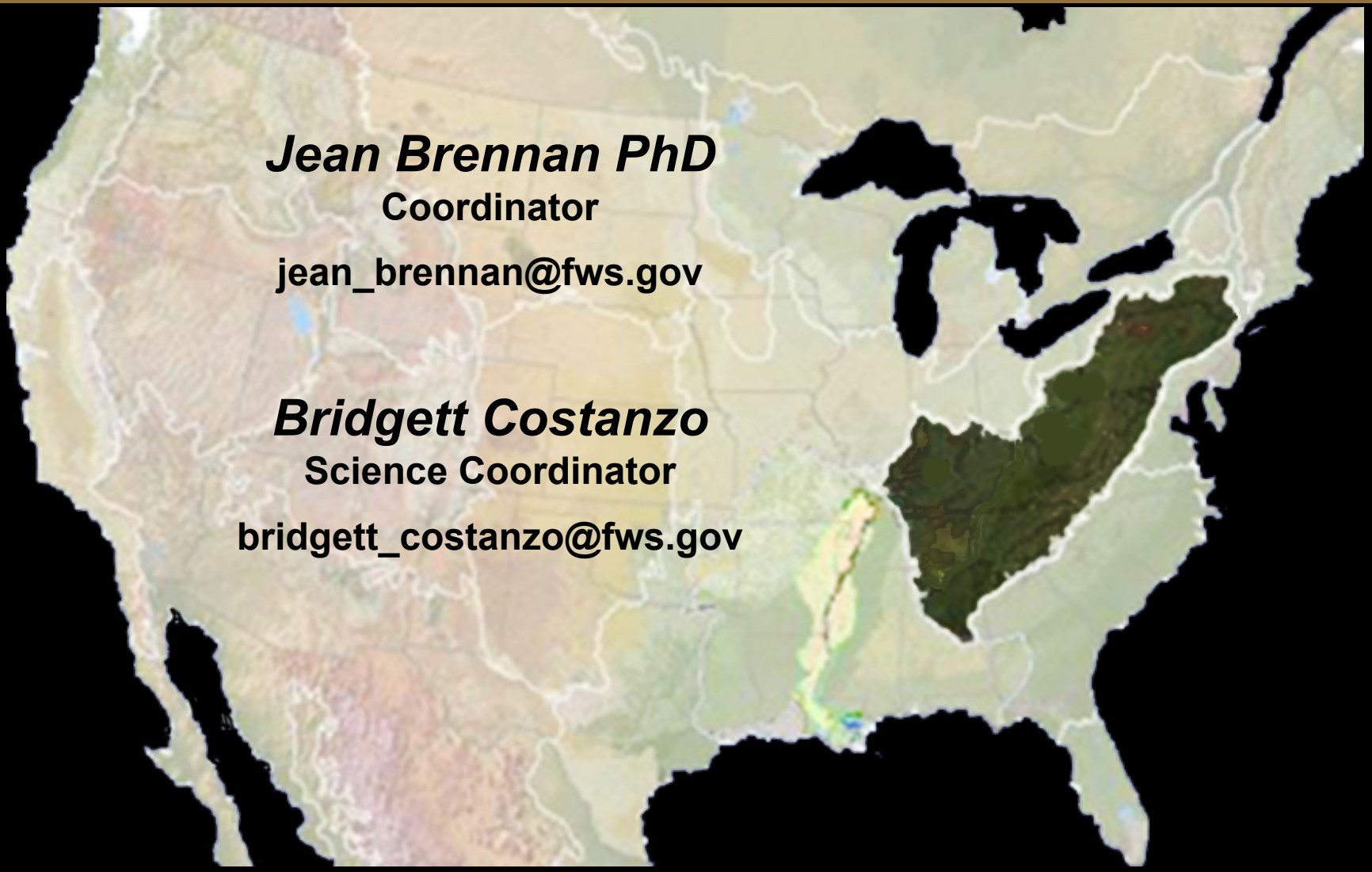
- **System or Issue -based Adv Group**
- **Taxonomic Advisory Group**

Stakeholder level — Broader societal representation (LCC report out to this broad representation and solicit feedback).

LCC Profile *snapshot*	WAK	PPP	App
Number of US States	1	6	15
International *(# Provinces)*	--	3	--
Steering Comm: Total Federal State Tribal NGO Regional Partnerships Other (Univ, Industry, CAN govmt)	12 F = 12 S = 1 T = 3	30 F = 11 S = 6 N = 5 P = 4 O = 4 (CAN)	33 F = 15 S = 11 T = 1 N = 3 P = 3
Primary & Secondary Ecoregions	Taiga & Tundra	PP & Sage Steppe	Forest & Agriculture
Landownership	75% Public 21% Tribal 2% Private	90+% Private	12% Federal; Large % Forest Public (S/F)
Critical / Imperiled System(s)	Tundra, Sea Ice, Coastal, Alpine	Prairie	Aquatic; Cave/ Karst
1^0 Landscape Challenge	Climate Change	Agriculture	Energy Development

Science Needs --- Immediate Needs --- Future Actions

Appalachian Landscape Conservation Cooperative



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Identify Science Needs – Workshop Participants

…Who do you engage and Why?

….(what's the historic relationships / partnerships?)

