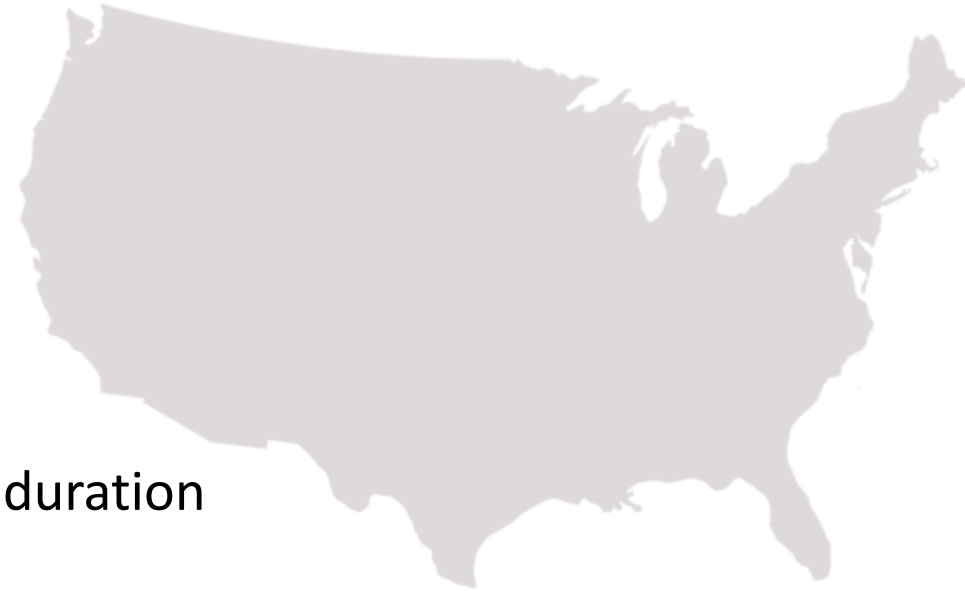
Diversity of Wetlands

Variability Across the Landscape

Wetlands reflect:



- Landscape position
  - Depression, floodplain, slope, flat
- Hydrology
  - Source, direction, frequency, depth, timing, duration
- Climate
  - Growing season, precipitation, evapotranspiration
- Soil/Substrate
  - Mineral, organic, chemistry
- Biotic factors
  - Beaver, muskrat, alligator, insects, invasives
- <u>All interrelated</u>

“Typical” Wetland?

Photo © Minnesota Dept. Natural Resources


Deep Marsh, Northern Minnesota
Photo © Minnesota Dept. Natural Resources

Seasonal/Temporary Wetland, Southern Minnesota

Seasonal/Temporary Wetlands - Farmed, Southern Minnesota


Playa Wetlands, Central Nebraska
Photo: Ted Lagrange, Nebraska Game and Parks Commission

