

# Guide to using habitat information in the site review process in Rhinebeck

Draft 2-20-08

All references to page numbers in this guide refer to:

“Significant Habitats in the Town of Rhinebeck, Dutchess County, New York”  
Report to the Town of Rhinebeck and the Dyson Foundation

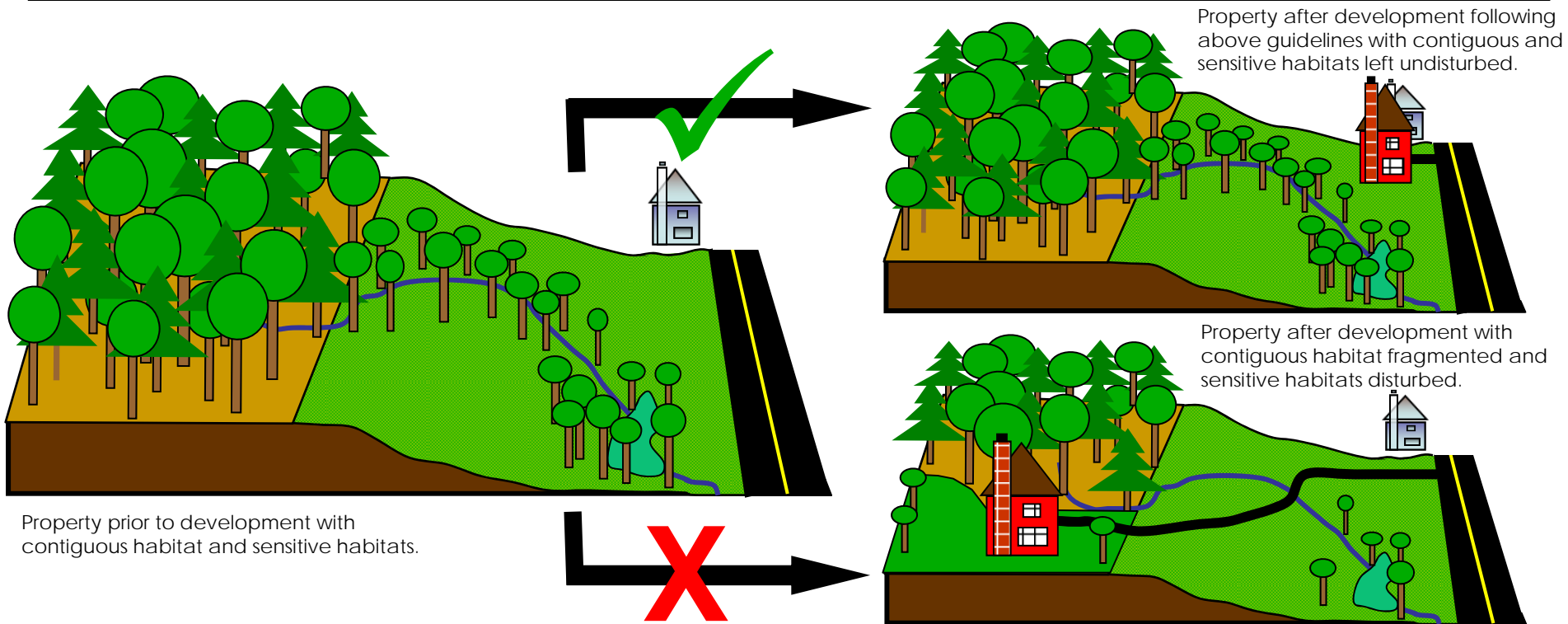
by Andy Reinmann, and Gretchen Stevens. July 2007. Hudsonia Ltd.

For use with Hudsonia’s large-format maps of significant habitats.



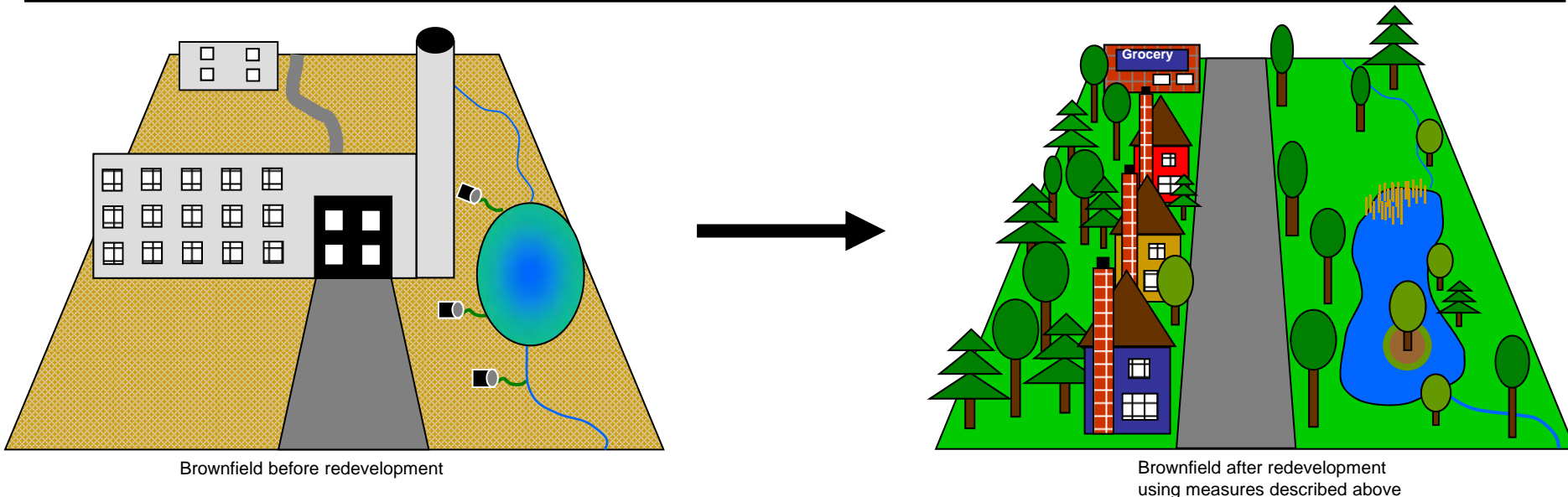
## 1. Employ the following basic conservation measures:

- Protect large, contiguous, undeveloped tracts wherever possible.
- Plan landscapes with interconnected networks of undeveloped habitats (preserve links and create new links between natural habitats on adjacent properties). When considering protection for a particular species or group of species, design the networks according to the particular needs of the species of concern.
- Preserve natural disturbance processes such as fires, floods, seasonal drawdowns, landslides, and wind exposures wherever possible.
- Restore and maintain broad buffer zones of natural vegetation along streams, shores of water bodies and wetlands, and around the perimeter of other sensitive habitats.
- Direct human uses toward the least sensitive areas, and minimize alteration of natural features, including vegetation, soils, bedrock, and waterways.



## 1. Employ the following basic conservation measures:

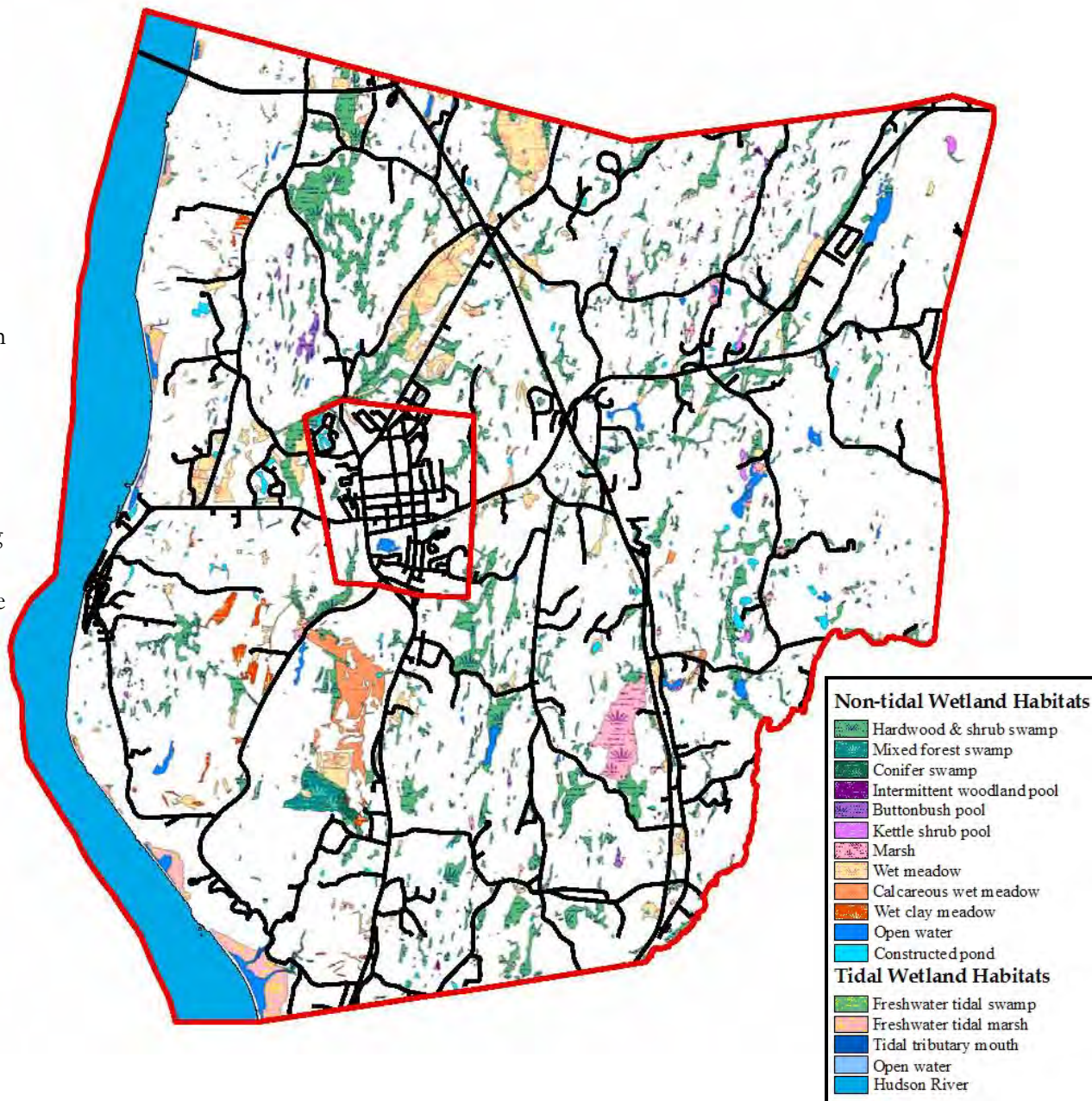
- Encourage development of altered land instead of unaltered land. Promote redevelopment of brownfields and previously altered sites, “infill” development, and re-use of existing structures wherever possible. Preserve farmland potential wherever possible.
- Concentrate development along existing roads; discourage construction of new roads in undeveloped areas. Promote clustered and pedestrian-centered development wherever possible to maximize extent of unaltered land and minimize expanded vehicle use.
- Encourage and provide incentives for developers to consider environmental concerns early in the planning process, and to incorporate biodiversity conservation principles into their choice of development sites, their site design, and their construction practices.
- Minimize the area of impervious surfaces (roads, parking lots, sidewalks, driveways, roof surfaces) and maximize onsite runoff retention and infiltration to help protect groundwater recharge and surface water quality and flows.
- Restore degraded habitats wherever possible, but do not use restoration projects as a license to destroy existing habitats. Habitat restoration should be based on scientific research so that it ultimately has the intended positive impacts on biodiversity.



