EISPC Environmental Focus Group
Sensitivity Categorization of Protected Lands, Habitat, and Imperiled Species

Categorization:

The following categorization was used to synthesize a large amount of information on protected lands, priority habitat, and imperiled species data. While different energy technologies may present varying degrees of risk to natural resources, this categorization is meant to generalize the sensitivity of these resources across all technologies. Further research into impacts of specific energy technologies should be performed at the project level. Protected lands, habitat, and imperiled species were categorized and incorporated into the model as separate datasets. A four-tier system was used for protected lands, habitat, and imperiled species, as follows:

4. Exclude from development (Red): Areas where development is already precluded by statute or regulation (federal, state, local).
3. Develop with extreme caution (Orange): Areas where development would likely pose a high risk to natural resources, but development is not precluded or where development would likely pose a high risk to important habitat or imperiled species (G1, G2, T1, T2, ESA-E, ESA-T, S1, ESA-C, ESA-P, ESA-PDL, ESA-XN, State-E, State-T).
2. Develop with caution (Yellow): Areas where development would likely pose a moderate risk to protected lands (development has not already been precluded) or where development would likely pose a moderate risk to important habitat or imperiled species (G3, T3, ESA-SAT, ESA-SC, S2).
1. Likely low conflict area (Transparent/Same color as the background): Areas where development would have the lowest impact on habitat, imperiled species, and protected lands based on the included data. Additional data may provide information to increase the sensitivity in these areas. Further research at the project level would provide a more comprehensive categorization of sensitivity in these areas.

Protected Lands:

The protected lands dataset consists primarily of lands contained in the latest version of the Protected Areas Database of the United States (http://www.protectedlands.net/), and the National Conservation Easement Database (http://conservationeasement.us/). The following categorization was applied to these data sources:

- Protected Areas Database
  - Sensitivity Field: GAP_Sts
    - 1: Exclude from development (Red)
    - 2: Develop with extreme caution (Orange)
    - 3: Develop with caution (Yellow)
    - 4: Likely low conflict area (Transparent)
- National Conservation Easement Database
  - No Sensitivity Field
  - Develop with extreme caution (Orange)

Several categories of protected lands may not be included in the sources above, and were obtained from the following sources, and categorized as shown:

- Marine Protected Areas Database
  - Sensitivity Field: GAP_sts

- o 1: Exclude from development (Red)
- o 2: Develop with caution (Orange)
- o 3: Develop with caution (Yellow)
- ▪ National Trail (with .5 mi buffer)
  - No Sensitivity Field
  - Develop with caution (Yellow)
- ▪ Scenic Byway (with .5 mi buffer)
  - No Sensitivity Field
  - Develop with caution (Yellow)
- ▪ Marine Sanctuary (NOAA)
  - No Sensitivity Field
  - Exclude from development (Red)
- ▪ Conserved Land (ME)
  - Sensitivity Field: dCONS1_TYP
  - Fee: Exclude from development (Red)
  - Easement, Easement Enforcer, Lease, Project Agreement, Restricted, Third Party Easement: Develop with extreme caution (Orange)
  - Public Access Easement, NA: Develop with caution (Yellow)
- ▪ Conserved Land (NH)
  - Sensitivity Field: GAP_STATUS
  - 1: Exclude from development (Red)
  - 2: Develop with extreme caution (Orange)
  - 3: Develop with caution (Yellow)
  - 3A, 4, 9: Likely low conflict area (Transparent)
- ▪ USFS Roadless Area
  - No Sensitivity Field
  - Exclude from development (Red)

NatureServe and the NGO Caucus compiled a database of layers which includes state-level information. These layers were used to augment the classification with more information. The data managers of these layers were contacted to assist with the categorization and their recommendations were incorporated into the categorization. Layers identified by NatureServe and the NGO caucus as protected lands include:

- ▪ Natural Area (DE)
  - No Sensitivity Field
  - Develop with caution (Yellow)
- ▪ Florida Forever Board of Trustees Project Area (FL)
  - Sensitivity Field: Priority (high – low)
    - o High, High/Med, Medium (1): Develop with extreme caution (Orange)
    - o Medium/Low, Low (2): Develop with caution (Yellow)
- ▪ Florida Conservation Land (FL)
  - Sensitivity Field: PROTSTAT
    - o 1: Exclude from development (Red)
    - o 2: Develop with extreme caution (Orange)
    - o 3: Develop with caution (Yellow)
- ▪ State Owned/Leased Land (LA)

- No Sensitivity Field
- Develop with caution (Yellow)
▪ State Claimed Water Body (LA)
    - No Sensitivity Field
    - Develop with caution (Yellow)
▪ Cross Ranch State Nature Preserve (ND)
    - No Sensitivity Field
    - Exclude from development (Red)
▪ Sentinel Butte State Nature Preserve (ND)
    - No Sensitivity Field
    - Exclude from development (Red)
▪ Natural Heritage Inventory Managed Area (OK)
    - No Sensitivity Field
    - Develop with caution (Yellow)

Habitat:

The habitat dataset consists primarily of Green Infrastructure data, where available as well as other regional and state-level datasets (listed below). NWI data, FWS designated critical habitat, and layers identified by NatureServe and the NGO Caucus as habitat layers were used to augment the classification with more information.

▪ Green Infrastructure Datasets:
    - Green Infrastructure Network Characterization
        ○ Sensitivity Field: Value (0 – 5; 5=highest quality area)
        ○ 1,2,3: Develop with caution (Yellow)
        ○ 4, 5: Develop with extreme caution (Orange)
    - NHESP BioMap2 Core Habitat
        ○ No Sensitivity Field
        ○ Develop with extreme caution (Orange)
    - NHESP BioMap2 Critical Natural Landscape
        ○ No Sensitivity Field
        ○ Develop with caution (Yellow)
    - Southeastern Ecological Framework Model
        ○ No Sensitivity Field: Value 1 = identified area of SE
        ○ Develop with caution (Yellow)
▪ Regional Datasets:
    - Landscape Permeability Flow Model (with .5 mi buffer)
        ○ Sensitivity Field: GRID_CODE
        ○ 6, 7, 8: Develop with caution (Yellow)
        ○ 9, 10, 11, 12: Develop with extreme caution (Orange)
    - Human Footprint (Northern Appalachian/Acadian Ecoregion)
        ○ Sensitivity Field: Value (0-100; 0=most wild/least influenced). Used quantiles.
        ○ 0 – 20: Develop with extreme caution (Orange)
        ○ 21 – 30: Develop with caution (Yellow)
        ○ 31 – 100: Likely low conflict area (Transparent)
    - Focal Areas of Conservation Significance (TNC)

- o Sensitivity Field: CLASS (1=priority climate and current biodiversity area; 2= priority climate area)
  - o 1: Develop with extreme caution (Orange)
  - o 2: Develop with caution (Yellow)
- Forest Focal Areas – Atlantic Flyway
  - o No Sensitivity Field
  - o Develop with caution (Yellow)
- High Irreplaceability Area
  - o Sensitivity Field: IRREPLACEA (Irreplaceable vs. Not Irreplaceable)
  - o Irreplaceable: Develop with extreme caution (Orange)
  - o Not irreplaceable: Likely low conflict area (Transparent)
- Mountain Treasures Area
  - o Sensitivity Field: MTREAS (1 vs. 0 = level of priority)
  - o 1: Develop with extreme caution (Orange)
  - o 0: Develop with caution (Yellow)
- State Datasets:
  - Habitat Block/Wildlife Corridor (VT)
    - o Sensitivity Field: Fwghtrcl (1-11; 11= greatest final weighted score based on 11 factors including landscape diversity, size of block, and presence of wetlands)
    - o 9, 10: Develop with extreme caution (Orange)
    - o 7, 8: Develop with caution (Yellow)
    - o 1 – 6: Likely low conflict area (Transparent)
  - Natural Heritage Area (NC)
    - o Sensitivity Field: SIG (A=National, B=State, C=Regional, D=County)
    - o A, B, C: Develop with extreme caution (Orange)
    - o D: Develop with caution (Yellow)
- Offshore Datasets:
  - Artificial Reef
    - o No Sensitivity Field
    - o Develop with caution (Yellow)
  - Cold-Water Coral Habitat
    - o No Sensitivity Field
    - o Develop with caution (Yellow)
  - Habitats of Particular Concern
    - o No Sensitivity Field
    - o Develop with caution (Yellow)
- NWI Dataset:
  - Develop with extreme caution (Orange)
    - o Palustrine (P): Emergent (EM) and Forested (FO)
  - Develop with caution (Yellow)
    - o Marine (M)
    - o Estuarine (E)
    - o Riverine (R)
    - o Lacustrine (L)

