

## **APPENDIX A**

### **HED GCAs with Karst Features and Closed Depression Capture Zones**

#### **Karst features identified on maps**

**CLOSED DEPRESSION CAPTURE ZONE:** An area of land surface which is internally drained with no surface outlet for runoff water.

**SINKHOLE:** A depression or opening on the land surface, formed by solution or the collapse of limestone or dolostone bedrock. Sinkholes may be partially or completely filled with unconsolidated material and vertical passages often extend to the groundwater sources.

**CREVICE:** A linear opening or fissure within bedrock created by water penetrating along a joint.

**SWALLET:** A sinkhole or rockhole that intercepts a stream, diverting all or a portion of potential contents into the groundwater.

**SPRING:** Groundwater that emerges at the land surface, usually diffuse and ephemeral in the Door County area.

**EXPOSED BEDROCK:** Areas lacking soils where Silurian dolostone is present at the land surface. Undefined karst features are included within Exposed Bedrock on the following maps.

**FRACTURE TRACE:** A natural linear feature consisting of topographic, vegetation, or soil tonal alignments expressed continuously for less than one mile, which might reflect fractures in the bedrock.

**MULTIPLE KARST FEATURES:** A term developed during the ground mapping process when karst features were at a high density and used here for the purpose of map clarity and readability.

