

BOG TURTLE CONSERVATION ZONES¹

(revised April 18, 2001)

Projects in and adjacent to bog turtle habitat can cause habitat destruction, degradation and fragmentation. Of critical importance is evaluating the potential direct and indirect effects of activities that occur in or are proposed for upland areas adjacent to bog turtle habitat. Even if the wetland impacts from an activity are avoided (i.e., the activity does not result in encroachment into the wetland), activities in adjacent upland areas can seriously compromise wetland habitat quality, fragment travel corridors, and alter wetland hydrology, thereby adversely affecting bog turtles.

The following bog turtle conservation zones have been designated with the intent of protecting and recovering known bog turtle populations within the northern range of this species. The conservation suggestions for each zone are meant to guide the evaluation of activities that may affect high-potential bog turtle habitat, potential travel corridors, and adjacent upland habitat that may serve to buffer bog turtles from indirect effects. *Nevertheless, it is important to recognize that consultations and project reviews will continue to be conducted on a case-by-case basis, taking into account site- and project-specific characteristics.*

Zone 1

This zone includes the wetland and visible spring seeps occupied by bog turtles. Bog turtles rely upon different portions of the wetland at different times of year to fulfill various needs; therefore, this zone includes the entire wetland (the delineation of which will be scientifically based), not just those portions that have been identified as, or appear to be, optimal for nesting, basking or hibernating. In this zone, bog turtles and their habitat are most vulnerable to disturbance, therefore, the greatest degree of protection is necessary.

Within this zone, the following activities are likely to result in habitat destruction or degradation and should be avoided. These activities (not in priority order) include:

- < development (e.g., roads, sewer lines, utility lines, storm water or sedimentation basins, residences, driveways, parking lots, and other structures)
- < wetland draining, ditching, tiling, filling, excavation, stream diversion and construction of impoundments
- < heavy grazing
- < herbicide, pesticide or fertilizer application²
- < mowing or cutting of vegetation²
- < mining
- < delineation of lot lines (e.g., for development, even if the proposed building or structure will not be in the wetland)

Some activities within this zone may be compatible with bog turtle conservation but warrant careful evaluation on a case-by-case basis:

- < light to moderate grazing
- < non-motorized recreational use (e.g., hiking, hunting, fishing)

Zone 2

The boundary of this zone extends *at least 300 feet* from the edge of Zone 1 and includes upland areas adjacent to Zone 1. Activities in this zone could indirectly destroy or degrade wetland habitat over the short or long-term, thereby adversely affecting bog turtles. In addition, activities in this zone have the potential to cut off travel corridors between wetlands occupied or likely to be occupied by bog turtles, thereby isolating or dividing populations and increasing the risk of turtles being killed while attempting to disperse. Some of the indirect effects to wetlands resulting from activities in the adjacent uplands include: changes in hydrology (e.g., from roads, detention basins, irrigation, increases in impervious surfaces, sand and gravel mining); degradation of water quality (e.g., due to herbicides, pesticides, oil and salt from various sources including roads, agricultural fields, parking lots and residential developments); acceleration of succession (e.g., from fertilizer runoff); and introduction of exotic plants (e.g., due to soil disturbance and roads). This zone acts as a filter and buffer, preventing or minimizing the effects of land-use activities on bog turtles and their habitat. This zone is also likely to include at least a portion of the groundwater recharge/supply area for the wetland.

Activities that should be avoided in this zone due to their potential for adverse effects to bog turtles and their habitat include:

- < development (e.g., roads, sewer lines, utility lines, storm water or sedimentation basins, residences, driveways, parking lots, and other structures)
- < mining
- < herbicide application²
- < pesticide or fertilizer application
- < farming (with the exception of light to moderate grazing - see below)
- < certain types of stream-bank stabilization techniques (e.g., rip-rapping)
- < delineation of lot lines (e.g., for development, even if the proposed building or structure will not be in the wetland)

Careful evaluation of proposed activities on a case-by-case basis will reveal the manner in which, and degree to which activities in this zone would affect bog turtles and their habitat. Assuming impacts within Zone 1 have been avoided, evaluation of proposed activities within Zone 2 will often require an assessment of anticipated impacts on wetland hydrology, water quality, and habitat continuity.

Activities that are likely to be compatible with bog turtle conservation, but that should be evaluated on a case-by-case basis within this zone include:

- < light to moderate grazing
- < non-motorized recreational use (e.g., hiking, hunting, fishing)
- < mowing or cutting of vegetation

Zone 3

This zone includes upland, wetland, and riparian areas extending either to the geomorphic edge of the drainage basin or at least one-half mile beyond the boundary of Zone 2. Despite the distance from Zone 1, activities in these areas have the potential to adversely affect bog turtles and their habitat. This particularly applies to activities affecting wetlands or streams connected to or contiguous with Zone 1,

because these areas may support undocumented occurrences of bog turtles and/or provide travel corridors. In addition, some activities (e.g., roads, groundwater withdrawal, water/stream diversions, mining, impoundments, dams, “pump-and-treat” activities) far beyond Zone 1 have the potential to alter the hydrology of bog turtle habitat, therefore, another purpose of Zone 3 is to protect the ground and surface water recharge zones for bog turtle wetlands. Where the integrity of Zone 2 has been compromised (e.g., through increases in impervious surfaces, heavy grazing, channelization of stormwater runoff), there is also a higher risk of activities in Zone 3 altering the water chemistry of bog turtle wetlands (e.g., via nutrient loading, sedimentation, and contaminants).

Activities occurring in this zone should be carefully assessed in consultation with the Fish and Wildlife Service and/or appropriate State wildlife agency to determine their potential for adverse effects to bog turtles and their habitat. Prior to conducting activities that may directly or indirectly affect wetlands, bog turtles and/or bog turtle habitat surveys should be conducted in accordance with accepted survey guidelines.

¹ These guidelines are taken directly from the final “Bog Turtle (*Clemmys muhlenbergii*), Northern Population, Recovery Plan” (dated May 15, 2001).

² Except when conducted as part of a bog turtle habitat management plan approved by the Fish and Wildlife Service or State wildlife agency