

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 Habitat for Native Plants and Animals” 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 three 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 Habitat for Native Plants and Animals	Large, Unfragmented Natural Areas	11%
	Habitat Richness	11%
	Escarpment	9%
	Embayment Complexes	9%
	Riparian Habitat	9%
	Migratory Bird Stopover Habitat	9%
	Coastal Wetlands	9%
	Coastal Habitats and Undeveloped On-Shore	9%
	Natural Communities and Habitats	8%
	Rare Species	4%
	Bedrock Beaches	4%
	Undeveloped Off-Shore	4%
	Conservation Opportunity Areas	4%
	TOTAL	100%

Rationale:

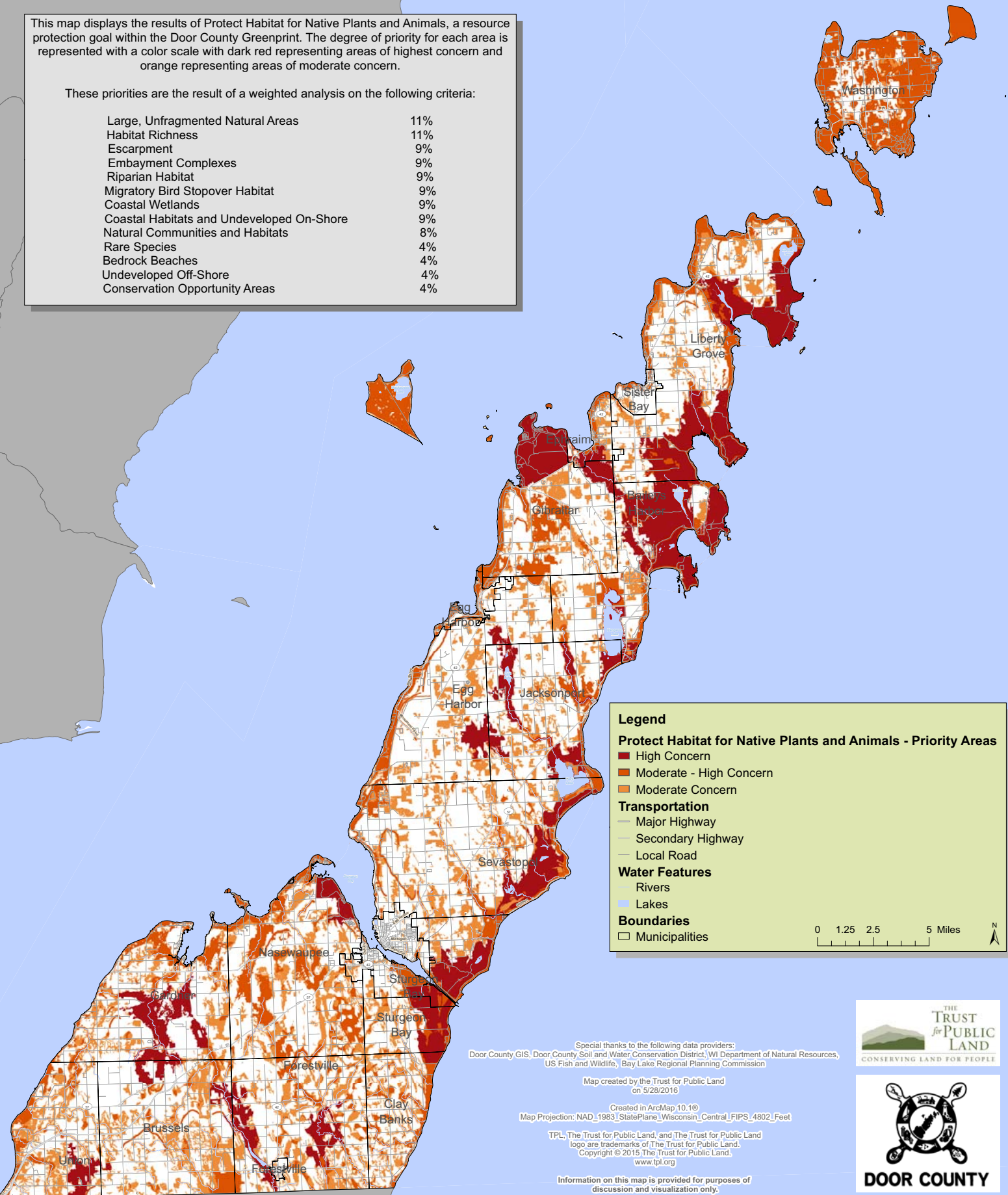
- *The two criteria analyzing natural blocks (Large Unfragmented Natural Areas and Habitat Richness) were given highest weight to emphasize the importance of size and diversity in currently undisturbed blocks of natural land.*
- *High importance was also assigned to criteria that characterize “Sensitive” features across the landscape, including the escarpment, embayment complexes, riparian habitat, migratory bird habitat, coastal wetlands, and other coastal habitats.*
- *Natural Communities and Habitats was assigned moderate weight, because of the more generalized nature of the model results.*
- *Rare Species, Bedrock Beaches, and Undeveloped Offshore were all assigned less weight due to lower confidence in available data and/or modeling results. For example:*
 - *There is high variability in the resolution at which rare species are recorded in Natural Heritage Inventory dataset.*
 - *There were modeling limitations on representing exact width of bedrock beaches.*
- *Conservation Opportunity Areas was also assigned lower weight because of its generalized nature. However, it does incorporate additional analysis not captured in other criteria (breeding bird surveys, tied to wildlife action plan, other specific DNR studies and expertise)*