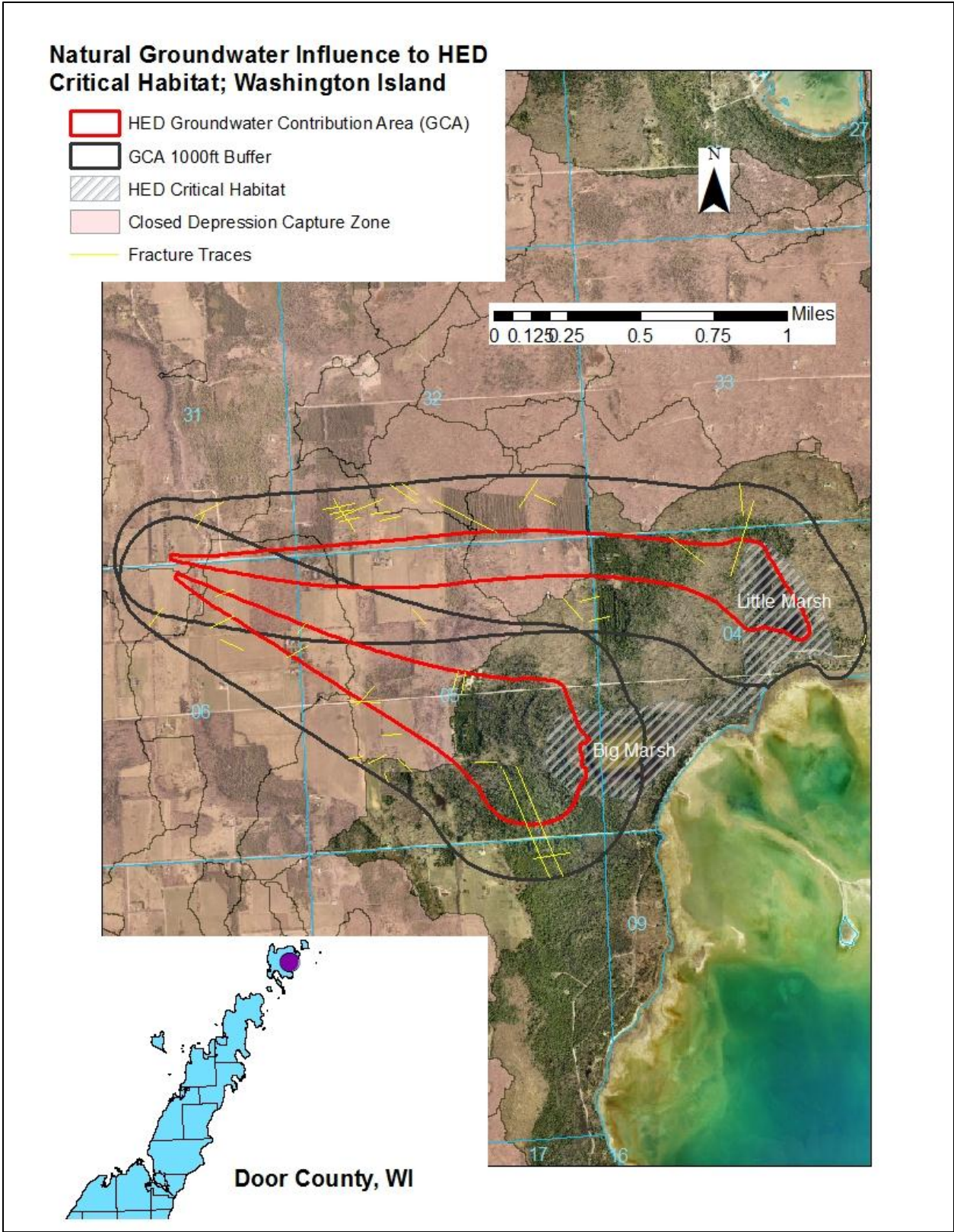


Figure A1. Contributing areas for larval sites on Washington Island

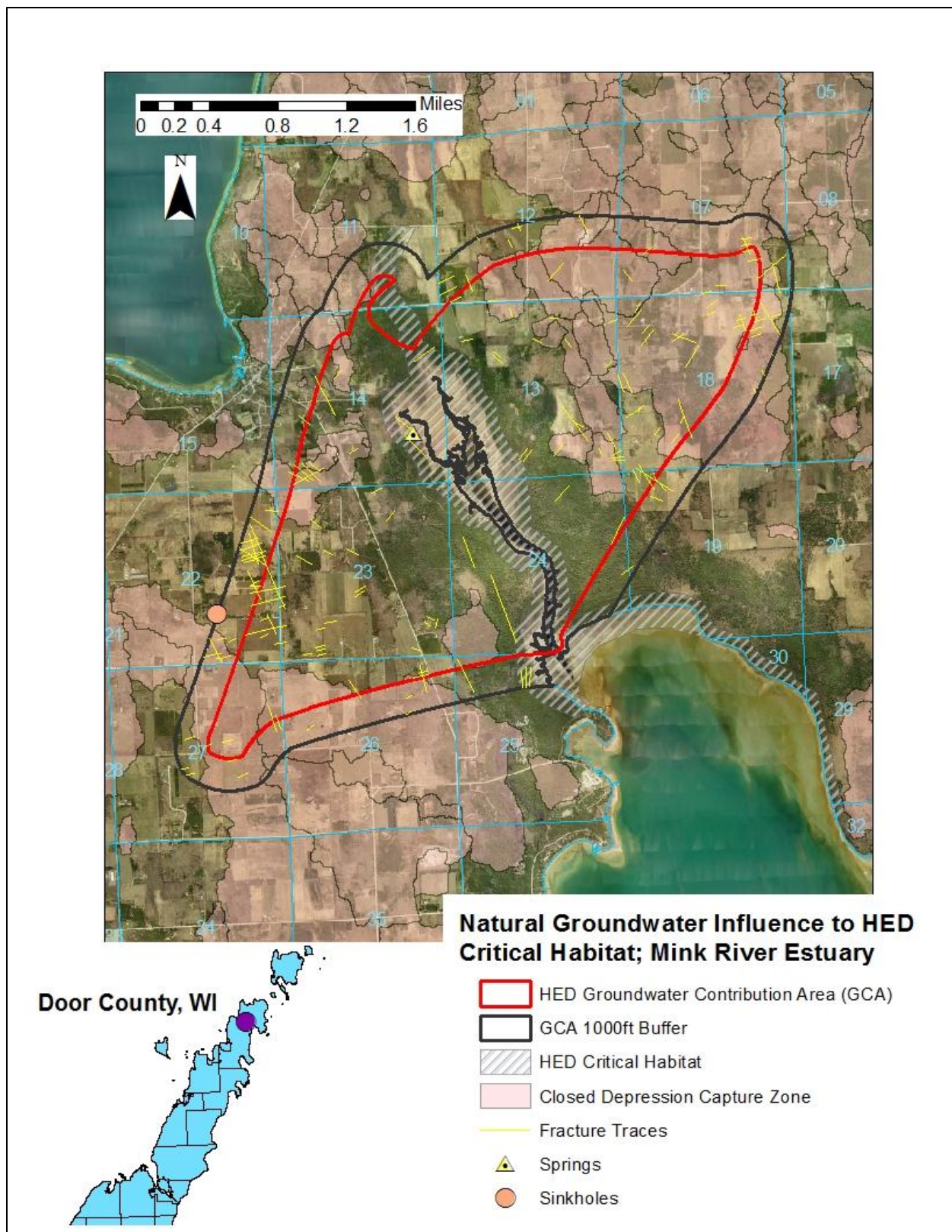








Figure A2. Contributing areas for larval sites along the Mink River

### Natural Groundwater Influence to HED Critical Habitat; Three Springs Creek

-  HED Groundwater Contribution Area (GCA)
-  GCA 1000ft Buffer
-  HED Critical Habitat
-  Closed Depression Capture Zone
-  Fracture Traces
-  Sinkholes

