

A Technical Guide for Identifying and Protecting Healthy Watersheds

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Conference

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www.epa.gov/healthywatersheds

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Healthy Watersheds Initiative

In 2009, EPA introduced the Healthy Watersheds Initiative to support states to:

- Identify healthy watersheds using integrated assessments and,
- Conserve & protect healthy watersheds ranging from pristine to healthy components of developed watersheds

Why a Healthy Watersheds Initiative?

- EPA recognizes the need to enhance our protection approaches to keep waters off the impaired waters list and to be more successful at restoring impaired waters
- Healthy watersheds form the critical ecological support system or building blocks that anchor our water quality restoration efforts
- It is cost-effective to prevent aquatic ecosystems from becoming impaired
- It has become a top priority for EPA Water Program to enhance efforts to prevent water quality impairments in healthy watersheds (Assistant Administrator for Water, Pete Silva)

What is the Healthy Watersheds Initiative Approach?

- **Maintenance of aquatic ecological integrity** by conserving and protecting our highest quality watersheds & intact components of watersheds
- **A strategic holistic systems approach** that includes protecting the key watershed processes and habitat needed for healthy aquatic ecosystems

How Do We Identify Healthy Watersheds?

Integration of assessments of:

Biota and Their Habitat

- Green Infrastructure (forest cover, headwaters, wetlands, riparian corridors, floodplains)
- Biological, chemical, & physical water quality condition (fish, macroinvertebrates, wetlands, biodiversity, nutrients, pH, temperature, riffle and pool habitat)

