LCCMR Minnesota Statewide Conservation and Preservation Plan

INSTITUTE ON THE ENVIRONMENT

UNIVERSITY OF MINNESOTA

C R Planning Community Resources

Bonestroo

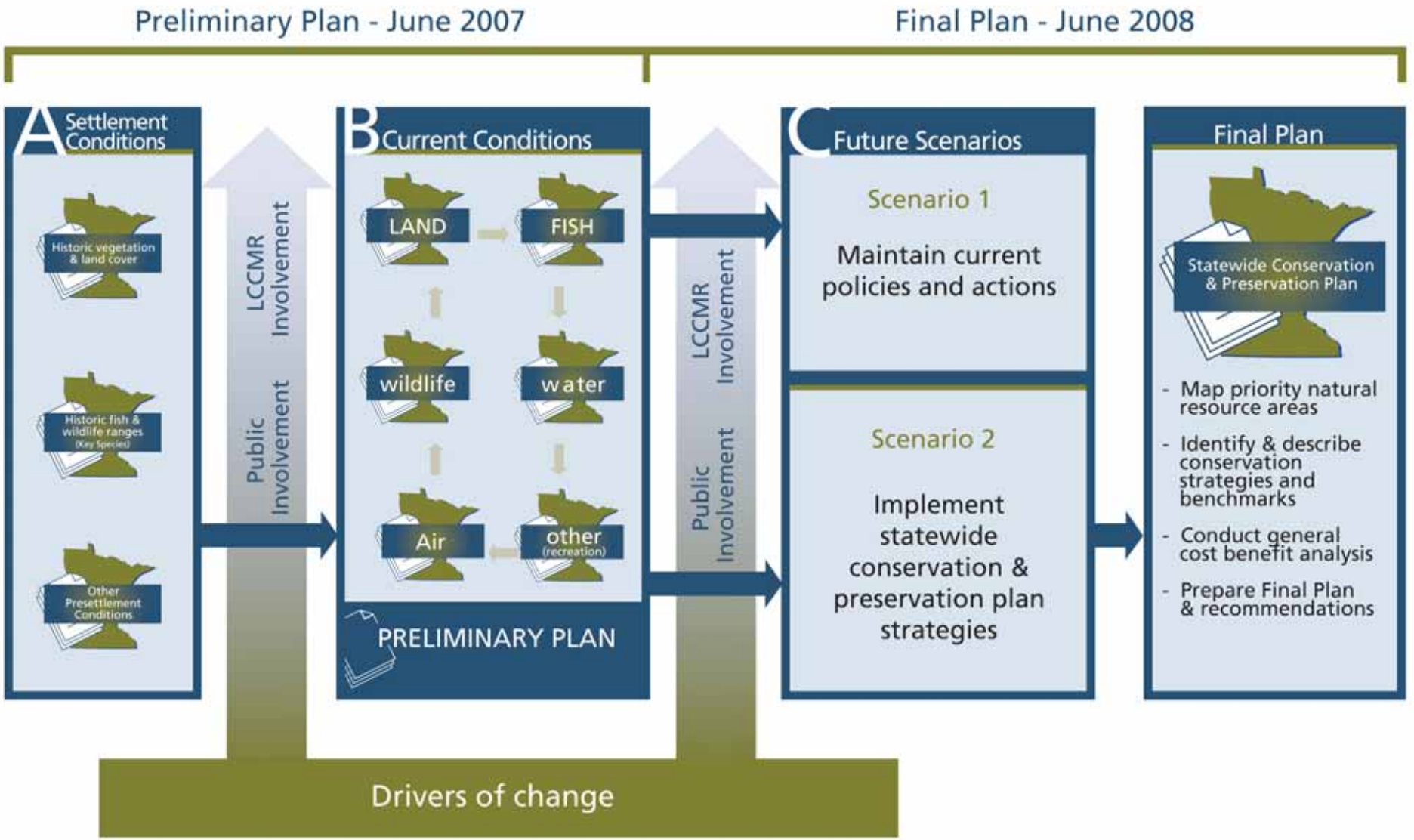
Presenters

- Deb Swackhamer, Univ. of Minnesota
- Paul Bockenstedt, Bonestroo
- John Shardlow, Bonestroo
- Nick Jordan, Univ. of Minnesota
- Jean Coleman, CR Planning

Presentation Goals

- Review Phase II Work Products & Timeline
- Status of Phase II Team Work
- Planned Outreach