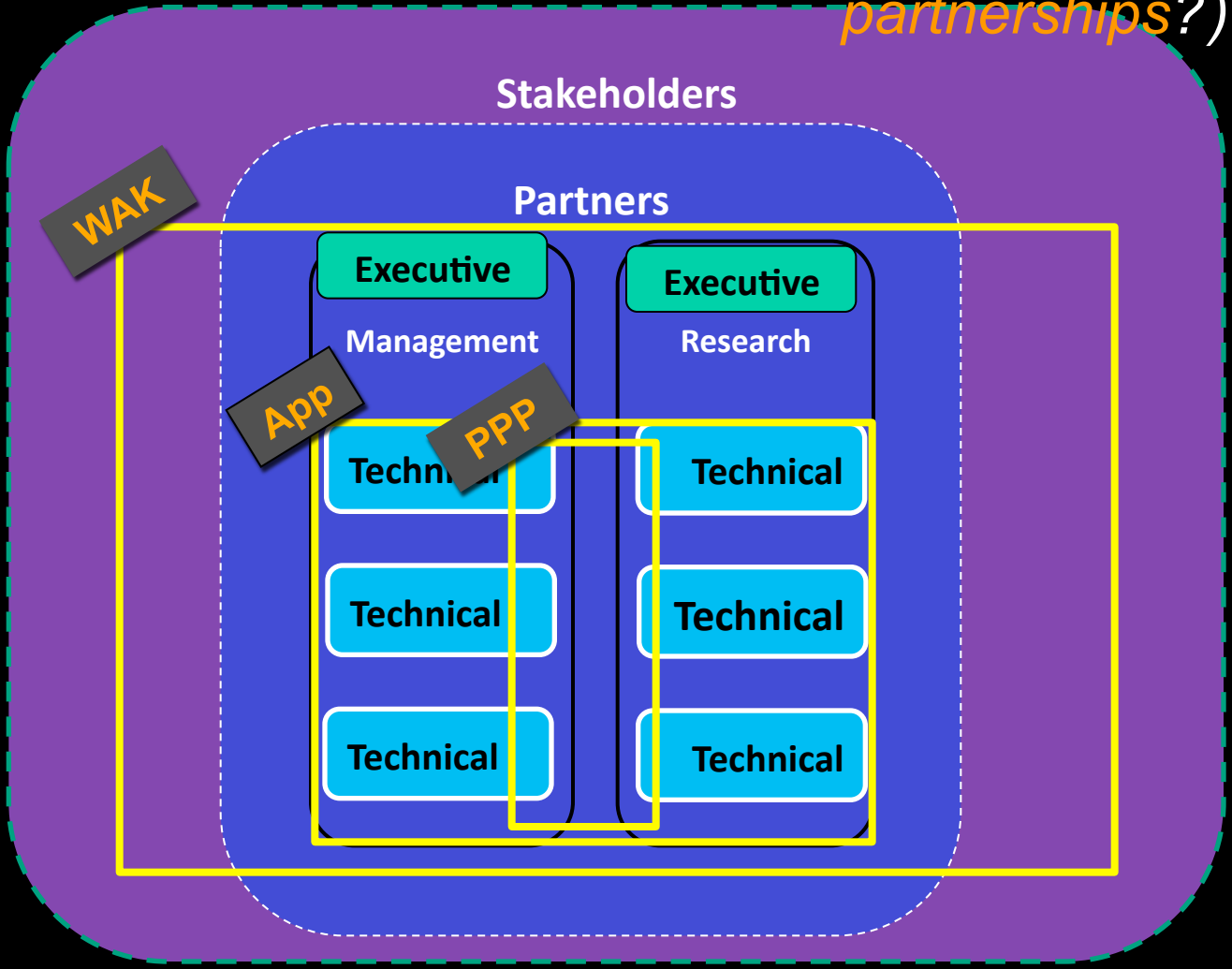
Committee level

Staff /Team level

Partnership at large -level

TechGroup level

Stakeholder level



Identify Science Needs – Workshop Participants

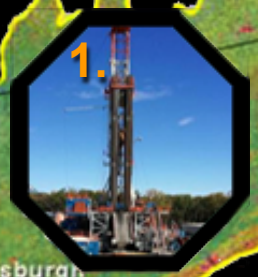
	WAK	PPP	App
Planning / Facilitation	USGS & Contractor w/ Staff	Contractor w/ Staff	Vol. Trained Facilitators & WPTeam *(partner org)*
Meeting Facilitation / Note takers	USGS & Contractor & Vol. 'Reporting Group Leads' * Webinars for RGLs	Contractor	Vol. Trained Facilitators & Technical Note takers *Webinars for F+NT
Participant Background Materials / Input	*at Resource Notebook (CC projects / maps)	*Webinars *Bckgrd Reading Materials	* Extensive [Science Portfolio – *Prep*] * Webcasts(Resources)
Site Visits / Field Trip	No	Yes	No
Outputs / Reports	* 100pg Report + 100pg Append	*Sythesis Rept (40 wk)	* Synthesis Rept (1 wk) * Full Portfolio (staff)
Process Goal	150 - 1/3 Decision – Makers + 1/3 Research + 1/3 Field Specialist	21 Technical Comm.	151 - Build Technical Community / Buy-in

Workshop Planning Team Repr. = 5 State / 6 Federal / 6 Other (NGOs, University, Partnerships)

Appalachian Landscape Conservation Cooperative

15 States *(NY-AL; IL-VA)*

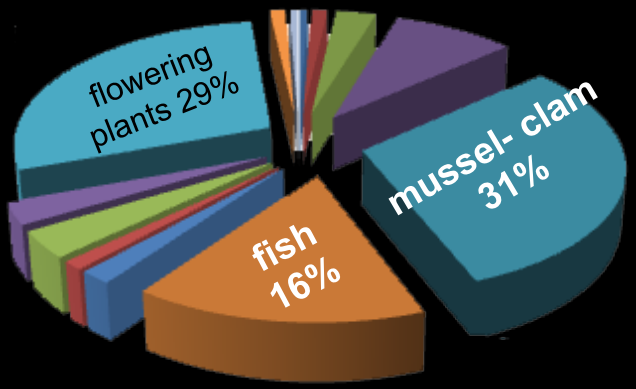
14 NFs
9 NP Areas
6 NWRs



Pittsburgh
Louisville
Evansville
Clarksville
Nashville
Knoxville
Birmingha

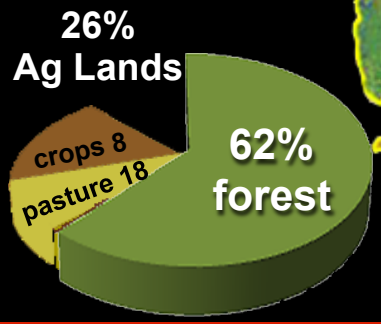
Fed. Listed (170)
Candidate (35)
Proposed (3)

Federally listed species



Major Threats

1. Energy: NG / *Hydro- "fracking"*
2. Energy: Mt Top Mining
3. Water Stress / Extreme Events
4. Urban Expansion



Goals of the Workshop:

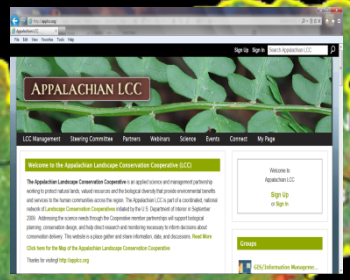
187

1. Survey Science Capacity => Directory of Expertise (COP)

Areas Expertise /Profession	North	South
Aquatic - Manager	11	15
Aquatic - Researcher	11	7
Terrestrial - Manager	13	10
Terrestrial - Researcher	8	11
Climate Change – Manager	3	3
Climate Change - Researcher	4	4
Human Dimensions – Manager	7	5
Human Dimensions – Researcher	10	3
IT & Info. Management-Manager	3	2
IT &Info. Management-Researcher	4	5
TOTALS	74	65

Sector Representation	Managers	Scientists
Federal 43% | State 28% | Other 28%	52%	48%

Photo Source: B. Smith



Human Dim.