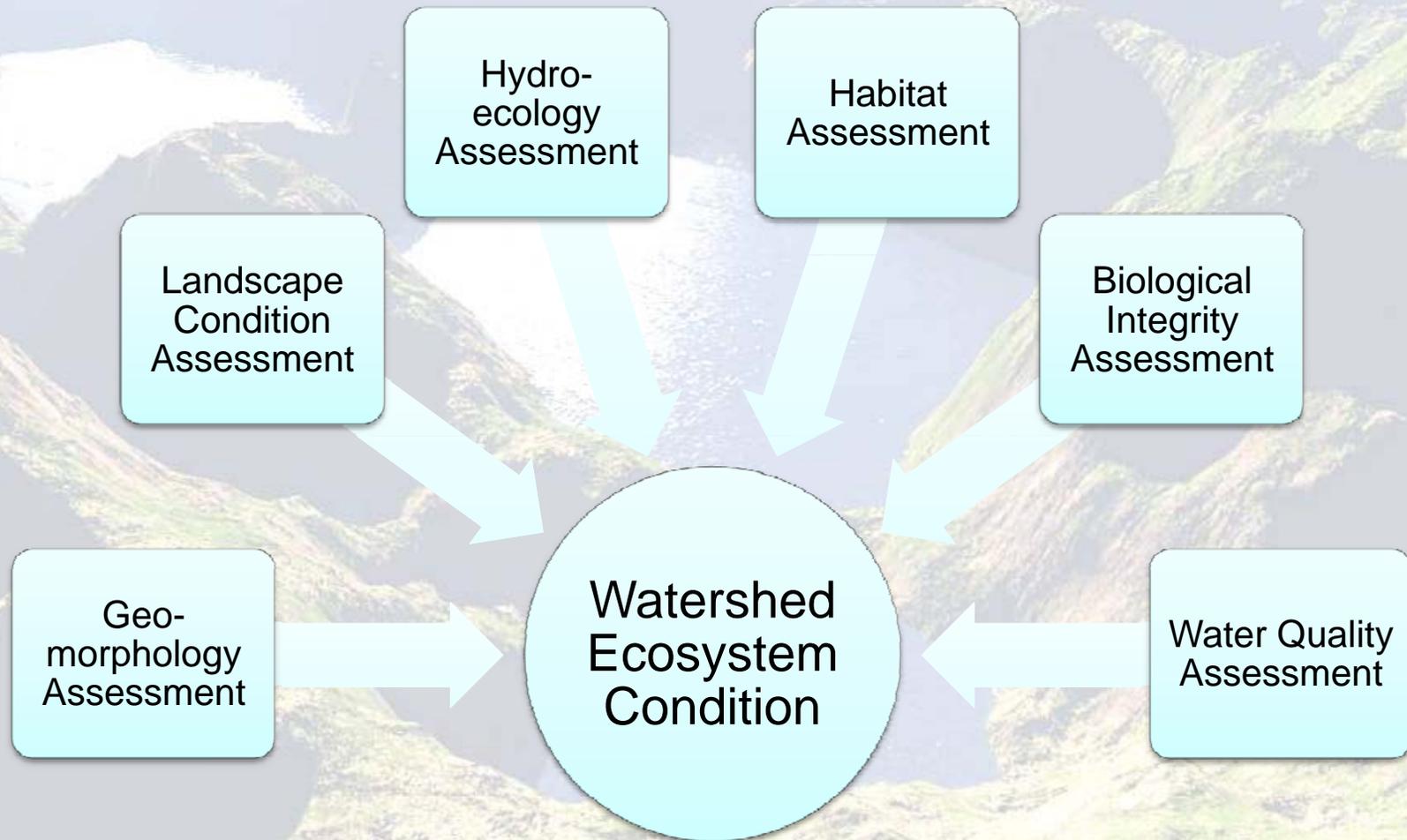
Key Processes That Sustain Them

- Hydrology and fluvial geomorphology (e.g, instream flows, natural channel form & movement of sediment)
- Natural disturbance (floods, droughts, fires, etc.)

Draft Identifying and Protecting Healthy Watersheds: A Technical Guide

- Purpose: To provide the technical foundation for identifying healthy watersheds