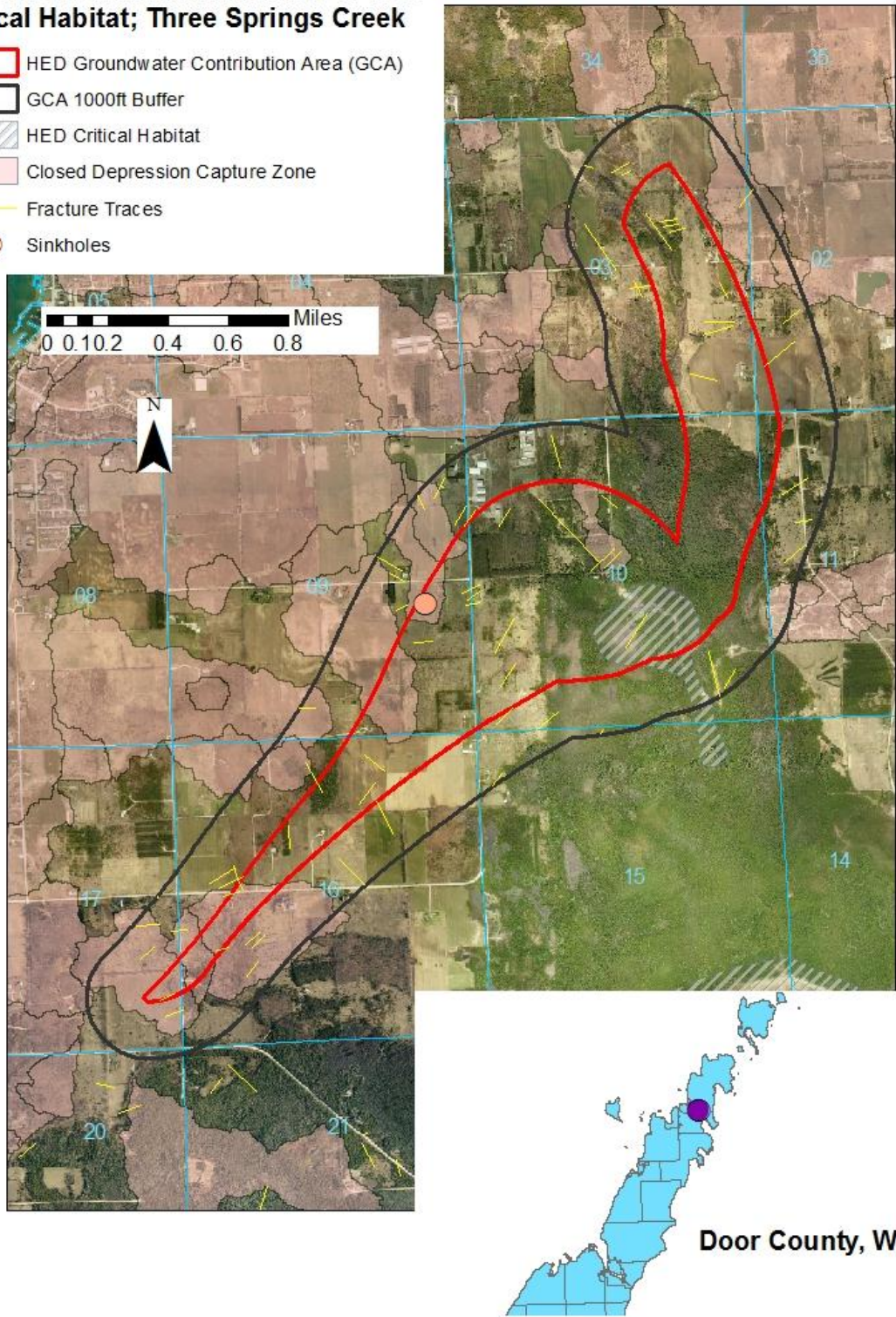


Figure A3. Contributing areas for larval sites along Three Springs Creek

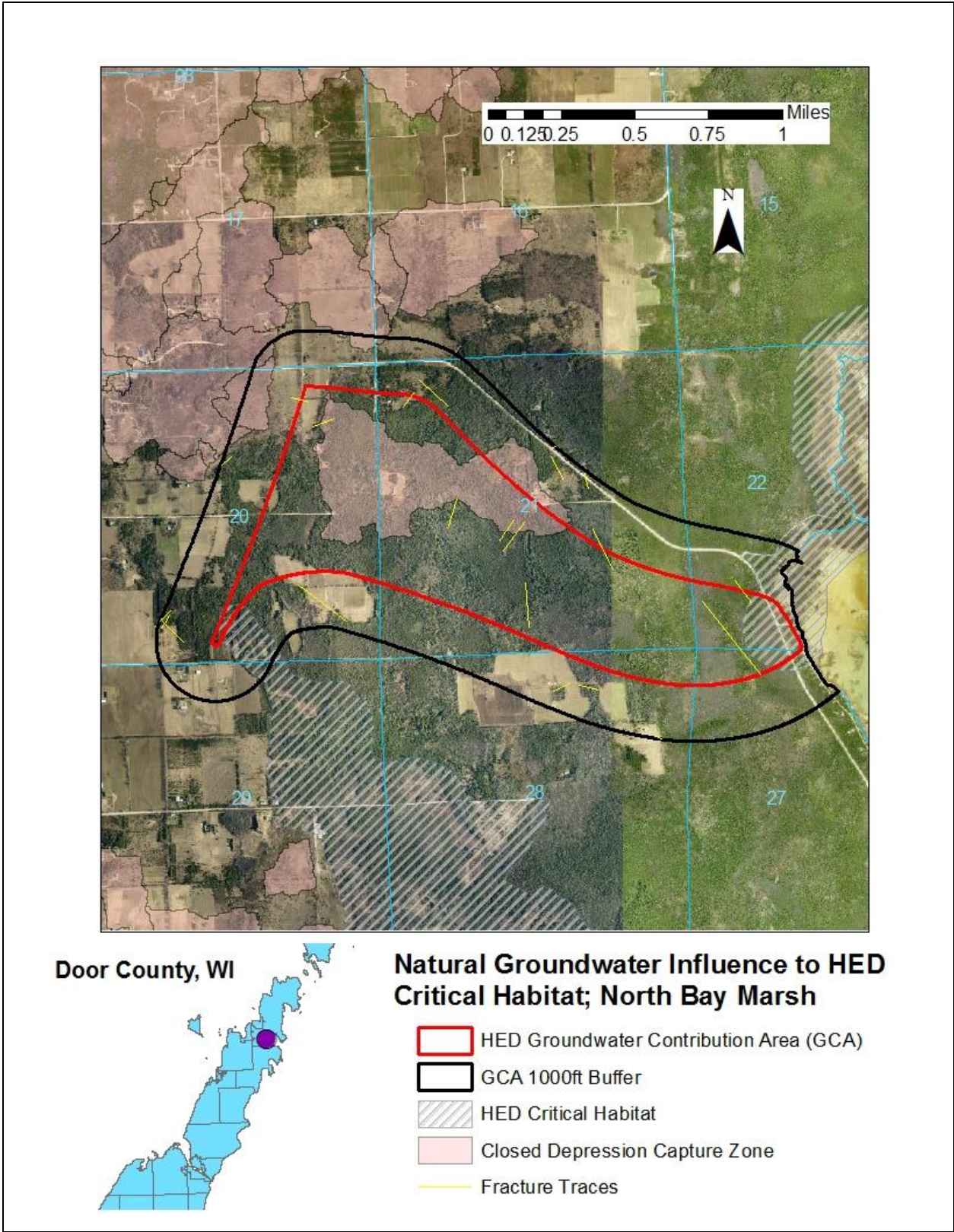


Figure A4. Contributing areas for larval sites near North Bay Marsh