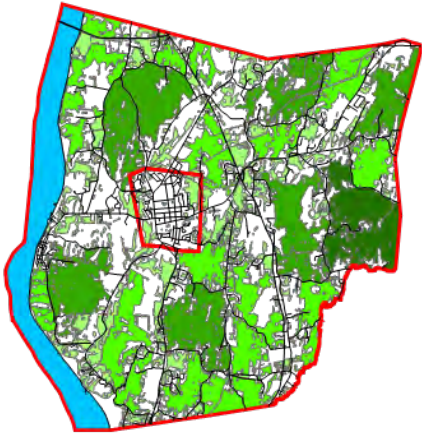
## 2. Are there any wetland habitats on the site?

(Refer to pages 41-60; 68-72 in the report)

- Protect small wetlands and large wetlands, and substantial buffer zones wherever possible
- Prevent runoff from agricultural fields, roads, lawns, and other developed areas from entering wetlands
- Maintain natural flow patterns and water volume in wetlands
- Minimize direct disturbances such as logging which can damage soil structure, plant communities, and microhabitats, and provide access for invasive plant species
- Avoid excavating wetlands to create ornamental ponds
- Minimize habitat fragmentation in the landscape surrounding wetlands to maintain migration corridors and critical upland habitats for animals that use wetlands