- Audience: Watershed assessors and managers with a technical background
- Contents:
 - Key concepts and assessment approaches
 - Examples of assessments
 - **Watershed integrated assessment approach**
 - Examples of integrated assessments
 - Management approaches and examples

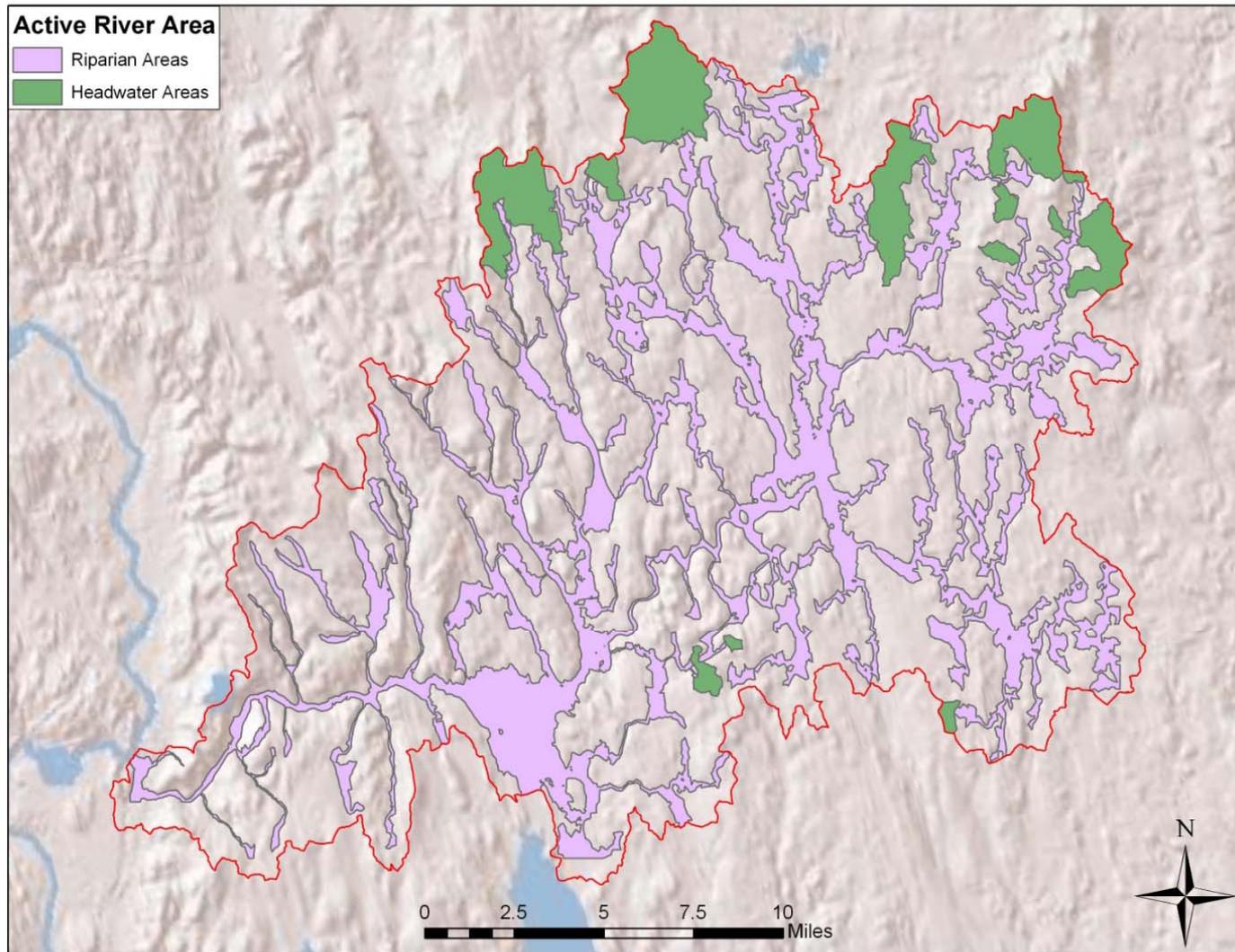
Watershed Integrated Assessment Approach



