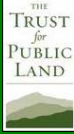




Door County Greenprint Model

Model Criteria
March 17, 2012

Goal	Criteria	Methodology	Data	Data Sources	Data Confidence (High, Med, Low)
Protect Habitat for Native Plants and Animals	Rare Species	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: 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 All Developed Land cover types were removed from the ranked results. Note: Non-listed SGCN are not included (spatial data was not available).	Designated critical habitat for Hine's Emerald Dragonfly Potential Hines Emerald Dragonfly habitat Natural Heritage Inventory Important potential Habitat Landcover 2008	Designated critical habitat for Hine's Emerald Dragonfly (Door County Soil & Water Dept) Groundwater areas for Hine's Emerald Dragonfly (Door County Soil & Water Dept or TNC) Wisconsin Department of Natural Resources The Nature Conservancy Door County	Low
	Natural Communities and Habitats	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: 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. Moderate Concern (3) - Other Natural Areas including Wetlands and Other Publicly-Owned Natural Areas (determined via imagery that these types were more disturbed). Low Concern (1) - Commercial Forests, Tree Plantations, Open Space, and Grasslands. Developed typeare not a priority Model updated March 2011 due to new zoning data	Significant Wildlife Habitat Door County Zoning (wetlands areas, most of study area) Wisconsin Wetland Inventory (where zoning does not have data) Landcover 2008	Door County Door County Door County Door County	High
	Escarpment	This model assigns high concern to escarpment areas. Available escarpment location data was line data. A 200 foot buffer was created around each line.	Escarpment	Bay-Lake RPC	Medium



Door County Greenprint Model

Model Criteria
March 17, 2012

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 2011 due to new zoning and hydro data</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, covertype, 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>Model updated March 2011 due to new hydro data</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 17, 2012

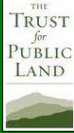
Goal	Criteria	Methodology	Data	Data Sources	Data Confidence (High, Med, Low)
	Coastal Habitats and Undeveloped On Shore	<p>This model identifies and ranks coastal habitats by incorporating Natural Heritage Inventory sites within 1/2 mile of the shoreline and all woodlands within 1/4 mile of the shoreline. 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 March 2011 due to new zoning and hydro data</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 2011 due to new zoning data and adding new impervious 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 2011 due to new zoning data, hydro and adding new impervious 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



Door County Greenprint Model

Model Criteria
March 17, 2012

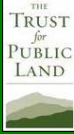
Goal	Criteria	Methodology	Data	Data Sources	Data Confidence (High, Med, Low)
Restore Landscape Connectivity					
	Connectivity Supporting Movement of Wildlife	<p>This model identifies critical wildlife corridors that make connections between large unfragmented blocks (500 acres or greater) of natural wildlife habitat. Corridors are 1/4 mile wide. The following "costs" were considered when modeling best connections (Note: the lower the cost, the more attractive for wildlife movement).</p> <p>Preferred corridors (order by most preferred to least preferred):</p> <ul style="list-style-type: none"> > Large Blocks 500+ = 0; Protected Land = 0 > Quarter Mile Segment Rivers = 5; Existing Trails = 5 > Natural Blocks: 150-500 = 5 > Quarter Mile Segment River = 8; Canals = 8 > Shoreline = 10 > Natural Blocks: 80-150 = 10, > Natural Blocks: 30-80 = 15, > Natural Landcover = 30 > Rural Roads = 50 <p>Impediments:</p> <ul style="list-style-type: none"> > Disturbed = 75; Low Development = 200; Urban Street = 750 > Minor Hiway = 500 > Major Hiway = 1000; Developed Land = 99999 <p>Modeled corridors were then ranked based on landcover, Natural = 5 (highest concern), Disturbed = 4, Low Development = 3, Developed = 2</p> <p>(Model updated march 2011)</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 Streams Shoreline</p>	<p>Door County TPL Wisconsin Department of Natural Resources</p> <p>Door County</p> <p>Door County Door County Door County</p>	H



