REPTILE CWCS SPECIES (27 SPECIES)

Common name	Scientific name
Alligator Snapping Turtle	*Macrochelys temminckii*
Broad-banded Water Snake	*Nerodia fasciata confluens*
Coal Skink	*Eumeces anthracinus*
Copperbelly Watersnake	*Nerodia erythrogaster neglecta*
Corn Snake	*Elaphe guttata guttata*
Diamondback Water Snake	*Nerodia rhombifer rhombifer*
Eastern Coachwhip	*Masticophis flagellum flagellum*
Eastern Mud Turtle	*Kinosternon subrubrum*
Eastern Ribbon Snake	*Thamnophis sauritus sauritus*
Eastern Slender Glass Lizard	*Ophisaurus attenuatus longicaudus*
False Map Turtle	*Graptemys pseudogeographica pseudogeographica*
Green Water Snake	*Nerodia cyclopion*
Kirtland's Snake	*Clonophis kirtlandii*
Midland Smooth Softshell	*Apalone mutica mutica*
Mississippi Map Turtle	*Graptemys pseudogeographica kohnii*
Northern Pine Snake	*Pituophis melanoleucus melanoleucus*
Northern Scarlet Snake	*Cemophora coccinea copei*
Scarlet Kingsnake	*Lampropeltis triangulum elapsoides*
Six-lined Racerunner	*Cnemidophorus sexlineatus*
Southeastern Crowned Snake	*Tantilla coronata*
Southeastern Five-lined Skink	*Eumeces inexpectatus*
Southern Painted Turtle	*Chrysemys picta dorsalis*
Timber Rattlesnake	*Crotalus horridus*
Western Cottonmouth	*Agkistrodon piscivorus leucostoma*
Western Mud Snake	*Farancia abacura reinwardtii*
Western Pygmy Rattlesnake	*Sistrurus miliarius streckeri*
Western Ribbon Snake	*Thamnophis proximus proximus*

CLASS REPTILIA

Alligator Snapping Turtle ***Macrochelys temminckii***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	T	G3G4	S2	G3	S2

G-Trend Decreasing

G-Trend Comment The alligator snapping turtle inhabits river systems draining into Gulf of Mexico in the south-central U.S. and ranges northward in the Mississippi River system into western Kentucky, Missouri, Illinois, and Iowa (Conant and Collins 1991). This turtle has been reported from specific, mappable localities in only 6 Kentucky counties (Ballard, Caldwell, Calloway, Carlisle, Livingston, and McCracken) but likely occurs in low numbers in and along the Mississippi, lower Ohio, and lower Tennessee and Cumberland Rivers including Kentucky Lake and Lake Barkley (Kentucky Herpetology Database 2004, Kentucky State Nature Preserves Commission Database 2004). Some reported occurrences (i.e., those in Breckinridge and Knox counties) have been based on the recovery of large captive specimens that had been released; others (i.e., the "Monster of Maple Lake") are based on media reports and require some sort of substantiation before they can be accepted.

S-Trend Unknown

S-Trend Comment The alligator snapping turtle is thought to be rare and declining throughout its range, but this species is so difficult to sample that very little recent population/abundance data is available. No population information is available for Kentucky. An ongoing graduate student project to sample for alligator

snappers in the western part of the state was funded by Kentucky Department of Fish and Wildlife Resources but none have thus far been captured. Recent records (1984-2004) in Kentucky are available from 4 counties (Ballard, Livingston, Caldwell, and Calloway) (Kentucky State Nature Preserves Commission Database 2004, J.R. MacGregor Data). Dams, commercial harvest for human consumption, and general habitat degradation have adversely impacted this species throughout its range (NatureServe 2004).

Habitat / Life History

Habitat characteristics for this turtle in Kentucky are largely unknown. The Laketon specimen was found in a cypress slough along the Mississippi River floodplain, the Princeton specimen was dug from a large urban spring that is the head of a tributary flowing into Lake Barkley, the Blood River juvenile was found in a tire rut after a flood event, the Panther Creek animal was found dead after having been hooked on an abandoned limb line, and the Paducah specimen was found at a water intake plant. Locality data is a bit vague for 1-2 specimens that have been captured by fishermen along the lower Tennessee River in Livingston County. There are a few old literature records and one

CLASS REPTILIA

Alligator Snapping Turtle ***Macrochelys temminckii***

recent record from the Ohio River (Ballard County). The species can be said to have occurred in habitats ranging from headwater springs and tire ruts to large rivers, but we still have little or no idea how or where to search for it in Kentucky.

Key Habitat	Habitat condition is completely UNKNOWN as no key habitat locations have been identified for this species in Kentucky.
Guilds	Emergent and shrub-dominated wetlands, forested wetland, running water, standing water.
Statewide Map	AlligatorSnappingTurtle.pdf

CLASS REPTILIA

Alligator Snapping Turtle ***Macrochelys temminckii***

Conservation Issues

Aquatic habitat degradation

2C Construction/Operation of impoundments (migration barrier). Dams (loss of natural river channel character).

2E Stream channelization/ditching. Loss of oxbows, sloughs, braided channels.

2H Wetland loss/drainage/alteration . Loss of natural and man made wetlands and loss of herbaceous vegetation in ponds/sloughs.

Biological/ consumptive uses

5B Predation from native species. Nest predation (skunks, raccoons, foxes, coyotes, etc.).

5F Low population densities

5H Isolated populations (low gene flow)

5I Commercial collecting for pet trade (overharvest). Commercial collection (human food, pet trade).

5J Incidental mortality due to commercial fishing/musseling (mortality and overharvest). Commercial fishing (trot lines et al). Fishing (troutline, limb lines, bank lines).

5K Lack of suitable habitat for spawning, nesting, or breeding. Reforestation of open sandy soil areas near ponds (loss of suitable nesting habitat).

5P Market hunting for human consumption. Commercial collection (human

food, pet trade).

Siltation and increased turbidity

1B Agriculture. Extensive agricultural development along waterways.

Terrestrial habitat degradation

3F Urban/residential development

3R Habitat and/or Population Fragmentation

3T Suppression of disturbance regimes. Reforestation of open sandy soil areas near ponds (loss of suitable nesting habitat).

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Broad-banded Water Snake ***Nerodia fasciata confluens***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	E	G5T5	S1	G5	S1

G-Trend Unknown

G-Trend Comment Gulf Coast region and Mississippi River drainage from Texas and Louisiana northward to extreme southeastern Missouri, extreme southern Illinois, and the western tip of Kentucky (Conant and Collins 1991) known in Kentucky only from Fish Lake and from the vicinity of Reelfoot National Wildlife Refuge in Fulton County (Kentucky Herpetology Database 2004, Kentucky State Nature Preserves Commission Database 2004).

S-Trend Decreasing

S-Trend Comment Known historically and recently from the lowlands of southwestern Fulton County (Kentucky State Nature Preserve Commission 2004, J.R. MacGregor 2004, W. Bird and P. Peak, pers. obs.); listed here as declining due to heavy past and recent impacts associated with agricultural development in the bottoms located north of Reelfoot Lake.

Habitat / Life History Usually found in sloughs, sluggish streams, bayous, oxbows, and other slow-moving or standing water habitats; often found in areas that are at least partly wooded (Wright and Wright 1957, J.R. MacGregor data). Also reported in the

literature from marshes and wet prairies (Ernst and Ernst 2003); several adults have been found in open wet meadow habitats in Kentucky both at Reelfoot National Wildlife Refuge (B. Palmer-Ball, Jr., pers. comm.) and at Fish Lake (W. Bird and P. Peak, pers. comm.). Often occurs in clear water areas with some emergent or aquatic vegetation and mud bottoms. Although past population data is generally lacking for this species in Kentucky, the author (J.R. MacGregor) believes that the broad-banded water snake has declined in far western Kentucky as a result of heavy past/recent impacts associated with agricultural development in the bottoms located north of Reelfoot Lake. Key habitat loss factors here have included wetland drainage and sedimentation, channelization, tree cutting/removal and land conversion (J.R. MacGregor, pers. obs.).

Key Habitat

Habitat condition is FAIR at best, although the habitat within Reelfoot National Wildlife Refuge has to be considered as GOOD (J.R. MacGregor, pers. obs.).

Following Key Habitats (good):

1. Fulton County

CLASS REPTILIA

Broad-banded Water Snake ***Nerodia fasciata confluens***

Guilds Emergent and shrub-dominated wetlands, forested wetland, standing water.

Statewide Map Broad-bandedWaterSnake.pdf

Conservation Issues

Aquatic habitat degradation

2E Stream channelization/ditching

2H Wetland loss/drainage/alteration . Loss of wetland connectivity and wetland drainage/conversion.

Biological/ consumptive uses

5F Low population densities. Always rare/local.

5H Isolated populations (low gene flow)

Terrestrial habitat degradation

3A Row-crop agriculture (conversion to, annual reuse of fields, etc)

3R Habitat and/or Population Fragmentation. Loss of wetland connectivity.

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Coal Skink ***Eumeces anthracinus***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	T	G5	S2	G5	S2

G-Trend Unknown

G-Trend Comment The species occurs over a relatively large area that extends from eastern Texas, Oklahoma , and Kansas eastward into northern Florida and northward into New York; the range is quite fragmented toward the east and northeast (Conant and Collins 1991). In our state, the coal skink is known from scattered locations in 16 counties; most records are from eastern Kentucky, but an isolated population once occurred (and still may occur) in the Mammoth Cave area (Edmonson County) and an extant population is present in the Jackson Purchase in southeastern Calloway County (Kentucky Herpetology Database 2004, Kentucky State Nature Preserves Commission Database 2004).

S-Trend Decreasing

S-Trend Comment The coal skink is probably declining in Kentucky; recent records (1984-2004) are available from only 9 counties (Calloway, McCreary, Whitley, Laurel, Clay, Rockcastle, Madison, Garrard, and Greenup) (Kentucky State Nature Preserve Commission 2004, East Kentucky Power Cooperative data, J.R. MacGregor data). Coal skinks occur in fair numbers in abandoned gravel pits and other

open habitats in Calloway County, in sunny open shale oak-pine woods in and around Berea College Forest, and along open powerline and roadside rights-of-way in McCreary, Whitley, and Laurel counties in southeastern Kentucky. Elsewhere, most records are for single animals that were found a number of years ago, and many colonies have likely been extirpated (J.R. MacGregor data).

