

Conservation Map Goals

A set of targeted land use management and planning goals, specific to Door County were identified by local and regional advisors. Each goal has been characterized using best available data, scientific review, and advanced analysis. The maps, reports, and interactive tools on this website will enable you to identify and explore locations of highest concern for each goal.

1. Protect Habitat for Native Plants and Animals
2. Restore Landscape Connectivity
3. Protect Surface Water Quality
- 4. Protect Ground Water Quality**

How the Goal Map “Protect Ground Water Quality” was Created

Each goal map is a composite of a number data layers known as “metrics” or “criteria”. The criteria data layers were created in consultation with the Door County Greenprint Technical Advisory Team comprised of resource experts and water scientists from Door County and across the region. For detailed information on data and methodology used to create the criteria layers, refer to last two pages of this document.

The composite map for each goal was created by combining the criteria data layers using a “weighted overlay” process. The Technical Advisory Team was responsible for determining a relative weight for each criterion layer, based on their knowledge of the subject areas and the datasets. The rationale that was used for assigning a higher or lower weight to a specific criterion included:

- Importance of that criterion for meeting the goal
- Quality or currency of the data used in the model
- Comprehensiveness of the data or modeling process

The following table summarizes the criteria layers considered for the goal and the relative weights used in the overlay process to create the composite goal map.

Goal	Criteria	Weight
Protect Ground Water Quality		
	Depth to bedrock	30%
	Depth to water table	20%
	Closed depressions and principal bedrock outlets	20 %
	Fractured bedrock and Karst features	10 %
	Soil infiltration rates	20%
	Municipal water supply ZOCs	0%
	TOTAL	100%

Rationale:

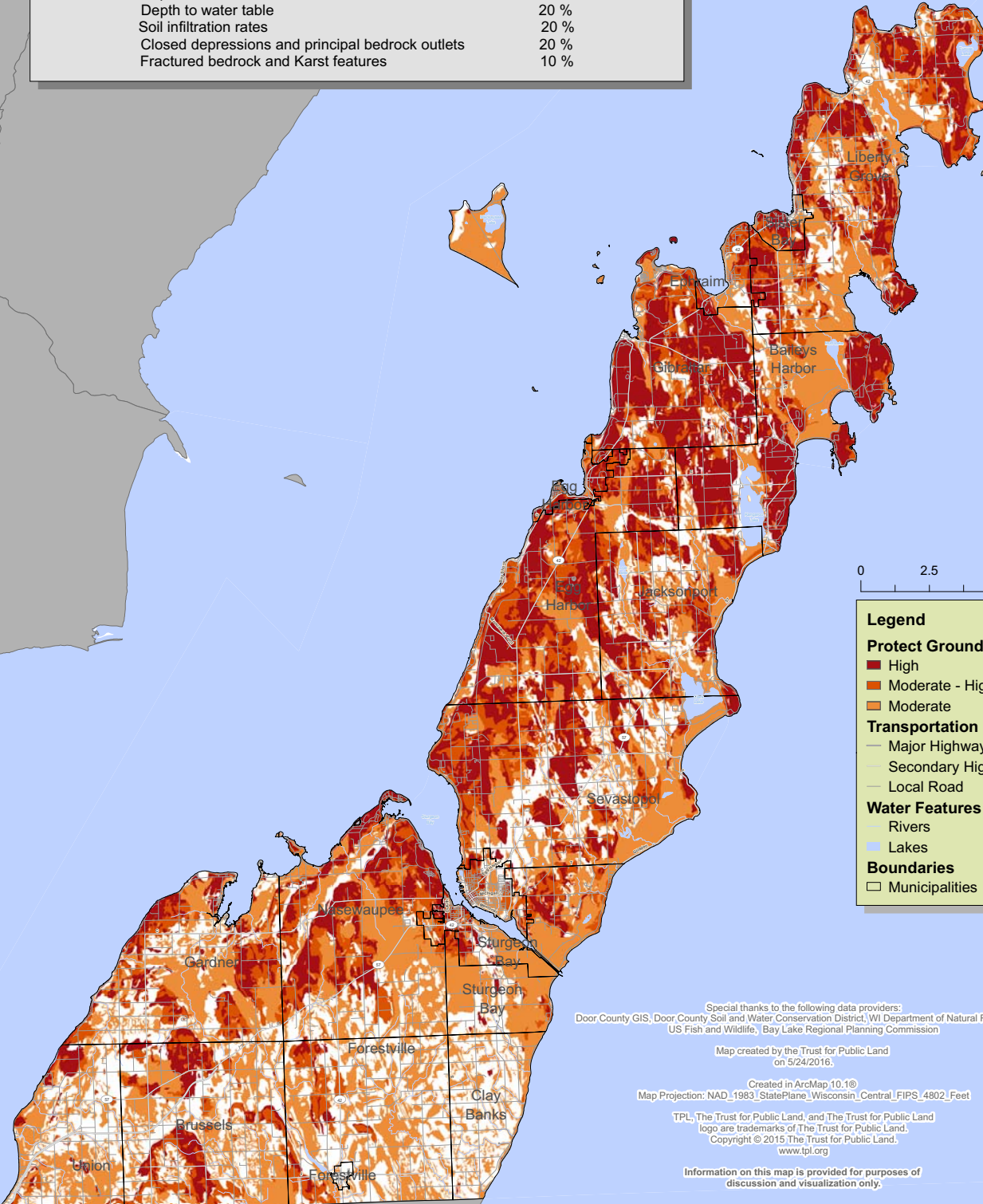
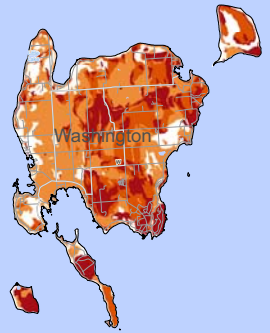
- *The soil characteristic with the greatest influence on groundwater quality is the depth to bedrock; regardless of the other properties, if there is only six inches of soil to rely on to buffer surface activities it will be a problem.*
- *Closed depressions are nearly as important, since they are concentrated areas where surface runoff has nowhere to go but into the ground. Depth to water table and soil infiltration rates were also weighted moderately high for their contribution to ground water quality.*
- *Fractured bedrock and karst features are opportunities for open conduits to the drinking water supply; incomplete data and inaccurate locations make a density approach more reasonable than trying to deal with individual features in a specific location but should still not carry as much weight.*
- *Municipal water supplies (Zones of Contribution) was used as an overlay, as they are not representative of the whole county and they are not natural features; we are not trying to protect a well but rather the drinking water supply.*

