

- Wetland modifications: Draining and tiling of ephemeral wetlands occurs to open them to agricultural use.
- Conversion to agriculture
- Dredging and channelization: Dredging of ephemeral wetlands to convert them to fish ponds or water retention basins is a threat.

#### **POLLUTION**

- Pesticides and herbicides: Nitrification due to runoff impacts ephemeral wetlands in the Southern Lower Peninsula. Fear of mosquito borne diseases like West Nile virus may foster the use of aquatic larvicides.

#### **CONSUMPTIVE BIOLOGICAL RESOURCE USE**

- Forestry practices: Ephemeral wetlands within forested systems may be affected by adjacent or surrounding timber harvest activities.

#### **BIOLOGICAL INTERACTIONS**

- Invasive plants and animals: Species like purple loosestrife (*Lythrum salicaria*) may alter community composition.

#### **EDUCATION**

- Social attitudes

### **Conservation Actions Needed [Threats addressed]**

#### **LAND & WATER PROTECTION**

- Expand conservation easement programs [variety of threats]
- Support and expand conservation purchase of high quality occurrences [variety of threats]

#### **LAND, WATER & SPECIES MANAGEMENT**

- Manage to approximate natural disturbance regimes using restoration of natural water flow patterns. [Altered hydrologic regimes; Wetland modifications; Dredging and channelization]
- Institute invasive species monitoring, prevention and control programs. [Invasive plants and animals]
- Ensure that wetland best management practices applied on timber harvests include consideration of ephemeral wetlands. [Forestry practices]
- Support Landowner Incentive Programs to foster conservation on private land [variety of threats]
- Maintain or establish riparian buffers of at least 50 ft., but 500 ft. or wider maximizes conservation benefits [wetland modifications]
- Maintain and rehabilitate natural corridors between wetlands and to representative upland habitats [fragmentation]

#### **LAW & POLICY**

- Work with municipalities to promote planning and zoning insuring adequate protection for ephemeral wetlands. [Fragmentation; Industrial, residential, and recreational development; Wetland modifications; Conversion to agriculture]
- Develop new legislation and ordinances, where necessary, to regulate or limit draining or development of ephemeral wetlands. Enforce existing regulations concerning draining and development of wetlands. [Fragmentation; Industrial, residential, and recreational development; Wetland modifications; Conversion to agriculture; Dredging and channelization]

#### **EDUCATION & AWARENESS**

- Provide information to landowners on less chemically intensive methods of fertilization and pest management. [Pesticides and herbicides]
- Educate the public about the value to wildlife of ephemeral wetlands. [Social attitudes]

### **Research and Survey Needs**

- Conduct a statewide wetlands inventory. Develop techniques to inventory ephemeral wetlands. Poorly timed inventories may result in some wetlands not being identified.
- Evaluate the impacts of modifications of natural hydrologic regimes and local water chemistry.
- Document the historic and current range of variation between ephemeral wetlands. This includes variables such as species composition, size, and surrounding communities and landforms.
- A better understanding is needed of ephemeral wetland restoration and management techniques. Is it possible to manage ephemeral wetlands to increase their value for wildlife? Are any agencies or non-governmental organizations managing or restoring ephemeral wetlands?
- A better understanding is needed of the value to wildlife of mosaics containing upland and wetland communities.
- Quantify differences in the value to wildlife of restored wetlands and natural wetlands. What is the value to wildlife of "accidental" ephemeral wetlands resulting from human disturbance, such as ditches and pits?
- Examine the impacts of activities (e.g., logging, farming, etc.) in the matrix surrounding ephemeral wetlands.

### **Monitoring**

- Track ephemeral wetland acreage and distribution across the landscape.
- Identify and track floristic composition and diversity.
- Track water level and flow fluctuations and its impacts on vegetation and wildlife.
- Track water quality trends.

**MICHIGAN'S WILDLIFE ACTION PLAN**  
**TERRESTRIAL SYSTEMS: SOUTHERN LOWER PENINSULA**

- Track amphibian use of ephemeral wetlands.