- -------
- -------
- -------

IT-InfoMgmt

Northern

- -------
- -------
- -------

Northern

- -------
- -------
- -------

Aq x2

Terr x2

- -------
- -------
- -------

- -------
- -------
- -------

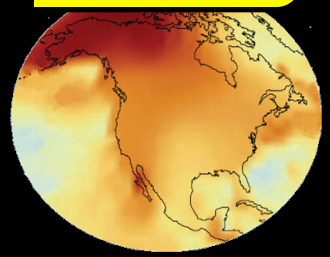
DAY 1- Thematic *(Expertise)* Groups

- -------
- -------
- -------

Southern

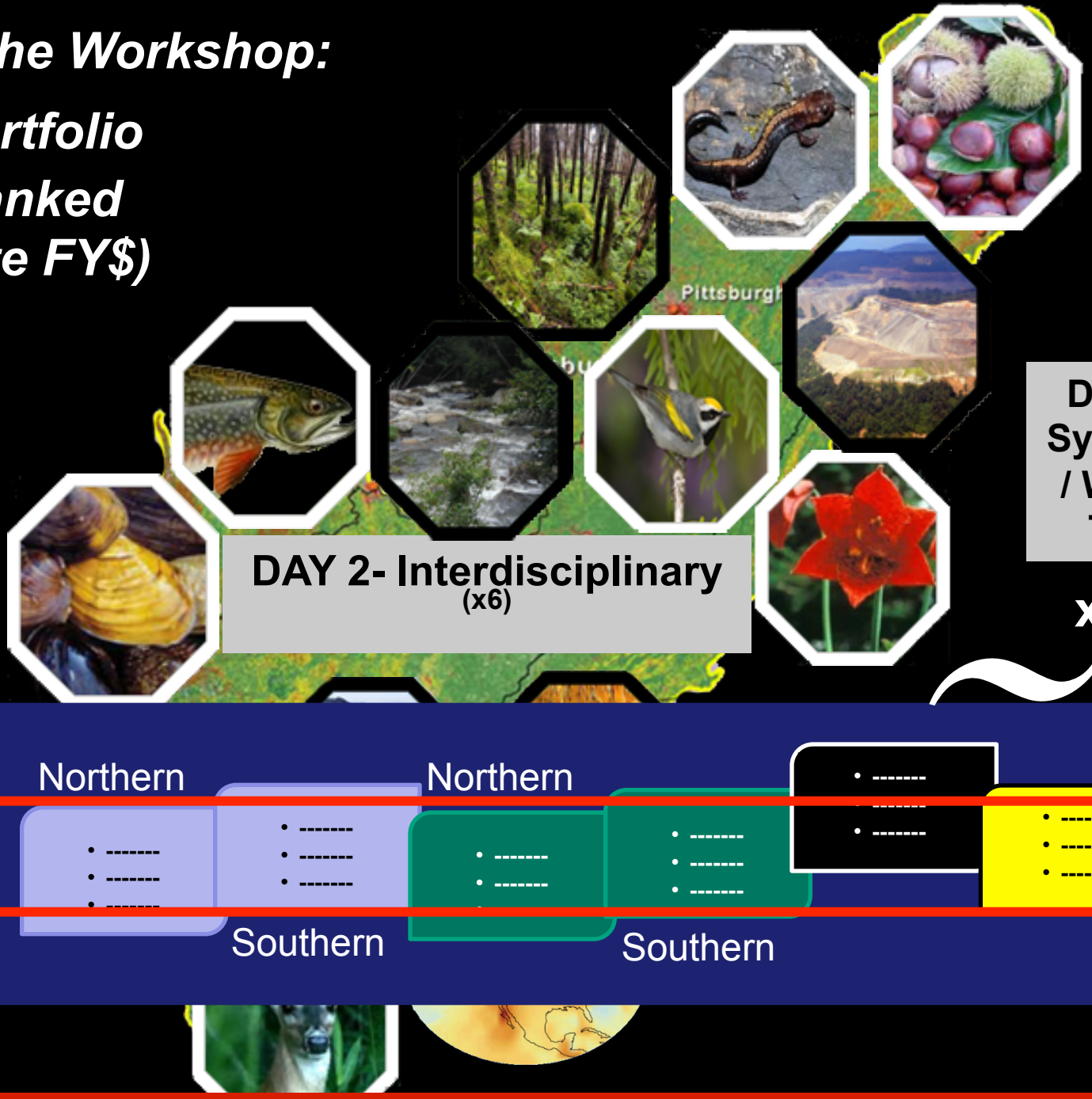
Southern

Climate Change



Goals of the Workshop:

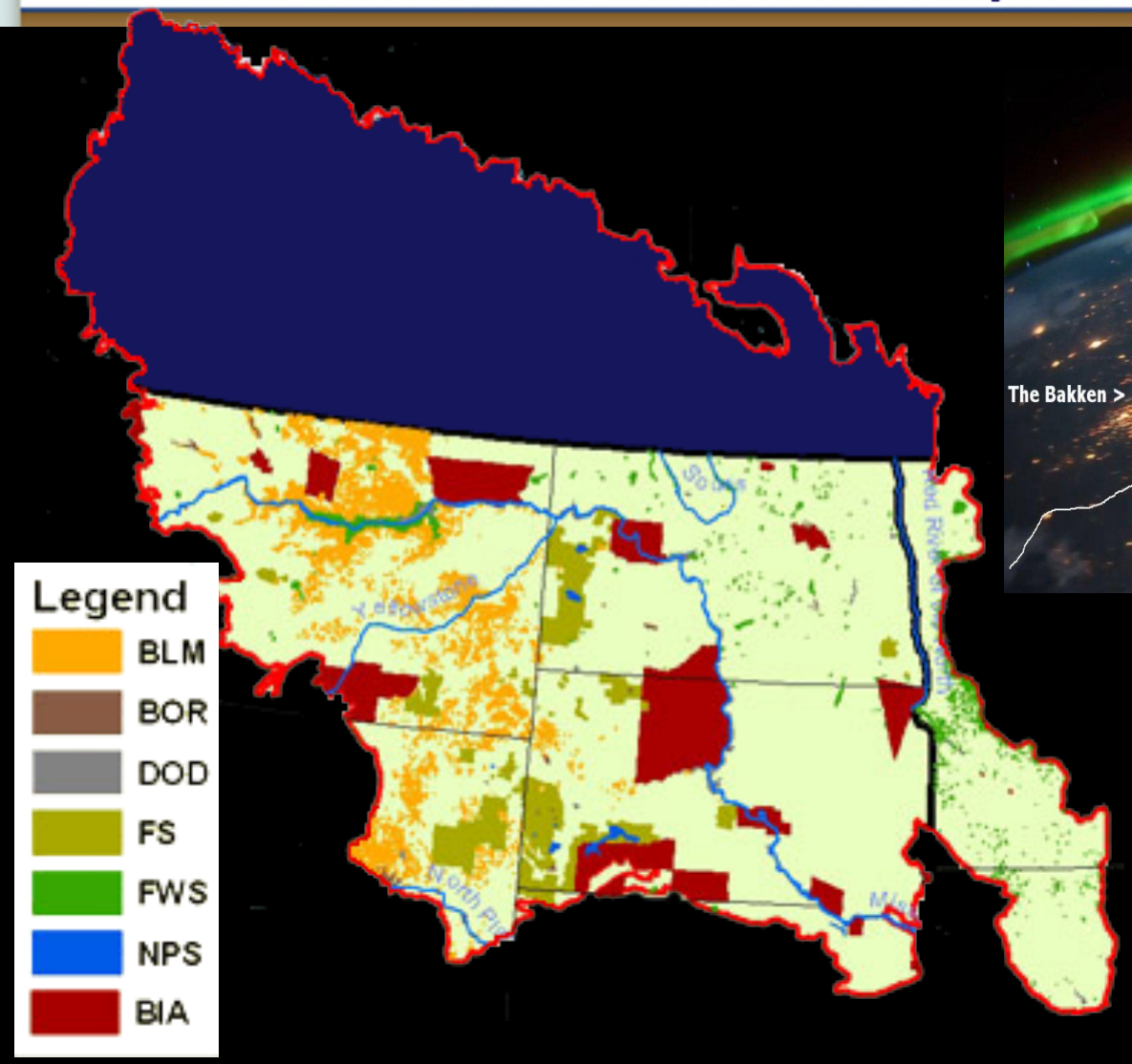
2. *Full Portfolio*
3. *Top-Ranked (Immediate FY$)*

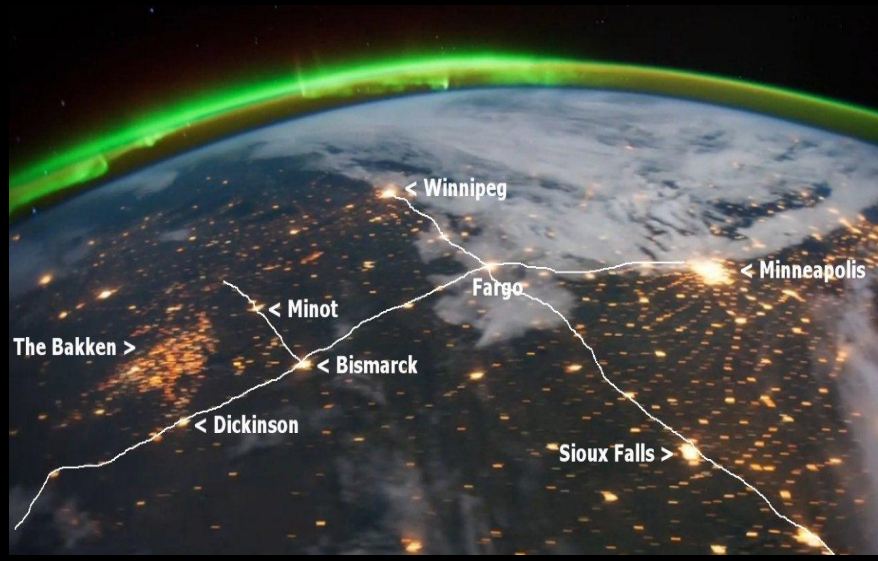


=> a transparent and defensible way of selecting science needs / support

Science Needs --- Immediate Needs --- Future Actions

Plains & Prairie Potholes Landscape Conservation Cooperative





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Plains and Prairie Potholes

Our Fundamental Objective: Increase conservation delivery by reducing scientific uncertainty associated with landscape level stressors which are important to our partnership

Our Initial List of Urgent Needs / Issues

- Agriculture
- Energy
- Climate Change
- Regional Understanding of Habitat Condition (spatial analysis)
- Land and Water Management Planning
- Water

Accomplishments - first 18 months

- Funded 27 projects (over 5 rounds of funding)
- Formed Steering & Technical Committees (more than 2 dozen active members)
- Draft Charter - soon to be finalized
- Conducted Science Needs Workshop
- Sci Webinars, Website, Initial Op's Plan
- Working to develop a seamless national network

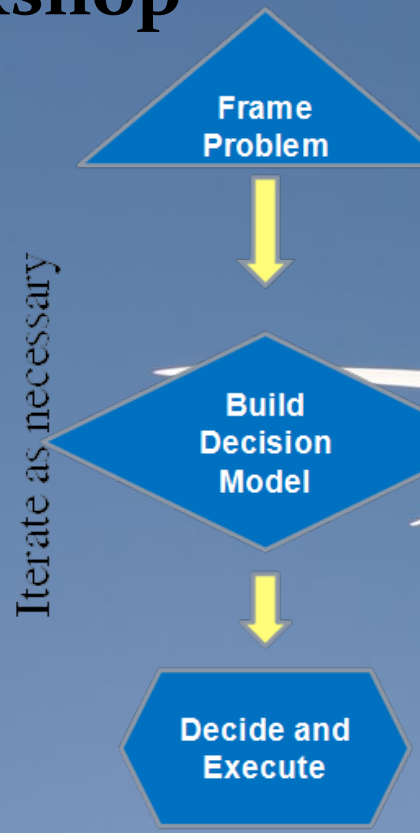
We are ….“a work in progress”

From early beginnings => Immediate needs (2nd yr) => preview of "coming attractions"