Habitat / Life History

Coal skinks occur primarily in fairly dry rocky open woodlands, remnant glades and prairies, old quarries and gravel pits, rocky fields, and utility line corridors with some bare ground and scattered areas of cover including rocks, sunny outcrops, old railroad ties, and/or discarded tree limbs and general household rubbish. Although some of the literature indicates that coal skinks are most often found in mesic habitats, nearly all Kentucky sites are quite dry and open (as are those in West Virginia and several other eastern states).

Key Habitat

For this species, habitat condition here is generally POOR.

Following Key Habitats (good):

1. Calloway County
2. McCreary County
3. Madison County

CLASS REPTILIA

Coal Skink ***Eumeces anthracinus***

Guilds grassland/agricultural, savanna/ shrub-scrub, upland forest.

Statewide Map CoalSkink.pdf

Conservation Issues

Biological/ consumptive uses

5A Predation from introduced species. Predation by domestic pets (primarily house cats).

5K Lack of suitable habitat for spawning, nesting, or breeding

Miscellaneous Mortality Factors

6G Stochastic events (droughts, unusual weather, pine beetle damage, flooding etc.)

Terrestrial habitat degradation

3A Row-crop agriculture (conversion to, annual reuse of fields, etc). Conversion of open/rocky habitats to pasture.

3I Conversion of native forest to short-rotation crop trees (pine, sycamore, cottonwood, etc.). Plantation forestry.

3Q Invasive/exotic plants (including fescue). Planting crown vetch and fescue along roadsides.

3R Habitat and/or Population Fragmentation

3S Fire suppression/fire regime management. Loss of fire in the ecosystem.

3T Suppression of disturbance regimes. natural reforestation of rocky, gravelly old fields, of abandoned gravel pits/quarries and go glades/rock outcrop

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Copperbelly Watersnake ***Nerodia erythrogaster neglecta***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
PS:LT	S	G5T2 T3	S3	G2	S3

G-Trend Decreasing

G-Trend Comment Southeastern Illinois, southwestern Indiana, and western Kentucky northward in isolated colonies to northwestern Ohio, northeastern Indiana, and adjacent southern Michigan; intergrades westward with additional subspecies (Conant and Collins 1991). Known from a total of 16 counties in Kentucky (Kentucky State Nature Preserves Commission 2004, Kentucky Herpetology Database 2004).

S-Trend Decreasing

S-Trend Comment Recent and extant populations (1984-2004) occur in 15 counties located within and adjacent to the Western Coal Field (Livingston County to Hancock County); also known historically from wetland habitats in southwestern Jefferson County (Louisville) but probably extirpated there (Kentucky Herpetology Database 2004, Kentucky State Nature Preserve Commission 2004).

Habitat / Life History Less aquatic than other Kentucky Nerodia; tends to be more common in bottomland forest and tannic seasonally flooded pools but also found regularly

in sloughs, sluggish stream margins, bayous, oxbows, and other slow-moving or standing water habitats. The copperbelly watersnake generally prefers areas that are at least partly wooded, and prefers clear water areas with some emergent or aquatic vegetation and mud bottoms (Ernst and Ernst 2003) and sometimes occurs in low to moderate numbers in man-made lakes and ponds (J.R. MacGregor data). Often associated with buttonbush ponds and isolated woodland pools with good populations of breeding salamanders and frogs and with water that becomes stained with tannin (Wright and Wright 1957). Gravid females often use highway and railroad fill slopes and other open upland habitat basking sites. Generally (but not always) requires adjacent upland habitat with suitable rock crevices, mammal burrows, or old root channels for winter hibernation but may also use crayfish or muskrat holes and spend at least part of the winter submerged (J.R. MacGregor, pers. obs.).

Key Habitat

Habitat condition is only FAIR overall.

Following Key Habitats (good):

1. Henderson County
2. Daviess and Hancock counties
3. Hopkins County

CLASS REPTILIA

Copperbelly Watersnake ***Nerodia erythrogaster neglecta***

Guilds Emergent and shrub-dominated wetlands, forested wetland, standing water.

Statewide Map CopperbellyWatersnake.pdf

Conservation Issues

Aquatic habitat degradation

2E Stream channelization/ditching

2H Wetland loss/drainage/alteration . Loss of wetland connectivity, wetland drainage/conversion and surface mining in wetlands.

Biological/ consumptive uses

5F Low population densities

5H Isolated populations (low gene flow)

5Q Declining prey base. Reduction of amphibian prey base.

Miscellaneous Mortality Factors

6A Traffic/road kills

6E Illegal killing

6F Wanton shooting/killing and unregulated take. Shooting (mostly from bridges) and just wanton killing.

Terrestrial habitat degradation

3A Row-crop agriculture (conversion to, annual reuse of fields, etc)

3K Surface mining. Surface mining in wetlands, surface mining fragmentation and water quality.

3R Habitat and/or Population Fragmentation. Loss of wetland connectivity and surface mining fragmentation.

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Corn Snake ***Elaphe guttata guttata***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	S	G5T5	S3	G5	S3

G-Trend Stable

G-Trend Comment Southeastern U.S., ranging northward into Tennessee, Virginia, DelMarVa Peninsula, and New Jersey with isolated colonies in central and eastern Kentucky (Conant and Collins 1991). Known to occur in 5 counties in west-central Kentucky (Barren, Edmonson, Hart, Grayson, and Hardin) and 4 counties in eastern Kentucky (Powell, Wolfe, Menifee, and Morgan) (Kentucky Herpetology Database 2004, Kentucky State Nature Preserves Commission Database 2004).

S-Trend Decreasing

S-Trend Comment The corn snake in Kentucky is somewhat of an enigma. Populations in west-central Kentucky seem to be doing quite well; Bird and Peak (pers. comm.) found nearly 60 corn snakes in Hart County during the 2003 field season, and an ongoing field study at Mammoth Cave National Park in Edmonson County yielded 25 or more corn snakes during the 2004 field season (J.R. MacGregor data). The eastern Kentucky population, on the other hand, appears to have declined greatly since the early 1980's; it has all but disappeared from the Red River Gorge area (Daniel Boone National Forest) and Natural Bridge State

Resort Park where very few have been found there during the past 20 years despite much searching (J.R. MacGregor, U.S. Forest Service, and Kentucky State Nature Preserves Commission data). At the present time there are recent (1984-2004) records from 8 counties.

Habitat / Life History

Terrestrial and at least partly fossorial; occurs in/near sparsely to moderately dense forested uplands dominated by oak and/or pine with well-drained sandy or loamy soils. Sites offering a mix of prairie patches and forest stands with numerous to scattered grassy or weedy openings seem to be preferred. The corn snake probably does best in fire-maintained and fire-managed habitats; it also does well in farm country where cropland and pasture alternate with large chunks of native forest. Most of the corn snakes in the Red River Gorge/Natural Bridge area that were found during the 1960's and 1970's were in and around old farmsteads and pastures in the bottomlands along the Red River and its major tributaries. Nearly all of these sites have subsequently been purchased by the U.S. Forest Service and have either been converted into visitor facilities or allowed to revert to young second-growth forest. It is quite likely that natural succession is one of the factors responsible for the decline of the corn snake in this section of eastern Kentucky (J.R. MacGregor, pers. obs). Throughout its range, the corn snake is noted for being less arboreal than the members of the black rat snake complex and for favoring habitats like brushy

CLASS REPTILIA

Corn Snake ***Elaphe guttata guttata***

fields, glades and prairie remnants, scrublands, pine barrens, roadsides, open forests, and various types of outbuildings (Ernst and Ernst 2003, Wright and Wright 1957).

Key Habitat

Habitat condition is overall GOOD in west-central Kentucky in upland areas but is POOR in eastern Kentucky where much formerly open habitat appears to have reverted to closed-canopy forest (J.R. MacGregor, pers. obs.).

Following Key Habitats (good):

1. Edmonson County
2. Hart County

Guilds grassland/agricultural, savanna/ shrub-scrub, upland forest.

Statewide Map CornSnake.pdf

Conservation Issues

Biological/ consumptive uses

5F Low population densities. Becoming rare/local.

5H Isolated populations (low gene flow)

5I Commercial collecting for pet trade (overharvest)

Miscellaneous Mortality Factors

6A Traffic/road kills

6F Wanton shooting/killing and unregulated take

Terrestrial habitat degradation

3R Habitat and/or Population Fragmentation. Loss of glade connectivity.

3S Fire suppression/fire regime management. Loss of fire in ecosystem.

3T Suppression of disturbance regimes. Reforestation of open rocky habitats.

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Diamondback Water Snake ***Nerodia rhombifer rhombifer***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	N	G5T5	S5	G5	S5

G-Trend Unknown

G-Trend Comment South-central U.S. from Texas to Alabama, northward into Kansas, Missouri, Iowa, Illinois, southwest Indiana, and western Kentucky (Conant and Collins 1991). Currently known from 17 counties in the Jackson Purchase, Land Between The Lakes National Recreation Area, and the Western Coal Field (Kentucky Herpetology Database 2004).

S-Trend Unknown

S-Trend Comment Apparently stable in the Jackson Purchase, but populations have been fragmented by impacts associated with mining and agriculture in the Western Coal Field (J.R. MacGregor, pers. obs.). This species is not tracked by Kentucky State Nature Preserves Commission.

Habitat / Life History Usually found in sloughs, sluggish streams, bayous, oxbows, and other slow-moving or standing water habitats; also associated frequently with river backwaters and the lower sections of tributary streams. Diamondback water snakes prefer areas that are at least partly wooded and are well-supplied with logjams, fallen trees, and similar basking sites that overhang deep water. They have also been found in low numbers in some reservoir backwater coves - and

upland ponds - in the Land Between The Lakes National Recreation Area (J.R. MacGregor, pers. obs.).

Key Habitat

Habitat condition is GOOD in the wetlands that border the Mississippi River and portions of the lower Ohio River, and in the wetland complexes that have redeveloped in the Jackson Purchase along some of the larger stream systems (Bayou du Chein, Obion Creek, Mayfield Creek); only FAIR to POOR in most of the Western Coal Field (J.R. MacGregor, pers. obs.).

Following Key Habitats (good):

1. Fulton County
2. Ballard County
3. Carlisle County

Guilds

Emergent and shrub-dominated wetlands, forested wetland, running water, standing water.