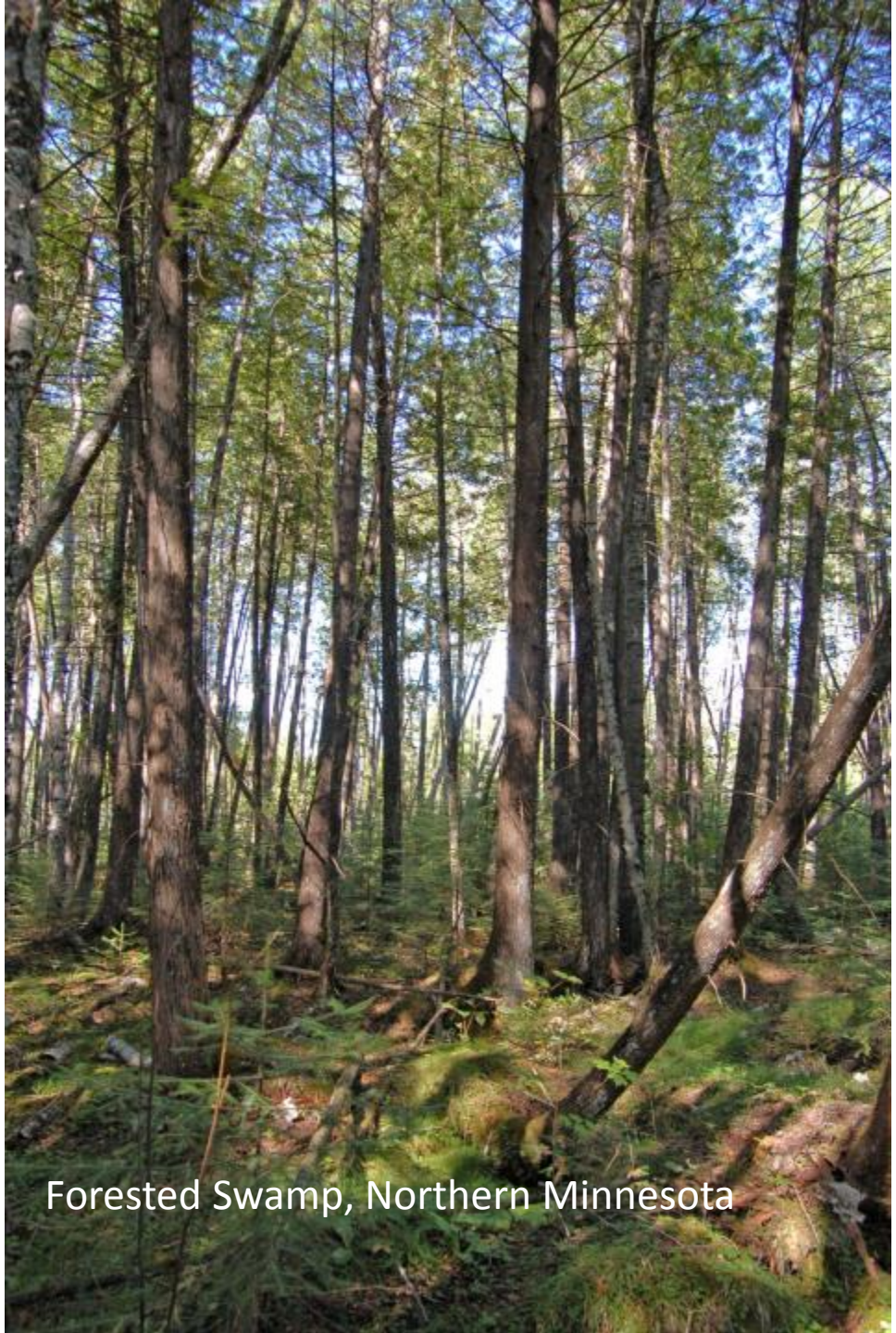

Vernal Pool, Central Minnesota
Photo © Minnesota Dept. Natural Resources


Delmarva Bay, Delaware
Photo: Delaware Wetland Monitoring and Assessment Program

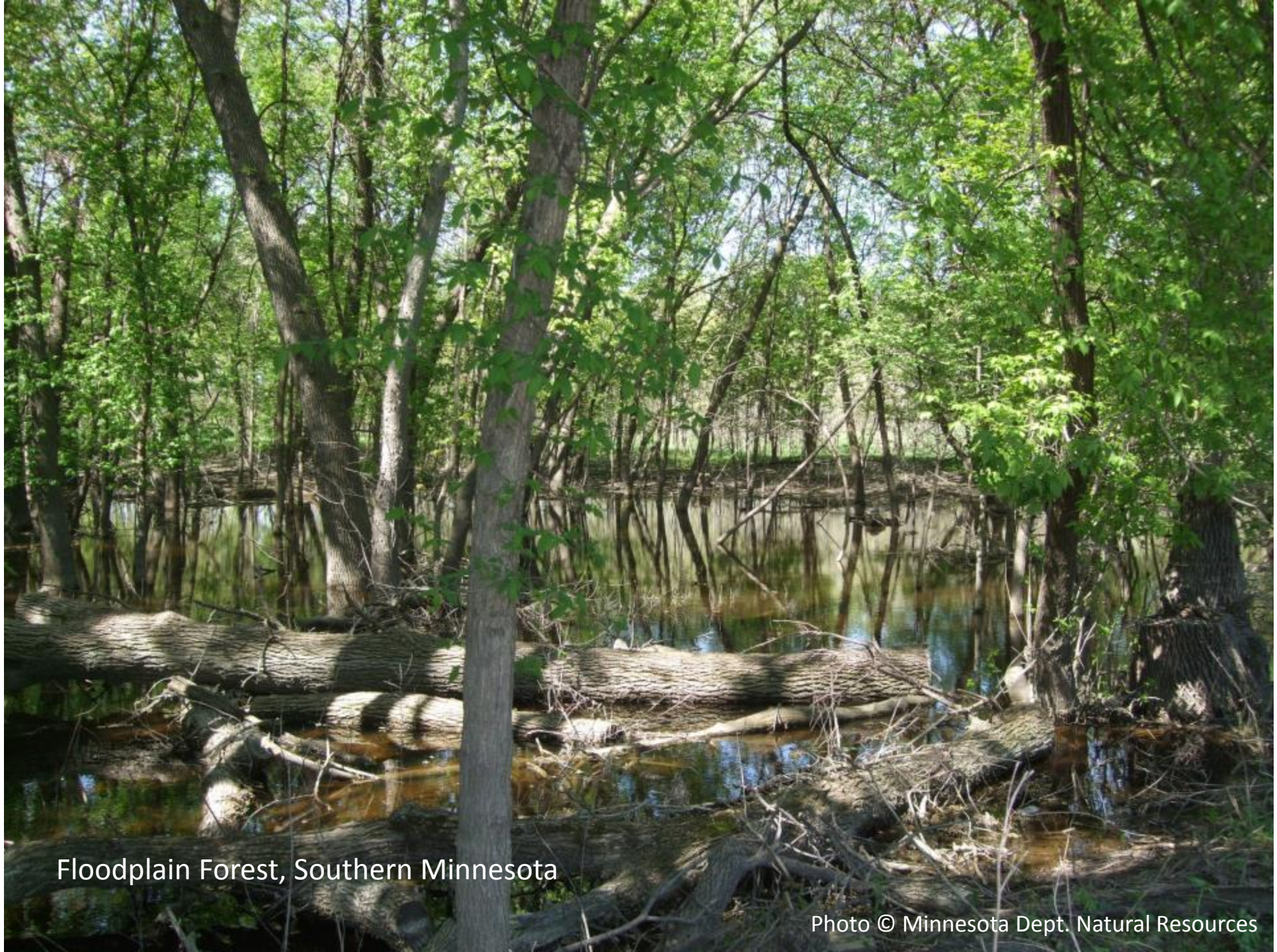

Montane Fen, Beaverhead-Deerlodge National Forest, Montana
M. Manning photo

Shrub Swamp, Southern Minnesota

Forested Swamp, Northern Minnesota



Forested Swamp, Northern Minnesota



Floodplain Forest, Southern Minnesota

Bog, Northern Minnesota


Pocosin Lakes NWR, North Carolina
Eric H. Christenson photo

Lacustrine Wetland, Northern Minnesota

Photo © Minnesota Dept. Natural Resources


Montane Wet Meadow, Beaverhead-Deerlodge National Forest, Montana
M. Manning photo

Oasis, Indian Canyons, Agua Caliente Indian Reservation, Southern California

Despite wide range of expression, all wetlands are characterized by:

- Inundation/saturation during growing season
- Hydric soils
- Hydrophytic vegetation

Benefits of Wetlands

Why we care . . .

Functions vs. Benefits (Services, Values)

- **Functions** = Things that wetlands do: physical, chemical, biological processes.