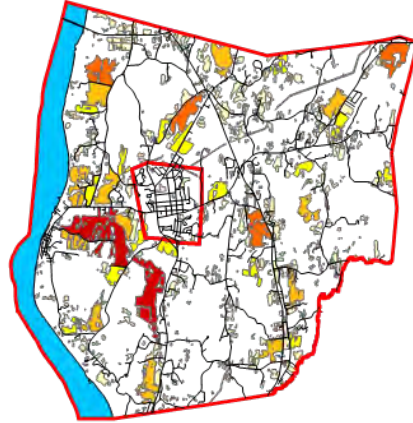


3. Does any part of the site contain a priority habitat or a conservation zone for a priority habitat?



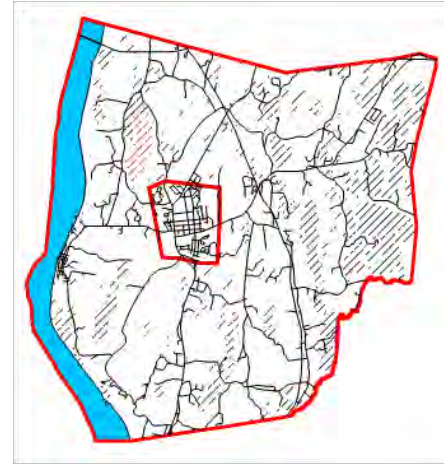
**Large forests**

Pages 19-24 and 81-83



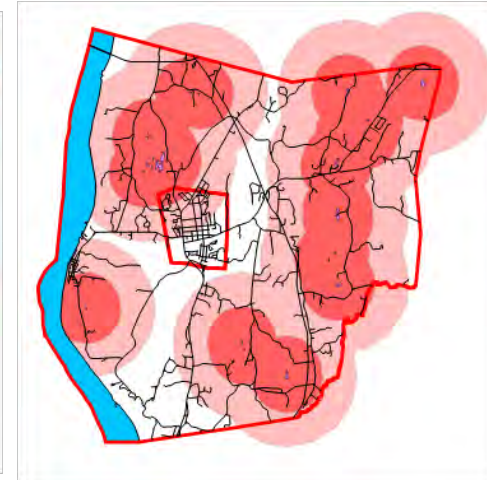
**Large meadows**

Pages 34-37, 52-56,  
and 84-86



**Oak heath barrens, and  
other crest, ledge, and talus**

Pages 26-31 and 88-90



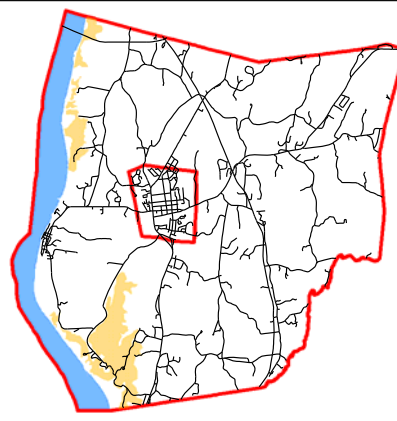
**Buttonbush pools**

Pages 48-50 and 94-97



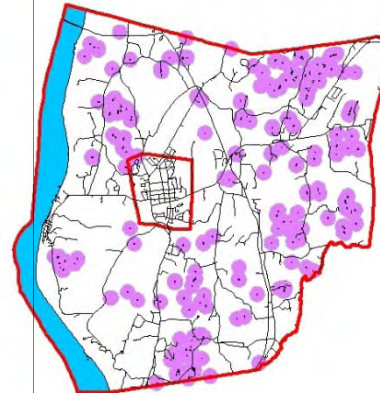
**Streams**

Pages 61-64 and 100-103



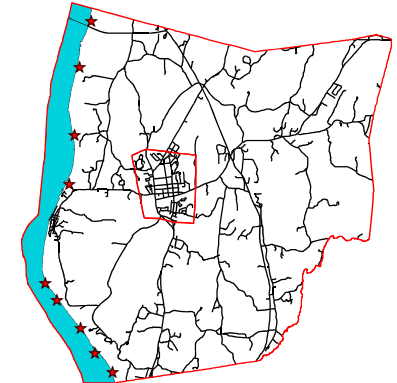
**Clay bluff and ravine**

Pages 31-32 and 88-89



**Intermittent woodland pools**

Pages 45-47 and 90-94



**Hudson River tidal wetlands  
and rocky habitat**

Pages 65-72 and 97-99

*\* these maps are reductions of figures in the report*

4. Consider the conservation recommendations for the priority habitats or conservation zones.



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Conservation recommendations are also summarized on the next four pages.

# Conservation Recommendations for Priority Habitats

(for more detailed discussion and recommendations, see the report)

## Extensive forest

- Protect large, contiguous forested areas wherever possible, and avoid development in forest interiors.
- Protect patches of forest types that are less common in the town regardless of their size. These include mature (and old-growth, if any is present) forests, natural conifer stands, forests with an unusual tree species composition, or forests that have smaller, unusual habitats (such as calcareous ledges) embedded in them.
- Maintain or restore broad corridors of intact habitat between large forested areas (including connections across roads). In areas where the forest is already fragmented, this can sometimes be accomplished by protecting smaller forest patches that provide a “stepping stone” connection between larger forest patches.
- Maintain the forest canopy and understory vegetation intact.
- Maintain standing dead wood, downed wood, “wolf trees,” and organic debris, and prevent disturbance or compaction of the forest floor.
- Avoid clearcutting, especially on steep slopes.
- Restrict timber harvesting to when there is snow cover, the ground is frozen, or the soil is dry.
- Avoid damage to advance regeneration in the understory.
- Implement best management practices and leave substantial undisturbed buffers along streams, wetlands, and other bodies of water.
- Leave logging slash in the woods.
- Be mindful of the forest that is being left.

## Extensive meadow

- Protect large meadows from fragmentation
- Preserve fertile agricultural land especially where “farmland soil of statewide importance” occur
- Minimize the use of pesticides and artificial fertilizers which can reduce a meadows ability to support biodiversity
- For landowners with flexibility in their mowing and grazing practices:
  - Mow after August 1 to help to ensure fledging of nestling birds; if you must mow before then, leave some unmowed strips or patches.
  - Mow each field only once every 1-3 years, or do rotational mowing so that each part of a field is mowed once every 3 years.
  - On an active farm, leave some fields out of production each year to provide wildlife habitat. Alternatively, hayfields mowed early in the season can be rotated annually with those that are mowed late in the season.
  - Raise mower blades to six inches or more, use flushing bars, and avoid night mowing when birds are roosting to help reduce bird mortality.
  - Remove fences and hedgerows between smaller fields to enlarge the habitat area for grassland breeding birds.
  - Employ light grazing and rotate livestock among fields throughout the season.

# Conservation Recommendations for Priority Habitats, *continued*

## Wet clay meadow

- Protect wet clay meadows from disturbances such as ditching, overgrazing, and frequent mowing which can alter the hydrology, soil structure and plant community.
- Protect intact habitats around wet clay meadows to allow safe movement of mobile wildlife using habitat complexes.

## Clay bluff and ravine

- Protect clay bluff and ravine habitats from disturbances such as clearing, construction of buildings or roads, and high intensity human recreation to minimize soil erosion and to maintain the integrity of the habitat complex.
- Protect adjacent wetland and upland habitats.

## Oak heath barren and other crest, ledge, talus

- Protect oak-heath barren habitats and their closely associated crest, ledge, and talus habitats from disturbances including the construction of communication towers, mining, housing and road construction, and high intensity human recreation.
- Protect critical adjoining habitats within 100 ft (30 m) of the barrens.
- Maintain corridors between oak-heath barrens and other crest habitats to allow for dispersal of plant and animal populations.

## Intermittent woodland pool

- Protect the intermittent woodland pool depression and all upland forest within 100 ft (30 m) of the intermittent woodland pool.
- Maintain critical terrestrial habitat within 750 ft (230 m) of the pool. Within this zone,
  - Minimize new construction of roads, driveways, or structures, and minimize habitat fragmentation.
  - Use gently sloping curbs or no-curb alternatives to reduce barriers to amphibian movement.
  - Use oversized square box culverts (2 ft wide by 3 ft high) near wetlands and known amphibian migration routes to facilitate amphibian movements under roads.
- Maintain woodland pool water quality and quantity at pre-disturbance levels.
  - Do not channel runoff from roads, lawns, and other developed areas into intermittent woodland pools
- Design or modify potential pitfall hazards to prevent the entrapment and death of migrating amphibians.
- Schedule construction activities to occur outside peak amphibian movement periods in spring and early summer.