- o Palustrine (P): Rock Bottom (RB), Unconsolidated Bottom (UB), Aquatic Bed (AB), Unconsolidated Shore (US), Moss-Lichen (ML), and Scrub-Shrub (SS)
  - Modifiers- Any wetland with the modifiers listed below were decreased to the next lowest sensitivity level.
    - o Farmed (f)
    - o Diked/Impounded (h)
    - o Excavated (x)
- Critical Habitat Area
  - FWS Critical Habitat (without the Topeka Shiner and Atlantic Salmon)
  - Critical Habitat for the Topeka Shiner as defined in the Federal Register (69 FR: 44736) and given a .5 mi buffer
  - Critical Habitat for the Atlantic Salmon as defined in the Federal Register (74 FR: 29300) (all perennial rivers, streams, and estuaries and lakes connected to the marine environment within the designated critical habitat) and given a 300ft buffer (as recommended in the recovery plan)
  - No Sensitivity Field
  - Develop with extreme caution (Orange)
- Layers identified by NatureServe and the NGO caucus as Habitat layers with unique data
  - Important Bird Area
    - o Sensitivity Field: PRIORITY (Global, Continental, State)
    - o Global, Continental: Develop with extreme caution (Orange)
    - o State: Develop with caution (Yellow)
  - Ecoregional Portfolio
    - o No Sensitivity Field
    - o Develop with caution (Yellow)
  - Aquatic Priority Conservation Area (AL)
    - o No Sensitivity Field
    - o Develop with caution (Yellow)
  - Terrestrial Priority Conservation Area (AL)
    - o No Sensitivity Field
    - o Develop with caution (Yellow)
  - Natural Diversity Database (CT)
    - o No Sensitivity Field
    - o Develop with caution (Yellow)
  - Potential Conservation Opportunity Area (GA)
    - o Sensitivity Field: GRIDCODE (2-7; 7=highest sensitivity)
    - o 2,3,4: Develop with caution (Yellow)
    - o 5,6,7: Develop with extreme caution (Orange)
  - Natural Vegetation (IA)
    - o Sensitivity Field: GRIDCODE (1-11; 11=greatest opportunity for conservation)
    - o 1: Likely low conflict area (Transparent)
    - o 2-9: Develop with caution (Yellow)
    - o 10-11: Develop with extreme caution (Orange)
  - Biodiversity (IN)
    - o No Sensitivity Field
    - o Develop with caution (Yellow)