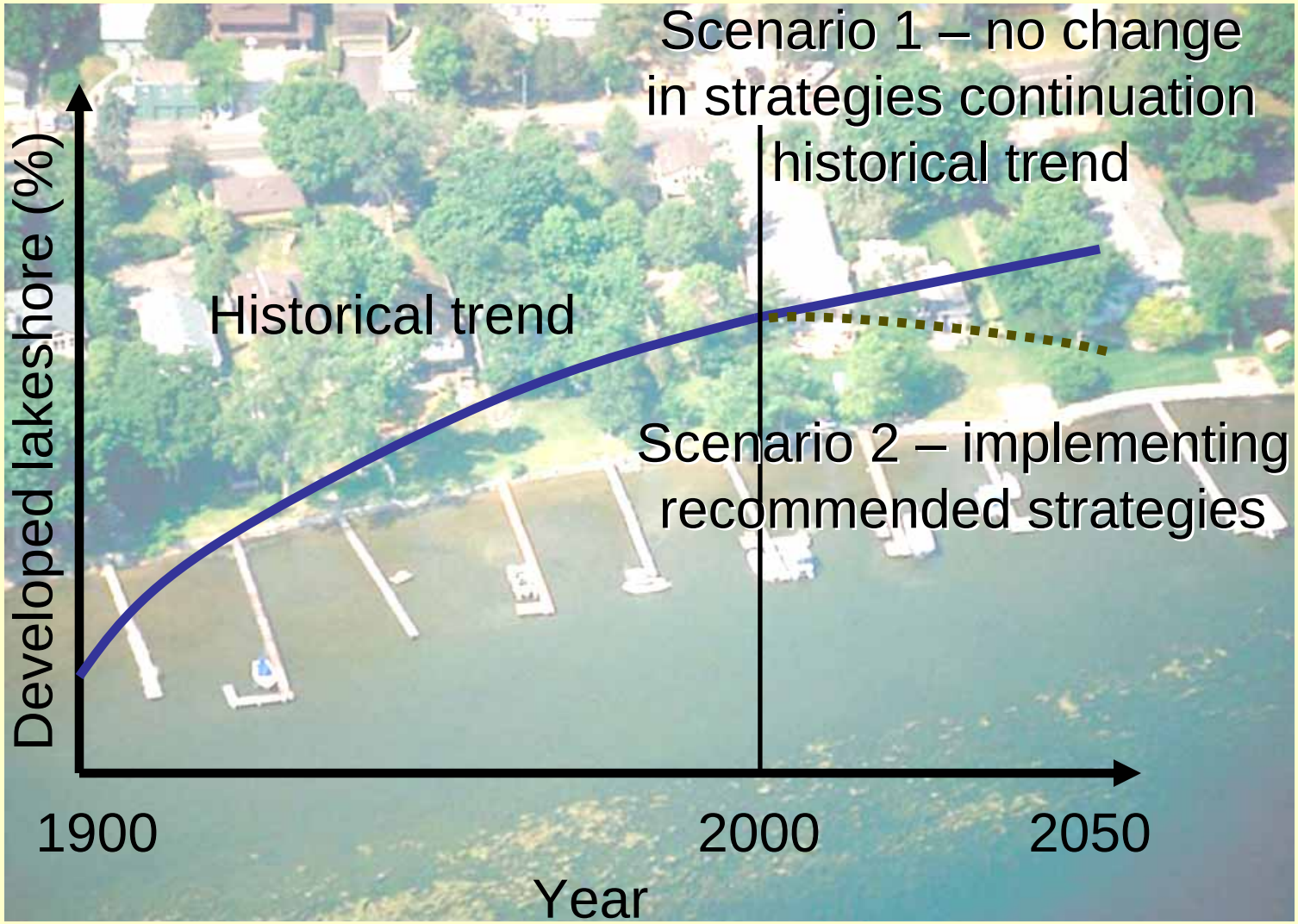
Project Phases and Timeline



Phase II Products

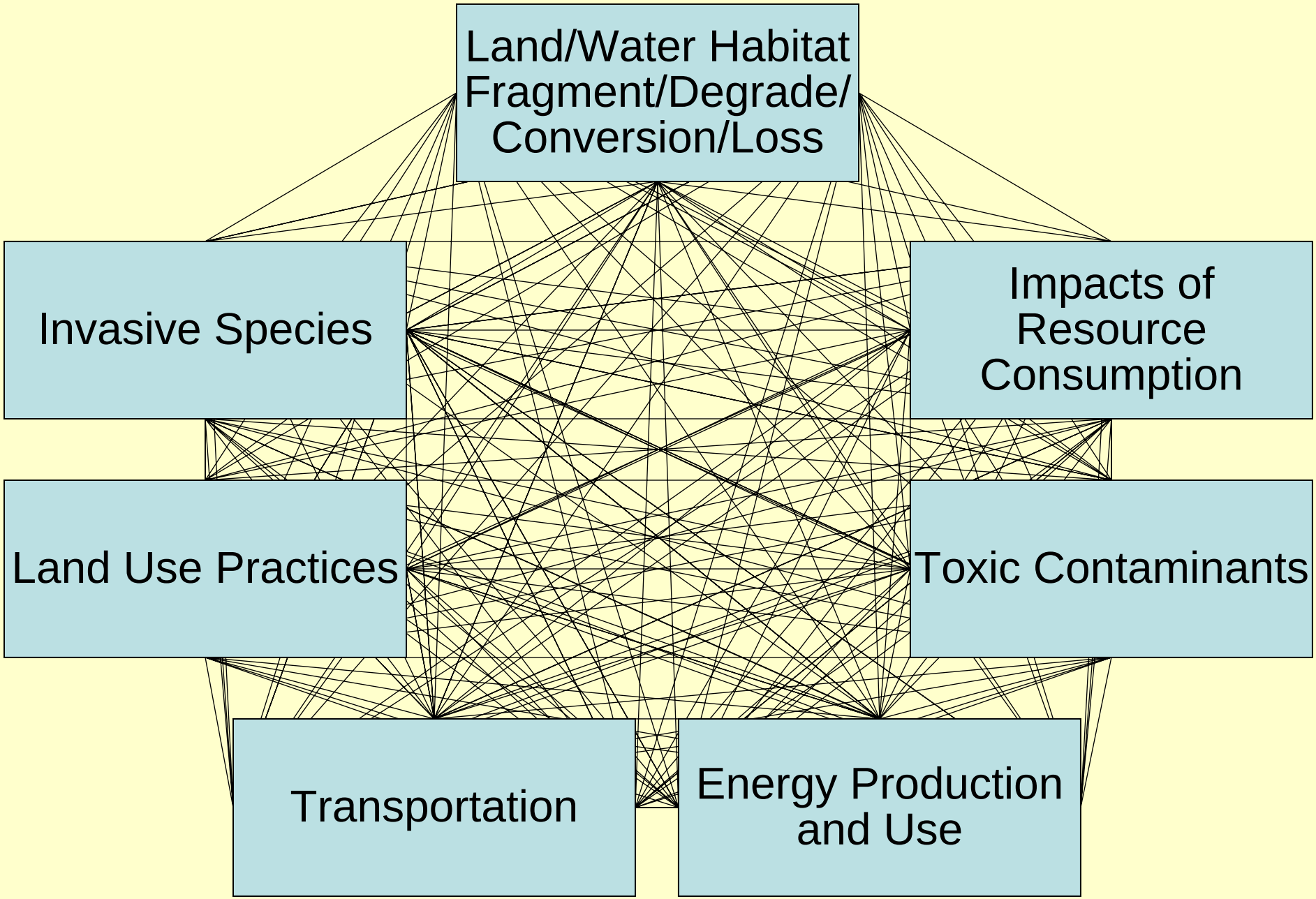
1. PRIORITY AREA MAPPING
2. RECOMMENDED CONSERVATION STRATEGIES
   - LCCMR investment strategies: protection priorities, research, pilots/demo projects
   - Policy changes
3. TREND ANALYSIS SUPPORTING RECOMMENDATIONS
4. EVALUATING CONSERVATION STRATEGIES
   - Qualitative cost benefit analysis
   - Stakeholder outreach

Trend Analysis Example: Lakeshore Development

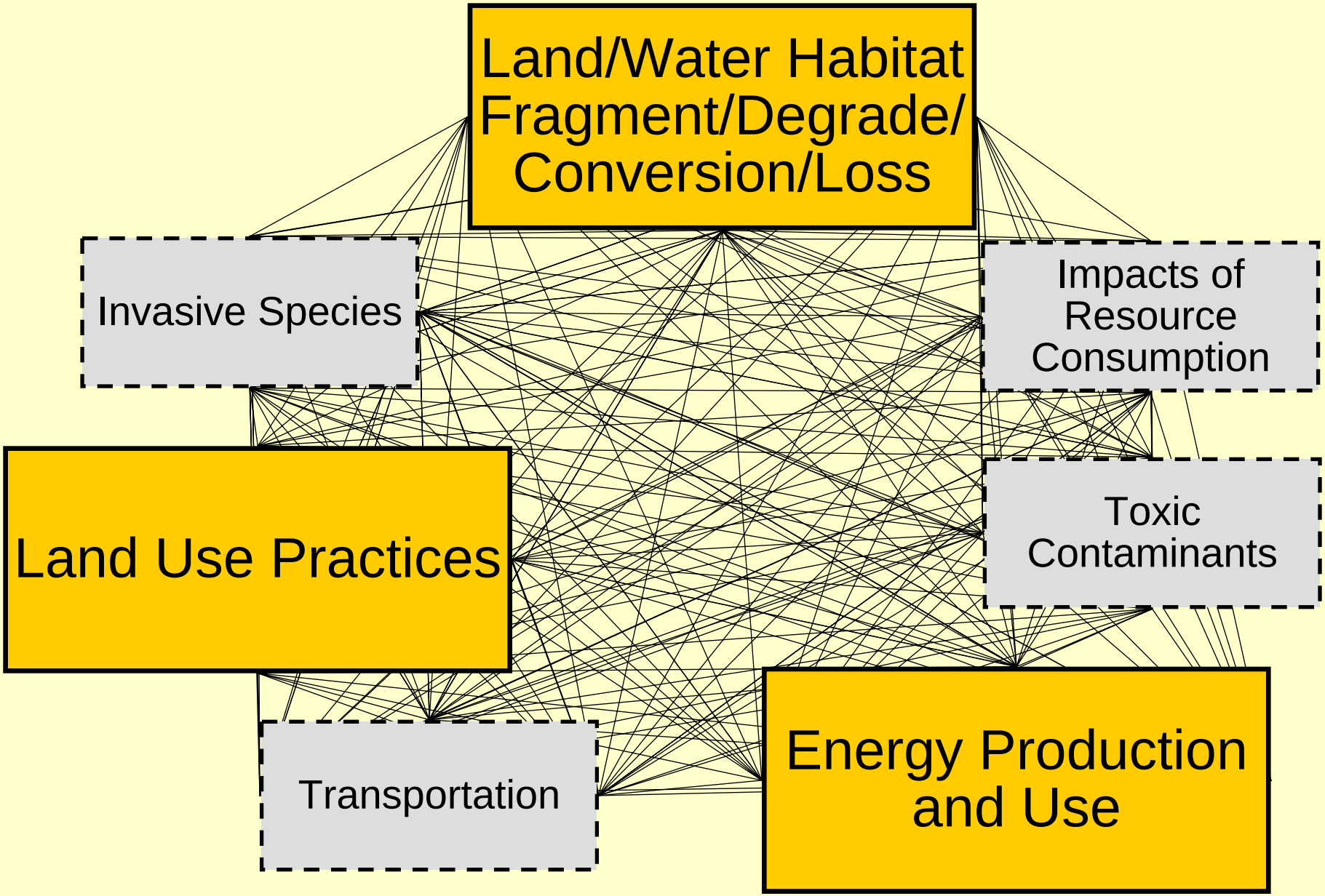


Photograph from MNDNR (Paul J. Radomski)