Door County Greenprint Model

Model Criteria
March 17, 2012

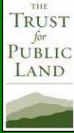
Goal	Criteria	Methodology	Data	Data Sources	Data Confidence (High, Med, Low)
Protect Surface Water Quality					
	Depth to bedrock	<p>This model assigns priority to areas in close proximity to surface water that exhibit shallow soils. Data was grouped using the following data ranges for depth to bedrock:</p> <ul style="list-style-type: none"> 0-20 inches 20-60 inches greater than 60 inches <p>Areas were scored using a scale of 0-5, with 5 representing highest concern for protecting surface water. Priorities were assigned using a combination of distance to surface water, formations, and depth to bedrock:</p> <ul style="list-style-type: none"> 0-1/4 mi from surface water: <ul style="list-style-type: none"> 5: 0-20", beaches, pits, and rock outcrops 4: 20-60" 3: 60"+ 1/4 - 1/2 mi from surface water <ul style="list-style-type: none"> 4: 0-20", beaches, pits, and rock outcrops 3: 20-60" 2: 60"+ <p>Surface water includes shoreline, but does not include wetlands.</p> <p>Model updated March 2011 due to new hydro data</p>	<p>Bedrock, derived from NRCS Soils data 1979</p> <p>Hydrology</p>	<p>Door County Soil and Water Conservation Dept</p> <p>Door County GIS</p>	High
	Depth to water table	<p>This model assigns priority to areas in close proximity to surface water that exhibit shallow depth to water table. Data was grouped using the following data ranges for depth to water table:</p> <ul style="list-style-type: none"> 0-30 inches 30-72 inches greater than 72 inches <p>Areas were scored using a scale of 0-5, with 5 representing highest concern for protecting surface water. Priorities were assigned using a combination of distance to surface water and depth to water table:</p> <ul style="list-style-type: none"> 0-1/4 mi from surface water: <ul style="list-style-type: none"> 5: 0-30" to water table 4: 30-72" 1: 72"+ 1/4 - 1/2 mi from surface water <ul style="list-style-type: none"> 4: 0-30" to water table 3: 30-72" 0: 72"+ <p>Surface water includes shoreline, but does not include wetlands.</p> <p>Model updated March 2011 due to new hydro data</p>	<p>SSURGO Soils Data 1979 with soil survey depths in feet attached</p> <p>Streams and water bodies</p>	<p>Door County Soil and Water Conservation Dept and NRCS</p> <p>Door County GIS</p>	High



Door County Greenprint Model

Model Criteria
March 17, 2012

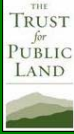
Goal	Criteria	Methodology	Data	Data Sources	Data Confidence (High, Med, Low)
	Soil infiltration rates	<p>This model assigns priority to areas in close proximity to surface water where soil infiltration rates are lowest (greatest chance for runoff to surface water). Data was grouped using the following data ranges for soil infiltration rates based on inches per hour:</p> <ul style="list-style-type: none"> group 1: impermeable, very slow, moderate slow group 2: slow, moderate group 3: moderate rapid, rapid <p>Areas were scored using a scale of 0-5, with 5 representing highest concern for protecting surface water. Priorities were assigned using a combination of distance to surface water and infiltration rate:</p> <p>0-1/4 mi from surface water:</p> <ul style="list-style-type: none"> 5: group 1 from above 3: group 2 1: group 3 <p>1/4 - 1/2 mi from surface water</p> <ul style="list-style-type: none"> 4: group 1 from above 2: group 2 0: group 3 <p>Surface water includes shoreline, but does not include wetlands.</p> <p>Model updated March 2011 due to new hydro data</p>	<p>SSURGO 1979 Soils Data Streams and water bodies</p>	<p>Door County GIS Door County GIS</p>	High
	Unfractured bedrock and absence of Karst features	<p>This model prioritizes areas with lowest density of karst features and fracture traces (greater chance for runoff to surface water). An analysis for karst features per 40 acres and 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 lowest density of karst features and fracture traces. Closed depression areas were ranked 2 points lower than other areas, since these areas have a lower probability of releasing runoff to surface 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>	<p>Karst features Closed Depression</p>	<p>Door County Soil and Water Conservation Dept Door County Soil and Water Conservation Dept</p>	High