Statewide Map

DiamondbackWaterSnake.pdf

CLASS REPTILIA

Diamondback Water Snake ***Nerodia rhombifer rhombifer***

Conservation Issues

Aquatic habitat degradation

2E Stream channelization/ditching

2H Wetland loss/drainage/alteration . Loss of wetland connectivity, wetland drainage/conversion and surface mining in wetlands.

Miscellaneous Mortality Factors

6A Traffic/road kills

6F Wanton shooting/killing and unregulated take. Shooting (mostly from bridges) and wanton killing.

Terrestrial habitat degradation

3F Urban/residential development

3K Surface mining. Surface mining in wetlands, fragmentation and water

3R Habitat and/or Population Fragmentation. Surface mining fragmentation of habitat and water quality.

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Eastern Coachwhip ***Masticophis flagellum flagellum***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	X	G5T5	SX	G5	N

G-Trend Decreasing

G-Trend Comment Southeastern U.S., northward to southeastern North Carolina and southwestern Tennessee; also occurs west of the Mississippi River lowlands from Louisiana and Texas northward to Missouri (Conant and Collins 1991). Reported from 4 Kentucky counties (Barren, Edmonson, Hart, and Pulaski) but all of the records are suspect; it is the opinion of J.R. MacGregor that the eastern coachwhip is not native to the state and that the specimens reported were escaped or released captives.

S-Trend Unknown

S-Trend Comment Apparently declining at least in some areas rangewide due to habitat loss (succession, development, conversion of native habitat to agriculture or plantation forestry, fire suppression, etc.) and direct mortality (i.e., entrapment in plastic erosion control netting, highway mortality, mowing) (NatureServe 2004). Probably an introduced species in Kentucky but apparently now extirpated; last documented in the 1960's near the site of the Kentucky Reptile Gardens (a roadside reptile zoo that closed for good in the early 1970's). This species is not tracked by Kentucky State Nature Preserves Commission.

Habitat / Life History

If native, the eastern coachwhip would likely have occurred only in the area formerly known as "The Barrens" - a region of native prairie that occupied the northern and western sections of the Mississippian Plateau and most upland section of the Jackson Purchase prior to human settlement (Mengel 1965). Several native reptiles and amphibians including the prairie kingsnake, six-lined racerunner, and (to some degree) western slender glass lizard, northern crawfish frog, and eastern narrowmouth toad have ranges that appear to reflect the original native prairie regions of Kentucky (J.R. MacGregor, pers. obs.). The eastern coachwhip probably would have done best in fire-maintained and fire-managed habitats.

Key Habitat

Habitat condition overall is POOR.

Following Key Habitats (good):

None identified - probably introduced; now apparently extirpated

Guilds

grassland/agricultural, savanna/ shrub-scrub.

CLASS REPTILIA

Eastern Coachwhip ***Masticophis flagellum flagellum***

Statewide EasternCoachwhip.pdf

Map

Conservation Issues

Biological/ consumptive uses

5K Lack of suitable habitat for spawning, nesting, or breeding. Loss of open gravelly/sandy nesting/egg-laying habitat.

Terrestrial habitat degradation

3R Habitat and/or Population Fragmentation. Loss of glade connectivity.

3S Fire suppression/fire regime management. Loss of fire in ecosystem.

3T Suppression of disturbance regimes. Reforestation of open rocky habitat.

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Eastern Mud Turtle ***Kinosternon subrubrum***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	N	G5	S3S4	G5	S3

G-Trend Unknown

G-Trend Comment The mud turtle has a widespread distribution in the southeastern U.S. with a range that extends northward into Illinois in the midwest and New Jersey and Long Island in the northeast (Conant and Collins 1991). This species has been recorded from about 20 Kentucky counties in the Jackson Purchase, Land Between The Lakes National Recreation Area, and Mississippian Plateau and a single county (Union) in the western Coal Field (Kentucky Herpetology Database 2004).

S-Trend Decreasing

S-Trend Comment Population trends for the mud turtle are unknown rangewide, but this species is almost certainly declining in Kentucky. The mud turtle has a spotty and discontinuous range in the state, and the habitat has been heavily impacted and/or fragmented by agriculture and mineral extraction. Some decent colonies occur in the Jackson Purchase region (Reelfoot Lake area, Obion Wildlife Management Area, Ballard Wildlife Management Area, and Bypass Road); elsewhere in western Kentucky the species is rare. Mud turtle populations that once inhabited the sinkhole ponds and upland swamps of central Kentucky are

probably on the verge of extirpation since much of the habitat there has been eliminated by the plow and tractor and by impacts associated with oil extraction. Recent (1984-2004) records exist for 13 of the 20 mud turtle counties in Kentucky; this figure may be misleadingly high since most of these counties have yielded only single observations. The mud turtle is not tracked by Kentucky State Nature Preserves Commission.

Habitat / Life History The mud turtle is associated with wetland habitats throughout its range in Kentucky. In the western part of the state, west of Dawson Springs, it is/was most common in areas with extensive shallow swamps and abundant emergent vegetation adjacent to wet meadows and bottomland hardwood forest. Further east, in the Mississippian Plateau region of central and southern Kentucky, mud turtles are still present but becoming rare in permanent and/or seasonal shallow sinkhole swamps.

Key Habitat Habitat condition is generally POOR, but there are a few good areas left, most of which (Reelfoot Lake area, Obion Wildlife Management Area, Ballard Wildlife Management Area, and Clarks River National Wildlife Refuge/Bypass Road) are located in the Jackson Purchase region.

Following Key Habitats (good):

CLASS REPTILIA

Eastern Mud Turtle ***Kinosternon subrubrum***

1. McCracken County and Marshall County
2. Ballard County
3. Fulton County
4. Hickman County

Guilds Emergent and shrub-dominated wetlands, forested wetland, standing water.

Statewide Map EasternMudTurtle.pdf

Conservation Issues

Aquatic habitat degradation

2E Stream channelization/ditching. Loss of oxbows, sloughs, braided channels.

2H Wetland loss/drainage/alteration . Loss of natural and man made wetlands. Loss of herbaceous vegetation in ponds/sloughs.

Biological/ consumptive uses

5K Lack of suitable habitat for spawning, nesting, or breeding. Reservoirs (fluctuating water levels/poor nest habitat).

Miscellaneous Mortality Factors

6A Traffic/road kills

Siltation and increased turbidity

1B Agriculture. Extensive agricultural development along waterways.

Terrestrial habitat degradation

3R Habitat and/or Population Fragmentation

3T Suppression of disturbance regimes. Reforestation of open sandy soil areas near ponds (loss of suitable nesting habitat) and wet meadows.

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Eastern Ribbon Snake ***Thamnophis sauritus sauritus***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	S	G5T5	S3	G5	S3

G-Trend Unknown

G-Trend Comment Widespread in eastern, southeastern, and central U.S. from New England south to Georgia, Alabama, and Mississippi; northward on the east side of the Mississippi River lowlands to southern Illinois, southwestern Indiana, and western Kentucky with scattered colonies elsewhere (Conant and Collins 1991). Scattered in wetland habitats with records from 20 counties in the western half of Kentucky; also known historically from lowland swamps along the Licking River (locations now submerged under Cave Run Lake) (Kentucky Herpetology Database 2004, Kentucky State Nature Preserves Commission Database 2004, C.H. Ernst, pers. comm.).

S-Trend Unknown

S-Trend Comment Rangewide and state population trends are unknown, but several herpetologists have mentioned that eastern ribbon snakes seem to be in decline in some parts of their range. There are recent records from 16 Kentucky counties (Kentucky State Nature Preserve Commission 2004).

Habitat / Life History Eastern ribbon snakes are usually associated with wetland habitats that harbor good populations of prey species including amphibians, mosquito fish

(Gambusia), and/or topminnows (Fundulus). These snakes typically inhabit wet meadows and sunny openings with low herbaceous vegetation along the margins of sloughs, sluggish streams, bayous, oxbows, and other slow-moving or standing water habitats. Some individuals - particularly gravid females - regularly climb up into shrubs such as buttonbush or willow in search of basking sites. Eastern ribbon snakes are sometimes present in large numbers on grassy dikes and highway/railroad fill slopes bordered by shallow wetlands; they are especially abundant on the water control structures that form the moist soil management units at Sloughs Wildlife Management Area in Henderson County. Mammal and crayfish burrows are often used both as hiding retreats from predators and as sites for winter hibernation (J.R. MacGregor, pers. obs.). Although eastern ribbon snakes are associated primarily with riparian wetland habitat complexes in western Kentucky (Jackson Purchase, Land Between The Lakes National Recreation Area, Western Coal Field) and (formerly) along the Licking River near Morehead, the isolated populations that have been found on the Mississippian Plateau in Hardin, Larue, and southern Logan counties occur in and around isolated shallow sinkhole swamps in Karst terrain (J.R. MacGregor, pers. obs.).

CLASS REPTILIA

Eastern Ribbon Snake ***Thamnophis sauritus sauritus***

Key Habitat Habitat condition is FAIR overall; several large tracts of GOOD habitat occur in a few areas (Sloughs Wildlife Management Area in Henderson/Union counties, Terrapin Creek in Graves/Calloway counties, and portions of Obion Wildlife Management Area in Hickman/Carlisle counties).

Following Key Habitats (good):

1. Henderson County

2. Graves County

Guilds Emergent and shrub-dominated wetlands, forested wetland, standing water.

Statewide Map EasternRibbonSnake.pdf

Conservation Issues

Aquatic habitat degradation

2E Stream channelization/ditching

2H Wetland loss/drainage/alteration . Loss of wetland connectivity, wetland drainage/conversion and surface mining in wetlands.

Biological/ consumptive uses

5Q Declining prey base. Reduction in amphibian prey base.

Terrestrial habitat degradation

3A Row-crop agriculture (conversion to, annual reuse of fields, etc)

3K Surface mining. Surface mining in wetlands, surface mining water quality and surface mining fragmentation.

3R Habitat and/or Population Fragmentation. Loss of wetland connectivity, surface mining in wetlands.

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Eastern Slender Glass Lizard ***Ophisaurus attenuatus longicaudus***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	T	G5T5	S2	G5	S2

G-Trend Unknown

G-Trend Comment The slender glass lizard can be found throughout much of the southeastern U.S.; its range extends northward into southeastern Virginia and west-central Kentucky (Conant and Collins 1991). In Kentucky, this lizard has been reported from 9 counties in 2 distinctly different regions; 7 counties lie within what was once the "Barrens of Kentucky" in the Mississippian Plateau region; the remaining 2 are located on the Cumberland Plateau in southeastern Kentucky (Kentucky Herpetology Database 2004, Kentucky State Nature Preserves Commission Database 2004).