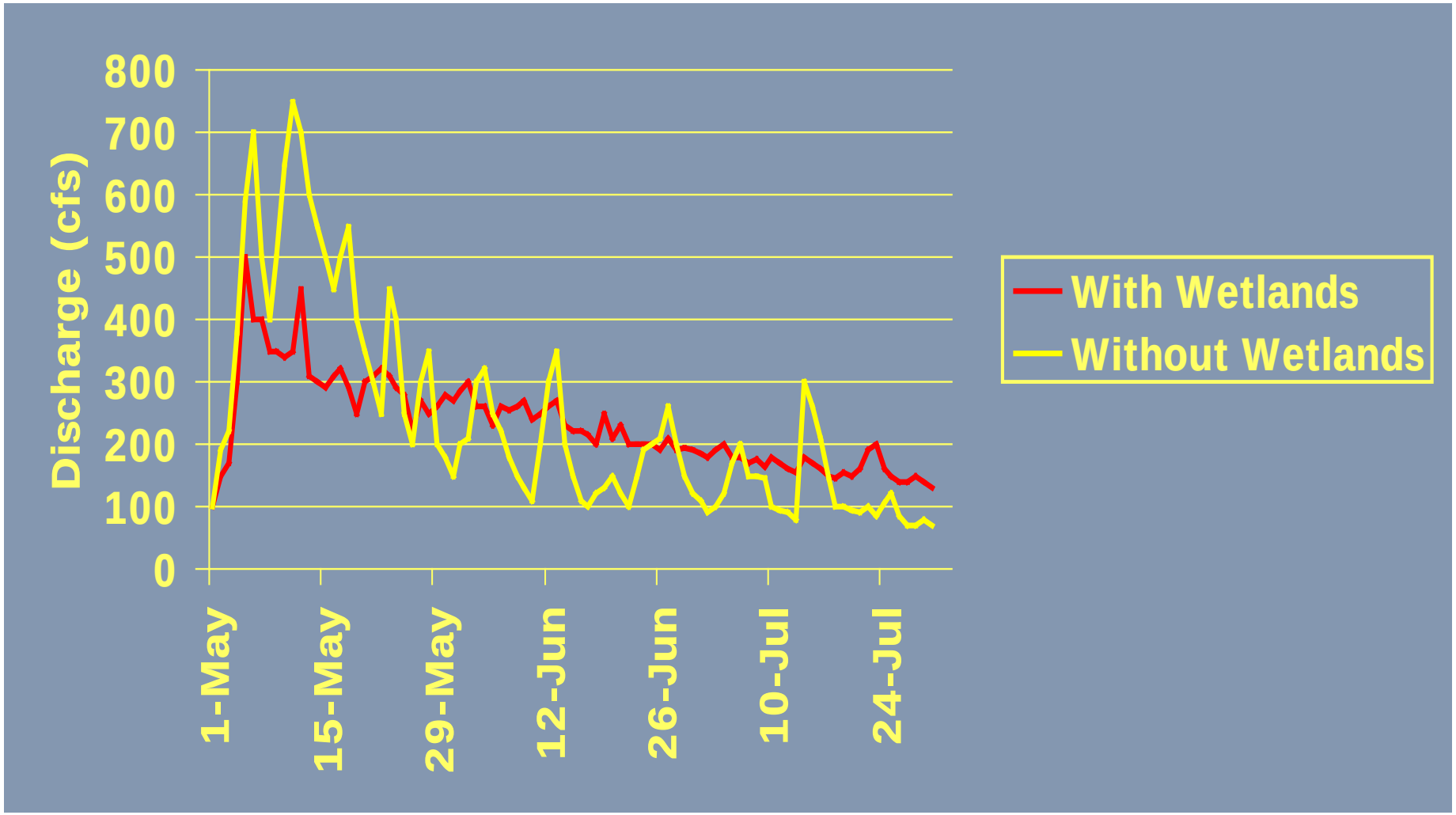
  Example: Sediment trapping

- **Benefits** = Ways in which wetland functions are useful to people.