PPPLCC	WALCC	AppLCC
DA/Science Needs Workshop	Two Workshops	Science Needs Workshop
Early RFP's Broad	Early RFP Broad	RFA's (contracts)
Later RFP's slightly more specific	Early RFP's addressed fundamental information	6 themes (priorities)
Early RFP's address immediate needs and long-term issues	Data gaps, Tools/Training for resource managers, TEK	Ecological flows, Aq. & Terr. Habitat Classification, CC Vul., T&E Rare species, Energy 'Footprint'
Technical Team review/ rank proposals	Steering Committee review/rank	SC Sub-committee, Annon. reviewers
Scientific rigor, link to needs, unique	Add to conservation / adaptation decision making	Supports adaptive management approach
Scalability /transport - short term	Add to building of partnership	Enhances risk management
Management tie, leverages resources	Leverages resources	Foundational & Tests promising proof of concept
"Connections" workshop upcoming	SC focused pilot program: impacts of coastal storms on coastal resources	Ongoing examination of portfolio into all planning activities

Refining/Improving Planning – year 2

Decision analysis workshop



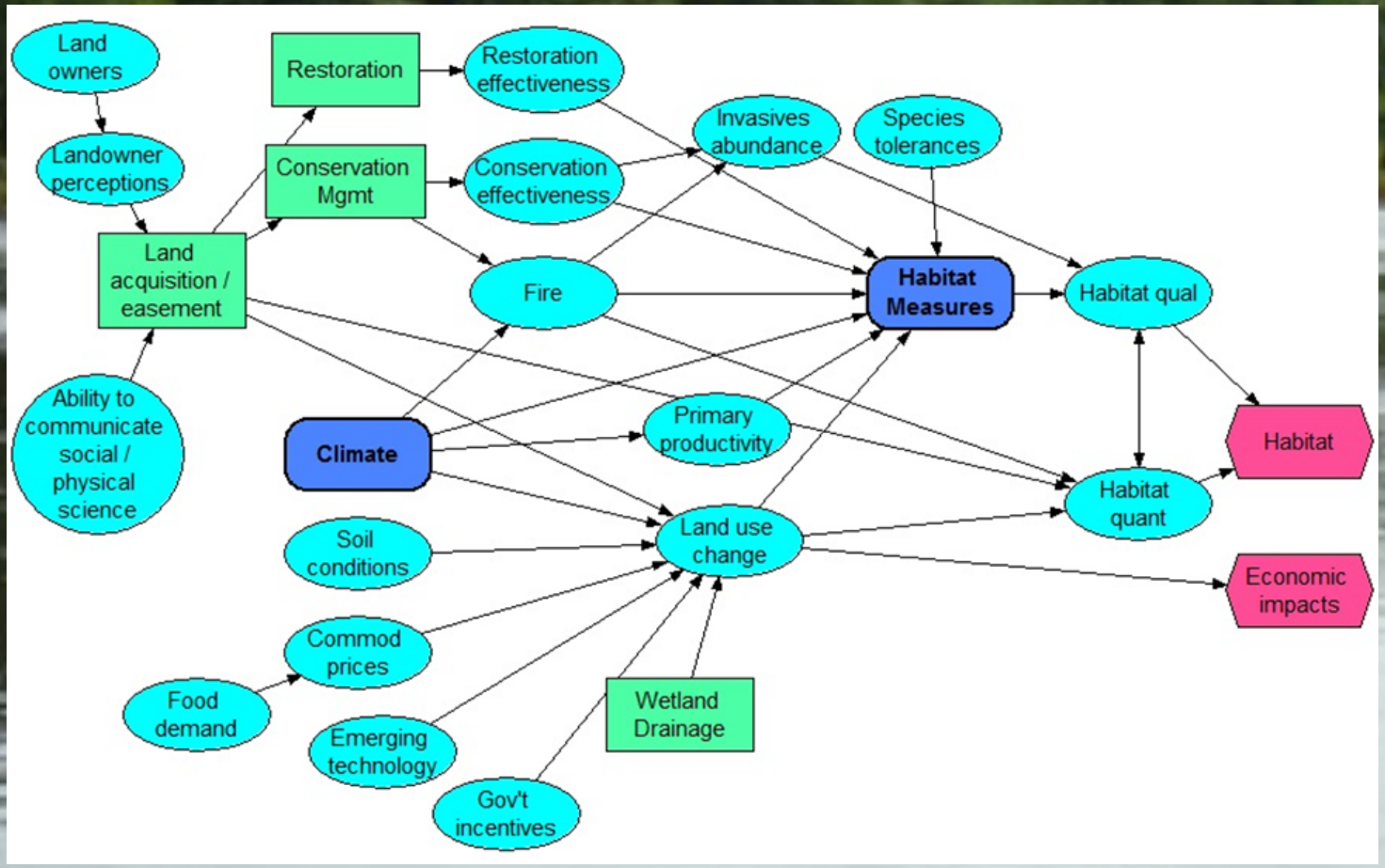
- Identify decision-makers, stakeholders, and scope of decisions to be addressed
- Define components of the decision(s): Objectives, alternatives, uncertainties
- Structure the model
  - Identify how components fit together
  - Identify what analysis outputs are useful
- Quantify model
  - Define relationships; assess uncertainties
- Conduct analysis and sensitivity analyses
  - Results structured to *inform* decision-makers, but not to "make the decision"
  - Flexible models allow exploration of different assumptions, scenarios, etc
- Decision-makers act