S-Trend Decreasing

S-Trend Comment Slender glass lizards are probably declining in Kentucky; recent records (1984-2004) have come from 7 counties (McCreary, Whitley, Edmonson, Barren, Hart, Hardin, and Todd) but the species can be found regularly only at a handful of sites. The current known range and dependence upon open habitat suggest that glass lizards once foraged silently among the grasses throughout the native prairie regions of the state but have largely disappeared now that this habitat is now essentially gone. Slender glass lizards still occur in good numbers

along open rights-of-way in McCreary and Whitley counties in southeastern Kentucky. In addition, several have recently been found in remnant open areas at Mammoth Cave National Park, and a few have turned up in old fields, glades, and prairies in Hart and Hardin counties. Elsewhere, most records are for single animals that were found a number of years ago, and many colonies have likely been extirpated as a result of farming, development, fire suppression, and natural succession (J.R. MacGregor and R.E. Todd data, Kentucky State Nature Preserves Commission Database 2004).

Habitat / Life History

As indicated above, the slender glass lizard occurs primarily in fairly dry rocky open woodlands, remnant glades and prairies, rocky fields, and utility line corridors with some bare ground. Sandy soils are often a prerequisite as well but some individuals have been found in other loose soil types if enough suitable cover is present.

Key Habitat

Overall habitat condition in Kentucky is POOR.

Following Key Habitats (good):

1. Edmonson County
2. McCreary County
3. Whitley County

CLASS REPTILIA

Eastern Slender Glass Lizard ***Ophisaurus attenuatus longicaudus***

Guilds grassland/agricultural, savanna/ shrub-scrub.

Statewide Map EasternSlenderGlassLizard.pdf

Conservation Issues

Biological/ consumptive uses

5K Lack of suitable habitat for spawning, nesting, or breeding

Miscellaneous Mortality Factors

6A Traffic/road kills

6F Wanton shooting/killing and unregulated take. Direct killing (mistaken for snake).

Terrestrial habitat degradation

3A Row-crop agriculture (conversion to, annual reuse of fields, etc). Conversion of open/rocky habitats to pasture.

3Q Invasive/exotic plants (including fescue). Planting crown vetch and fescue along roadsides.

3R Habitat and/or Population Fragmentation

3S Fire suppression/fire regime management. Loss of fire in the ecosystem.

3T Suppression of disturbance regimes. Natural reforestation of rocky/gravelly

old fields, abandoned gravel pits/quarries, and glades/rock outcrop areas.

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

False Map Turtle ***Graptemys pseudogeographica***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	N	G5T5	S3S4	G5	S3

G-Trend Unknown

G-Trend Comment The false map turtle (subspecies, not including G. ouachitensis - see below) occurs through much of the midwestern U.S. from the Reelfoot Lake area (J.R. MacGregor data) northward along the Mississippi River into Minnesota and Wisconsin, westward in the Missouri River through Missouri and Iowa into South Dakota, and eastward in the lower Ohio River and up the Wabash River into western Indiana (Conant and Collins 1991). This species is currently known from 10 Kentucky counties bordering the state's major rivers (Mississippi, Ohio, and the lowest sections of the Tennessee, Cumberland, and Green) from the Tennessee border to Union and McLean counties; it was common at least through the 1980's in Reelfoot Lake and is also present in Lake No. 9 in western Fulton County. This turtle apparently does not occur in either Kentucky Lake or Lake Barkley (J.R. MacGregor data, BPB data, Lindeman data, Kentucky Herpetology Database 2004) even though the three remaining Graptemys known from the state (Mississippi, Ouachita, and common map turtles) all can be found in both of these reservoirs. The taxonomy of the false map turtle group (G. ouachitensis, G. kohnii, and G.

pseudogeographica) is unsettled; some authorities recognize each at the species level while others list them in various combinations as subspecies. In Kentucky, each appears to function as a full species; populations that occur sympatrically in various combinations in different rivers show little or no evidence of intergradation; all are treated at the species level by this author (J.R. MacGregor).

S-Trend Decreasing

S-Trend Comment False map turtle numbers appear to be fairly stable in the Mississippi River (where the species is most common). However, this species, like the Mississippi map turtle, appears to have declined dramatically in the Reelfoot Lake area in recent years. This species is not tracked by Kentucky State Nature Preserves Commission.

Habitat / Life History The false map turtle occurs primarily in sand-bottomed sections of the Mississippi River and at scattered similar locations in the Ohio River with moderate current; it is relatively intolerant of silt and organic/industrial pollution; like the smooth softshell it typically nests in open habitat on beaches and sand bars. Human disturbance and periodic summer flooding of beach and sandbar nesting habitat are major problems (Ernst et al. 1994, NatureServe 2004).

CLASS REPTILIA

False Map Turtle ***Graptemys pseudogeographica***

Key Habitat conditions is FAIR in Kentucky.

Habitat

Following Key Habitats (good):

1. Fulton County

Guilds running water.

Statewide Map FalseMapTurtle.pdf

Conservation Issues

Aquatic habitat degradation

2C Construction/Operation of impoundments (migration barrier). Dams (loss of natural river channel character). Loss of natural sandbars and gravel bars (for nesting).

2E Stream channelization/ditching. Loss of oxbows, sloughs, braided channels.

2H Wetland loss/drainage/alteration . Loss of natural and man made wetlands. Loss of herbaceous vegetation in ponds/sloughs.

Biological/ consumptive uses

5B Predation from native species. Nest predation (skunks, raccoons, foxes, coyotes, etc).

5K Lack of suitable habitat for spawning, nesting, or breeding. Reservoirs

(fluctuating water levels/poor nest habitat). Reforestation of open sandy soil areas near ponds (loss of suitable nesting habitat).

Miscellaneous Mortality Factors

6F Wanton shooting/killing and unregulated take. Turtle shooting for recreation/target practice.

6G Stochastic events (droughts, unusual weather, pine beetle damage, flooding etc.)

Siltation and increased turbidity

1B Agriculture. Extensive agricultural development along waterways.

Terrestrial habitat degradation

3F Urban/residential development

3R Habitat and/or Population Fragmentation

3T Suppression of disturbance regimes. Reforestation of open sandy soil areas near ponds (loss of suitable nesting habitat).

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Green Water Snake ***Nerodia cyclopion***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	E	G5	S1	G5	S1

G-Trend Unknown

G-Trend Comment The Mississippi green water snake occurs along the Gulf Coast from Texas to Alabama, northward in the Mississippi River valley to extreme western Kentucky, southern Illinois, and southeastern Missouri (Conant and Collins 1991). This snake is known in Kentucky only from the Long Point area of Reelfoot Lake within Reelfoot National Wildlife Refuge in Fulton County (Kentucky Herpetology Database 2004, Kentucky State Nature Preserves Commission Database 2004).

S-Trend Stable

S-Trend Comment Population trends are unknown rangewide, but this snake still occurs in low numbers at the only Kentucky location where it was originally found in 1938; at least one gravid female was captured and released there as recently as 2001 (J.R. MacGregor data).

Habitat / Life History Usually found in shallow lakes, sloughs, bayous, oxbows, and sluggish swamps; most often associated with slow-moving or standing water; prefers areas that are at least partly wooded. Generally requires adjacent upland habitat with mammal burrows, rock crevices, or old root channels for winter hibernation

(Wright and Wright 1957, Ernst and Ernst 2003, J.R. MacGregor data).

Key Habitat condition is probably GOOD.

Habitat

Following Key Habitats (good):

1. Fulton County

Guilds Emergent and shrub-dominated wetlands, forested wetland, standing water.

Statewide GreenWaterSnake.pdf

Map

CLASS REPTILIA

Green Water Snake ***Nerodia cyclopion***

Conservation Issues

Aquatic habitat degradation

2H Wetland loss/drainage/alteration . Loss of wetland connectivity, wetland drainage/conversion.

Biological/ consumptive uses

5F Low population densities. Always rare/local

Terrestrial habitat degradation

3A Row-crop agriculture (conversion to, annual reuse of fields, etc)

3R Habitat and/or Population Fragmentation. Loss of wetland connectivity.

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Kirtland's Snake ***Clonophis kirtlandii***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	T	G2	S2	G2	S2

G-Trend Decreasing

G-Trend Comment Midwestern U.S., from Pennsylvania westward through much of Ohio, Indiana, and Illinois; also southern Michigan, western and northern Kentucky, and the eastern edge of Missouri (Conant and Collins 1991). Known from 8 Kentucky counties in the Jackson Purchase, Western Coal Field, the Louisville area, and northern Kentucky (Kentucky Herpetology Database 2004, Kentucky State Nature Preserves Commission Database 2004).

S-Trend Decreasing

S-Trend Comment Kirtland's snake is thought to be declining both rangewide and in Kentucky. This snake seems to be holding its own in some sections of Louisville and in the Terrapin Creek drainage near the Tennessee border in Graves County, but colonies in other parts of Louisville may have disappeared. Elsewhere in the state, David Bell found a specimen in the mid-1980's at Rumsey (McLean County) in the Western Coal Field. Recent records (1984-2004) total 4 counties; all other records are historic. House cat predation may be an important factor limiting urban populations of Kirtland's snakes in Jefferson

County (J.R. MacGregor, pers. obs.).

Habitat / Life History Kirtland's snake inhabits urban areas including vacant lots, wet meadows, thickets, woods margins, waste areas, and wetland restoration sites in Jefferson County; it also occurs in roadsides and adjacent old fields, open wetlands, and low woodlands in the Terrapin Creek area in Graves County. Published habitat information from across the range lists the following habitats: marshy land, open prairie, pastures, edges, areas near wetlands and water, and woodlands (Ernst and Ernst 2003, Wright and Wright 1957).

Key Habitat Habitat condition is generally POOR through most of the range in Kentucky.

Following Key Habitats (good):

1. Jefferson County
2. Graves County

Guilds Emergent and shrub-dominated wetlands, forested wetland, urban/suburban.

CLASS REPTILIA

Kirtland's Snake ***Clonophis kirtlandii***

Statewide Kirtland'sSnake.pdf

Map

Conservation Issues

Aquatic habitat degradation

2E Stream channelization/ditching

2H Wetland loss/drainage/alteration . Loss of wetland connectivity and wetland drainage/conversion. Surface mining in wetlands.