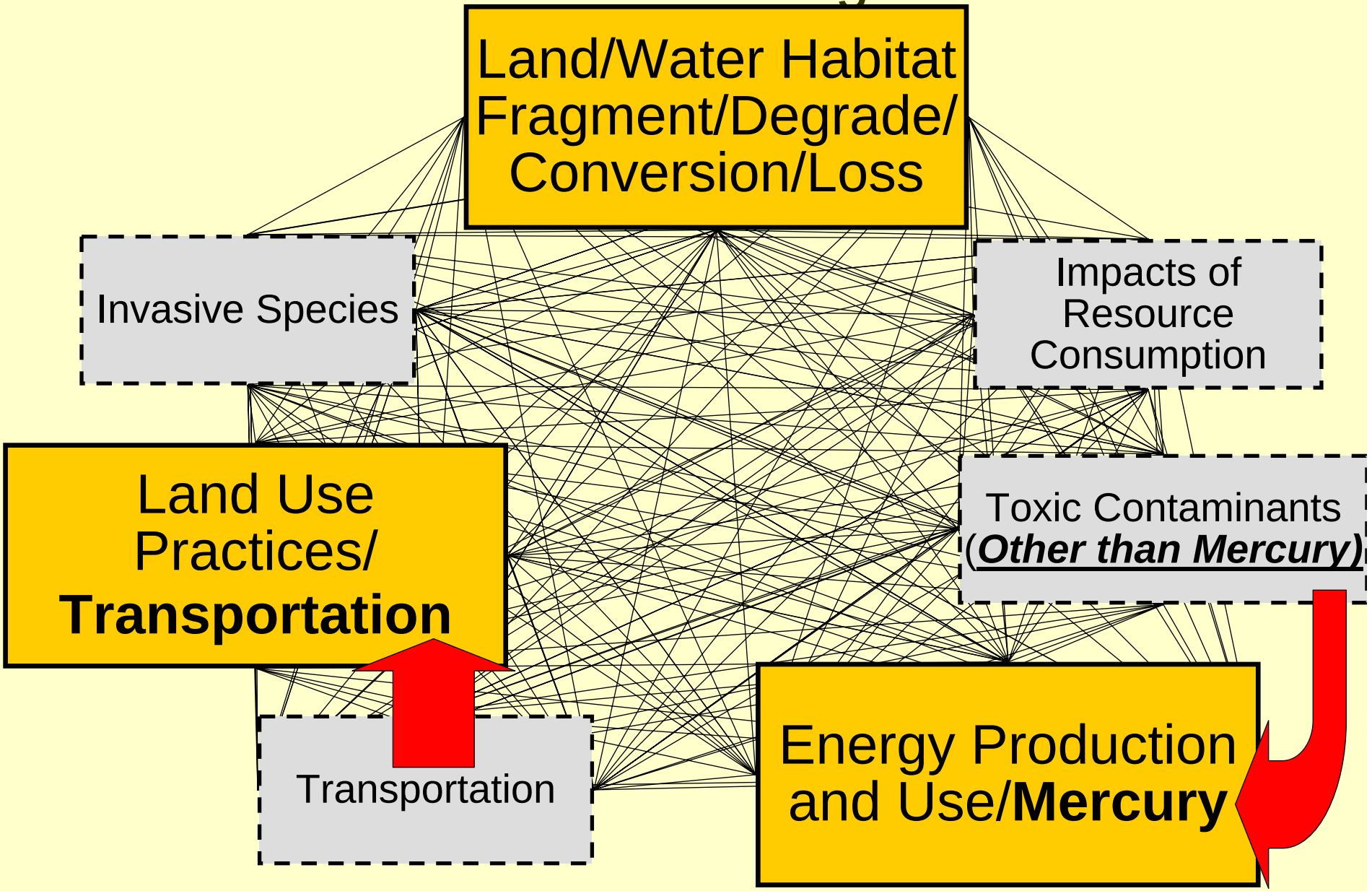
Key Issues Identified in Phase I



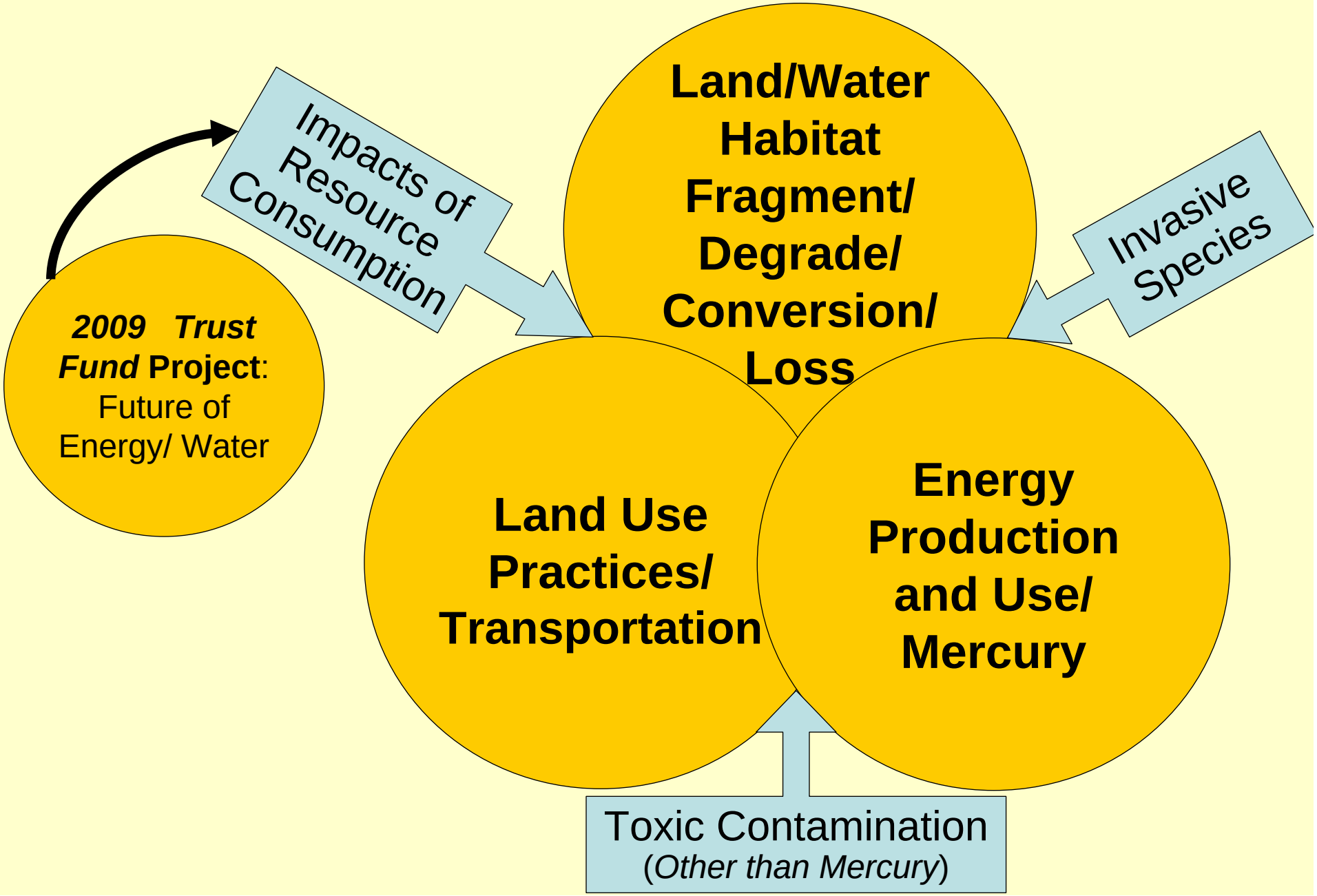
Initial ***Focus Areas*** Funded for Phase II