- Tier 1 Conservation Area (KY)
  - No Sensitivity Field
  - Develop with caution (Yellow)
- Rare Species (MA)
  - No Sensitivity Field
  - Develop with caution (Yellow)
- Sensitive Species Project Review Area (MD)
  - Sensitivity Field: SYMBOL (1-4; 1=federally-listed species, 2= state-listed, 3= species of concern to the Maryland Department of Natural Resources, 4= bald eagle nest site)
  - GOUP 1, GROUP 2: Develop with extreme caution (Orange)
  - GOUP 3, GROUP 4: Develop with caution (Yellow)
- Focus Area of Ecological Significance (ME)
  - No Sensitivity Field
  - Develop with caution (Yellow)
- Rare Species Concentration Area (MN)
  - Sensitivity Field: biodiv_sig (Below/Moderate/High/Outstanding)
  - Below: Likely low conflict area (Transparent)
  - Moderate: Develop with caution (Yellow)
  - High, Outstanding: Develop with extreme caution (Orange)
- Conservation Opportunity Area (MO)
  - No Sensitivity Field
  - Develop with caution (Yellow)
- Aquatic Conservation Focus Area (MT)
  - No Sensitivity Field
  - Develop with caution (Yellow)
- Terrestrial Conservation Focus Area (MT)
  - No Sensitivity Field
  - Develop with caution (Yellow)
- Biodiversity and Wildlife Habitat Assessment (NC)
  - Sensitivity Field: Final (1 – 10; 10=best habitat)
  - -1 (degraded areas): Likely low conflict area (Transparent)
  - 1,2,3,4: Develop with caution (Yellow)
  - 5,6,7,8,9,10: Develop with extreme caution (Orange)
- Focus Area (ND)
  - No Sensitivity Field
  - Develop with caution (Yellow)
- Biologically Unique Landscape (NE)
  - No Sensitivity Field
  - Develop with caution (Yellow)
- Conservation Focus Area (NH)
  - Sensitivity Field: TYPE (Core Area vs. Supporting Natural Landsc)
  - Core Area: Develop with extreme caution (Orange)
  - Supporting Natural Landsc: Develop with caution (Yellow)
- Natural Services Network (NH)
  - Sensitivity Field: NSN (0 vs. 1)

- o 1: Develop with caution (Yellow)
- o 0: Likely low conflict area (Transparent)
- Highest Ranked Wildlife Habitat (NH)
  - o Sensitivity Field: GRIDCODE (1-3; 1=highest sensitivity)
  - o 1: Develop with extreme caution (Orange)
  - o 2,3: Develop with caution (Yellow)
- Environmental Sensitive Area (NJ)
  - o No Sensitivity Field
  - o Develop with caution (Yellow)
- Natural Heritage Priority Site (NJ)
  - o Sensitivity Field: BIODIVRANK (B1-B5; B1=highest sensitivity) (B=global significance. Also contains V=state significance. Will rank based on global)
  - o B1, B1V1, B2, B2V1, B2V2: Develop with extreme caution (Orange)
  - o B3, B3V1, B3V2, B4, B4V1, B4V2, B4V3, B4V5, B5, B5V1,B5V2, B5V3, B5V4, B5V5: Develop with caution (Yellow)
- Landscape v3.1 - Atlantic Coastal Region (NJ)
  - o Sensitivity Field: LNDR (1-5; based on conservation status of species present; 1=suitable, 2=priority concern, 3=state threatened, 4=state endangered, 5=federally listed)
  - o 1,2: Develop with caution (Yellow)
  - o 3,4,5: Develop with extreme caution (Orange)
- Landscape v3.1 - Delaware Bay Region (NJ)
  - o Sensitivity Field: LNDR (1-5; based on conservation status of species present; 1=suitable, 2=priority concern, 3=state threatened, 4=state endangered, 5=federally listed)
  - o 1,2: Develop with caution (Yellow)
  - o 3,4,5: Develop with extreme caution (Orange)
- Landscape v3.1 - Piedmont Plains Region (NJ)
  - o Sensitivity Field: LND (1-5; based on conservation status of species present; 1=suitable, 2=priority concern, 3=state threatened, 4=state endangered, 5=federally listed)
  - o 1,2: Develop with caution (Yellow)
  - o 3,4,5: Develop with extreme caution (Orange)
- Landscape v3.1 - Pinelands Region (NJ)
  - o Sensitivity Field: LNDR (1-5; based on conservation status of species present; 1=suitable, 2=priority concern, 3=state threatened, 4=state endangered, 5=federally listed)
  - o 1,2: Develop with caution (Yellow)
  - o 3,4,5: Develop with extreme caution (Orange)
- Landscape v3.1 - Skylands Region (NJ)
  - o Sensitivity Field: LNDR (1-5; based on conservation status of species present; 1=suitable, 2=priority concern, 3=state threatened, 4=state endangered, 5=federally listed)
  - o 1,2: Develop with caution (Yellow)
  - o 3,4,5: Develop with extreme caution (Orange)
- Landscape v3.1 - Marine Region (NJ)
  - o Sensitivity Field: LNDR (1-5; based on conservation status of species present; 1=suitable, 2=priority concern, 3=state threatened, 4=state endangered, 5=federally listed)
  - o 4,5: Develop with extreme caution (Orange)
- Landscape v3.1 - Freshwater Mussel Habitat (NJ) (with .5 mi buffer)