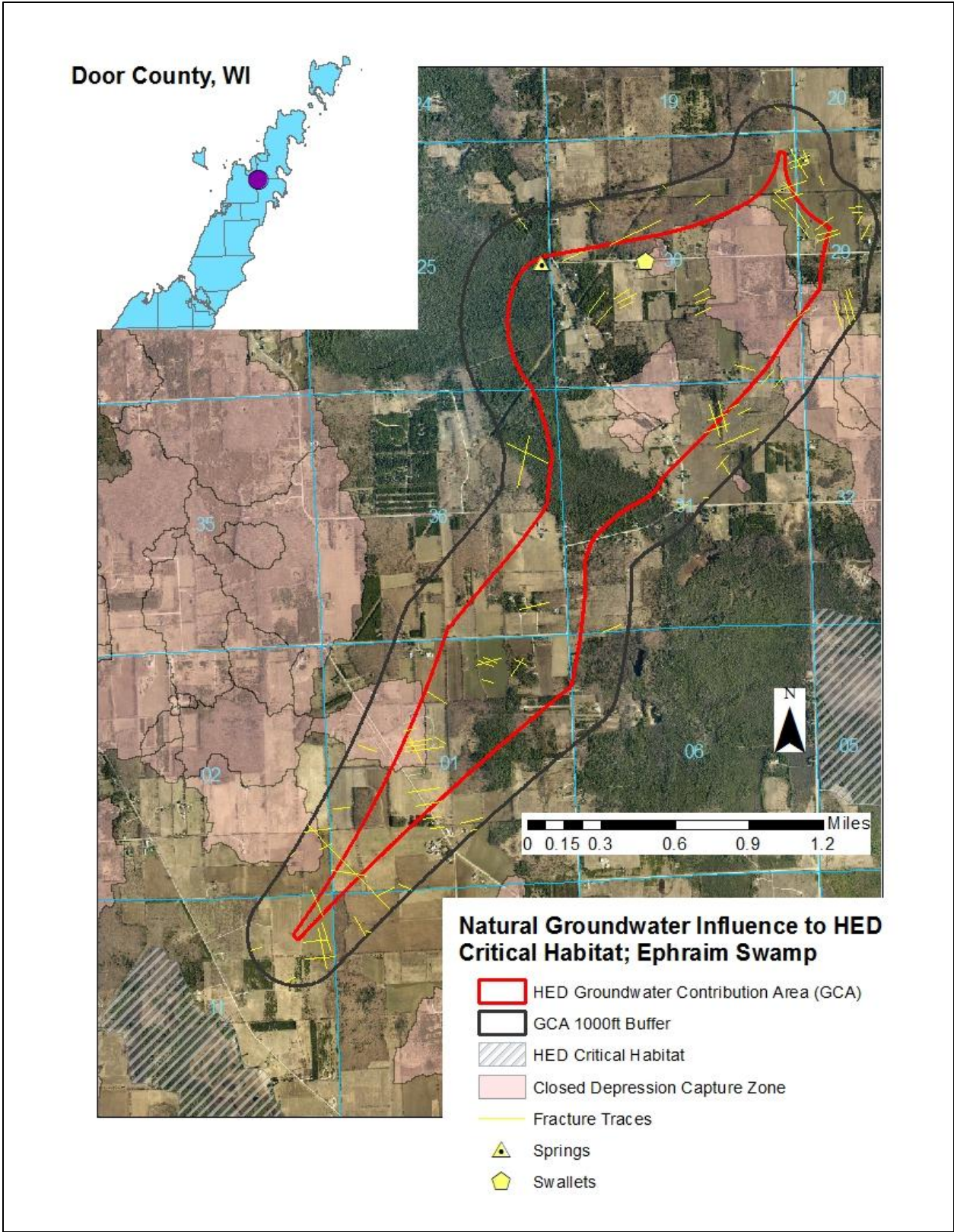


Figure A5. Contributing areas for larval sites near Ephraim Swamp

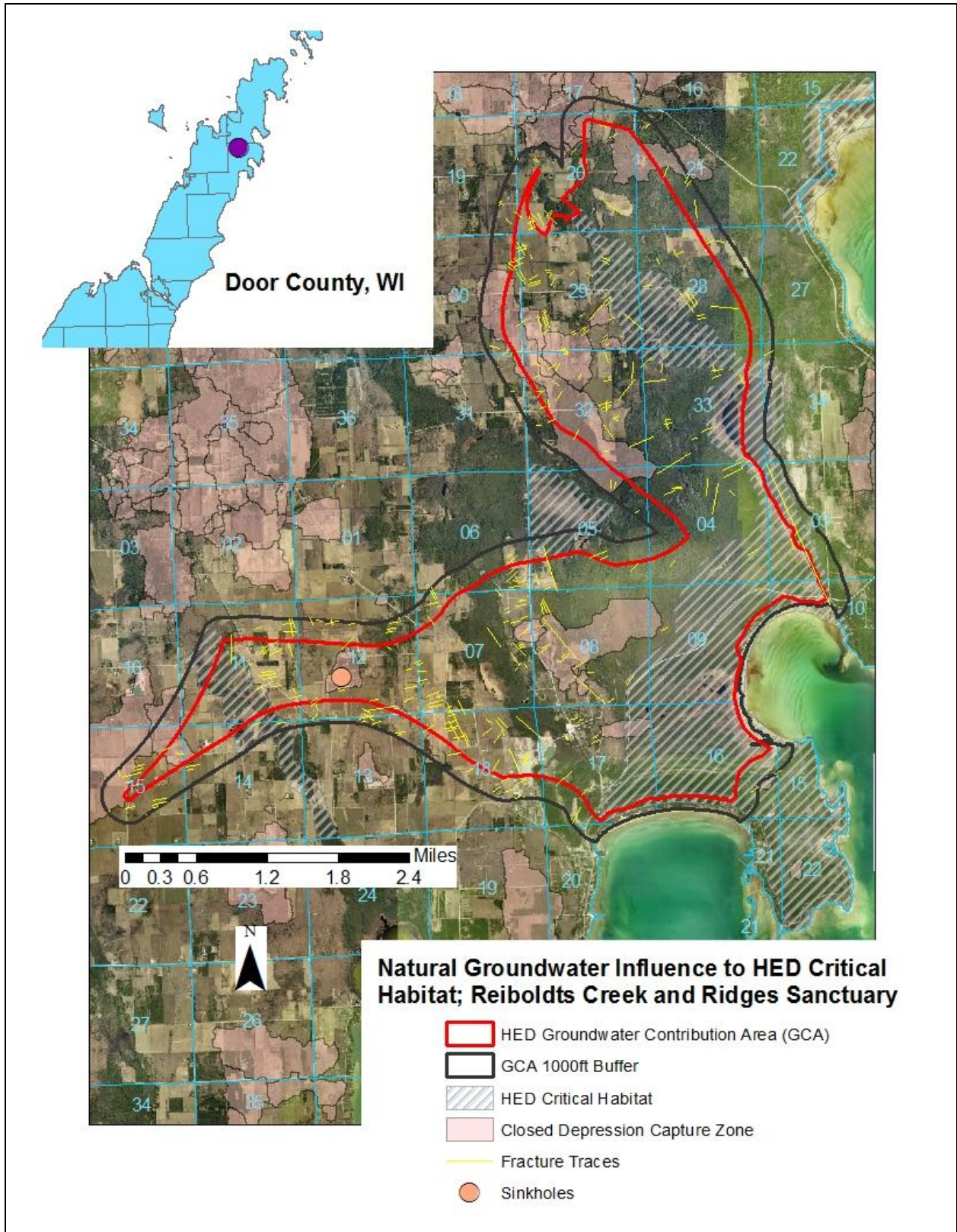









Figure A6. Contributing areas near Reiboldts Creek and The Ridges Sanctuary

### Natural Groundwater Influence to HED Critical Habitat; Baileys Harbor Swamp

-  HED Groundwater Contribution Area (GCA)
-  GCA 1000ft Buffer
-  HED Critical Habitat
-  Closed Depression Capture Zone
-  Fracture Traces
-  Sinkholes
-  Crevices