***Current* Focus Areas** for Phase II w/ Additional Funding Received



Issue Integration: Phase II and Beyond



Phase II Project Organization

Project Coordinators

Core Management Team

Research Teams			
	Land & Aquatic Habitat Conservation	Land Use Practices/ Transportation	Energy Production and Use/Mercury
Team members			
Partners			

Information, Data, GIS

Outreach

Cost Benefit Analysis

Phase II Team Members

	Land & Aquatic Habitat Conservation	Land Use Practices/ Transpor-tation	Energy Production and Use/Mercury	Cost Benefit Analysis	GIS and Data Support
University of MN	6	5	15	5	8
Bonestroo/ CR Planning	1	3			4
Stake-holders	7	11	4		
Agency staff	7	5	3		
	21	24	22	5	12

Land and Aquatic Habitat Conservation: Products

- Identify/map critical land & aquatic areas necessary to maintain/improve:
  - Water quality
  - Biodiversity
  - Sustainable outdoor recreation
  - Quality of Minnesota habitats
- Identify investment strategies & policies needed to maintain or restore critical land & water areas

Land Use Practices: Products

- Identify public/private land use choices needed to:
  - Improve environmental quality
  - Anticipate and adapt to environmental changes in Minnesota
- Identify land use investment practices & policies to best support these choices

Energy Production and Use: Products

- Identify energy trends/impacts, including the areas of:
  - Biofuels
  - Fuel Conservation
- Identify/map priority natural resource areas likely to be affected
- Identify energy-related investment & policy choices that impact natural resources

Land & Aquatic Habitat Team: Phase II Progress

Paul Bockenstedt, Bonestroo

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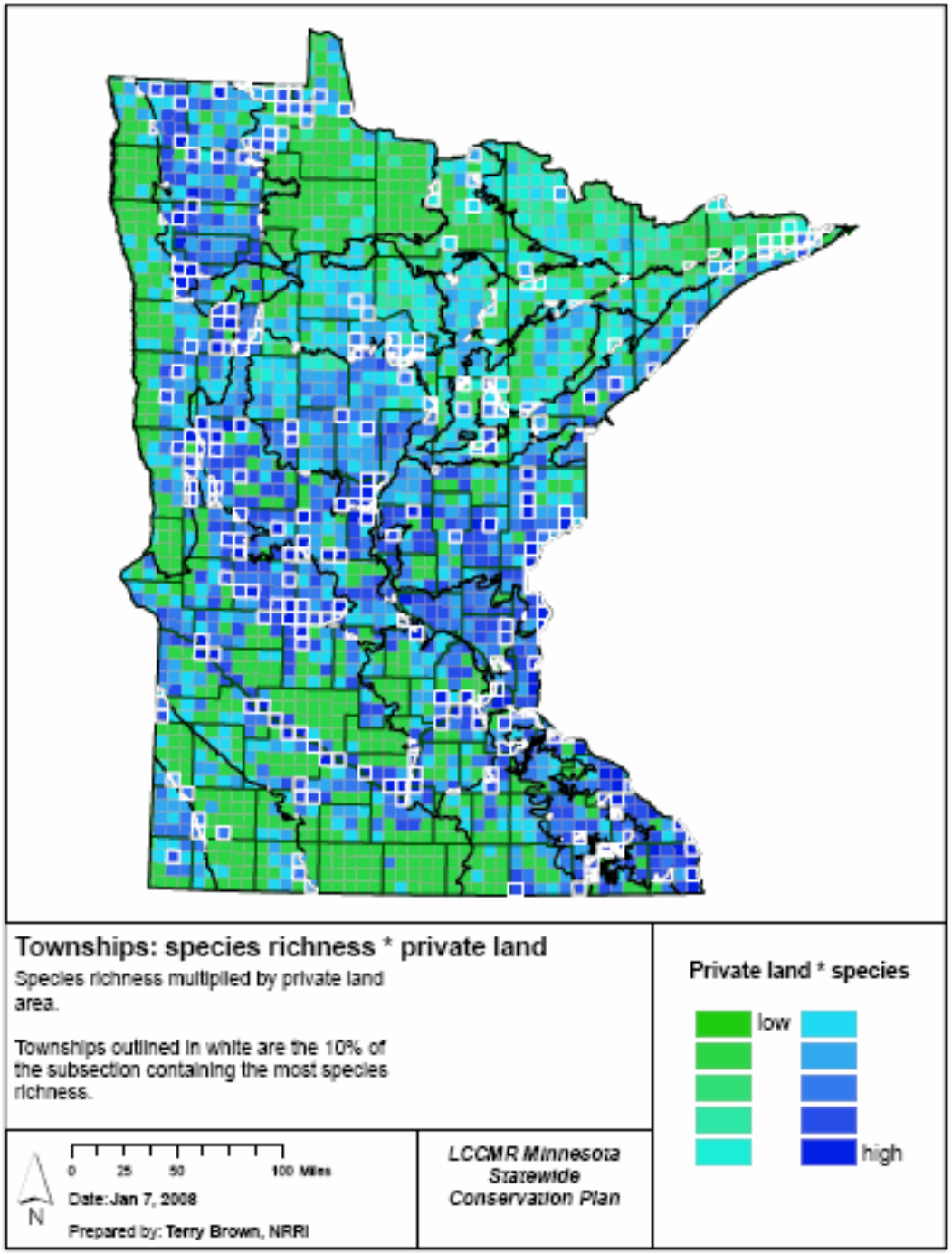
Land & Aquatic Habitat Team: Priority Mapping

- Biodiversity – two key databases
  - MN Species of Greatest Conservation Need
  - MN GAP analysis – key habitats and species distribution
- Large contiguous ecosystems and corridors
- Change detection
  - Land use and trends
  - Ownership
  - Population density
  - Road networks
- Current & desirable outdoor recreation areas
- Water priorities – lake trophic status and impaired waters



Example of mapping step:

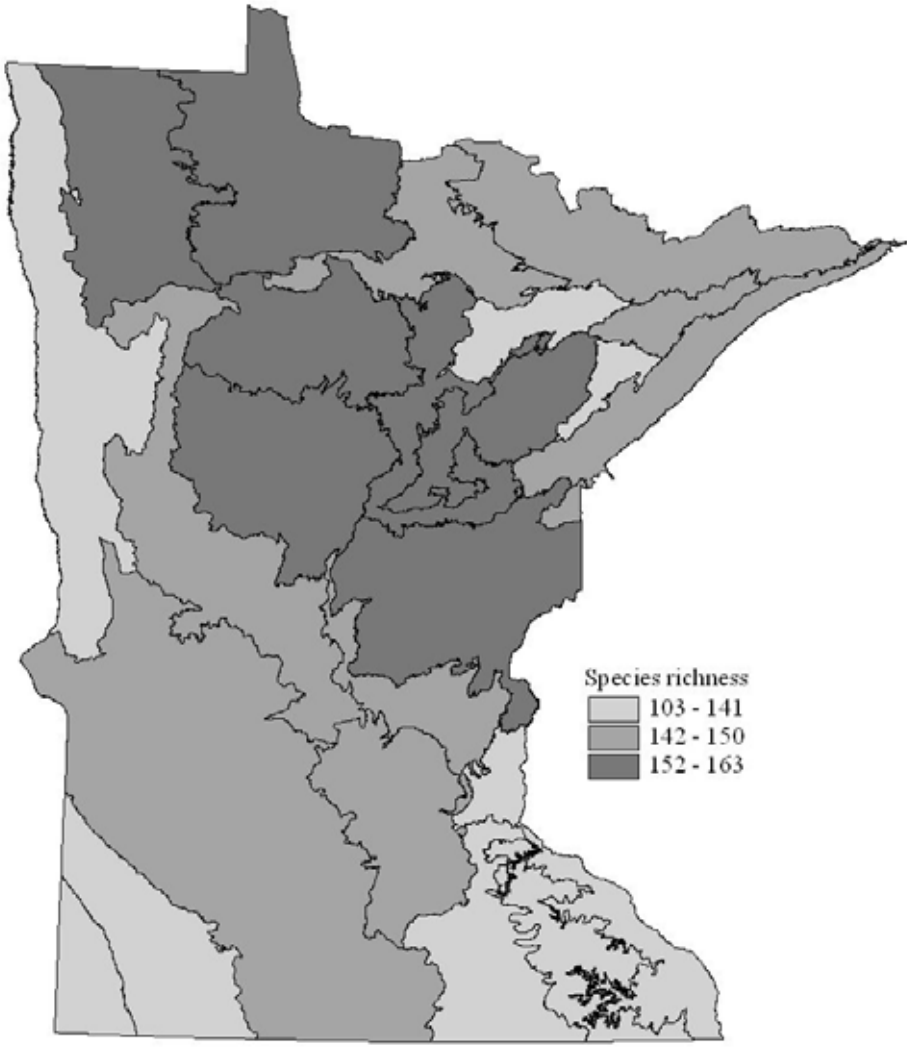
Species of Greatest Conservation Need

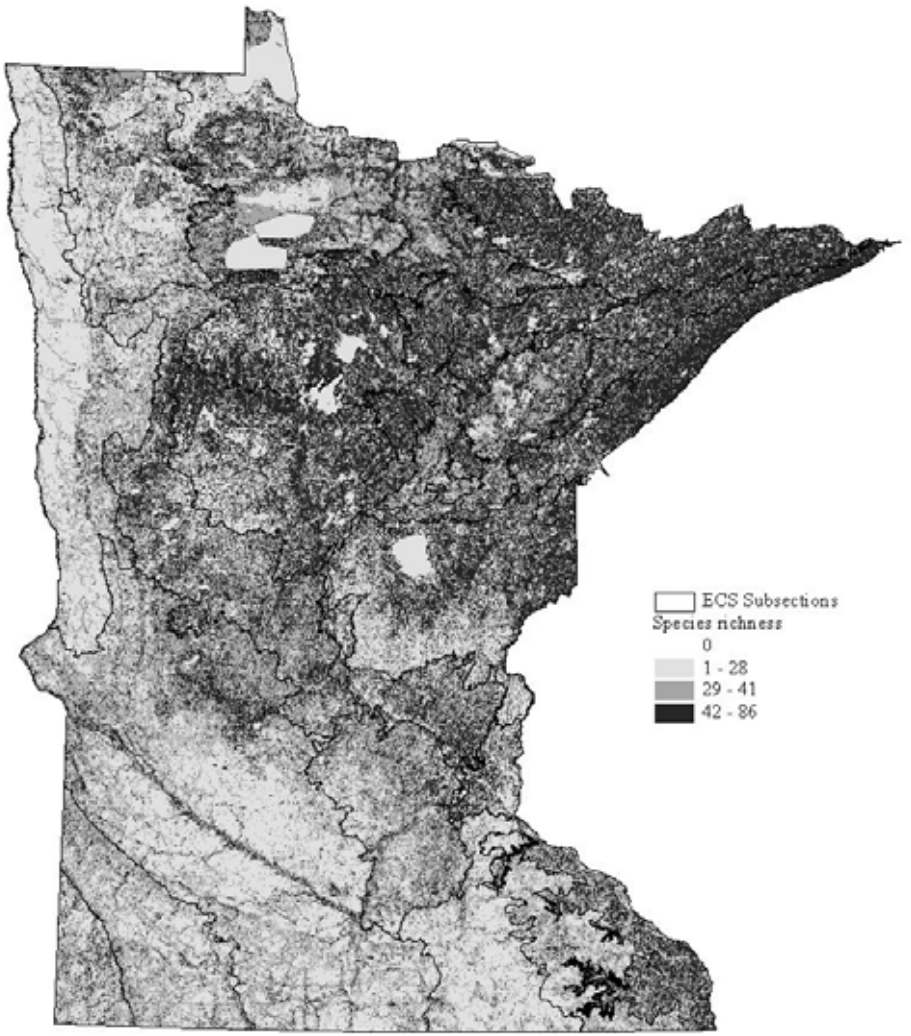
Species richness by township

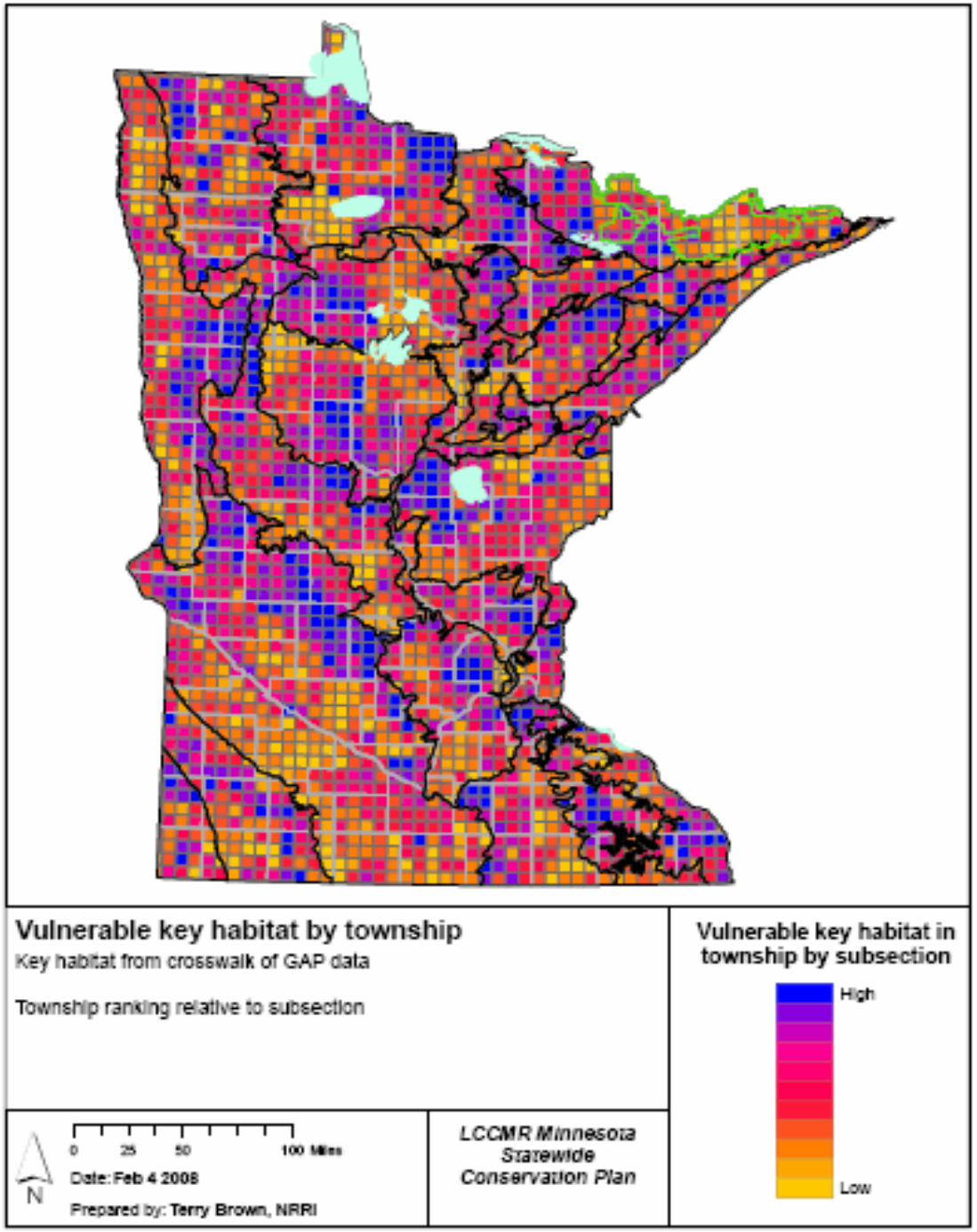
and

Top 10% of townships within each Ecological Section

Example of mapping step:
Using GAP analysis key habitats –
Predicted bird species richness