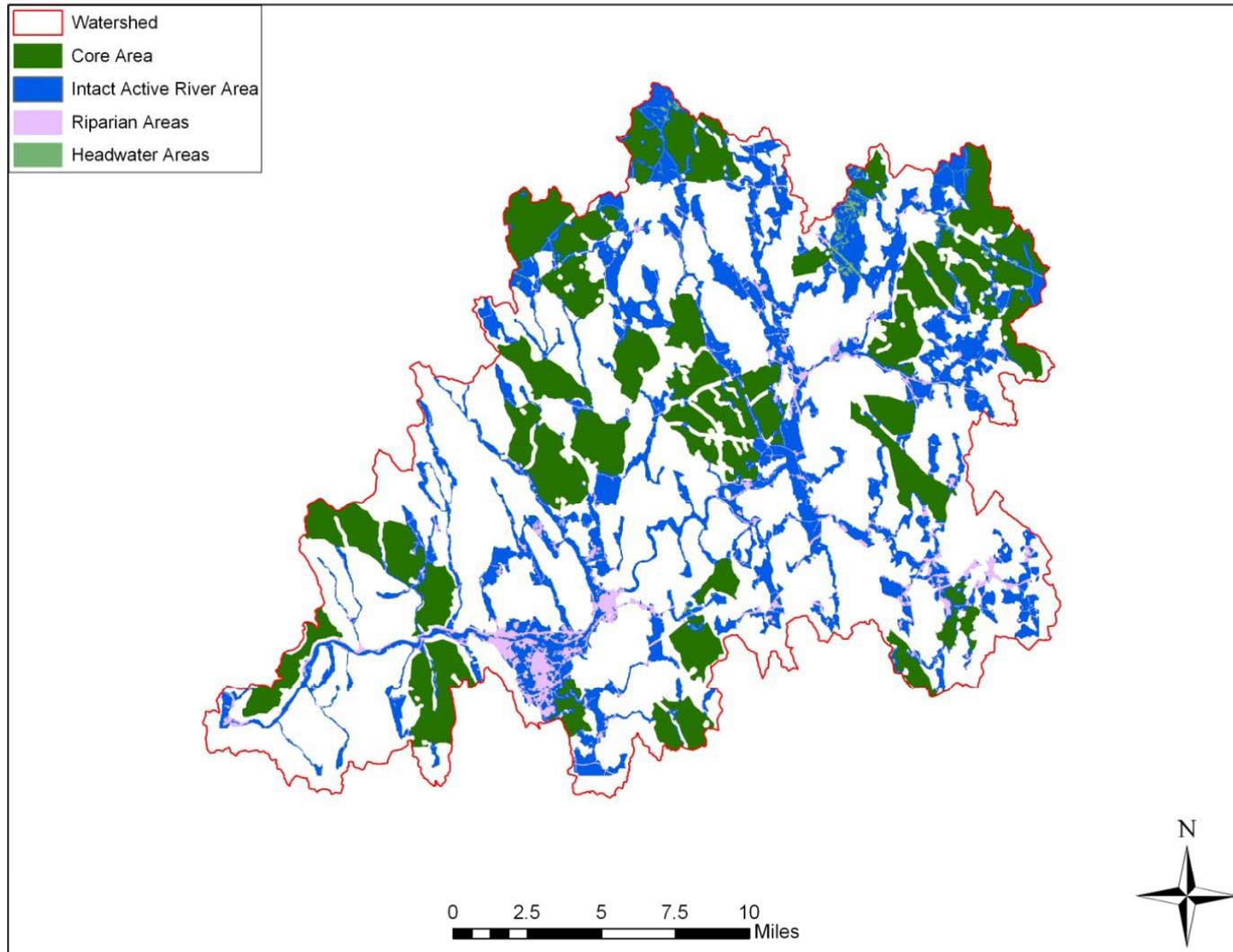
Watershed Integrated Assessment Approach