Door County Greenprint Goal: Protect Habitat for Native Plants and Animals

This map displays the results of Protect Habitat for Native Plants and Animals, a resource protection 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:

Large, Unfragmented Natural Areas	11%
Habitat Richness	11%
Escarpment	9%
Embayment Complexes	9%
Riparian Habitat	9%
Migratory Bird Stopover Habitat	9%
Coastal Wetlands	9%
Coastal Habitats and Undeveloped On-Shore	9%
Natural Communities and Habitats	8%
Rare Species	4%
Bedrock Beaches	4%
Undeveloped Off-Shore	4%
Conservation Opportunity Areas	4%



Legend

Protect Habitat for Native Plants and Animals - Priority Areas

- High Concern
- Moderate - High Concern
- Moderate Concern

Transportation

- Major Highway
- Secondary Highway
- - - Local Road

Water Features

- Rivers
- Lakes

Boundaries

- Municipalities

0 1.25 2.5 5 Miles

N

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 5/28/2016

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 Habitat for Native Plants and Animals					
	Rare Species	<p>This model assigns priority to areas with rare species based on Natural Heritage Inventory data provided by Wisconsin Department of Natural Resources. The model ranks the data on a scale of 0-5, as follows:</p> <ul style="list-style-type: none"> Federally listed species and dragonfly critical habitat =5 (highest concern) State Threatened/Endangered (but not Federal Threatened/Endangered) = 4 Species of State Special Concern = 3 Dragonfly Potential Habitat = 3. Important potential habitat data identified by TNC = 2 <p>All Developed Land cover types were removed from the ranked results. Note: Non-listed SGCN are not included (spatial data was not available).</p>	<p>Designated critical habitat for Hine's Emerald Dragonfly</p> <p>Potential Hines Emerald Dragonfly habitat</p> <p>Natural Heritage Inventory</p> <p>Important potential Habitat</p> <p>Landcover 2008</p>	<p>Designated critical habitat for Hine's Emerald Dragonfly (Door County Soil & Water Dept)</p> <p>Groundwater areas for Hine's Emerald Dragonfly (Door County Soil & Water Dept or TNC)</p> <p>Wisconsin Department of Natural Resources</p> <p>The Nature Conservancy</p> <p>Door County</p>	Low
	Natural Communities and Habitats	<p>This model uses Door County 2008 landcover to identify natural communities and habitat. The following landcover types were taken into consideration, and were ranked on a scale of 0-5 as follows:</p> <p>High Concern (5) - Beaches, Bluffs, Natural Areas, Nature Study Areas, Other Natural Areas, Other Publicly-Owned Natural Areas, Parks/Parkways/Forest-Related Picnic Areas, Wildlife Refuges, Wetlands, and Woodlands greater than 30 acres.</p> <p>Moderate Concern (3) - Other Natural Areas including Wetlands and Other Publicly-Owned Natural Areas (determined via imagery that these types were more disturbed).</p> <p>Low Concern (1) - Commercial Forests, Tree Plantations, Open Space, and Grasslands.</p> <p>Developed type are not a priority</p> <p>Model updated March 2014 due to new zoning data.</p>	<p>Significant Wildlife Habitat</p> <p>Door County Zoning (wetlands areas, most of study area)</p> <p>Wisconsin Wetland Inventory (where zoning does not have data)</p> <p>Landcover 2008</p>	<p>Door County</p> <p>Door County</p> <p>Door County</p> <p>Door County</p>	High
	Escarpment	<p>This model assigns high concern to escarpment areas. Available escarpment location data was line data. A 200 foot buffer was created around each line.</p>	Escarpment	Bay-Lake RPC	Medium



