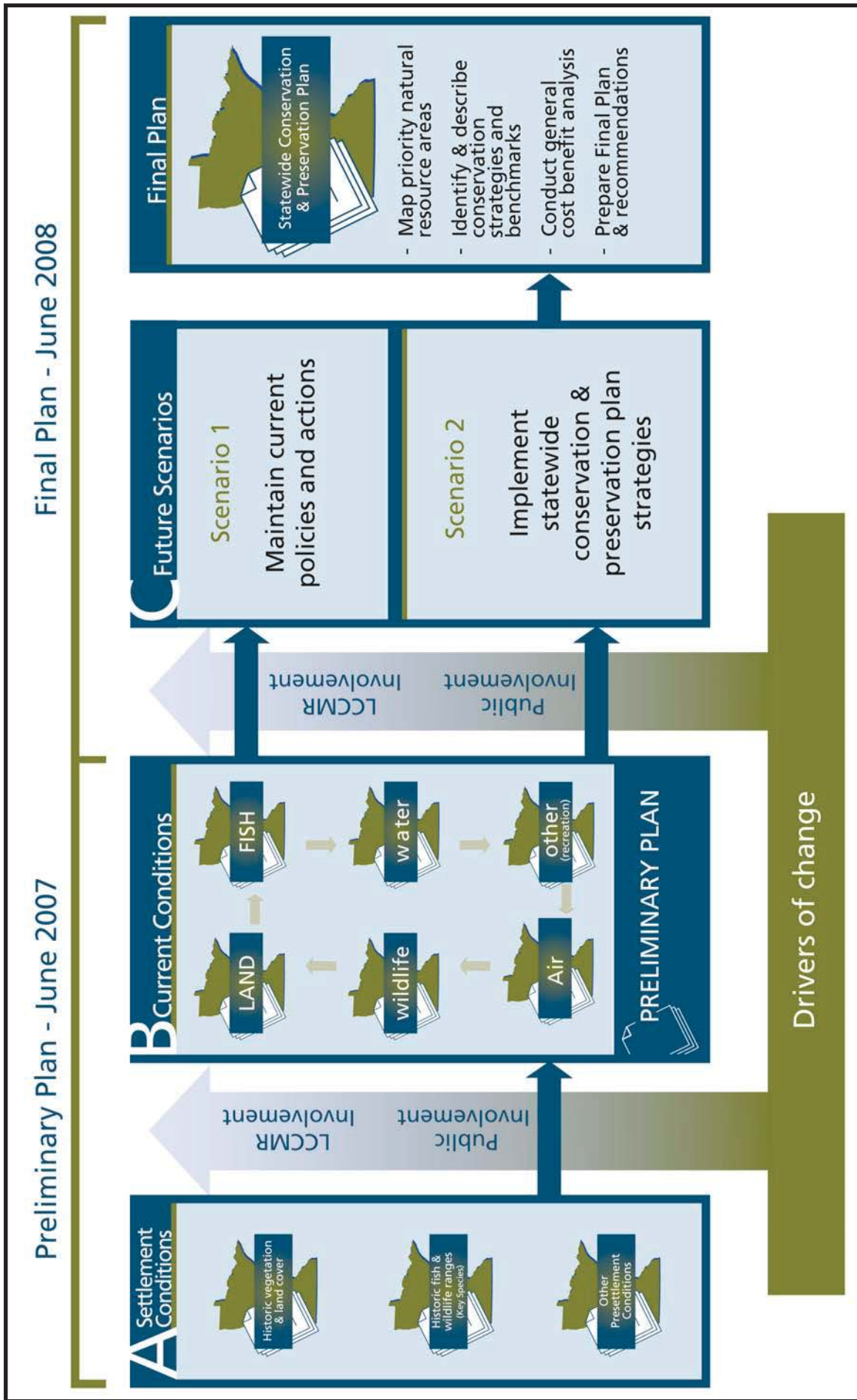# Key Issues for Final Plan Phase

Figure 1: Statewide Conservation and Preservation Plan project timeline. This report culminates the Preliminary Plan phase. This section contains the project team's recommendations for issues to focus on during the Final Plan phase. Credit: SCPP Project Team

Key Issues for Final Plan Phase

The Statewide Conservation and Preservation Plan project has two phases (see Figure 1, facing page). This report closes the first phase, and we now turn to the trends analysis and the development of policy and investment recommendations that comprise the final Plan. The challenge as the project moves forward is to examine the many drivers of change identified in the first phase and narrow the field to the few key issues to be investigated during the final Plan.