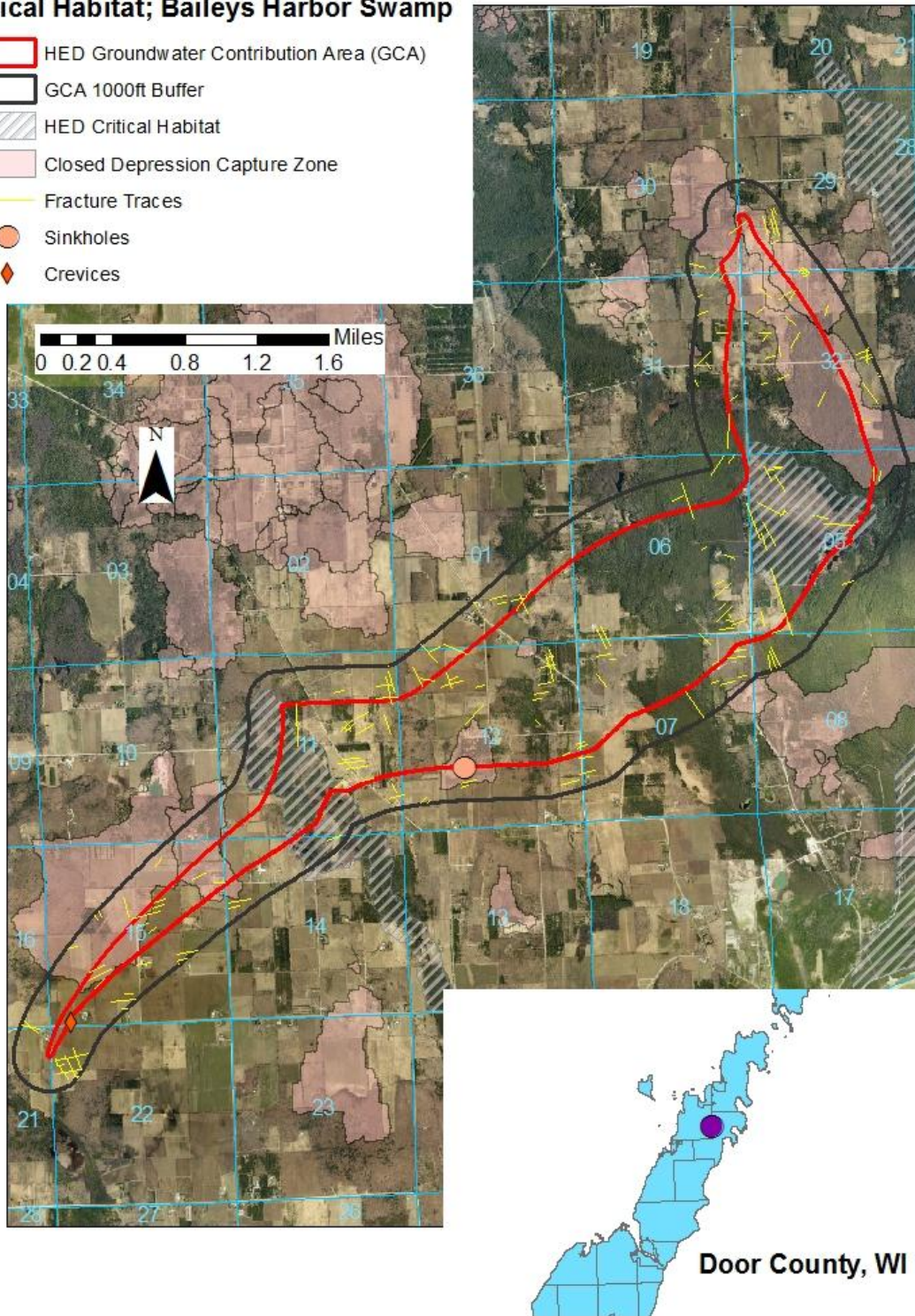


Figure A7. Contributing areas near Baileys Harbor Swamp



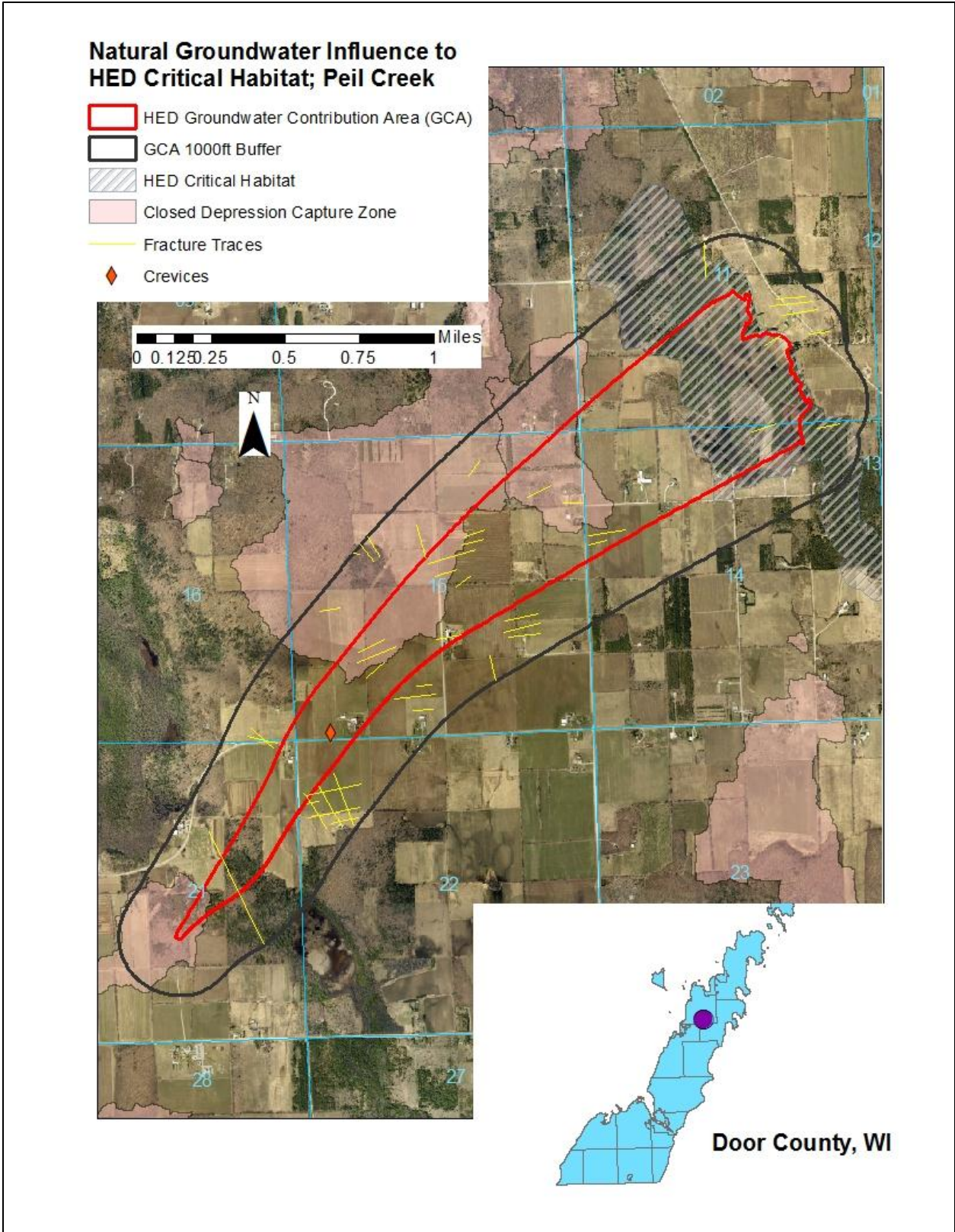


Figure A8. Contributing areas near Peil Creek