Example of mapping step:

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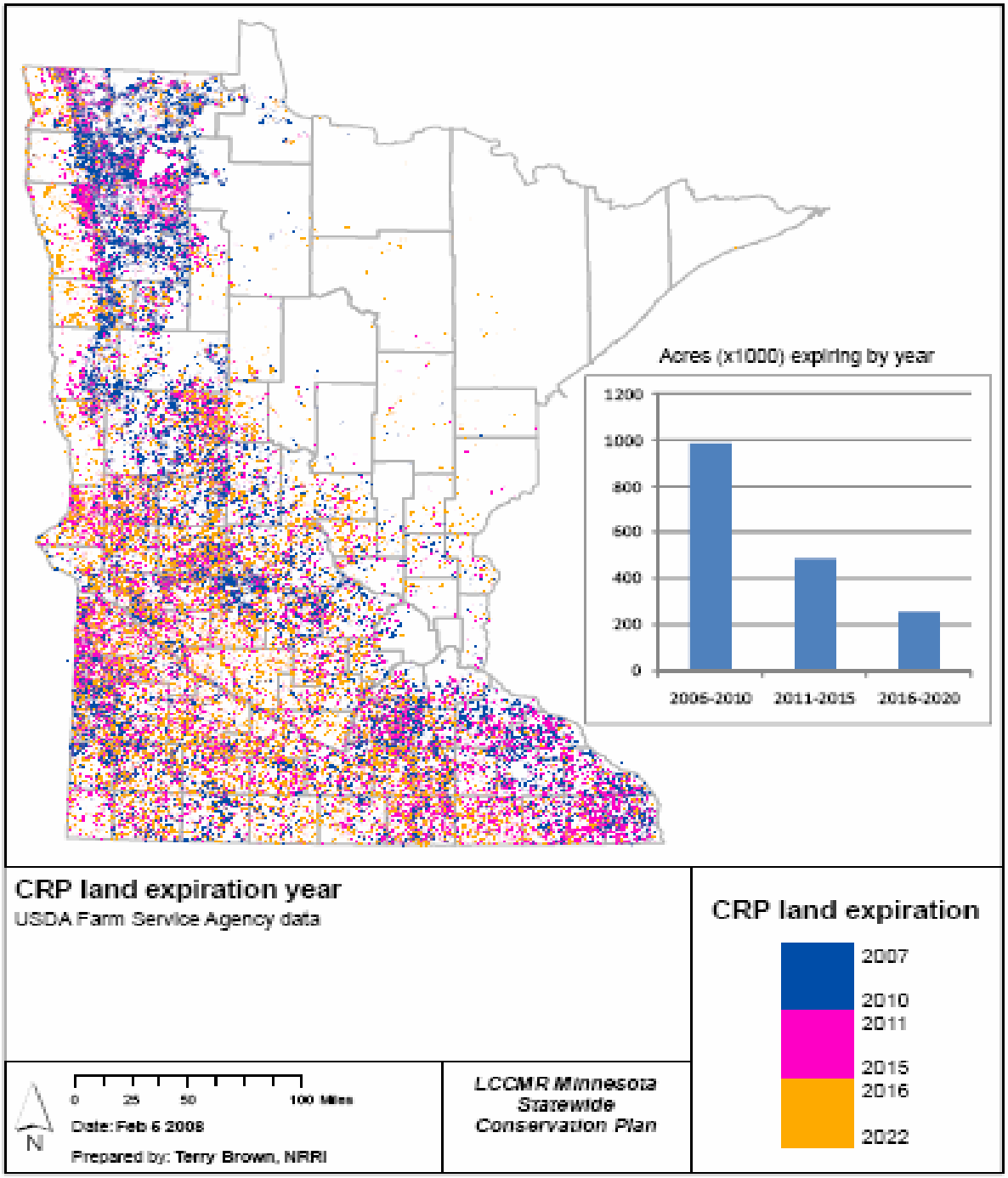

Trend Analysis Example:

Conservation Reserve Program

Year of expiration of enrolled acreage

Land Use Practices Team: Phase II Progress

John Shardlow, Bonestroo

1. RECOMMENDED CONSERVATION STRATEGIES
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   - Policy changes
2. TREND ANALYSIS SUPPORTING RECOMMENDATIONS

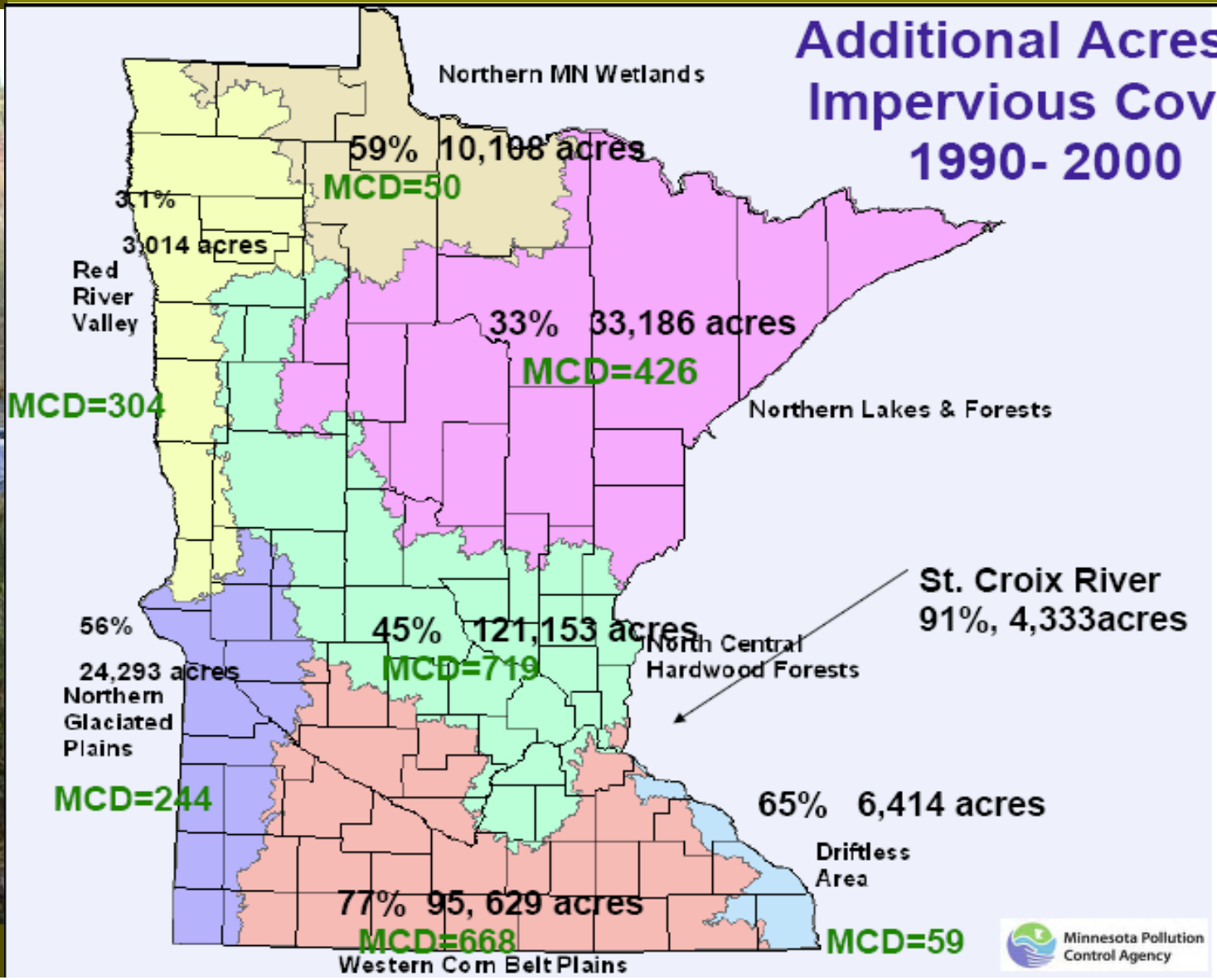
Land Use Practices Team

- Focus: How land is used on a particular parcel or site
  - Forest
  - Agriculture
  - Urban