Biological/ consumptive uses

5F Low population densities. Always rare/local and becoming rare/local.

Miscellaneous Mortality Factors

6A Traffic/road kills

6F Wanton shooting/killing and unregulated take

Terrestrial habitat degradation

3A Row-crop agriculture (conversion to, annual reuse of fields, etc)

3F Urban/residential development

3K Surface mining. Causing habitat fragmentation and mining (surface) in wetlands.

3R Habitat and/or Population Fragmentation. Loss of wetland connectivity and surface mining fragmentation.

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Midland Smooth Softshell ***Apalone mutica mutica***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	S	G5T5	S3	G5	S3

G-Trend Unknown

G-Trend Comment The midland smooth softshell occurs in the south-central and midwestern U.S., ranging northward in Mississippi River system into Wisconsin and Minnesota and eastward through Ohio River system into western Pennsylvania (Conant and Collins 1991). This form is currently known from 17 Kentucky counties bordering the state's major rivers (Mississippi, Ohio, Tennessee, and Cumberland); possibly occurs in all of the Ohio River counties in suitable sandy habitat (Kentucky Herpetology Database 2004; Kentucky State Nature Preserves Commission Database 2004).

S-Trend Decreasing

S-Trend Comment Although its global status is unknown, the smooth softshell is probably declining here in Kentucky where it mostly occurs in the Mississippi River, at scattered locations in the Ohio River, and in Lake Barkley and Kentucky Lake. Recent records (1984-2004) in the Kentucky State Nature Preserves Commission Database (2004) are from 13 counties (Fulton, Hickman, Carlisle, Ballard, McCracken, Marshall, Lyon, Trigg, Calloway, Livingston, Union, Henderson, and Jefferson). The smooth softshell was probably much more

common in the Ohio River before the original low-level dams were put in, and the newer high-level dams are likely reducing it further by altering or eliminating nesting habitat on beaches and sandbars. Mississippi River population levels are likely stable. Both species of softshells are extremely sensitive to water pollution and very vulnerable to industrial discharges and chemical spills that can cause fish kills (Minton 2001). Periodic summer flooding of sandbars (nesting habitat) is a major problem (Ernst et al. 1994), as is the damming of rivers to block natural fluctuations in flow regime and sandbar deposition.

Habitat / Life History

The smooth softshell occurs in sand-bottomed sections of the Mississippi River and at scattered similar locations in the Ohio River with moderate current; the species does not tolerate silt well; nesting takes place in open areas on beaches and sand bars. This species is also present in some numbers in Lake Barkley and Kentucky Lake, but suitable nesting areas are sparse along reservoir shorelines and swimming beaches seem to have become the most important nesting habitat here. Both species of softshells are adversely affected by water pollution and the periodic summer flooding of sandbar/beach nesting habitat.

CLASS REPTILIA

Midland Smooth Softshell ***Apalone mutica mutica***

Key Habitat Habitat condition is GOOD along the Mississippi River, FAIR along the lower Ohio, and FAIR to POOR elsewhere.

Following Key Habitats (good):

1. Fulton County
2. Lyon County

Guilds running water, standing water.

Statewide Map MidlandSmoothSoftshell.pdf

Conservation Issues

Aquatic habitat degradation

2C Construction/Operation of impoundments (migration barrier). Dams (loss of natural river channel character). Loss of natural sandbars and gravel bars (for nesting).

Biological/ consumptive uses

5B Predation from native species. Nest predation (skunks, raccoons, foxes, coyotes, etc.).

5J Incidental mortality due to commercial fishing/musseling (mortality and overharvest). Commercial fishing (trot lines et al).

5K Lack of suitable habitat for spawning, nesting, or breeding. Reservoirs (fluctuation water levels/poor nest habitat).

Miscellaneous Mortality Factors

6D Human disturbance (spelunking, destruction/disturbance of nest sites). Human disturbance of nesting females in beaches.

6G Stochastic events (droughts, unusual weather, pine beetle damage, flooding etc.)

Siltation and increased turbidity

1B Agriculture. Silt (replacing clean sand as river substrate).

Terrestrial habitat degradation

3F Urban/residential development

3R Habitat and/or Population Fragmentation

3T Suppression of disturbance regimes

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Mississippi Map Turtle ***Graptemys pseudogeographica kohnii***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	N	G5G4	S3S4	G4	S3

G-Trend Unknown

G-Trend Comment The Mississippi map turtle occurs in the south-central U.S. from eastern Texas to Louisiana, ranging northward in the lower Ohio, Missouri, and Mississippi River systems into Kansas, Missouri, Illinois, extreme southwestern Indiana, and western Kentucky (Conant and Collins 1991). It is currently known from at least 12 Kentucky counties bordering the state's major rivers (Mississippi, Ohio, Tennessee, and Cumberland including Kentucky Lake and Lake Barkley) and is also found in Reelfoot Lake. This species in known to occur as far east as Henderson County along the Ohio River, and it may extend even further to the east since there is also a sight record available from Greenup County (Kentucky Herpetology Database 2004). However, head pattern features are the primary characters used by biologists to differentiate Kentucky's four (see below) Graptemys species from one another, and some individual Ouachita map turtles (G. ouachitensis) have kohnii-like head markings and must be captured and examined closely for definitive species determination. The taxonomy of the false map turtle group (G. ouachitensis, G. kohnii, and G. pseudogeographica) is unsettled; some authorities recognize each at the species

level while others list them in various combinations as subspecies. In Kentucky, each of these forms appears to function as a full species; populations that occur sympatrically in various combinations in different rivers show little or no evidence of intergradation or hybridization (J.R. MacGregor, pers. obs.).

S-Trend Decreasing

S-Trend Comment The Mississippi map turtle seems to be fairly stable in numbers in riverine habitats within its limited range in Kentucky, but there is really no hard data to back this up. Observations made on recent excursions into west Tennessee indicate that the Mississippi map turtle is declining rather sharply in the Reelfoot Lake area. This species is not tracked by Kentucky State Nature Preserves Commission.

Habitat / Life History Habitats occupied by Mississippi map turtles in Kentucky are quite variable; the species occurs in various permanent aquatic habitats ranging from extensive wetland complexes, large mud-bottomed ponds and sloughs to reservoirs (Kentucky Lake and Barkley Lake), and from sluggish streams and bayous (Obion Creek and Bayou du Chien) to large rivers (Ohio River and Mississippi River).

CLASS REPTILIA

Mississippi Map Turtle ***Graptemys pseudogeographica kohnii***

Key Habitat condition is FAIR in Kentucky.

Habitat

Following Key Habitats (good):

1. Fulton County

2. Carlisle County

3. Calloway County

Guilds Emergent and shrub-dominated wetlands, running water, standing water.

Statewide Map MississippiMapTurtle.pdf

Conservation Issues

Aquatic habitat degradation

2C Construction/Operation of impoundments (migration barrier). Dams (loss of natural river channel character). Loss of natural sandbars and gravel bars (for nesting).

2E Stream channelization/ditching. Loss of oxbows, sloughs, braided channels.

2H Wetland loss/drainage/alteration . Loss of natural and man made wetlands and loss of herbaceous vegetation in ponds/sloughs.

Biological/ consumptive uses

5B Predation from native species. Nest predation (skunks, raccoons, foxes,

coyotes, etc).

5K Lack of suitable habitat for spawning, nesting, or breeding. Reservoirs (fluctuating water levels/poor nest habitat) and loss of natural sandbars and gravel bars for nesting.

Miscellaneous Mortality Factors

6F Wanton shooting/killing and unregulated take. Turtle shooting for recreation/target practice.

6G Stochastic events (droughts, unusual weather, pine beetle damage, flooding etc.)

Siltation and increased turbidity

1B Agriculture. Extensive agricultural development along waterways and water quality problems impacting snail/mussel prey.

Terrestrial habitat degradation

3F Urban/residential development

3R Habitat and/or Population Fragmentation

3T Suppression of disturbance regimes. Reforestation of open sandy soil areas near ponds (loss of suitable nesting habitat).

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Northern Pine Snake ***Pituophis melanoleucus melanoleucus***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	T	G4T4	S2	G4	S2

G-Trend Decreasing

G-Trend Comment Range extremely fragmented with isolated populations in the following states: Alabama, Georgiam Kentucky, North Carolina, New Jersey, South Carolina, Tennessee, Virginia, West Virginia (Conant and Collins 1991, Ernst and Ernst 2003). Reported historically from about 11 counties in southeastern Kentucky (Harlan, Letcher, Whitley, McCreary counties), the Mammoth Cave region (Edmonson, Barren, Hart counties), and the vicinity of Land Between The Lakes National Recreation Area (Lyon, Trigg, Marshall, Calloway counties); the only recent records are from Edmonson, Hart, Lyon, Trigg, and Calloway counties (Kentucky Herpetology Database 2004, Kentucky State Nature Preserves Commission Database 2004).

S-Trend Decreasing

S-Trend Comment Declining rangewide due to a combination of factors that includes the loss of open habitat from natural succession and/or fire suppression, collecting for the pet trade, wanton killing, road mortality, and habitat conversion via urban and suburban development and agriculture (NatureServe 2004). Declining in

Kentucky, with recent records (1984-2004) from only 6 counties; most are from Land Between The Lakes and nearby areas but northern pine snakes are still being reported in low numbers from counties near Mammoth Cave. Despite a considerable trapping effort in recent years, this species has not been seen in southeastern Kentucky (including the southern half of the Daniel Boone National Forest) since to mid-1970's and may be gone from that section of Kentucky.

Habitat / Life History

Occurs primarily in well-drained upland habitats with sandy to loamy soils with patchy open pine- and/or oak-dominated forest cover; prefers old fields, broomsedge fields, large forest openings, and cutover areas, and nests in large clearings in burrows constructed by the females (the only known nesting site in Kentucky had been dug in an abandoned gravel pit in Calloway County). The species is largely fossorial (Wright and Wright 1957, Ernst and Ernst 2003, J.R. MacGregor data) and probably does well in fire-maintained and fire-managed habitats.

Key Habitat

Habitat condition is generally POOR.

Following Key Habitats (good):

1. Calloway County
2. Trigg County

CLASS REPTILIA

Northern Pine Snake ***Pituophis melanoleucus melanoleucus***

Guilds grassland/agricultural, savanna/ shrub-scrub, upland forest.

