

**Grassland and Savanna Protocol
for
Incidental Take Permit and Authorization

Ornate Box Turtle (*Terrapene ornata*)**

Note

If carrying out a given protocol is not feasible, or multiple listed species in a given management area pose conflicts, contact the Bureau of Natural Heritage Conservation (NHC) at 608-264-6057. Staff in NHC will work with Science Services staff, species experts and managers to establish an acceptable protocol for a given site that will allow for incidental take without further legal consultation or public notice.

I. Species Background Information

A. Status

State Status: Endangered.

Wisconsin Range: The ornate box turtle is found in Columbia, Dane, Grant, Green, Iowa, Richland, Rock and Sauk counties.

Please note: This protocol only needs to be followed for projects requiring a broad incidental take permit/authorization under the “Screening Procedures” section of the Blanchard’s Cricket Frog Species Guidance document (<http://dnr.wi.gov/files/PDF/pubs/er/ER0666.pdf>).

Global Range: Southern Wisconsin and northwestern Indiana west to southern South Dakota and south to eastern New Mexico and Texas.

B. Habitat

General Habitat Description: Mesic prairies, dry-mesic prairies, sand prairies, barrens and savannas.

Over-wintering Habitat: Deep sand in areas of open canopy. Overwintering depth averages 30 inches but may exceed 5 feet.

C. Life History

Home Range: Home ranges are usually about 2 acres for adult females and 3 acres for males. Research in Wisconsin suggests that habitat fragmentation and natural succession may greatly increase home range size (to over 7 acres for males).

Communal Behaviors: Ornate box turtles typically do not exhibit communal behavior.

Site Fidelity: Species tends to have high overwintering site fidelity (individuals return to same micro-site annually).

Nest Location and Height: Nesting occurs primarily in areas of sparse and low vegetation, usually in the more xeric microhabitats within the sand prairie, and almost exclusively in open sun.

Breeding: Peak breeding occurs in August in WI, but ornates can breed any time while active. Females can produce a viable clutch of eggs annually, but usually about 60% of the mature females produce in a given year.

Nesting Period: Nesting typically occurs in early to mid June. Nesting generally occurs in the evening and can continue throughout the night. Clutches are often buried 7 – 12 inches below the surface, so females are completely buried when depositing eggs. This may explain why surface nest predation appears to be quite low. Eggs generally hatch in 65-85 days in WI (mid-August through September). Late hatching young may not emerge from nests in the fall but go directly into hibernation.

Activity periods:

Seasonal: Ornate box turtles have a maximum active period of March 5 – November 15. As spring progresses, individuals typically disperse from overwintering sites to their summer ranges, which may involve a number of habitats within the terrestrial landscape.

Daily: Ornates are diurnal. In early spring they are temperature-activated and usually remain burrowed until temperatures reach approximately 50° F. They remain active until temperatures fall to the same trigger point, then typically re-burrow for the night. During the warmer months (mid-late May through early September) ornates become active just after sunrise and are active until temperatures force them to thermoregulate (cool down). They may become active again later in the day to forage. Despite living in a dry environment, ornates prefer to be active when there is heavy dew or during and after rains, especially following dry spells.

II. Management Protocols for Permitted/Authorized Incidental Take

The management activity shall be for purposes of recovering, maintaining or improving the grassland, prairie or savanna ecosystem that includes habitat for ornate box turtles.

Since this species is so imperiled in Wisconsin, every effort should be taken to avoid take altogether, although the management activities required to maintain its habitat are considered essential to its continued existence in the state. These activities will therefore be recommended, but scheduled such that they will likely avoid take. Only the unlikely taking that may occur inadvertently despite following all the conditions of these protocols and the following management prescriptions is permitted/authorized. If incidental take of ornate box turtles is observed, please notify the Bureau of Natural Heritage Conservation's Incidental Take Coordinator.

A. **Burning:**

Spring burns

Generally, spring burns should occur prior to March 5 but the timing should remain flexible due to weather conditions. The following provides some flexibility with this date:

1. If, after March 5, the daily high temperatures have remained consistently below 50°F or if frost remains detectable in the soils of open canopy areas within the prairie habitat to be burned, burning can be safely conducted.
2. If, before March 5, the daily high temperatures have been above 50°F for several days and frost is undetectable in open canopy areas of the prairie, or if you suspect that turtles may be active earlier than normal, please call BNHC before proceeding with burns.

Fall burns

Fall burns may be conducted without restriction after November 15. For burns prior to November 15, please call BNHC before proceeding.

B. **Mowing/Haying/Mechanical Seed Collecting or Planting:**

1. Allowed between November 15 and March 5

Note: In instances where trails or fire breaks need to be maintained during the turtle's active period, a careful survey should be conducted by a person familiar with locating ornate box turtles in the field. These surveys should be done in conjunction with the mowing/mechanical cutting activity by having the surveyor work ahead of the mower to locate and remove any turtles located within and adjacent to the corridor of impact.

C. Selective Brush/Tree-Cutting:

Selective brush/tree-cutting (i.e., chain saw) may occur without restriction.

D. Grazing:

The potential for hatchling and juvenile mortality associated with grazing makes this an undesirable management tool at this time. (Grazing may be re-evaluated for sites when and if recovery has occurred.)

E. Herbiciding:

To the maximum extent possible, herbiciding should occur during the turtle's dormant period (November 15 – March 5).

Where active season herbiciding is necessary to control herbaceous vegetation, spot treat, preferably with a low persistence/short half-life herbicide (i.e. Round-up®), using wick, sponge or hand-held spray applications, not broadcast spraying.

Basal-bark or cut-stump-treatment methods should be used when treating woody vegetation.