Door County Greenprint Model

Model Criteria
March 17, 2012

Goal	Criteria	Methodology	Data	Data Sources	Data Confidence (High, Med, Low)
	Steep slopes	<p>This model assigns priority to areas in close proximity to surface water with steep slopes (greater chance for runoff/erosion). Data was grouped using the following data ranges for percent slope.</p> <ul style="list-style-type: none"> 7.9% - 25% slope 3.9% - 7.9% slope 1.7% - 3.9% slope 0% - 1.7% slope <p>Areas were scored using a scale of 0-5, with 5 representing highest concern for protecting surface water. Priorities were assigned using a combination of distance to surface water and steepness:</p> <p>0-1/4 mi from surface water:</p> <ul style="list-style-type: none"> 5: 7.9% - 25% slope 4: 3.9% - 7.9% slope 3: 1.7% - 3.9% slope 0: 0% - 1.7% slope <p>1/4 - 1/2 mi from surface water</p> <ul style="list-style-type: none"> 4: 7.9% - 25% slope 3: 3.9% - 7.9% slope 2: 1.7% - 3.9% slope 0: 0% - 1.7% slope <p>Surface water includes shoreline, but does not include wetlands.</p> <p>Model updated March 2011 due to new hydro data</p>	<p>Slope derived from DEM</p> <p>Hydrology</p>	<p>DEM (Door County GIS)</p> <p>Door County GIS</p>	High
	Close proximity to drainage channels	<p>This model assigns priority to areas that are in closet proximity to surface water.</p> <p>Areas were scored using a scale of 0-5, with 5 representing highest concern for protecting surface water:</p> <ul style="list-style-type: none"> 5: areas within 75 feet of surface water 0: all other areas <p>Surface water includes shoreline, but does not include wetlands.</p> <p>Model updated March 2011 due to new hydro data</p>	Streams and Rivers	(Door County GIS)	High
	Sub-watersheds with high percentage of impervious cover	<p>This model assigns highest concern to subwatersheds with highest percentage of impervious cover. Subwatersheds with no impervious surface were considered a non-priority (0).</p> <p>Impervious cover was delineated using building footprints, parking lots and roads provided by Door County. Percent impervious cover per subwatershed was computed.</p> <p>Subwatersheds were scored using a scale of 0-5, with 5 representing highest concern for protecting surface water:</p> <ul style="list-style-type: none"> 30% and greater impervious cover = 5 (highest concern) 20% - 30% impervious cover = 4 10% - 20% impervious cover = 3 0% - 10% impervious cover = 0 (not a priority) <p>(Model updated March 2011 to incorporate new impervious surface data)</p>	<p>Impervious Areas</p> <p>Subwatersheds</p> <p>Impervious Surface (provided March 2011)</p>	<p>Door County Soil and Water Conservation Dept</p> <p>Door County Soil and Water Conservation Dept, University of Wisconsin</p> <p>Door County GIS</p>	High



Door County Greenprint Model

Model Criteria
March 17, 2012

Goal	Criteria	Methodology	Data	Data Sources	Data Confidence (High, Med, Low)
Protect Ground Water Quality					
	Depth to bedrock	<p>This model assigns priority to areas that exhibit shallow soils. Data was grouped using the following data ranges for depth to bedrock:</p> <ul style="list-style-type: none"> 0-20 inches 20-60 inches greater than 60 inches <p>Areas were scored using a scale of 0-5, with 5 representing highest concern for protecting ground water:</p> <ul style="list-style-type: none"> 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 ?	<p>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:</p> <ul style="list-style-type: none"> 0-30 inches 30-72 inches greater than 72 inches <p>This model was reintroduced as a criterion in the Protect Ground Water Quality goal in November 2010.</p>	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	<p>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:</p> <ul style="list-style-type: none"> group 3: moderate rapid, rapid group 2: slow, moderate group 1: impermeable, very slow, moderate slow <p>Areas were scored using a scale of 0-5, with 5 representing highest concern for protecting ground water:</p> <ul style="list-style-type: none"> 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	<p>This model identifies closed depressions.</p> <p>Areas were scored using a scale of 0-5, with 5 representing highest concern for protecting ground water:</p> <ul style="list-style-type: none"> 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 17, 2012

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