Main focus of workshop

Where we left things

Continue to quantifying relationships between decisions, needs and outcomes

Example scenarios



PPP-LCC "Connections" Workshop

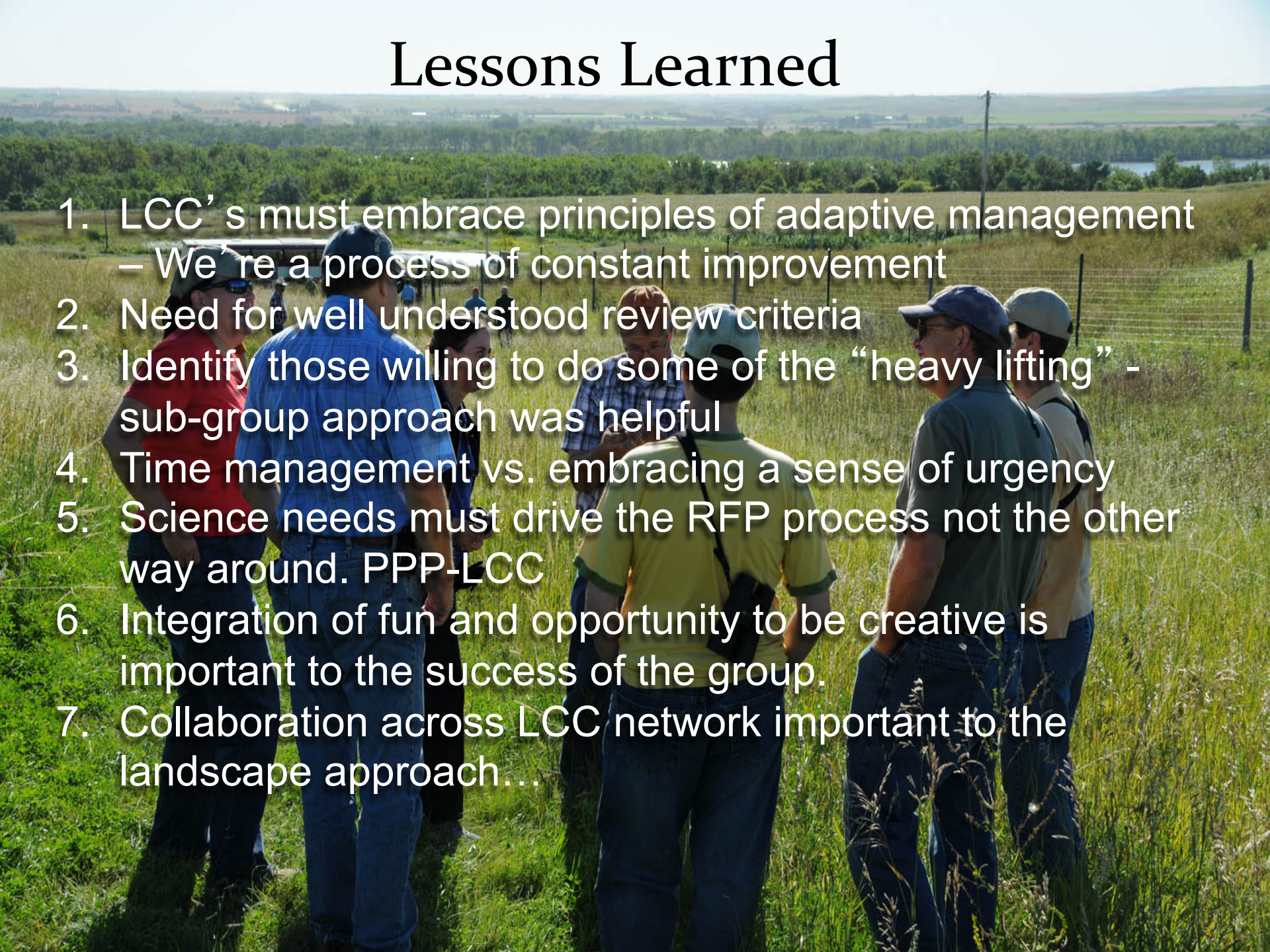
Terrific idea "borrowed" from UMGLLCC…

Moving from individual projects to an even more comprehensive view of the landscape – Will discuss targets, objectives, gaps.

Oriented on 4 themes (potholes, rivers, sage-steppe, human dimensions)

Bringing PI's, Technical and Executive committee members together for the first time.

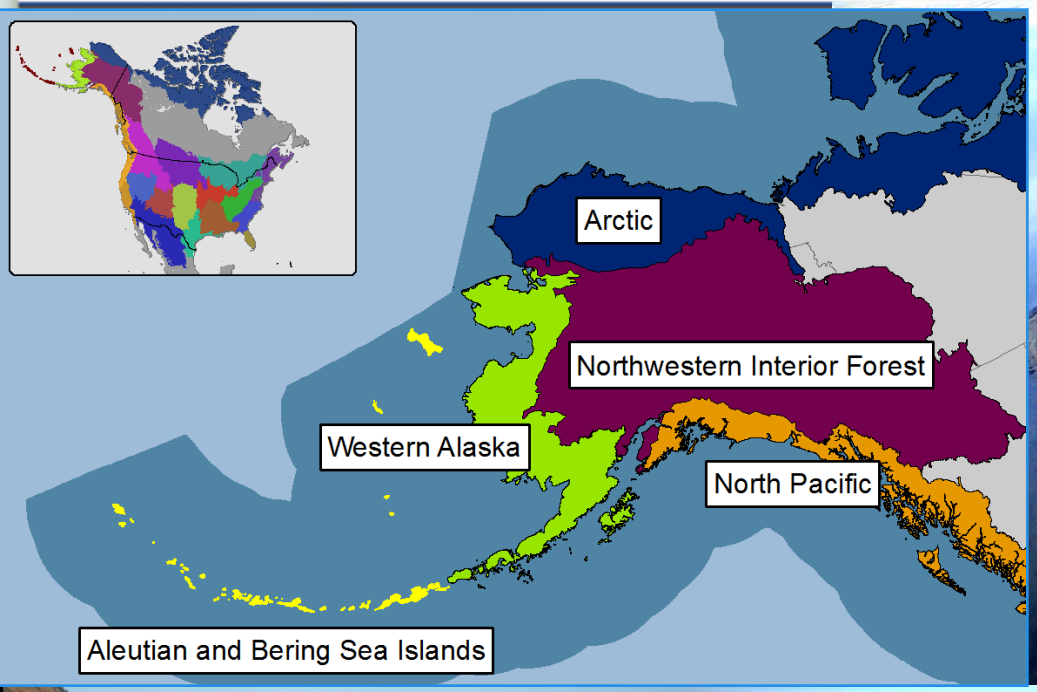
Lessons Learned



1. LCC's must embrace principles of adaptive management – We're a process of constant improvement
2. Need for well understood review criteria
3. Identify those willing to do some of the "heavy lifting" - sub-group approach was helpful
4. Time management vs. embracing a sense of urgency
5. Science needs must drive the RFP process not the other way around. PPP-LCC
6. Integration of fun and opportunity to be creative is important to the success of the group.
7. Collaboration across LCC network important to the landscape approach…

Science Needs --- Immediate Needs --- Future Actions

Western Alaska Landscape Conservation Cooperative



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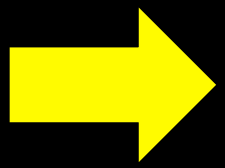
Strategic Planning for a LCC