To assist the LCCMR in choosing these key issues, the project team prioritized the drivers of change by applying its collective expertise with the following questions in mind:

- Does the driver affect multiple resources
- How extensive is our current knowledge base about the driver
- How quickly will a resource respond to a change in the driver
- What are the implementation challenges to changes in policy or investment for this driver
- Are there public acceptance challenges to a change in policy or investment for this driver
- What is the relative public urgency for the driver
- Does the driver affect adaptation to climate change or mitigation to climate change by the state

As a result of this exercise, the project team offers the following list of potential issues for further investigation by the project, in priority order:

Land and Water Habitat Fragmentation, Degradation, Loss, and Conversion

Habitat fragmentation, degradation, loss and conversion are a concern for land, lakes and streams. On land, fragmentation refers to changes in the landscape pattern resulting from human activities, primarily as a result of habitat conversion to agriculture, residential, and commercial/industrial development as well as road construction, forest harvest patterns, and numerous other factors.

Fragmentation results in smaller patch sizes, increased edge, and an overall 'simplification' of the landscape. The nature of fragmentation varies across Minnesota, from the characteristic checkerboard pattern of farm fields with isolated woodlots in agricultural regions of the state, to broadleaf forests perforated by 1-5 residential acre lots in the broadleaf forest region of the state, to aspen-conifer forests with interspersed 40-80 acre clear cuts in northern Minnesota.

In aquatic ecosystems, fish habitat fragmentation and outright loss result from removal of downed trees, aquatic vegetation (fish habitat), alteration of shorelines (e.g. installing rip rap) and removal of riparian wetlands.

Often associated with fragmentation is habitat degradation, defined as a reduction in the quality of remaining habitat. Habitat fragmentation and, degradation, loss, and conversion add up to greatly reduced complexity of habitat structure.

Land Use Practices

Land use practices includes the full spectrum of human activities on the land from conservancy and restoration through agricultural, extraction, alteration and all forms of urban and shoreland development and redevelopment. The previous issue deals directly with fragmentation, conversion, degradation and loss of land and water habitat, as one distinct set of consequences associated with human activities. In this context, land use practices

refers to the manner in which a use, or activity is conducted on a particular parcel of land and its affect on the natural environment.

Impacts of Resource Consumption

The ways in which land is used to support human activities have both direct and indirect effects on all of the natural resource systems. Land conservation and restoration activities are known to yield positive effects on the environment.

Some forms of extraction and land alteration can permanently destroy preexisting natural resources. It is also true that the patterns and density of development, the interrelationships between different uses and construction and development practices combine to have major effects on energy consumption, air and water quality, and transportation.

Toxic Contaminants

Contaminants are chemicals regulated because of human or wildlife toxicity. For our purposes, the definition of contaminants also includes the Criteria air pollutants, "legacy" toxic chemicals, emerging toxic chemicals including endocrine disruptors (EDCs) and pharmaceuticals, pesticides including herbicides and insecticides, and mercury.

Transportation

Transportation includes infrastructure networks that enable and support personal (passenger) and commercial (freight) traffic. From the perspective of natural resources, transportation networks and the vehicles they carry directly or indirectly cause impacts on land, water and air.

Energy Production and Use

Energy production and use are human activities related to the extraction, production and consumption of energy, including fossil fuels and renewable energy sources.

Invasive Species

Invasive species are undesirable aquatic and terrestrial species, accidentally or intentionally introduced into Minnesota disrupt native plants and animals and their habitat, or are a nuisance to human activities. Serious invasive species in the state span many taxonomic groups, such as terrestrial and aquatic plants, insects and aquatic invertebrates, fish, and pathogens.

Please see Appendix IX for a detailed description of these issues, the research questions associated with them, available data, and the expected value and outcomes from further investigation.