# Conservation Recommendations for Priority Habitats, *continued*

## Buttonbush pool/Kettle shrub pool

- Buttonbush and kettle shrub pools are the core wetland habitats for the Blanding's turtle which also require adjacent, broad corridors of intact upland habitat to travel amongst these pools and other wetlands, and to upland nesting habitats.
- Protect the pool from direct destruction or degradation through such activities as filling, draining, excavation, or vegetation removal.
- Establish a 660 ft (200 m) buffer zone around the pool to help maintain wetland hydrology and water temperature, filter runoff containing silt and other pollutants, and minimize direct impacts to Blanding's turtles.
- Consider the impacts on water quality, hydrology, and habitat disturbance to turtle habitat complexes when reviewing all applications for permits, and considering siting of wells and sewage treatment systems within 3300 ft (1000 m) of a buttonbush pool or a kettle shrub pool.
- Protect and manage potential turtle nesting areas (such as upland meadows, upland shrublands, and waste ground with exposed gravelly soils) within 3300 ft (1,000 m) of buttonbush pools.
- Assess potential impacts within at least 6500 ft (2000 m) of the buttonbush pool or kettle shrub pool. Despite the distance, development activities occurring within this zone may affect the wide-ranging Blanding's turtle and its habitat. Within this zone,
  - Protect all wetland habitats. Maintain broad buffers (at least 100 ft [30 m] in width) of natural soil and vegetation around all wetlands.
  - Minimize impacts from new and existing roads and driveways.
  - Maintain broad corridors between individual habitats within a complex and between neighboring habitat complexes.
  - Minimize or eliminate pesticide use on lawns, gardens, and agricultural fields, and prevent movement of soil and nutrients into wetlands.

## Hudson river tidal wetlands and rocky habitats

- Protect the tidal habitat complex from direct disturbances.
- Maintain an undisturbed buffer within 660 horizontal feet of the tidal habitat complex.
- Prohibit the use of motorized watercraft, intensive human recreation, and ATV riding and other activities within the protected buffer zone that could potentially disturb marsh birds.

# Conservation Recommendations for Priority Habitats, *continued*

## Wetland complexes

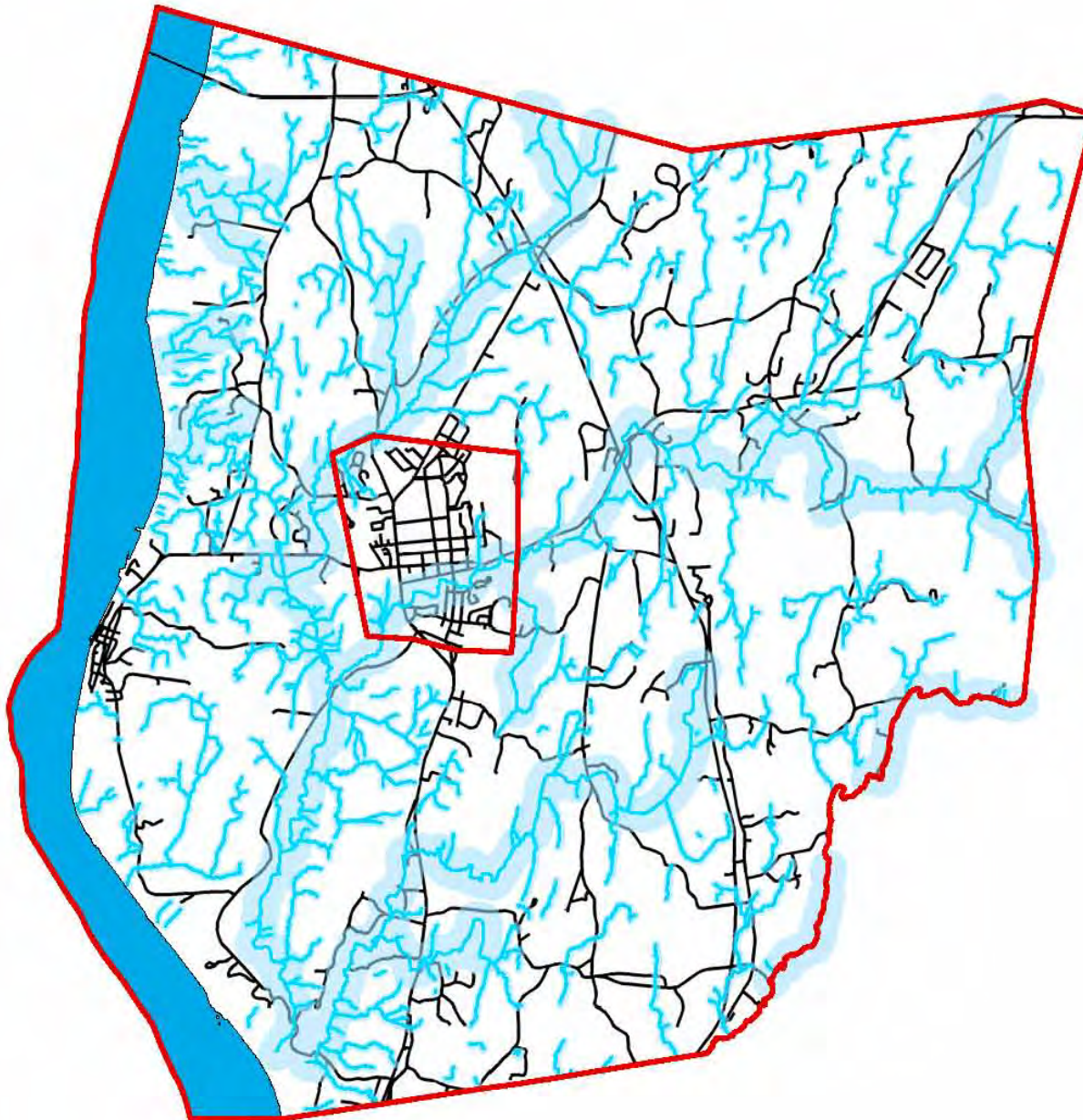
- Maintain broad intact upland habitat connections between wetlands within wetland complexes.
- Protect intermittent woodland pools and their conservation zones.
- When intermittent woodland pools are located within 3,300 ft (1,000 m) of a swamp, marsh, or wet meadow, protect the intervening upland habitats. These upland areas encompass spotted turtle travel corridors, and nesting, aestivation, and basking sites.
- Within 390 ft (190 m) of all wetlands, protect from disturbance the spotted turtle nesting habitats including open sties such as fields, lawns, or unshaded, exposed gravelly soils.
- Avoid creating pitfall hazards.