- Delineate Watershed and Active River Area
- Evaluate each of the six Healthy Watersheds attributes
- Evaluate Watershed Ecosystem Condition
- Assess vulnerability

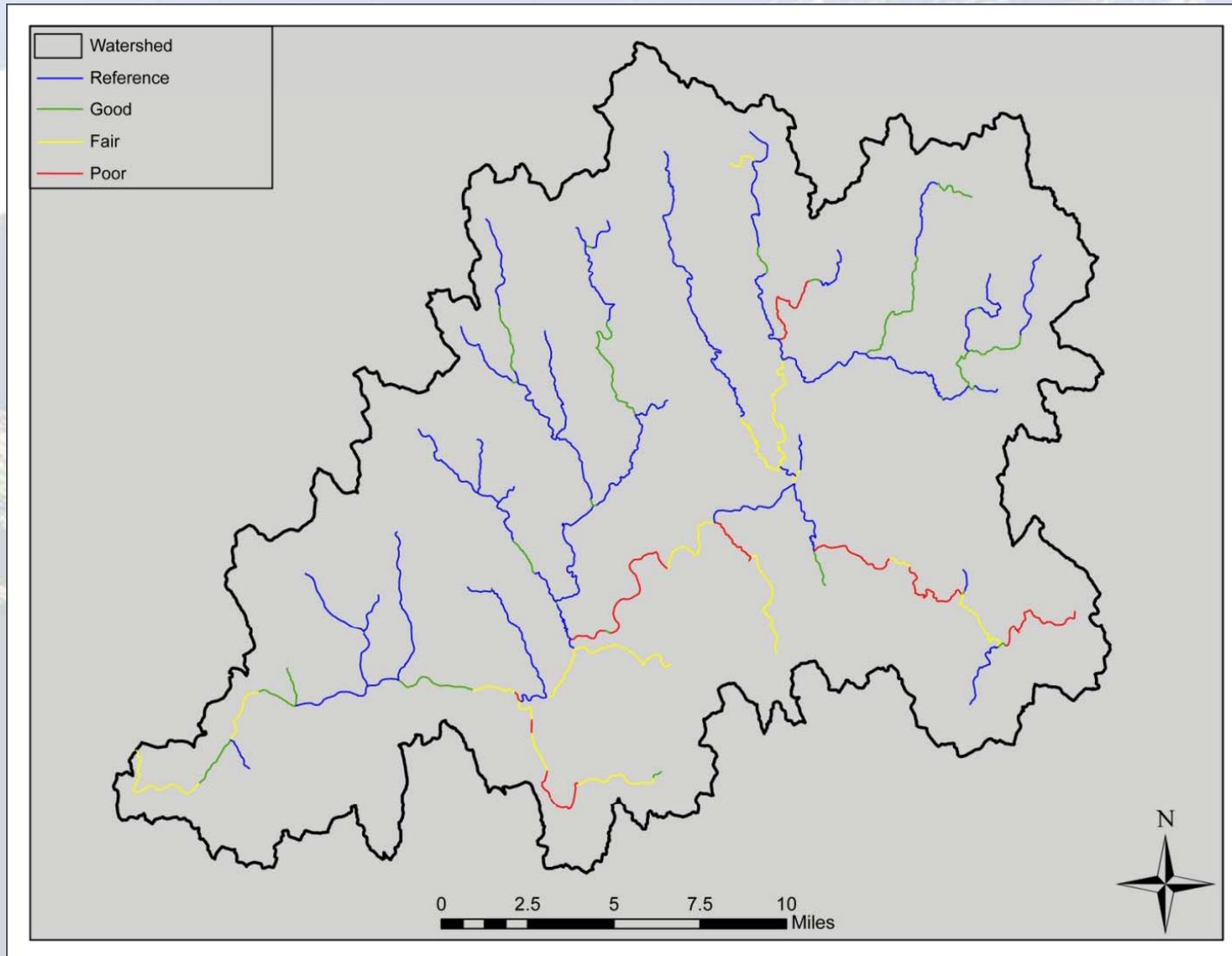
Delineate Watershed and Active River Area