Statewide Map NorthernPineSnake.pdf

Conservation Issues

Biological/ consumptive uses

5F Low population densities. Becoming rare/local.

5H Isolated populations (low gene flow)

5I Commercial collecting for pet trade (overharvest)

5K Lack of suitable habitat for spawning, nesting, or breeding. Loss of open gravelly/sandy nesting/egg-laying habitat.

Miscellaneous Mortality Factors

6A Traffic/road kills

6F Wanton shooting/killing and unregulated take

6G Stochastic events (droughts, unusual weather, pine beetle damage, flooding etc.)

Terrestrial habitat degradation

3F Urban/residential development

3I Conversion of native forest to short-rotation crop trees (pine, sycamore,

cottonwood, etc.)

3Q Invasive/exotic plants (including fescue)

3R Habitat and/or Population Fragmentation. Loss of glade connectivity.

3S Fire suppression/fire regime management. Loss of fire in ecosystem.

3T Suppression of disturbance regimes. Reforestation of open rocky habitat.

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Northern Scarlet Snake ***Cemophora coccinea copei***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	N	G5T5	S3S4	G5	S3

G-Trend Unknown

G-Trend Comment Widely distributed in southeastern U.S., ranging northward into central Missouri, southern Illinois and Indiana, and western and southern Kentucky (Conant and Collins 1991). Known historically from about 21 Kentucky counties in the Jackson Purchase, Cretaceous Hills, Western Coal Field, Knobs, and Cumberland Plateau; most counties are represented by only single specimens and colonies are likely small and widely disjunct (Fuller and Barbour 1962, J.R. MacGregor Herpetology Maps 2004, Meade 2005).

S-Trend Decreasing

S-Trend Comment Population trends for the scarlet snake are unknown rangewide but seem to be sharply declining in Kentucky. It is known only historically (pre-1984) from 14 counties; there are only 7 recent county records and 5 of these (Calloway, Marshall, Lyon, Trigg, and Caldwell) are from Land Between The Lakes and nearby areas [the remaining 2 are from Hardin and Powell]. It is nearly incomprehensible that the scarlet snake would have disappeared from the shortleaf pine and pine-oak ridgetop forests on the southern half of the Daniel

Boone National Forest, but none have been found there for many years despite much searching. This species may persist in low numbers in the Knobs region of the state (J.R. MacGregor, pers. obs). This species is not tracked by Kentucky State Nature Preserves Commission.

Habitat / Life History Largely fossorial; occurs primarily in sparsely to moderately dense forested areas dominated by oak and/or pine with well-drained sandy or loamy soils; stands with scattered grassy or weedy openings are preferred (this is not surprising since the scarlet snake feeds largely on reptile eggs and lizards); probably does best in fire-maintained and fire-managed habitats (J.R. MacGregor, pers. obs).

Key Habitat Habitat condition is apparently POOR, although it certainly appears at least FAIR to most of us (J.R. MacGregor, pers. obs.).

Following Key Habitats (good):

1. Lyon County
2. Trigg County

Guilds savanna/ shrub-scrub, upland forest.

CLASS REPTILIA

Northern Scarlet Snake ***Cemophora coccinea copei***

Statewide NorthernScarletSnake.pdf

Map

Conservation Issues

Biological/ consumptive uses

5K Lack of suitable habitat for spawning, nesting, or breeding. Loss of open gravelly/sandy nesting/egg-laying habitat.

Terrestrial habitat degradation

3F Urban/residential development

3I Conversion of native forest to short-rotation crop trees (pine, sycamore, cottonwood, etc.)

3K Surface mining. Cause habitat fragmentation.

3R Habitat and/or Population Fragmentation. Loss of open gravelly/sandy nesting/egg-laying habitat. Surface mining fragmentation.

3S Fire suppression/fire regime management. Loss of fire in ecosystem.

3T Suppression of disturbance regimes. Reforestation of open rocky habitat.

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Scarlet Kingsnake ***Lampropeltis triangulum elapsoides***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	S	G5T5	S3	G5	S3

G-Trend Stable

G-Trend Comment Southeastern U.S., northward into Kentucky, North Carolina, and Virginia. The scarlet kingsnake is listed as a subspecies of the milk snake (Lampropeltis triangulum) by NatureServe (2004) and Conant and Collins (1991) but is now considered monotypic by J.R. MacGregor and many others. It is historically known from 9 Kentucky counties including 5 (Rowan, Johnson, Floyd, Whitley, and McCreary) in eastern Kentucky; also from Mammoth Cave National Park (Edmonson). It is also known from 3 counties (Lyon, Trigg, Calloway) located in and around Land Between The Lakes National Recreation Area, and it is likely that only the Land Between The Lakes National Recreation Area population remains extant (Kentucky Herpetology Database 2004, Kentucky State Nature Preserves Commission Database 2004).

S-Trend Decreasing

S-Trend Comment Little information is available rangewide, but Ernst and Ernst (2003) note that populations have apparently declined noticeably in Florida. This attractive little reptile is apparently declining in Kentucky; all recent records (1984-2004)

are from just 2 counties (Trigg, Lyon) at Land Between The Lakes but this snake seems to be doing well there. It is difficult to understand why the scarlet kingsnake (like the scarlet snake) would have disappeared from the shortleaf pine and pine-oak ridgetop forests on the southern half of the Daniel Boone National Forest, but none have been found there for many years.

Habitat / Life History Largely fossorial; occurs primarily in sparsely to moderately dense forested areas dominated by oak and/or pine with well-drained sandy or loamy soils. The species probably does best in fire-maintained and fire-managed habitats.

Key Habitat Habitat condition is apparently POOR, although it certainly appears at least FAIR (J.R. MacGregor, pers. obs.).

Following Key Habitats (good):

1. Lyon County
2. Trigg County

Guilds savanna/ shrub-scrub, upland forest.

CLASS REPTILIA

Scarlet Kingsnake ***Lampropeltis triangulum elapsoides***

Statewide Map ScarletKingsnake.pdf

Conservation Issues

Biological/ consumptive uses

5F Low population densities. Becoming rare/local (Wetland/semiaquatic/Swamps/Lowlands).

5H Isolated populations (low gene flow)

5K Lack of suitable habitat for spawning, nesting, or breeding. Loss of gravelly/sandy nesting/egg-laying habitat.

Terrestrial habitat degradation

3F Urban/residential development

3I Conversion of native forest to short-rotation crop trees (pine, sycamore, cottonwood, etc.)

3R Habitat and/or Population Fragmentation. Loss of glade connectivity.

3S Fire suppression/fire regime management. Loss of fire in ecosystem.

3T Suppression of disturbance regimes. Reforestation of open rocky habitat.

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Six-lined Racerunner ***Cnemidophorus sexlineatus***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	N	G5	S3S4	G5	S3

G-Trend Unknown

G-Trend Comment The six-lined racerunner occurs throughout the southeastern U.S., northward to southern Illinois, southern Indiana, western Kentucky, and southern Maryland (Conant and Collins 1991). It is known from about 22 counties in western Kentucky including locations in the northern and western Mississippian Plateau, Land Between The Lakes National Recreation Area, and the Jackson Purchase (Kentucky Herpetology Database 2004).

S-Trend Decreasing

S-Trend Comment This lizard is apparently declining in Kentucky. Its present distribution and general habitat requirements indicate that the racerunner once roamed throughout the native prairie regions of the state, but this habitat is now essentially gone. Racerunners now occur only in small isolated colonies that are gradually disappearing as suitable sites are reduced in size or eliminated by farming, development, reclamation, and natural succession (J.R. MacGregor data). This species has vanished completely from Mammoth Cave National Park - an area where it was quite abundant in the 1930's (Hibbard 1936) - and

appears to be decreasing quite rapidly at Land Between The Lakes National Recreation Area (J.R. MacGregor data). Current (1984-2004) records are available from only 13 of the 22 counties from which it has been reported historically. The six-lined racerunner is not tracked by Kentucky State Nature Preserves Commission.

Habitat / Life History

Occurs in small colonies in rocky or sandy open habitats including remnant glades and prairies, abandoned quarries and gravel pits, overgrazed rocky pastures, and certain reservoir shorelines, utility line corridors and railroad and highway rights-of-way that feature moderate to large amounts of bare ground and scattered cover in the form of small trees/shrubs, rocks/outcrops, old railroad ties, and/or discarded household rubbish.

Key Habitat

Habitat condition is generally POOR.

Following Key Habitats (good):

1. Calloway County
2. Lyon County
3. Hardin County

CLASS REPTILIA

Six-lined Racerunner ***Cnemidophorus sexlineatus***

Guilds grassland/agricultural, savanna/ shrub-scrub.

Statewide Six-linedRacerunner.pdf

Map

Conservation Issues

Biological/ consumptive uses

5A Predation from introduced species. Predation by domestic pets (primarily house cats).

5K Lack of suitable habitat for spawning, nesting, or breeding

Miscellaneous Mortality Factors

6G Stochastic events (droughts, unusual weather, pine beetle damage, flooding etc.)

Terrestrial habitat degradation

3A Row-crop agriculture (conversion to, annual reuse of fields, etc). Conversion of open/rocky habitats to pasture.

3F Urban/residential development. Urban expansion (counties around Louisville/Jefferson County).

3I Conversion of native forest to short-rotation crop trees (pine, sycamore, cottonwood, etc.). Plantation forestry.

3Q Invasive/exotic plants (including fescue). Planting crown vetch and fescue

along roadsides.

3R Habitat and/or Population Fragmentation

3S Fire suppression/fire regime management. Loss of fire in the ecosystem.

3T Suppression of disturbance regimes. Natural reforestation of glades/rock outcrop areas, abandoned gravel pits/quarries and rocky/gravelly old fields.

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Southeastern Crowned Snake ***Tantilla coronata***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	N	G5	S3S4	G5	S3

G-Trend Unknown

G-Trend Comment The southeastern crowned snake ranges through much of the southeastern U.S. and extends northward into Kentucky, Virginia, and extreme southern Indiana (Conant and Collins 1991). It has been reported from about 17 counties in Kentucky; most records are from upland habitats in western and west-central Kentucky but 1 adult (preserved at University of Michigan Museum of Zoology) was also found near Cumberland Falls in southeastern Kentucky (Kentucky Herpetology Database 2004).