Door County Greenprint Model

Model Criteria
March 11, 2015

Goal	Criteria	Methodology	Data	Data Sources	Data Confidence (High, Med, Low)
	Embayment Complexes	<p>This model ranks embayment complexes. Embayment complexes were derived as specified in 2009 mapping exercise by Door County and The Nature Conservancy. In this modeling effort, areas with sand deposits were identified using soils data, and then scored using the following approach:</p> <ul style="list-style-type: none"> Presence of surface water (0 points =no water, 3 points =water present) Percent development (1-5 points based on percentage) Development along shore (1-5 points based development intensity), Total area (1-3 points based on relative overall size), Diversity of NHI Occurrences (0 points = no rare species, 3-5 points based on relative diversity of site), Number of NHI Occurrences (0-2 points based on rare species count). Diversity of non disturbed habitat (0 points for disturbed habitat, 3-5 points based on relative diversity of site). <p>Scores were added together, and then normalized to be consistent with Greenprint scoring range of 0-5</p> <p>Model not rerun in March 2011 even though new hydro data and impervious data are available. The new streams data would make no change in the result of this model as points are given simply for presence of surface water. The impervious is not needed as the percent development aspect of this model is derived from the landcover data. Not impervious.</p>	<p>Embayment Complexes</p> <p>Streams</p> <p>Door County Boundary</p> <p>2008 County Landcover</p> <p>Natural Heritage Species Locations</p>	<p>Door County and TNC</p> <p>Door County GIS</p> <p>Door County GIS</p> <p>Door County GIS</p> <p>Wisconsin Department of Natural Resources</p> <p>WI DNR Landcover Dataset with Forest Types</p>	Medium
	Coastal Wetlands	<p>This model assigns highest concern (5) to all wetlands within 50 feet of shoreline. Moderately high concern (4) was assigned to any wetlands that were within 25 feet from the high priority wetlands above.</p> <p>Model updated March 2014 due to new zoning.</p>	<p>Shoreline</p> <p>Door County Zoning (wetlands areas)</p> <p>Cities where zoning data does not have wetland Information</p> <p>Wisconsin Wetland Inventory</p>	<p>Door County</p> <p>Door County</p> <p>TPL</p> <p>Wisconsin Department of Natural Resources</p>	High
	Bedrock Beaches	<p>This model identifies Gravel Beaches from the Environmental Sensitivity Index Shoreline data. Available data used was line format The line was buffered to the high water mark of 584 ft.</p>	<p>NOAA environmental sensitivity</p> <p>2 ft contours</p> <p>Shoreline</p>	<p>USF&W</p> <p>Door County</p> <p>Door County</p>	Low
	Riparian Habitat	<p>This model identifies streams designated as trout streams and/or as outstanding and exceptional waters by the Wisconsin DNR Fisheries Program. A 200 ft buffer was created along all identified streams. Streams were ranked as follows:</p> <ul style="list-style-type: none"> Critical habitat waters, trout streams, and designated outstanding waters = 5 (highest concern) Designated exceptional waters (may have point source influences) = 4 Other stream segments = 3 	<p>Wisconsin Trout Streams layer</p> <p>Outstanding and Exceptional Streams</p> <p>Door County Critical Habitat Designations</p>	<p>DNR Fisheries Program designated waters</p> <p>Wisconsin Department of Natural Resources</p> <p>Wisconsin Department of Natural Resources</p>	Low
	Migratory Bird Stopover Habitat	<p>This model identifies migratory bird habitat along shorelines. Areas are ranked using shorebird, waterbird and landbird priority scores provided by Wisconsin DNR. DNR scoring is based on proximity to shore, coverytype, and patch size.</p>	<p>Shorebird, waterbird and landbird data</p>	<p>Wisconsin Department of Natural Resources</p>	High
	Undeveloped Off-Shore	<p>The model assigns priority to shoreline with no off-shore man-made structures. Piers and docks were located by reviewing high resolution 2007 imagery. After removing all segments with man made structures from the shoreline data, the remaining undeveloped shoreline was buffered by 200 feet (or the average lot width). Undeveloped Shoreline that has sandy beaches was ranked as a 5 (highest concern) other shoreline types were scored as 4.</p>	<p>Pier, boat ramp and seawall locations</p> <p>2008 County Landcover</p> <p>Streams and Rivers</p> <p>Environmentally Sensitive Shoreline Inventory</p>	<p>TPL digitized from 2007 Pictometry</p> <p>Door County GIS</p> <p>Door County GIS</p> <p>USF&W</p>	Medium