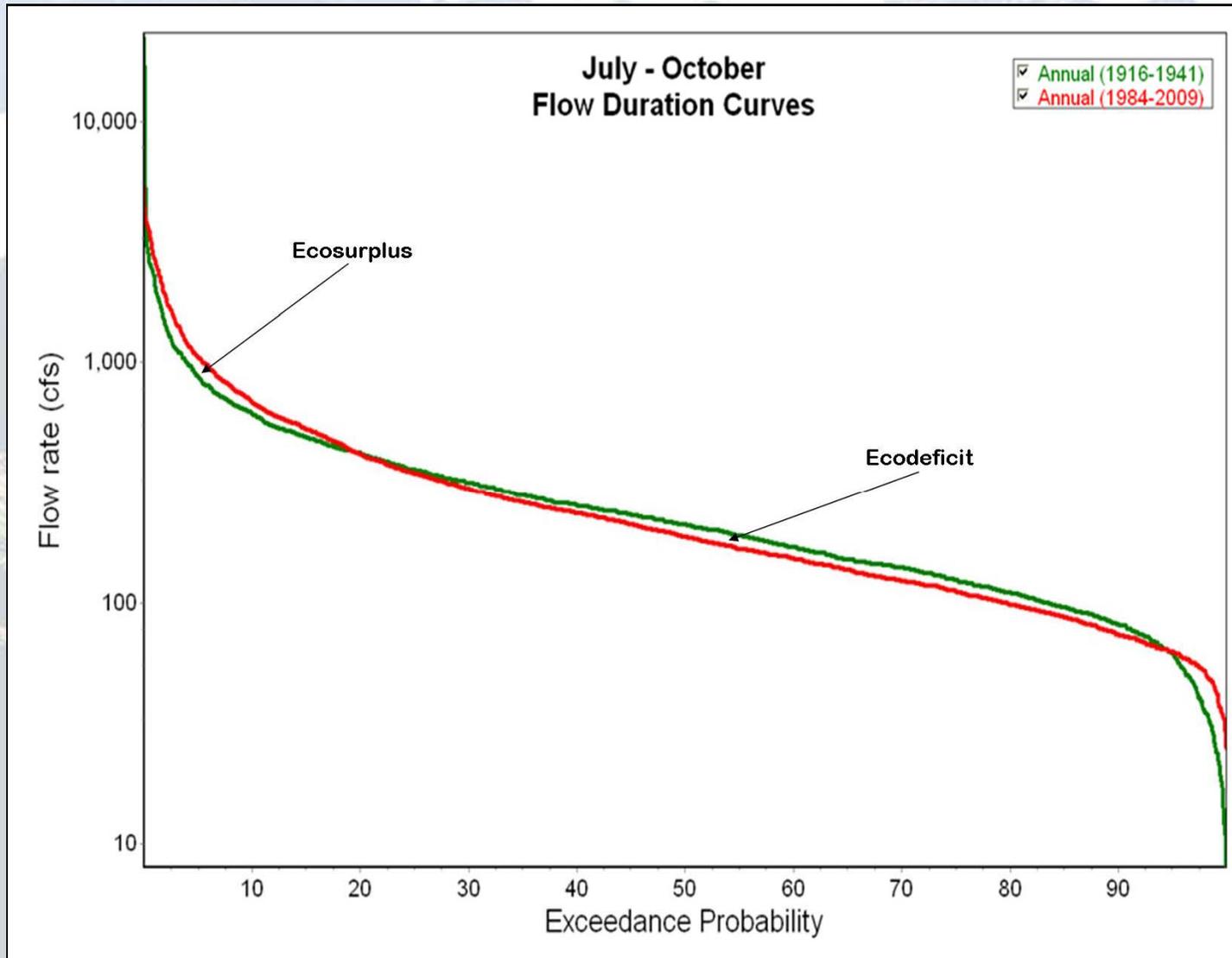
Evaluate Landscape Condition



Evaluate Geomorphic and Physical Habitat Condition



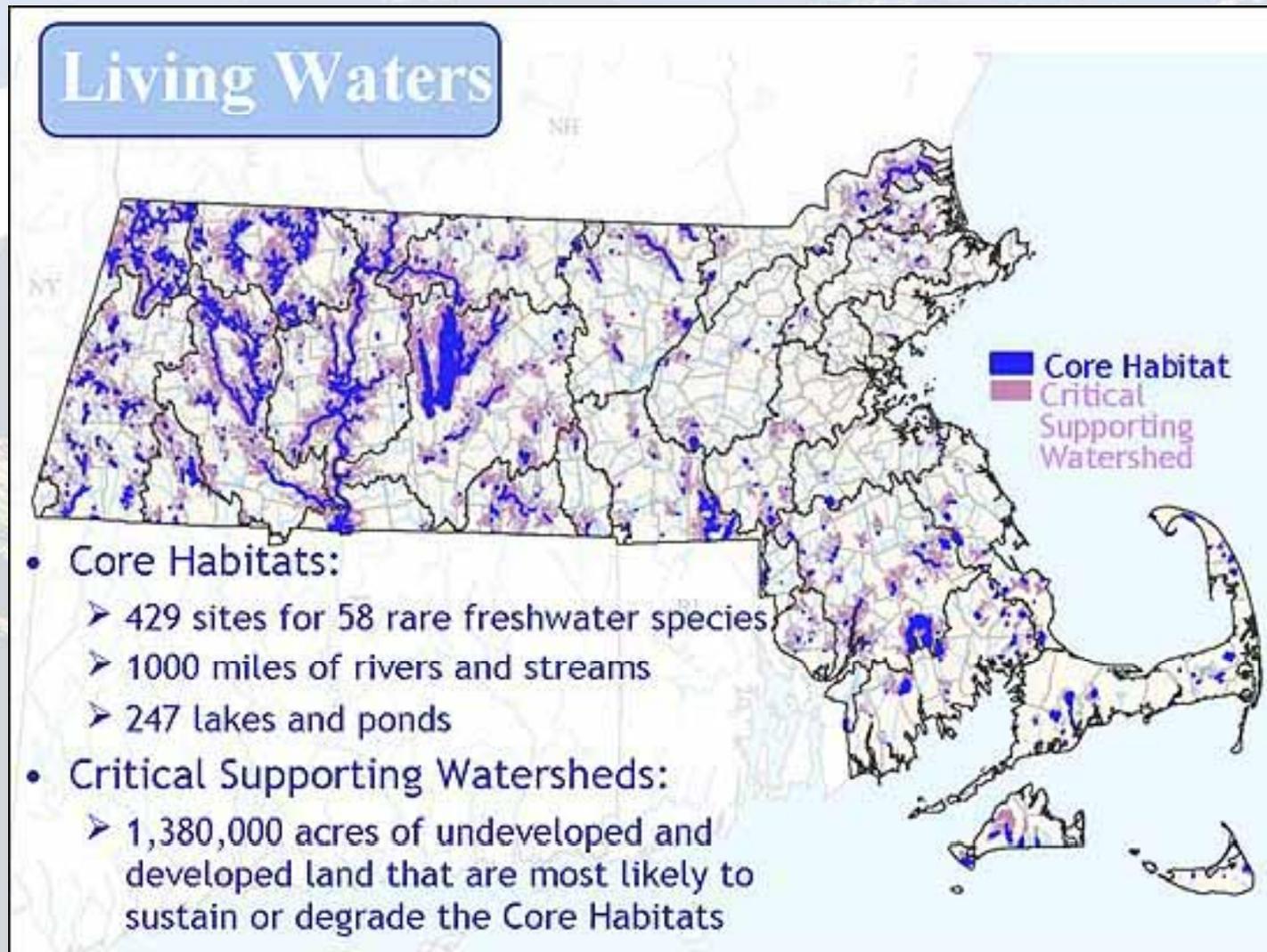