Develop

- Shared vision for long-term ***LCC success***
- Processes for translating science needs into ***Strategic Activities***
- Processes for ***Evaluating LCC's Performance*** (feedback)

key: X - identified as priority need; / - raised in the group's report but not in final list of priorities.	Coastal Birds	Coastal Mar. Mammals	Landscape Ecology	Birds	Fish	Mammals
Maintain and expand hydrological stations (flow, water balance, temperature, etc.)	X		X	X	X	X
Expand weather stations; temperature data	X		X	X	X	
Precipitation data (establish water balance micromet stations, upgrade ppt gauges)	X		X	X	X	
Snow measurements/accumulation data; and snow timing (e.g. MODIS imagery)			X	X	X	X
Digital Elevation Models / topographic and bathymetric data (for: veg maps & models; sea level rise; landform processes): statewide, 2.5 m resolution [SPOT, etc.] (LCC should advocate for); coastal localized <1m [LIDAR]; localized <1m [LIDAR] @ high priority watersheds/ coastlines/ research sites	X		X	X		
Tide gauges / monitor sea level rise (LCC advocates for with relevant agency)	X		X	X		
Baseline conditions of water chemistry and temperature in lakes, rivers, streams	X			X	X	
(Coastal) storm monitoring (frequency, wind strength, direction, intensity)	X			X		
Permafrost distribution and changes				X	X	
Soil moisture baseline data, evapotranspiration rate data	X				X	
Sediment loads/transport by stream type (fish), in floodplains (birds)				/	X	
Wetland spatial data mapping			X	/		
Salinization extent and levels in coastal zones	X			/		
Baseline contaminants				X		
Acidification extent and levels in coastal zones	X					
Waterbody monitoring (lake drying, change in aquatic food resources)				X		
Coastal erosion / subsidence / sedimentation				X		
Soil carbon databases (can veg mapping & other efforts be linked to current C			X			



Activities

Develop a Shared Vision of Success

What do you want the LCC to look like in 3 years?
5 years? 10 years?

- Promote Communication re: effects of Climate Change
- Coord. & Collab. to improve efficiencies in science activities
- Address common information needs of
  Resource Management DM
- Synthesis of information at Landscape & Larger Scales
- …Applied Science & Technology Transfer
- …

What characterizes the issues the LCC will consider? (Scope, Domain)

Develop a Shared Vision of Success

What do you want the LCC to look like in 3 years?
5 years? 10 years?

- Promote Communication re: effects of Climate Change
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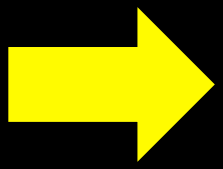
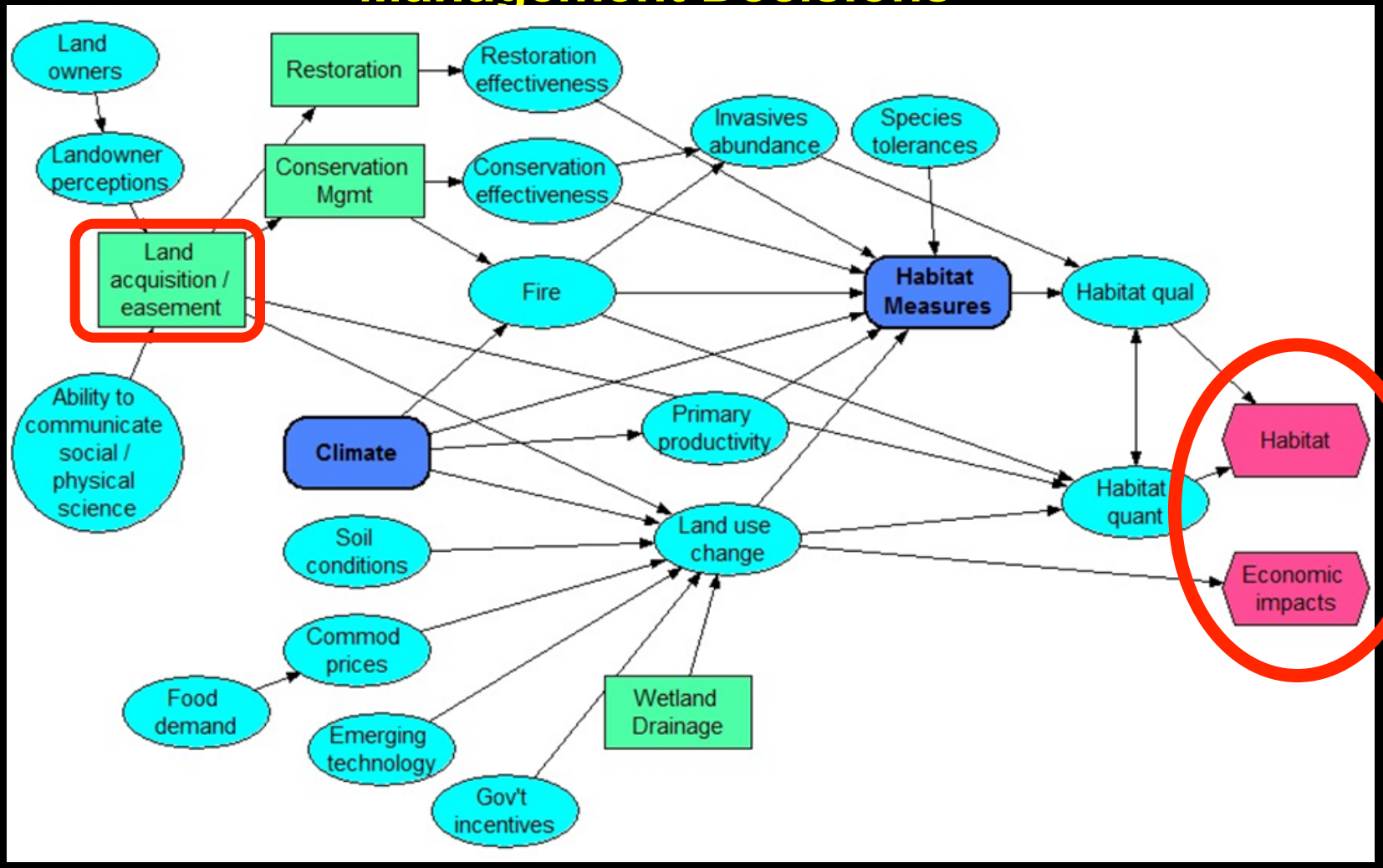