## Streams & riparian zones

- Avoid direct discharge of stormwater runoff, chlorine-treated wastewater, agricultural by-products, and other potential pollutants into streams.
- Avoid stream channelization, artificial stream bank stabilization, construction of dams or artificial weirs, vehicle crossings, and the clearing of natural stream bank vegetation.
- Establish a protective buffer zone extending at least 160 ft (50 m) on either side of all streams in the watershed. Buffer zones should remain naturally vegetated and undisturbed by construction, conversion to impervious surfaces, agriculture and livestock use, pesticide and fertilizer application, and installation of septic leachfields or other waste disposal facilities.
- Preserve large, contiguous blocks of upland habitats (e.g., forests, meadows, shrublands) within 660 ft (200 m) of large, perennial streams to the greatest extent possible to provide basking, foraging, and nesting habitat for wood turtle.
- Minimize impacts from new and existing stream crossings. For example, use bridges and open-bottomed arches that span at least 1.2 times the full width of the stream so that one or both banks remain in a semi-natural state beneath the structure.
- Minimize impacts from new and existing roads. Avoid building new roads, and keep vehicle speeds low on existing roads by installing speed bumps, low speed limit signs, and wildlife crossing signs.
- Maintain broad corridors between habitats and habitat complexes.

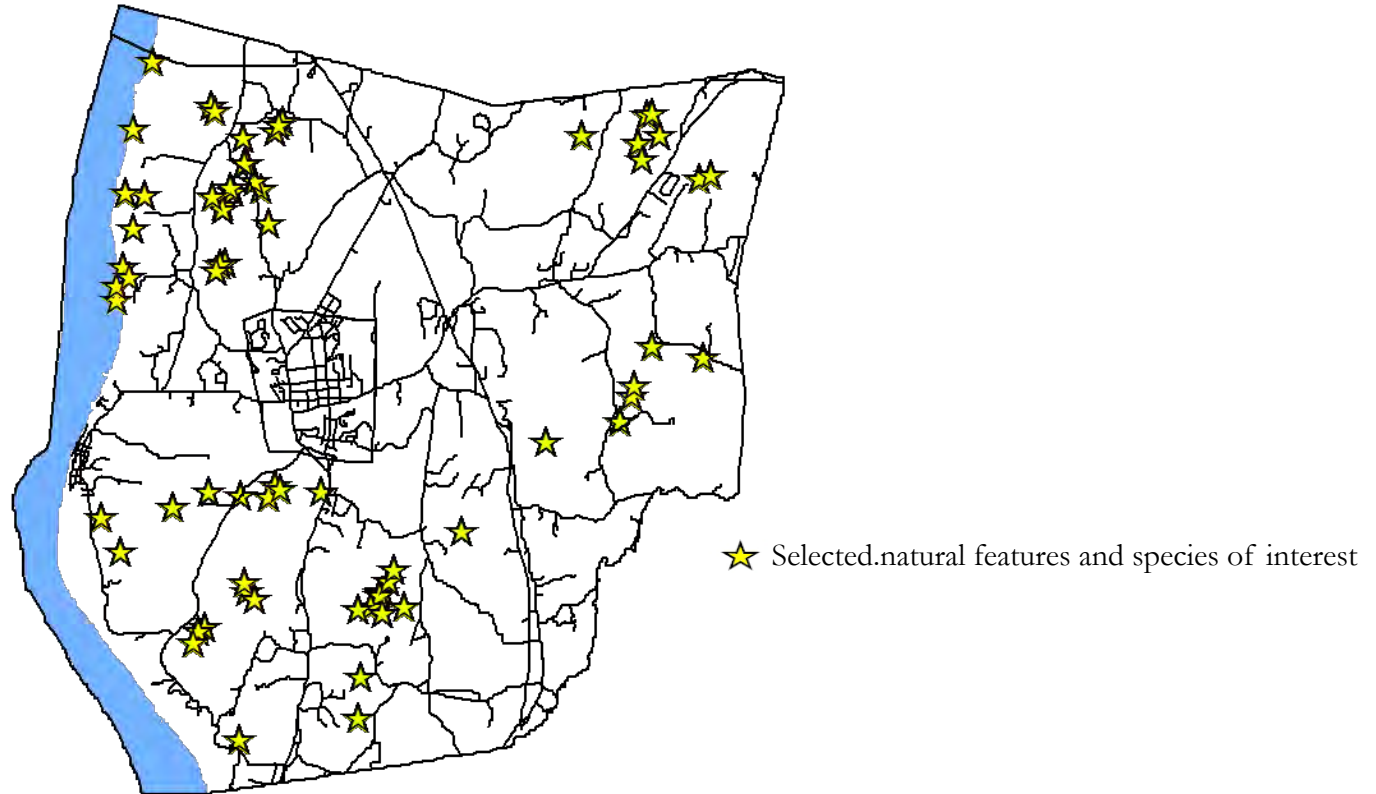
5. Will the proposal impact intermittent or perennial streams?