Evaluate Hydroecological Condition



Evaluate Biological Integrity



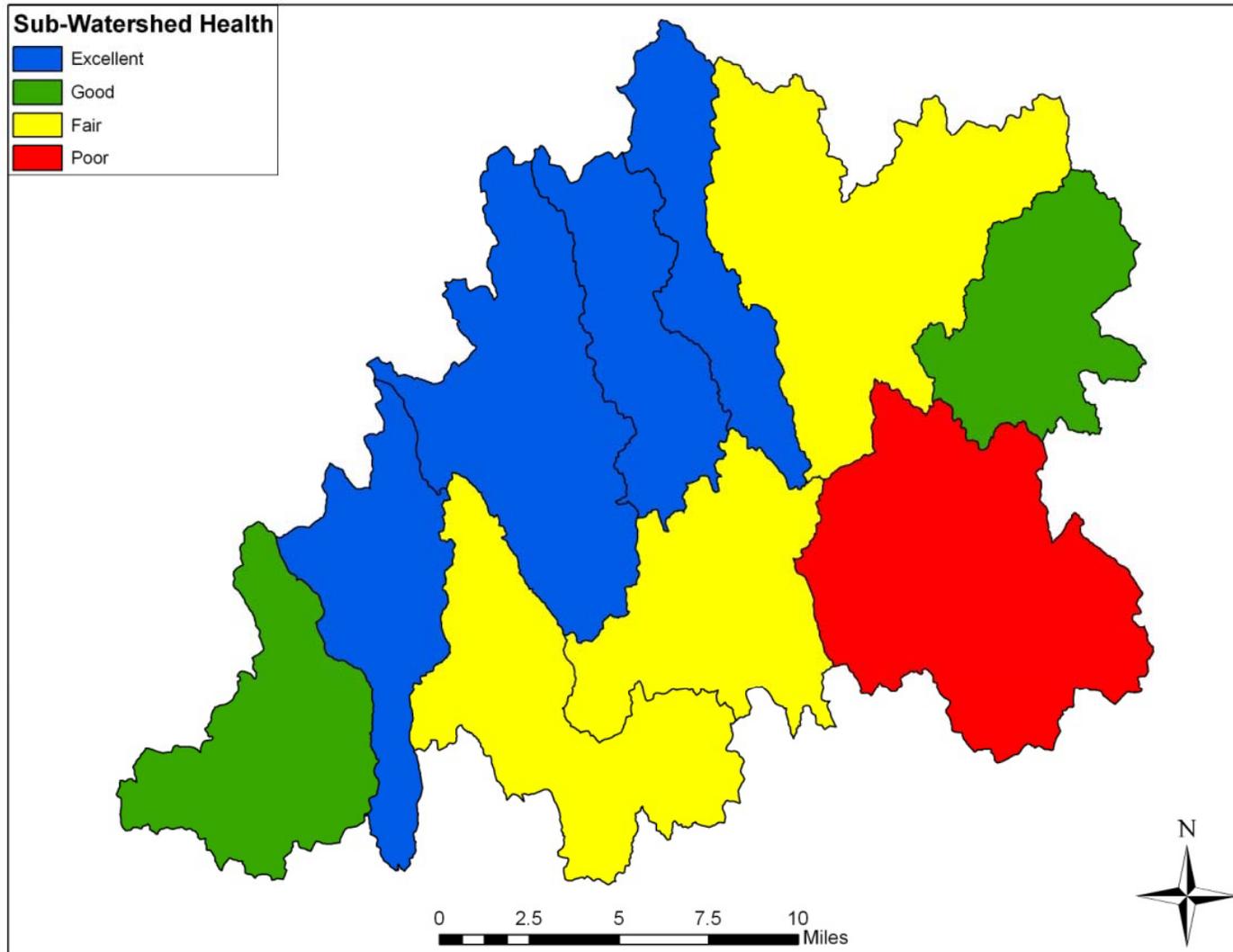
Massachusetts Statewide Living Waters Map (2003)