  Example: Downstream water quality improvement

Benefit: Flood Mitigation

Benefit: Stream Flow Moderation



Benefit: Water Quality Maintenance/Improvement

Sediment

Contaminants

Nutrients

Sedimentation

Plant Uptake

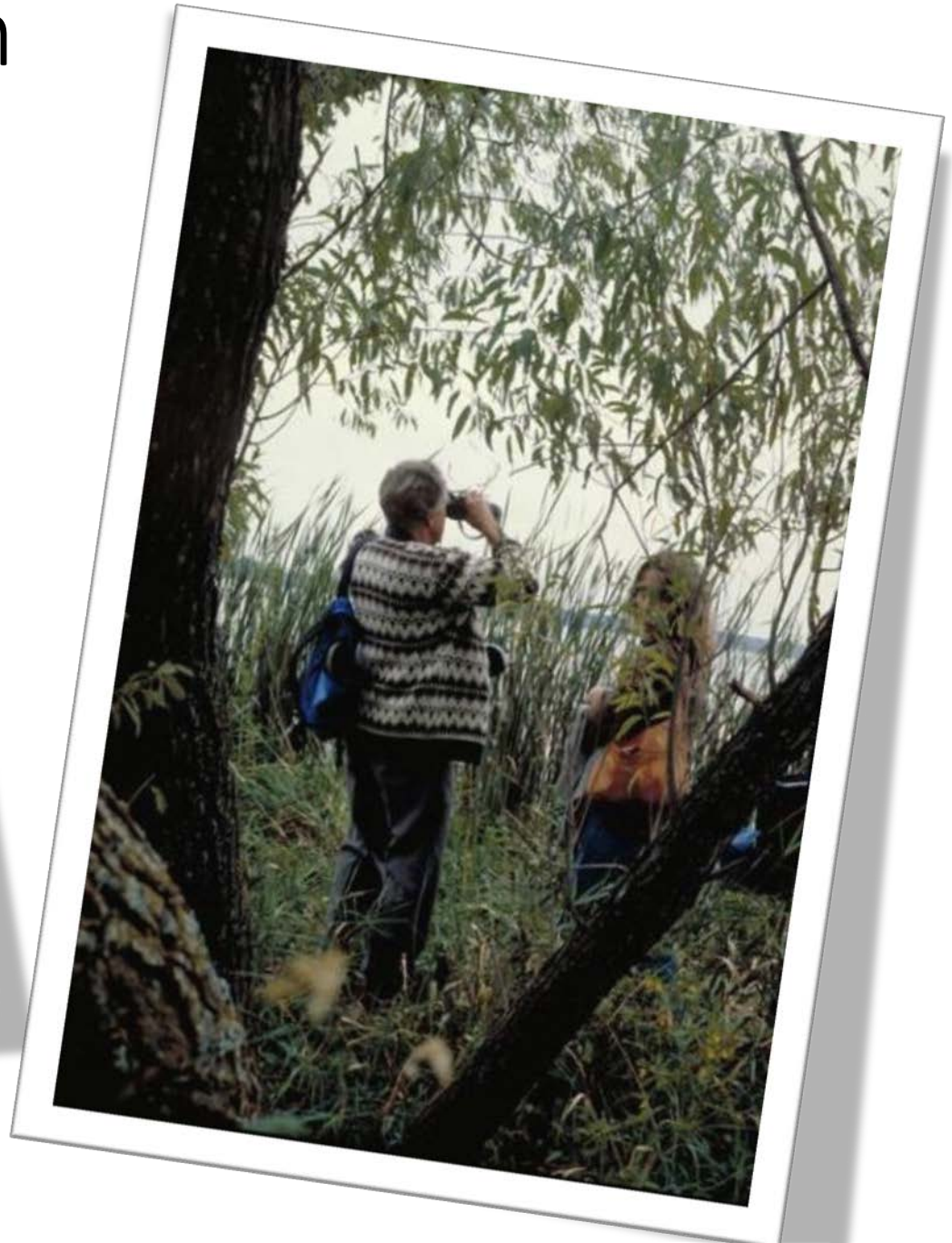