Land use practices: Progress

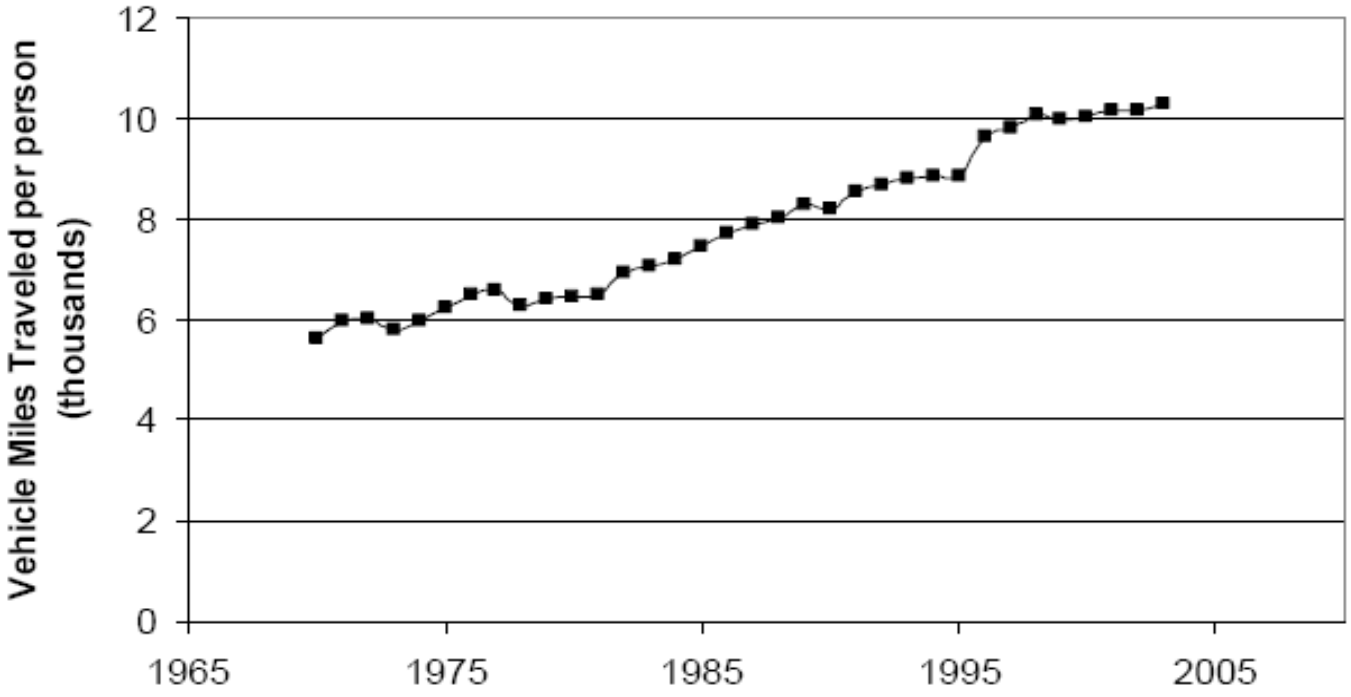
- Subcommittee work on recommendations
- Trends
  - Illuminate problems
  - Guide priorities
- Integrate with Transportation

Trend example: Impervious surface



Trend example

Annual Vehicle Miles Traveled per person in Minnesota, 1970-2004



Source: MPCA

Developing recommendations

- Three subcommittees focused on three distinct landscape areas
  - Agricultural
  - Forest
  - Urban

Recommendation Example

Urban Development

- Limit or reduce expansion of urban areas
- Reduce the effects of urban development
- Strategies with multiple benefits
  - High density leads to reduction in vehicle miles traveled and lower carbon footprint

Energy Team: Phase II Progress

Nick Jordan, University of Minnesota

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2. RECOMMENDED CONSERVATION STRATEGIES
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3. TREND ANALYSIS SUPPORTING RECOMMENDATIONS

Energy Team: Products

- Identify biofuel and energy trends and impacts, including potential trends in energy and fuel conservation
- Map priority natural resource areas affected by these trends
- Identify energy-related investment and policy choices that impact natural resources