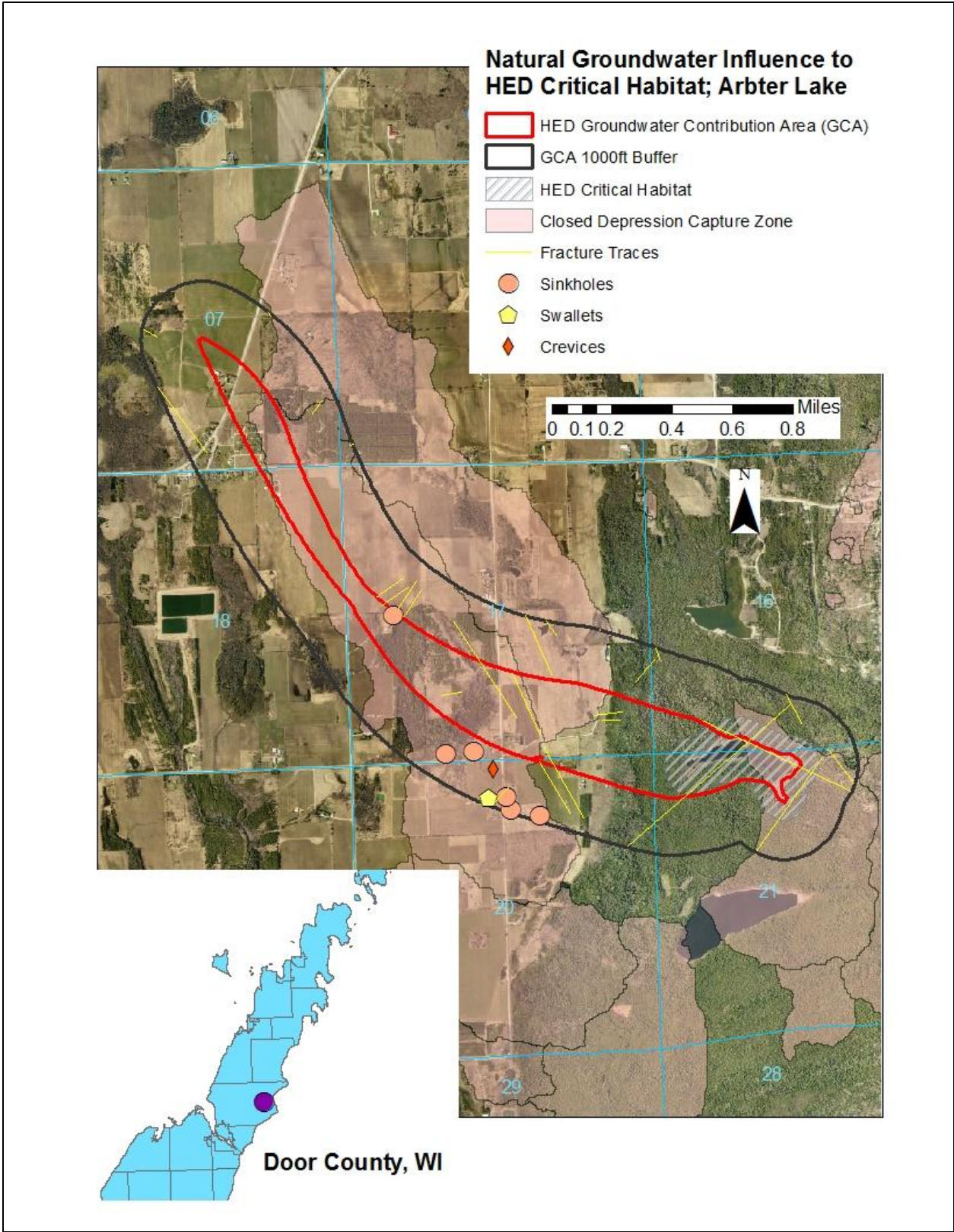


Figure A9. Contributing areas for larval sites at Arbter Lake

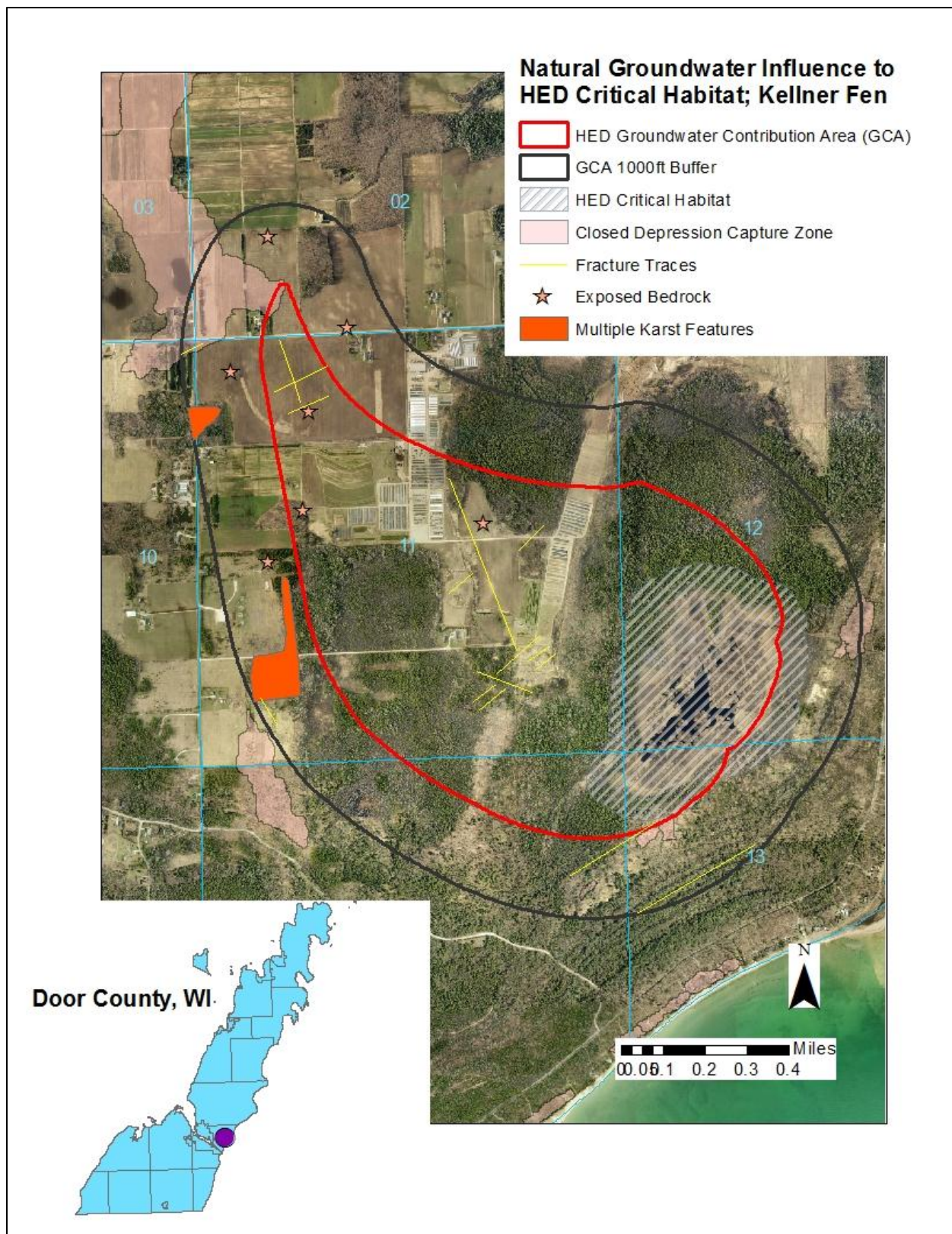