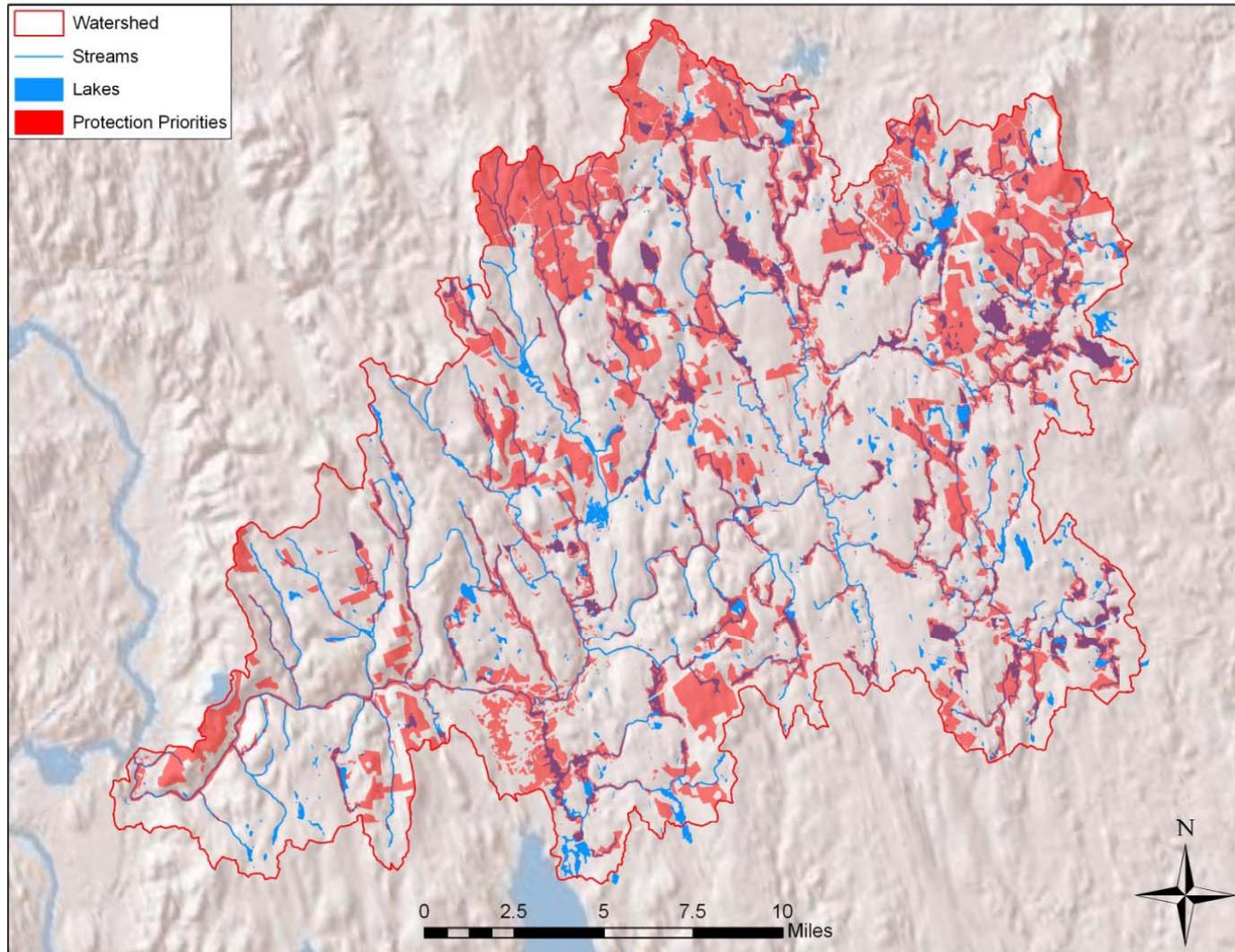
Evaluate Water Quality

- Dissolved oxygen (%sat)
- pH
- Biochemical oxygen demand (ppm)
- Temperature change from reference site
- Total phosphate (ppm)
- Nitrates (ppm)
- Turbidity (ntu)
- Total solids (ppm)
- Etc.

Evaluate Watershed Condition



Evaluate Vulnerability & Prioritize for Protection



Next Steps

- Complete stakeholder review of document
- Conduct scientific peer review
- Finalize technical guide in the Fall 2010
- Post on www.epa.gov/healthywatersheds
- Updates on website:
www.epa.gov/healthywatersheds
- Contact:
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