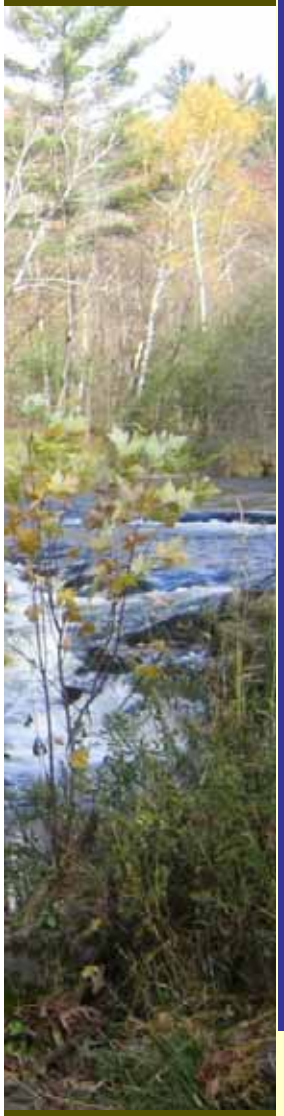
Three Scenarios

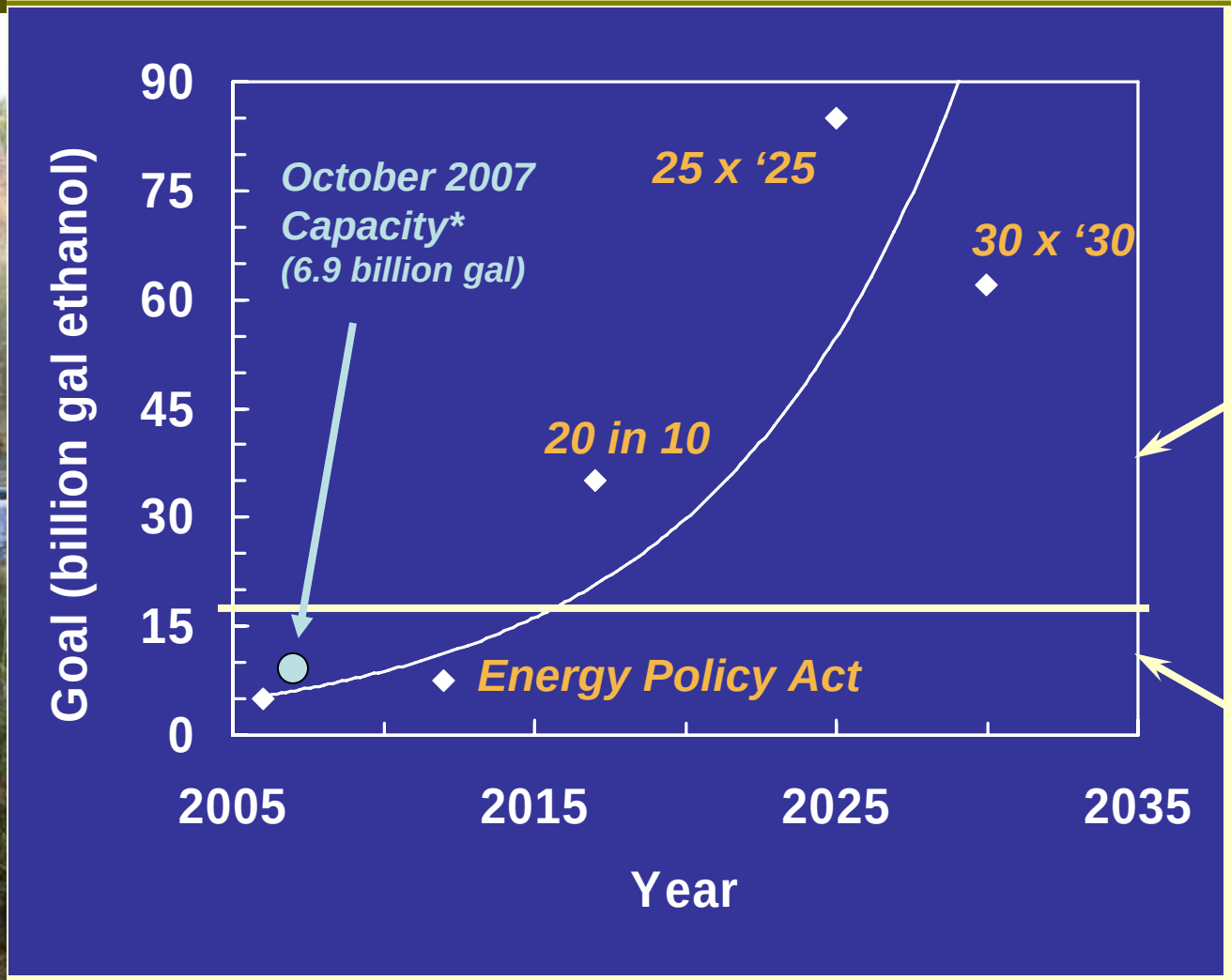
- Examine 3 overarching energy & environmental policy scenarios relevant to future sustainable energy systems
  1. Continuation of **current** energy & environmental policy & incentives
  2. Shift to policies/practices that promote **significant conservation** of energy and alternative energy sources
  3. Scenario 2 + policies/practices that promote **significant environmental benefits** from land use practices
- For each scenario: identify trends, evaluate biofuel options, recommend strategies

Agricultural Land Use Options

- 3 major options for Ag. Landscapes
  - ***Corn-soybean rotation***
    - Probably more corn, collection of corn biomass
  - ***Monocultures of perennial energy crops***
    - Switchgrass, miscanthus, hybrid poplar, others
  - ***Polycultures of perennial energy crops***
    - Grass-legume mixtures, native prairie plantings
- For each overarching scenario:
  - We will determine expected pattern (think mosaic) of options across ag. landscapes
  - We will determine expected benefits/costs of each pattern
- Ex.: Environmental scenario likely means more perennials

Trend: Growing Demand for Cellulose Biofuel - from where?





*RFA, http://www.ethanolrfa.org/industry/statistics/#C

**NCGA, http://www.ncga.com/ethanol/pdfs/2007/HowMuchEthanolCanComeFromCorn0207.pdf

Relevant Trends for Energy Conservation & Alternative Energy Scenario

Trends to be considered include:

- Better mileage standards
- Electric plug-in cars
- More mass transit
- Increased wind and solar energy
- Deep injection of carbon
- Decreased carbon footprints
- Others?

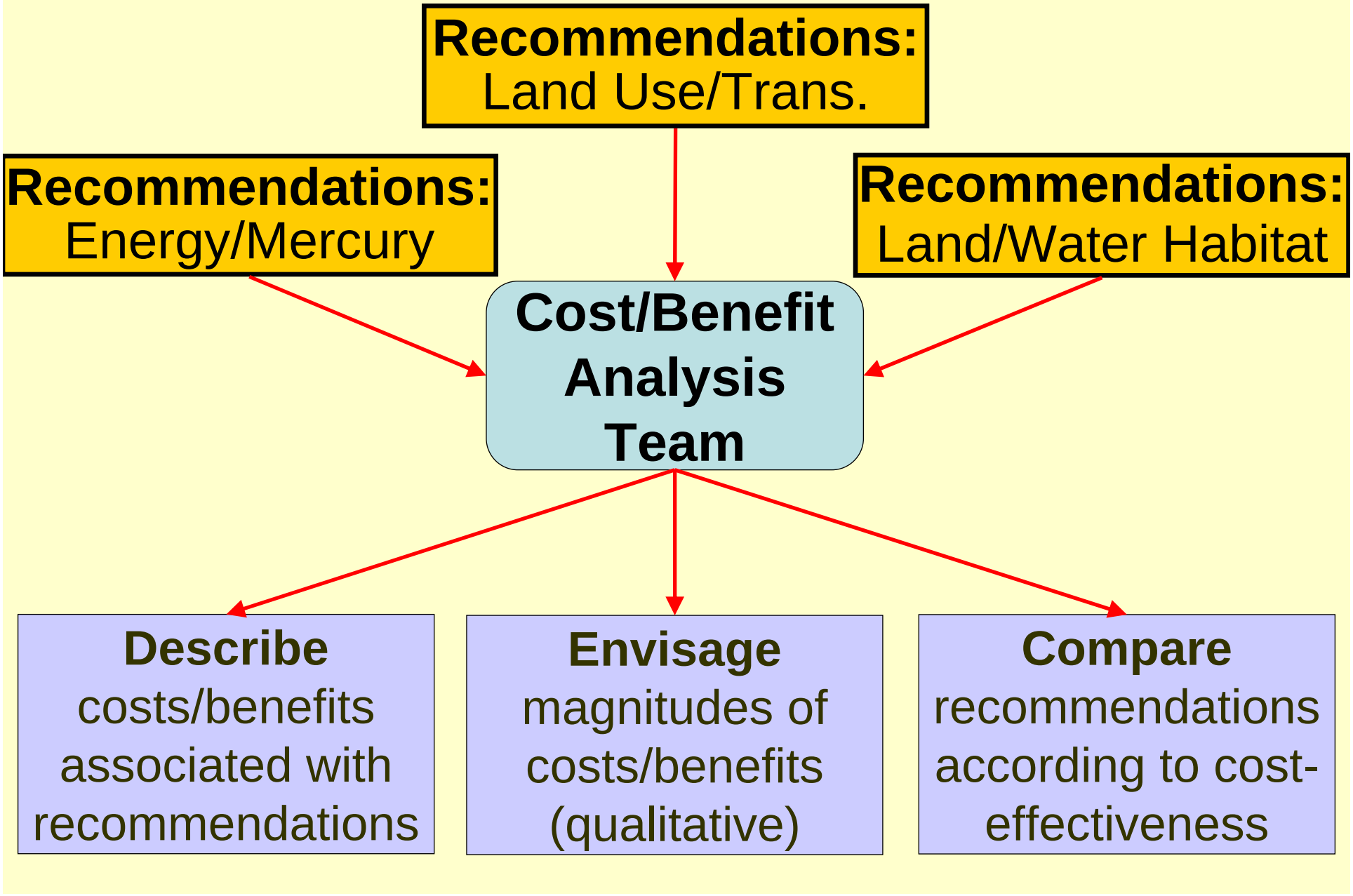
Mercury

- Compile information on current Hg emissions from all energy sources
- Apply to 3 scenarios
- Compare the scenarios for overall Hg emissions

Phase II Products

- Priority area mapping
- Recommended conservation strategies
  - LCCMR investment strategies – protection priorities, research, pilots/demonstration projects
  - Policy changes
- Trend analysis supporting recommendations
- Evaluating conservation strategies
  - Qualitative cost benefit analysis
  - Stakeholder outreach

Objectives of Cost Benefit Analysis (CBA)



Stakeholder evaluation of recommendations

- Late April stakeholder outreach meetings
- To be held in 3 locations across the state – ag, urban, forest
- A “working” workshop
- Purpose is to have stakeholders work through and understand the draft recommendations and comment on potential impact, feasibility, likely support, etc.

Thank You!

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CR Planning
Community Resources

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