(Refer to pages 61-63 in the report)



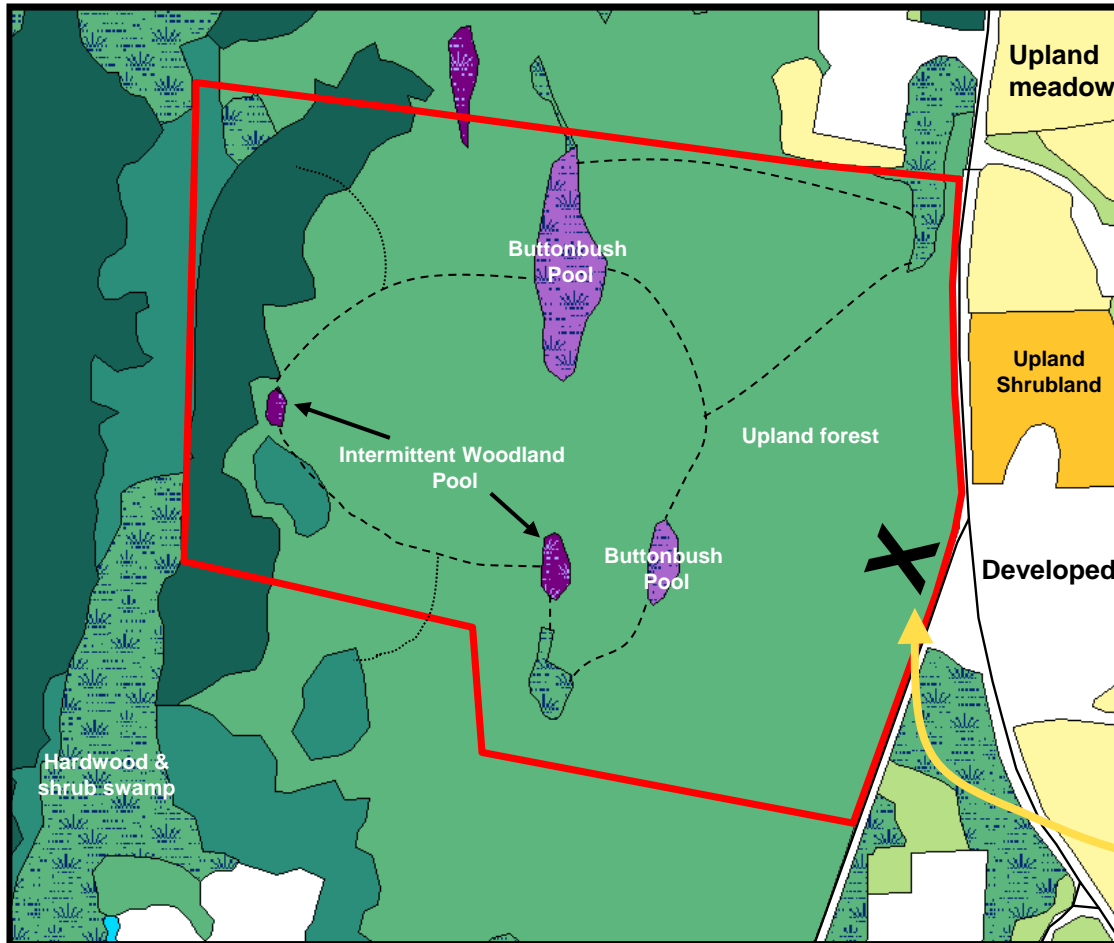
## 6. Is any part of the site near any known rare species or rare ecological community location?

- Ask the New York Natural Heritage Program for locations of rare species and communities.
- Refer to the "natural history notes" shapefile in the GIS database for sightings of uncommon or noteworthy species or natural features from Hudsonia's field work.
- Treat all rare species data confidentially to prevent collection or harassment of rare species.



Consult a specialist for advice about site-specific conservation measures.