S-Trend Decreasing

S-Trend Comment Population trends for the southeastern crowned snake are unknown rangewide, but the lack of recent records indicate a precipitous decline over the past 30-40 years in Kentucky. All recent (1984-2004) reports are from Land Between The Lakes National Recreation Area (Lyon and Trigg counties) except for a single individual that was found in Hart County (B. Palmer-Ball, pers. comm.). It is hard to imagine how a small, burrowing snake that occurs in dry rocky areas and eats spiders and centipedes could suddenly become so rare here, but similar tendencies are being noted in other reptiles that tend to favor dry open habitats

(racerunner, glass lizard, southeastern five-lined skink, scarlet kingsnake, scarlet snake, northern pine snake) (J.R. MacGregor, pers. obs.). This species is not tracked by Kentucky State Nature Preserves Commission.

Habitat / Life History The southeastern crowned snake is largely fossorial and occurs primarily in xeric (dry) rocky habitats. Most individuals are found in mounds of old bark debris, around old logs and stumps, or under flat stones and other cover on south-facing rocky hillsides (Minton 2001, Minton 1949, Wright and Wright 1957, Ernst and Ernst 2003, J.R. MacGregor data); several have been found under partly-imbedded flagstones and fallen gravestones in old ridgetop cemeteries at Land Between The Lakes National Recreation Area (D. Frymire and E. Zimmerer, pers. comm.). Crowned snakes are often found in close association with six-lined racerunners (Minton 2001, J.R. MacGregor, pers. obs.).

Key Habitat Habitat condition for the crowned snake in Kentucky is apparently POOR, although it certainly looks at least FAIR to most of us.

Following Key Habitats (good):

1. Trigg County

CLASS REPTILIA

Southeastern Crowned Snake ***Tantilla coronata***

Guilds grassland/agricultural, savanna/ shrub-scrub, upland forest.

Statewide Map SoutheasternCrownedSnake.pdf

Conservation Issues

Biological/ consumptive uses

5F Low population densities. Becoming rare/local (Wetland/semiaquatic/Swamps/Lowlands).

5H Isolated populations (low gene flow)

5K Lack of suitable habitat for spawning, nesting, or breeding. Loss of gravelly/sandy nesting/egg-laying habitats.

Miscellaneous Mortality Factors

6G Stochastic events (droughts, unusual weather, pine beetle damage, flooding etc.)

Terrestrial habitat degradation

3I Conversion of native forest to short-rotation crop trees (pine, sycamore, cottonwood, etc.)

3R Habitat and/or Population Fragmentation. Loss of glade connectivity.

3S Fire suppression/fire regime management. Loss of fire in ecosystem.

3T Suppression of disturbance regimes. Reforestation of open rocky habitat.

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Southeastern Five-lined Skink ***Eumeces inexpectatus***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	S	G5	S3	G5	S3

G-Trend Unknown

G-Trend Comment This species occurs throughout the southeastern U.S., extending northward into Virginia and Kentucky (Conant and Collins 1991). In Kentucky, it is known from three general areas and a total of 10 counties. The three areas include Land Between The Lakes National Recreation Area (Lyon and Trigg counties), the Park Mammoth region (Edmonson, Hart, and Barren counties), and southeastern Kentucky (McCreary, Pulaski, Whitley, Laurel, and Bell counties) (Kentucky Herpetology Database 2004, Kentucky State Nature Preserves Commission Database 2004).

S-Trend Unknown

S-Trend Comment Almost certainly declining in Kentucky; there are recent records (1984-2004) from only 6 counties (Trigg, Edmonson, Laurel, Pulaski, McCreary, and Whitley) (Kentucky State Nature Preserve Commission 2004, East Kentucky Power Cooperative data, J.R. MacGregor Data). Southeastern five-lined skinks are known to occur in good numbers only along open roadsides bordered by powerline rights-of-way in McCreary, Whitley, and Laurel counties in

southeastern Kentucky. Elsewhere, most records are for only 1-2 animals (e.g., Park Mammoth) or sites that were found a number of years ago (Bell County). In the early 1970's, these lizards were fairly common at old house sites near Golden Pond on Land Between The Lakes National Recreation Area, but most colonies have apparently disappeared as the upland old fields with bare ground have reverted to young oak forest (J.R. MacGregor data). This species was observed in an abandoned gravel pit at Land Between The Lakes National Recreation Area in 2002 by James Kiser (pers. comm.).

Habitat / Life History

Southeastern five-lined skinks occur primarily in fairly dry rocky open woodlands, remnant glades and prairies, old quarries and gravel pits, rocky weedfields, and railroad and utility line corridors that feature some bare ground and a fair amount of scattered cover (rocks, ledges, outcrops, old railroad ties, discarded rubbish, etc.). Like the coal skink and the six-lined racerunner, this species seems to occur only at sites are quite dry and open (J.R. MacGregor data).

Key Habitat

Habitat condition for this lizard in Kentucky is generally POOR.

Following Key Habitats (good):

1. McCreary County

CLASS REPTILIA

Southeastern Five-lined Skink ***Eumeces inexpectatus***

2. Whitley County

Guilds grassland/agricultural, savanna/ shrub-scrub, upland forest.

Statewide Map SoutheasternFive-linedSkink.pdf

Conservation Issues

Biological/ consumptive uses

5A Predation from introduced species. Predation by domestic pets (primarily house cats).

5K Lack of suitable habitat for spawning, nesting, or breeding

Miscellaneous Mortality Factors

6G Stochastic events (droughts, unusual weather, pine beetle damage, flooding etc.)

Terrestrial habitat degradation

3A Row-crop agriculture (conversion to, annual reuse of fields, etc). Conversion of open/rocky habitats to pasture.

3I Conversion of native forest to short-rotation crop trees (pine, sycamore, cottonwood, etc.). Plantation forestry.

3Q Invasive/exotic plants (including fescue). Planting crown vetch and fescue along roadsides.

3R Habitat and/or Population Fragmentation

3S Fire suppression/fire regime management. Loss of fire in the ecosystem.

3T Suppression of disturbance regimes. natural reforestation of rocky/gravelly old fields, abandoned gravel pits/quarries and glades/rock outcrop areas.

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Southern Painted Turtle ***Chrysemys picta dorsalis***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	T	G5T5	S2	G5	S2

G-Trend Unknown

G-Trend Comment The southern painted turtle occurs in the south-central U.S. from Louisiana north to extreme southeastern Missouri and southwestern Kentucky (Conant and Collins 1991). It intergrades with both the midland painted turtle and eastern painted turtle in eastern Alabama (ibid), and with the midland painted turtle in western Kentucky (J.R. MacGregor data) and southern Illinois (Smith 1961). Some authorities regard the southern painted turtle as a full species (Chrysemys dorsalis) and consider the intergrade populations listed both above and below to be hybrids. Pure populations occur only in western Fulton and Hickman counties in the Reelfoot Lake area and in the lower Hickman Bottoms; intergrades between southern and midland painted turtles can be found in a number of locations in the Jackson Purchase (J.R. MacGregor data, Kentucky Herpetology Database 2004, Kentucky State Nature Preserves Commission Database 2004).

S-Trend Stable

S-Trend Southern painted turtle populations are low in Kentucky but are probably

Comment	stable or only slightly declining; all recent records are from Fulton County (Kentucky State Nature Preserves Commission Database 2004, J.R. MacGregor Data). The southern painted turtle was likely never a common species anywhere in Kentucky except for the lowlands between Reelfoot Lake and the City of Hickman.
Habitat / Life History	In Kentucky, the southern painted turtle is usually found in sloughs, sluggish streams, bayous, oxbows, and other slow-moving or standing water habitats (J.R. MacGregor data); it prefers clear water areas with much aquatic vegetation and mud bottoms (J.R. MacGregor data, Dundee and Rossman 1989).
Key Habitat	Habitat condition is FAIR, in my opinion. Following Key Habitats (good): 1. Fulton County
Guilds	Emergent and shrub-dominated wetlands, standing water.
Statewide Map	SouthernPaintedTurtle.pdf

CLASS REPTILIA

Southern Painted Turtle ***Chrysemys picta dorsalis***

Conservation Issues

Aquatic habitat degradation

2E Stream channelization/ditching. Loss of oxbows, sloughs, braided channels.

2H Wetland loss/drainage/alteration . Loss of natural and man made wetlands. Loss of herbaceous vegetation in ponds/sloughs.

Biological/ consumptive uses

5B Predation from native species. Nest predation (skunks, raccoons, foxes, coyotes, etc.).

5F Low population densities

5H Isolated populations (low gene flow)

Miscellaneous Mortality Factors

6A Traffic/road kills

6F Wanton shooting/killing and unregulated take. Turtle shooting for recreation/target practice.

Siltation and increased turbidity

1B Agriculture. Extensive agricultural development along waterways.

Terrestrial habitat degradation

3R Habitat and/or Population Fragmentation

3T Suppression of disturbance regimes. Reforestation of open sandy soil areas

near ponds (loss of suitable nesting habitat).

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Timber Rattlesnake ***Crotalus horridus***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	N	G4	S4	G4	S4

G-Trend Decreasing

G-Trend Comment Widespread in much of the eastern and central U.S. from central Texas eastward to northern Florida, northward to Vermont, New Hampshire, New York, Pennsylvania , Ohio, Indiana, Illinois, Wisconsic, Minnesota, and southern Iowa and Nebraska (Conant and Collins 1991). Recorded from nearly 90 Kentucky counties including all sections of the state except the Bluegrass Region (J.R. MacGregor Herpetology Maps 2004); least common in the Jackson Purchase, the lowlands of the Western Coal Field, and the flat and largely deforested parts of the Mississippian Plateau. About 8 county records have had no reports of timber rattlesnakes since prior to 1925 (Funkhouser 1925, 1945 and Meade 2000).

S-Trend Stable

S-Trend Comment Rangewide, the timber rattlesnake is still common in some mountainous regions, but now completely extirpated in many areas where it once was common (Conant and Collins 1991). The timber rattlesnake seems to be holding its own in the state; recent reports and observations indicate that good populations remain in many sections of eastern Kentucky and in the Knobs region (Bullitt,

Nelson, Marion, Boyle, Casey counties), the Mammoth Cave area (Edmonson County), and the Land Between The Lakes National Recreation Area (Lyon and Trigg counties) (J.R. MacGregor data). There are recent (1984-2004) records from at least 60 Kentucky counties. This species is not tracked by Kentucky State Nature Preserves Commission.