Door County Greenprint Model

Model Criteria
March 11, 2015

Goal	Criteria	Methodology	Data	Data Sources	Data Confidence (High, Med, Low)
	Coastal Habitats and Undeveloped On Shore	<p>This model identifies and ranks coastal habitats by incorporating Natural Heritage Inventory sites within 1/2 mile of the shoreline and all woodlands within 1/4 mile of the shoreline. Areas are ranked based on degree of disturbance to the natural landcover:</p> <ul style="list-style-type: none"> Natural Landcovers = 5 (highest concern) Moderately Disturbed Areas = 3 Disturbed Areas = 1 <p>Developed Landcover not a priority</p> <p>Model updated Sept 2012 due to new zoning.</p>	<p>Natural Heritage Inventory Shoreline from Hydrology Woodlands from Landcover 2008 Hines Dragonfly contributing habitat Hines Dragonfly critical habitat</p> <p>2008 County Landcover Roads Rivers and Streams</p>	<p>Wisconsin Department of Natural Resources Door County Door County GIS Wisconsin Department of Natural Resources Wisconsin Department of Natural Resources</p> <p>Door County GIS Door County GIS Door County GIS</p>	High
	Large, Unfragmented Natural Areas	<p>This model uses Door County 2008 landcover to identify natural areas. The following landcover types were considered "natural": Beaches, Bluffs, Natural Area, Nature Study Areas, Other Natural Area, Wetlands, other Publicly-Owned Natural Areas, Parks/Parkways/Forest-Related, Parks/Parkways/Forest-Related Picnic Area, Wildlife Refuges, and Woodlands. Also included are Wetlands from Door County Zoning/Wisconsin Wetland Inventory.</p> <p>Fragmentation of these natural blocks was modeled by removing buffered paved roads. Remaining contiguous blocks were then ranked by size:</p> <ul style="list-style-type: none"> Unfragmented blocks of 1000 or more acres were ranked as 5 (highest concern). Blocks 500-1000 acres were ranked as 4. Blocks 150-500 acres ranked as 3. Blocks under 150 acres were not considered "large", and therefore were not included. <p>Model updated March 2014 with new zoning and roads data.</p>	<p>Door County Zoning (wetlands areas) Cities where zoning data does not have wetland Information Wisconsin Wetland Inventory</p> <p>Landcover 2008</p> <p>Roads Impervious Surface</p>	<p>Door County TPL Wisconsin Department of Natural Resources</p> <p>Door County Door County Door County</p>	High
	Habitat Richness	<p>This model prioritizes unfragmented natural areas based on a "habitat richness" score. Unfragmented blocks of at least 150 acres in size were determined using the methodology described above. Blocks were then assigned points based on the following strategy:</p> <ul style="list-style-type: none"> Number of NHI species occurrences (1-5 points based on occurrence count), Number of different landcover types (1-5 points based on landcover type count) Presence of a natural spring (3 points) Presence of surface water/ outstanding/exception waters / trout waters (2-5 points based on types present) Presence of escarpment areas (2 points) Access to shoreline (3 points) Overall size (1-5 points based on size range). <p>Scores were added together, and then normalized to be consistent with Greenprint scoring range of 0-5</p> <p>Model updated March 2014 with new roads and zoning data.</p>	<p>Door County Zoning (wetlands areas) Cities where zoning data does not have wetland Information Wisconsin Wetland Inventory 2008 County Landcover Roads Natural Heritage Inventory WDNR Landcover data with forest types Springs Streams and Rivers Outstanding and Exceptional Streams Trout Streams Escarpment Impervious Surface</p>	<p>Door County TPL Wisconsin Department of Natural Resources Door County Door County Wisconsin Department of Natural Resources Wisconsin Department of Natural Resources Door County GIS Door County GIS Wisconsin Department of Natural Resources Wisconsin Department of Natural Resources Door County GIS Door County GIS</p>	High
	Conservation Opportunity Areas	<p>This model identifies areas designated as Wisconsin DNR Conservation Opportunities Areas (incorporates WI Wildlife Action Plan priorities).</p>	<p>Conservation Opportunity Areas</p>	<p>Wisconsin Department of Natural Resources</p>	High