Door County Greenprint Goal: Protect Ground Water Quality

This map displays the results of the Protect Ground Water Quality, a conservation goal within the Door County Greenprint. The degree of priority for each area is represented with a color scale with dark red representing areas of highest concern and orange representing areas of moderate concern.

These priorities are the result of a weighted analysis on the following criteria:

Depth to bedrock	30 %
Depth to water table	20 %
Soil infiltration rates	20 %
Closed depressions and principal bedrock outlets	20 %
Fractured bedrock and Karst features	10 %



Legend

Protect Ground Water Quality - Priority Areas

- High
- Moderate - High
- Moderate

Transportation

- Major Highway
- Secondary Highway
- Local Road

Water Features

- Rivers
- Lakes

Boundaries

- Municipalities

Special thanks to the following data providers:
Door County GIS, Door County Soil and Water Conservation District, WI Department of Natural Resources,
US Fish and Wildlife, Bay Lake Regional Planning Commission

Map created by the Trust for Public Land
on 5/24/2016.

Created in ArcMap 10.1®
Map Projection: NAD_1983_StatePlane_Wisconsin_Central_FIPS_4802_Feet

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Door County Greenprint Model

Model Criteria
March 11, 2015

Goal	Criteria	Methodology	Data	Data Sources	Data Confidence (High, Med, Low)
Protect Ground Water Quality					
	Depth to bedrock	This model assigns priority to areas that exhibit shallow soils. Data was grouped using the following data ranges for depth to bedrock: 0-20 inches 20-60 inches greater than 60 inches Areas were scored using a scale of 0-5, with 5 representing highest concern for protecting ground water: 5: 0-20", beaches, pits, and rock outcrops 4: 20-60" 1: 60"+	Bedrock, derived from NRCS Soils data 1979	Door County Soil and Water Conservation Dept	High
	Depth to water table ?	This model assigns priority to areas that exhibit significant depth to water table. Data was grouped using the following data ranges for depth to water table: 0-30 inches 30-72 inches greater than 72 inches This model was reintroduced as a criterion in the Protect Ground Water Quality goal in November 2010.	SSURGO Soils Data 1979 with soil survey depths in feet attached	Door County Soil and Water Conservation Dept and NRCS Door County GIS	High
	Soil infiltration rates	This model assigns priority to areas where soil infiltration rates are highest (greatest probability of impacting groundwater). Data was grouped using the following data ranges for soil infiltration rates based on inches per hour: group 3: moderate rapid, rapid group 2: slow, moderate group 1: impermeable, very slow, moderate slow Areas were scored using a scale of 0-5, with 5 representing highest concern for protecting ground water: 5: group 3 from above 3: group 2 1: group 1	SSURGO 1979 Soils Data	Door County GIS	High
	Municipal water supply ZOCs	This model maps City of Sturgeon Bay wellheads and Zones of Contribution.	City of SB Wellheads City of SB ZOCs – zones of contribution City of Sister Bay	Door County Soil and Water Conservation Dept Door County Soil and Water Conservation Dept Door County Soil and Water Conservation Dept	High
	Closed depressions and principal bedrock outlets	This model identifies closed depressions. Areas were scored using a scale of 0-5, with 5 representing highest concern for protecting ground water: 5: Closed depressions with karst features 3: Closed depressions without karst features	Karst Features Closed Depressions	Door County Soil and Water Conservation Dept Door County Soil and Water Conservation Dept	High



Door County Greenprint Model

Model Criteria
March 11, 2015

Goal	Criteria	Methodology	Data	Data Sources	Data Confidence (High, Med, Low)
	Fractured bedrock and Karst features	<p>This model prioritizes areas with highest density of karst features and fracture traces (greater probability of impacting groundwater). An analysis of karst features per 40 acres and fracture traces per 40 acres was used to establish relative densities across the landscape.</p> <p>Areas were scored using a scale of 0-5, with 5 (highest concern) assigned to areas with highest density of karst features and fracture traces. Areas outside of closed depression areas were ranked 1 point lower than other areas, since these areas have a lower probability of impacting ground water.</p> <p>Note: Karst and fracture trace data is unavailable for southeast section of the county. These areas were scored a 2, to minimize the impact of the missing data when combining with other models.</p>	Karst features Fracture Traces Closed Depressions	Door County Soil and Water Conservation Dept Door County Soil and Water Conservation Dept	High