Use to establish
- multi-year Goals & Objectives
- metrics for evaluating success

Identifying Strategic Activities: Focus Area Priorities

Management Decisions



Identifying Strategic Activities: Focus Area Priorities

Sys ties
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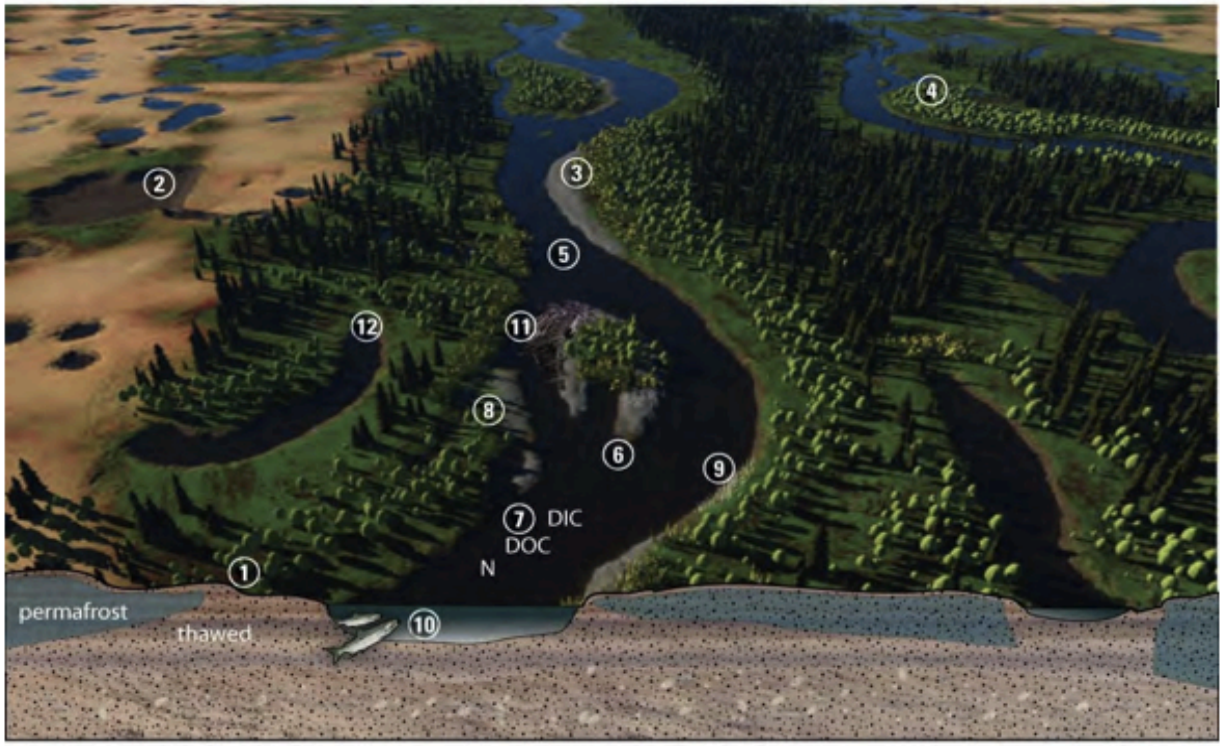
Floodplain Dynamics



(1) Permafrost absent at earlier succession stages
(2) Thaw lake drainage on abandoned floodplains
(3) Wetter scenario- flooding, channel migration, erosion, sedimentation, early successional vegetation;
(4) Drier scenario-channel stabilization, shrub growth
(5) Reduced summer flows and increased winter flows
(6) Changing sediment loads from glacier retreat
(7) Change in amounts and seasonality of nutrient exports
(8) Cottonwood and alder dispersal on river bars
(9) Floodplains as corridors for invasive species
(10) Changes in salmon migration and marine nutrient inputs
(11) Increased large woody debris from erosion of permafrost banks
(12) Changing connectivity with oxbow lakes (for fish spawning and rearing)

Identifying Strategic Activities

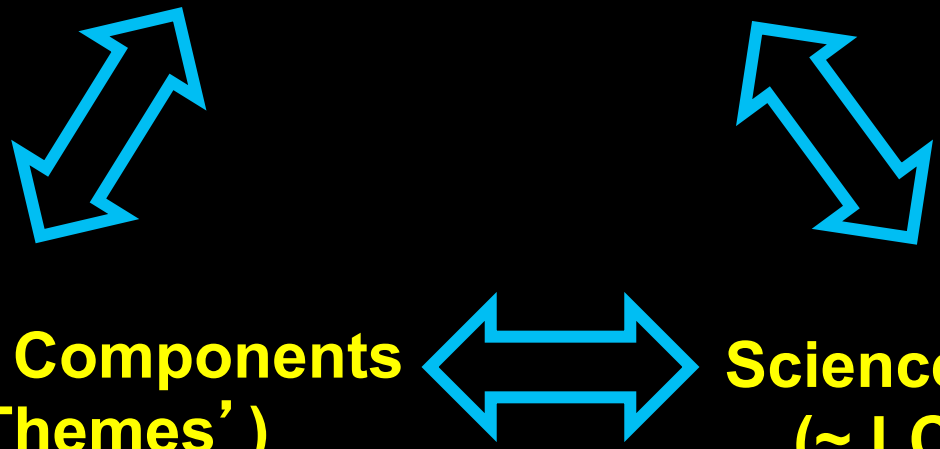
Management Decisions
& High-level Outcomes of Interest

Science Activities:
-Study Design / Planning
-Data Collection
-Analysis / Synthesis / Integration
-Data Management & Sharing /
-Info Dissemination, Training
-Tool Assessment, Development
- …

Syst **vities**
als)

Identifying Strategic Activities: Focus Area Priorities

Management Decisions
& High-level Outcomes of Interest



System Components
('Themes')

Science Activities
(~ LCC Goals)

Choose starting perspective in light of

- **Partner Comfort / Political Realities**
- **System Knowledge**
- **Available Resources & Expertise**
- **Urgency of issue(?), Opportunities**

How might your local LCC…

a. incorporate LCC-relevant *decision makers* and *decisions* into its long-range planning?
b. generate and maintain *buy-in* from and *trust* among its partners when their immediate interests may not be the highest priority?
c. select its activities? What should being considered in that process?
d. …define & evaluate success, and institute learning?
e. (whatever else we've forgotten)