- o Sensitivity Field: LNDR (1-5; based on conservation status of species present; 1=suitable, 2=priority concern, 3=state threatened, 4=state endangered, 5=federally listed)
  - o 2: Develop with caution (Yellow)
  - o 3,4,5: Develop with extreme caution (Orange)
- Landscape v3.1 - Vernal Habitat (NJ)
  - o Sensitivity Field: VPH_TYPE (Potential vernal habitat area vs. vernal habitat area)
  - o Vernal habitat area: Develop with extreme caution (Orange)
  - o Potential vernal habitat area: Develop with caution (Yellow)
- Key Area for Conservation Action (NM)
  - o Sensitivity Field: VALUE (4 – 16; 16=consider 1st for conservation planning)
  - o 4 – 8: Likely low conflict area (Transparent)
  - o 9 – 12: Develop with caution (Yellow)
  - o 13 – 16: Develop with extreme caution (Orange)
- Appalachian Foothills Focus Area (OH)
  - o No Sensitivity Field
  - o Develop with caution (Yellow)
- Killbuck Focus Area (OH)
  - o No Sensitivity Field
  - o Develop with caution (Yellow)
- Killdeer Focus Area (OH)
  - o No Sensitivity Field
  - o Develop with caution (Yellow)
- Lasuan Focus Area (OH)
  - o No Sensitivity Field
  - o Develop with caution (Yellow)
- Lake Erie Marsh Focus Area (OH)
  - o No Sensitivity Field
  - o Develop with caution (Yellow)
- Grand River/Mosquito Focus Area (OH)
  - o No Sensitivity Field
  - o Develop with caution (Yellow)
- Paint Creek Focus Area (OH)
  - o No Sensitivity Field
  - o Develop with caution (Yellow)
- Tecumseh Focus Area (OH)
  - o No Sensitivity Field
  - o Develop with caution (Yellow)
- CNHI: Supporting Landscapes (PA)
  - o No Sensitivity Field
  - o Develop with caution (Yellow)
- CNHI: Core Habitat (PA)
  - o No Sensitivity Field
  - o Develop with caution (Orange)
- CNHI: Landscape Conservation Area (PA)
  - o No Sensitivity Field