Transformation

- **Chemical**
- **Biological**

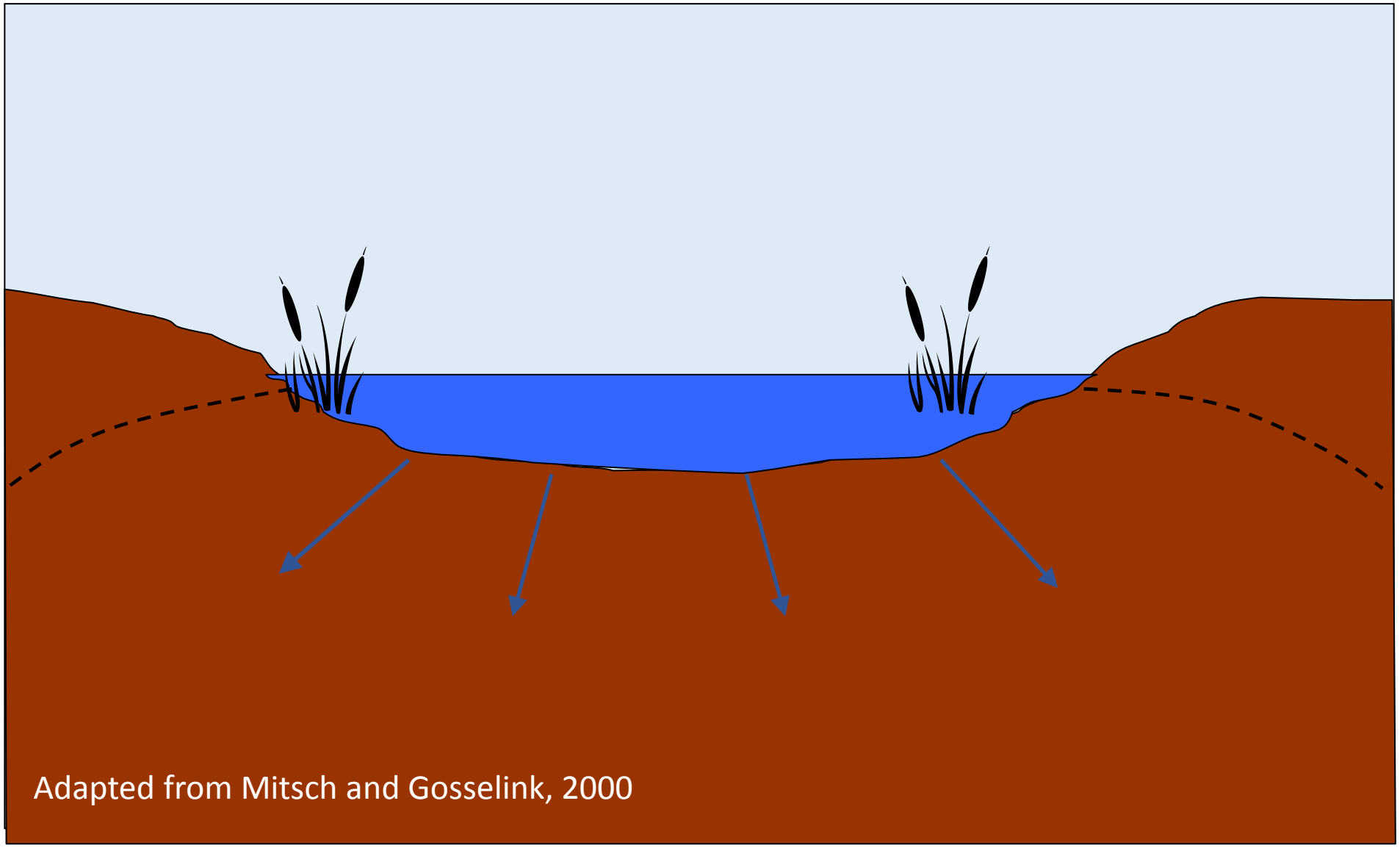
Volatilization

Benefit: Fish and Wildlife Habitat

Benefit: Recreation/Education



Benefit: Groundwater Recharge



Benefit: Commercial Products