Figure A10. Contributing areas for larval sites near Kellner Fen

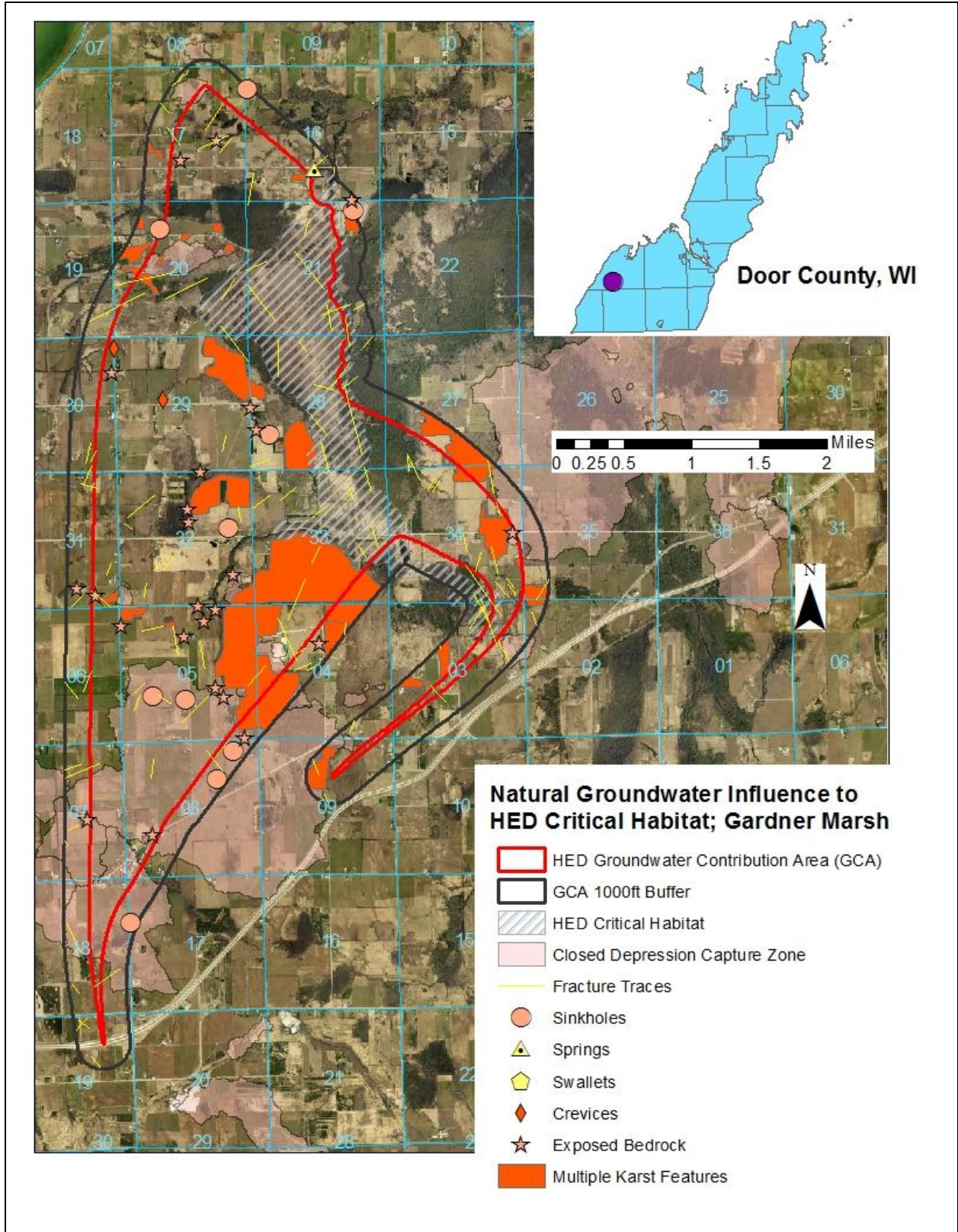


Figure A11. Contributing areas for larval sites near Gardner Swamp