- - Develop with caution (Yellow)
- Conservation Opportunity Area (PA)
  - No Sensitivity Field
  - Develop with caution (Yellow)
- Greenway Corridor (RI)
  - No Sensitivity Field
  - Develop with caution (Yellow)
- Natural Heritage Area (RI)
  - No Sensitivity Field
  - Develop with caution (Yellow)
- Ecological Conservation Site (TN)
  - Sensitivity Field: BIODIVERSI (B1 – B5; B1=highest sensitivity)
  - B1,B2: Develop with extreme caution (Orange)
  - B3, B4, B5, B? – Unknown, No Data: Develop with caution (Yellow)
- Aquatic Priority Area (TN)
  - Sensitivity Field: AR_T1_PRIO
  - Blank, Low: Likely low conflict area (Transparent)
  - Medium, High: Develop with caution (Yellow)
  - Very High: Develop with extreme caution (Orange)
- Subterranean Priority Area (TN)
  - Sensitivity Field: T1_NB4GRP (0-4; 4 = highest sensitivity)
  - 0,1: Likely low conflict area (Transparent)
  - 2,3: Develop with caution (Yellow)
  - 4: Develop with extreme caution (Orange)
- Terrestrial Priority Area (TN)
  - Sensitivity Field: T1RPRIORIT (Low – Very High)
  - Low: Likely low conflict area (Transparent)
  - Medium, High: Develop with caution (Yellow)
  - Very High: Develop with extreme caution (Orange)
- Natural Landscape Assessment: Ecological Core (VA)
  - Sensitivity Field: EI_Class (1 -5; 1=highest sensitivity)
  - 1,2: Develop with extreme caution (Orange)
  - 3,4,5: Develop with caution (Yellow)
- Biological Hotspots (VT)
  - No Sensitivity Field
  - Develop with caution (Yellow)
- Rare, Threatened, and Endangered Species and Significant Community (VT)
  - Sensitivity Field: G-RANK (G1 – G5; G1=extremely rare, G2=very rare, G3=rare to uncommon, G4=common, G5=very common)
  - G3G5, G4, G4?, G4G5, G4Q, G4T4, G5, G5?, G5?Q, G5?T3, G5?T5?, G5T1, G5T2Q, G5T3?, G5T3T4Q, G5T4, G5T4?, G5T4Q, G5T4T5, G5T5, G5T5?, G5TNR, GNA, GNR: Likely low conflict area (Transparent)
  - G2, G2?, G2G3, G2G3Q, G3, G3?, G3G4: Develop with caution (Yellow)
  - G1G2: Develop with extreme caution (Orange)
- Great Lake Opportunity Area (WI)

- o   No Sensitivity Field
  - o   Develop with caution (Yellow)
- River Opportunity Area (WI) (with 0.5 mi buffer)
  - o   Sensitivity Field: SIG_CODE (C=continental, U=upper Midwest, S=state)
  - o   C: Develop with extreme caution (Orange)
  - o   U, S: Develop with caution (Yellow)
- Terrestrial Opportunity Area (WI)
  - o   Sensitivity Field: SIG_CODE (G=global, C=continental, U=upper Midwest, S=state)
  - o   G, C: Develop with extreme caution (Orange)
  - o   U, S: Develop with caution (Yellow)

Imperiled Species:

The imperiled species dataset was created by NatureServe and its natural heritage member programs and represents a species blind categorization of locational occurrence data for ESA threatened, endangered, candidate, proposed, SAT, and SC species, State listed species, G-rank, T-rank, and S-rank species. The following categorization was applied to this data source:

- Develop with extreme caution (Orange):
  - G2 (Globally imperiled species)
  - T2 (A subspecies that is imperiled)
  - S1 (State critically imperiled species)
  - ESA – Candidate
  - ESA – Proposed
  - State – Endangered
  - State – Threatened
  - G1 (Globally critically imperiled species)
  - T1 (A subspecies that is critically imperiled)
  - ESA – Endangered
  - ESA – Threatened
  - ESA – Proposed for Delisting
  - ESA – Nonessential Experimental Population
- Develop with caution (Yellow):
  - G3 (Globally vulnerable species)
  - T3 (A subspecies that is vulnerable)
  - ESA – Threatened Due to Similarity of Appearance (SAT)
  - ESA – Species of Concern (SC)
  - S2 (State imperiled species)
- Likely Low Conflict Area (Brown):
  - Element Occurrences exist, but these occurrences are not included in the yellow or orange sensitivity categories.