7. Does the site provide important connections between any of the above habitats or locations?

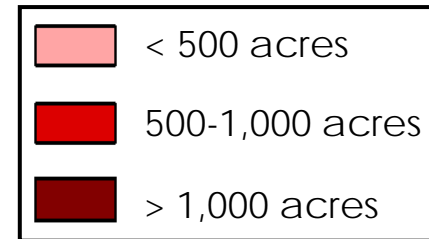
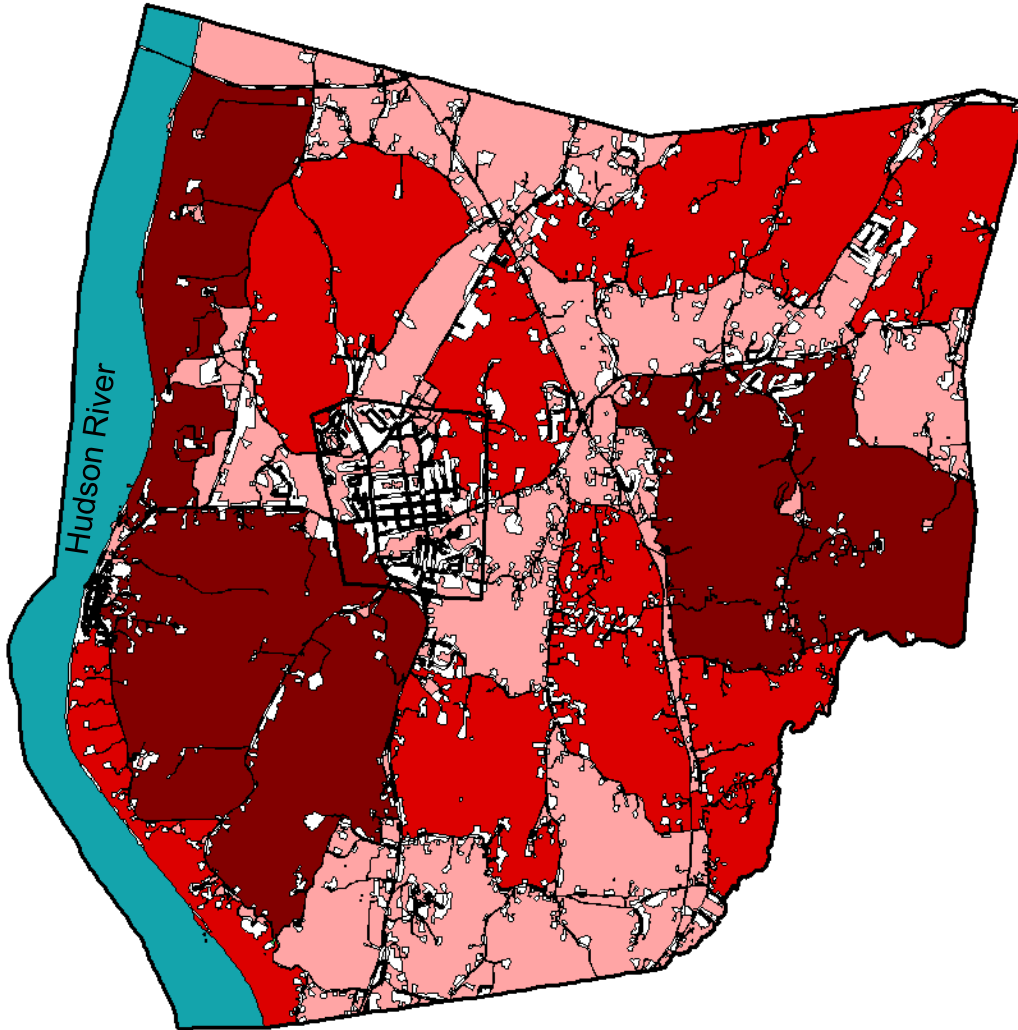


Map of a property (red outline) and surrounding habitats, showing some possible dispersal routes for rare animals and plants amongst wetlands and upland habitats.

Best site for new development on this property that maintains connections among buttonbush pools, intermittent woodland pools, other wetlands, and upland habitat.

Design land uses such that the broadest possible connections are maintained between important habitat areas.

## 8. Is the site part of a large contiguous habitat area?



See map on page 18 of the report.

Design land uses such that new development occurs only at edges, so that interior areas of habitat patches are left undisturbed.

## 9. Does the site contain “prime farmland soil” or “farmland soil of statewide importance”?



### Dutchess County Prime Farmland Soils

BeB	Bernardston silt loam, 3 to 8% slopes
ChB	Charlton loam, 3 to 8% slopes
CuA	Copake gravelly silt loam, nearly level
CuB	Copake gravelly silt loam, undulating
CwA	Copake channery silt loam, fan, 0 to 3% slopes
CwB	Copake channery silt loam, fan, 3 to 8% slopes
DuB	Dutchess silt loam, 3 to 8% slopes
Fr	Fredon silt loam (where drained)
GsA	Georgia silt loam, 0 to 3% slopes
GsB	Georgia silt loam, 3 to 8% slopes
HeA	Haven loam, nearly level
HeB	Haven loam, undulating
KrA	Knickerbocker fine sandy loam, nearly level
KrB	Knickerbocker fine sandy loam, undulating
Ln	Linlithgo silt loam (where drained)
MnA	Massena silt loam, 0 to 3% slopes (where drained)
MnB	Massena silt loam, 3 to 8% slopes (where drained)
Pg	Pawling silt loam
PwB	Pittstown silt loam, 3 to 8% slopes
PzA	Punsit silt loam, 0 to 3% slopes (where drained)
PzB	Punsit silt loam, 3 to 8% slopes (where drained)

### Dutchess County Farmland Soils of Statewide Importance

BeC	Bernardston silt loam, 8 to 15% slopes
Ca	Canandaigua silt loam, neutral substratum
ChC	Charlton loam, 8 to 15% slopes
CrC	Charlton-Chatfield complex, rolling, rocky
CuC	Copake gravelly silt loam, rolling
DuC	Dutchess silt loam, 8 to 15% slopes
DwC	Dutchess-Cardigan complex, rolling, rocky
GfC	Galway-Farmington complex, rolling, rocky
GsC	Georgia silt loam, 8 to 15% slopes
HsA	Hoosic gravelly loam, nearly level
HsB	Hoosic gravelly loam, undulating
HsC	Hoosic gravelly loam, rolling
HtA	Hoosic channery loam, fan, 0 to 3 % slopes
HtB	Hoosic channery loam, fan, 3 to 8 % slopes
HvB	Hudson and Vergennes soils, 3 to 8 % slopes
HvC	Hudson and Vergennes soils, 8 to 15% slopes
Kn	Kingsbury and Rhinebeck soils
KrC	Knickerbocker fine sandy loam, rolling
PwC	Pittstown silt loam, 8 to 15% slopes
SkC	Stockbridge silt loam, 8 to 15% slopes
SmC	Stockbridge-Farmington complex, rolling, rocky
Su	Sun silt loam (where drained)

**Design land uses to avoid disturbance to good farmland soil types, and to avoid fragmenting areas of current or potential value for agriculture.**

10. Is any part of the site in a priority conservation area?