Habitat / Life History

Found primarily in forested areas with hilly or mountainous terrain (J.R. MacGregor data). Wright and Wright (1957) list preferred habitat as including mountains, bluffs, and ledges, rocky points, broken slopes, wastelands, clearings, huckleberry patches [in] oak and oak-pine forest - this provides a decent synopsis of where timber rattlesnakes are most likely to occur in Kentucky. Open sites such as tree fall gaps, powerline corridors, cutover areas, rock outcrops, rock talus slopes, old quarries, strip mines, and wildlife openings are often used as basking sites (J.R. MacGregor data).

Key Habitat

Habitat condition in Kentucky is GOOD, for the most part.

Following Key Habitats (good):

1. Edmonson County
2. Boyle County, Casey County, and Marion County

CLASS REPTILIA

Timber Rattlesnake ***Crotalus horridus***

3. Bullitt County and Nelson County

Guilds Cumberland highland forest, savanna/ shrub-scrub, upland forest.

Statewide Map TimberRattlesnake.pdf

Conservation Issues

Biological/ consumptive uses

5I Commercial collecting for pet trade (overharvest)

Miscellaneous Mortality Factors

6A Traffic/road kills

6F Wanton shooting/killing and unregulated take

Terrestrial habitat degradation

3I Conversion of native forest to short-rotation crop trees (pine, sycamore, cottonwood, etc.)

3K Surface mining. Surface mining fragmentation.

3R Habitat and/or Population Fragmentation. Surface mining causing fragmentation.

3T Suppression of disturbance regimes. Reforestation of open rocky habitats.

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Western Cottonmouth ***Agkistrodon piscivorus leucostoma***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	N	G5T5	S3S4	G5	S3

G-Trend Unknown

G-Trend Comment Central and eastern Texas to Mississippi, northward to southern Illinois, southwestern Indiana, and western Kentucky (Conant and Collins 1991). Currently and historically known from about 16 Kentucky counties in the Jackson Purchase, Cretaceous Hills, and Western Coal Field; most populations are small and widely disjoint (J.R. MacGregor Herpetology Maps 2004).

S-Trend Decreasing

S-Trend Comment Population trends for the cottonmouth are unknown rangewide but probably declining in Kentucky, in my opinion, primarily due to the loss of high quality forested wetland habitat that has been degraded by surface mining and conversion to cropland. Despite the overall decline, there are recent (1984-2004) records from 15 of the 16 counties from which the species has been documented (J.R. MacGregor data); the remaining record is from Ohio County and lacks precise location data (Von Allman 1976, Meade 2005). The cottonmouth tends to be a conspicuous element of the fauna in areas where it occurs in good numbers and is often persecuted relentlessly (J.R. MacGregor,

pers. obs). This species is not tracked by Kentucky State Nature Preserves Commission.

Habitat / Life History Usually found in sloughs, sluggish streams, bayous, oxbows, and other slow-moving or standing water habitats and prefers areas that are at least partly wooded; prefers clear water areas with some emergent or aquatic vegetation and mud bottoms. Occurs in low numbers in some reservoir backwater coves in the Land Between The Lakes National Recreation Area area. Gravid females may use highway and railroad fill slopes and other upland habitat with open sunny exposures as birthing rookeries; generally requires adjacent upland habitat with suitable rock crevices, mammal burrows, or old root channels for winter hibernation (J.R. MacGregor, pers. obs).

Key Habitat Habitat condition is FAIR overall, but ranges from GOOD in some sections of the Jackson Purchase to POOR in many parts of the Western Coal Field.

Following Key Habitats (good):

1. Daviess County
2. Hickman County
3. Hopkins County

CLASS REPTILIA

Western Cottonmouth ***Agkistrodon piscivorus leucostoma***

Guilds Emergent and shrub-dominated wetlands, forested wetland, standing water.

Statewide Map WesternCottonmouth.pdf

Conservation Issues

Aquatic habitat degradation

2E Stream channelization/ditching

2H Wetland loss/drainage/alteration . Loss of wetland connectivity, wetland drainage/conversion and surface mining in wetlands.

Biological/ consumptive uses

5F Low population densities. Becoming rare/local.

5H Isolated populations (low gene flow)

5I Commercial collecting for pet trade (overharvest)

5Q Declining prey base. Reduction of amphibian prey base.

Miscellaneous Mortality Factors

6A Traffic/road kills

6F Wanton shooting/killing and unregulated take. Shooting (mostly from bridges) and wanton killing.

Terrestrial habitat degradation

3A Row-crop agriculture (conversion to, annual reuse of fields, etc)

3F Urban/residential development

3K Surface mining. Surface mining water quality and mining in wetlands as well as causing fragmentation.

3R Habitat and/or Population Fragmentation. Loss of wetland connectivity and surface mining causing habitat fragmentation.

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Western Mud Snake ***Farancia abacura reinwardtii***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	S	G5T5	S3	G5	S3

G-Trend Unknown

G-Trend Comment Gulf Coast drainage from Alabama to Texas, northward in lowland habitats to western Kentucky, southwestern Indiana, southern Illinois, and southeastern Missouri (Conant and Collins 1991). Known from about 12 Kentucky counties, mostly in the Jackson Purchase region but also from a few isolated areas in the Western Coal Field (possibly extirpated there) (Kentucky Herpetology Database 2004, Kentucky State Nature Preserves Commission Database 2004).

S-Trend Decreasing

S-Trend Comment Recent (1984-2004) records exist from 7 counties in the Jackson Purchase region of western Kentucky (Ballard, Carlisle, Fulton, Graves, Hickman, Marshall, and McCracken counties); the most recent dates for the 5 more eastern counties date back to the early 1970's and before. There may still be a few mud snakes in the swamps near the Ohio and Tennessee Rivers in Livingston County and in the Tradewater River drainage in Caldwell and Hopkins counties.

Habitat / Usually found in sloughs, sluggish streams, bayous, oxbows, and other slow-

Life History moving or standing water habitats; prefers areas that are at least partly wooded; prefers clear water areas with some emergent or aquatic vegetation and mud bottoms, usually with large amounts of woody debris in and near the water (Wright and Wright 1957, Ernst and Ernst 2003, J.R. MacGregor).

Key Habitat Habitat condition is only FAIR in many areas, but GOOD habitat remains in isolated locations in the Jackson Purchase region (J.R. MacGregor, pers. obs.).

Following Key Habitats (good):

1. Fulton County
2. Ballard County
3. Hickman County
4. Marshall County
5. Graves County

Guilds Emergent and shrub-dominated wetlands, forested wetland, standing water.

CLASS REPTILIA

Western Mud Snake ***Farancia abacura reinwardtii***

Statewide WesternMudSnake.pdf

Map

Conservation Issues

Aquatic habitat degradation

2E Stream channelization/ditching

2H Wetland loss/drainage/alteration . Loss of wetland connectivity, wetland drainage/conversion, surface mining in wetlands.

Biological/ consumptive uses

5F Low population densities. Becoming rare/local.

5H Isolated populations (low gene flow)

5Q Declining prey base. Reduction of amphibian prey base.

Miscellaneous Mortality Factors

6A Traffic/road kills

Terrestrial habitat degradation

3A Row-crop agriculture (conversion to, annual reuse of fields, etc)

3F Urban/residential development

3K Surface mining. Surface mining in wetlands, fragmentation, water quality.

3R Habitat and/or Population Fragmentation. Surface mining fragmentation, loss of wetland connectivity.

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Western Pygmy Rattlesnake ***Sistrurus miliarius streckeri***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	T	G5T5	S2	G5	S2

G-Trend Unknown

G-Trend Comment The range of the western pigmy rattlesnake is in the south-central U.S. and includes portions of Texas, Oklahoma, Missouri, Arkansas, Louisiana, Michigan, and a northward extension into western Tennessee and Kentucky (Conant and Collins 1991). In Kentucky, this rare species has been confirmed only from Land Between The Lakes National Recreation Area (Trigg County) and southeastern Calloway County; it was also reported from Lyon County in the 1980's but this record has since been recanted by the purported observer and thus remains unverified (Kentucky Herpetology Database 2004, Kentucky State Nature Preserve Commission 2004).

S-Trend Decreasing

S-Trend Comment Population trends are unknown globally, but apparently declining here; the western pigmy rattlesnake has always been rare in our area and has had limited in range in Kentucky but there are very few recent records. The species is known both historically and recently (1984-2004) from Calloway and Trigg counties (Kentucky State Nature Preserve Commission 2004; J.R. MacGregor

data; E. Zimmerer, pers. comm.).

Habitat / Life History Although most subspecies of the pigmy rattlesnakes occur in wet habitats, the western race has been recorded in relatively dry areas including open grassy prairie areas and various types of glades (Wright and Wright 1957, Anderson 1965) and is often found hiding among dead leaves and rubbish. In Kentucky, it has been found in rocky areas and barren shorelines with scattered grasses and/or weeds, in a large abandoned quarry with much bare ground, and (at night) crossing gravel roads bordering dry open fields (J.R. MacGregor data; Tom C. Fuller, pers. comm.; Ed Zimmerer, pers. comm.).

Key Habitat Habitat condition is POOR in Kentucky.

Following Key Habitats (good):

1. Calloway County

Guilds grassland/agricultural, savanna/ shrub-scrub.

Statewide Map WesternPygmyRattlesnake.pdf

CLASS REPTILIA

Western Pygmy Rattlesnake ***Sistrurus miliarius streckeri***

Conservation Issues

Biological/ consumptive uses

5F Low population densities. Always rare/local

(Wetland/semiaquatic/Swamps/Lowlands) or becoming rare/local.

5H Isolated populations (low gene flow)

Terrestrial habitat degradation

3F Urban/residential development

3Q Invasive/exotic plants (including fescue)

3R Habitat and/or Population Fragmentation. Loss of glade connectivity.

3S Fire suppression/fire regime management. Loss of fire in ecosystem.

3T Suppression of disturbance regimes. Reforestation of open rocky habitat.

3U Loss, lack and degradation of special and unique microhabitats

CLASS REPTILIA

Western Ribbon Snake ***Thamnophis proximus proximus***

Federal Status	Heritage Status	GRank	SRank	GRank (Simplified)	SRank (Simplified)
N	T	G5T5	S1S2	G5	S1

G-Trend Stable

G-Trend Comment West-central U.S., primarily west of the Mississippi River, from Texas, Louisiana, and Mississippi northward to Nebraska, Iowa, Wisconsin, and Illinois; isolated population bordering sections of Lake Michigan (Conant and Collins 1991). Recorded from only 2 locations in Kentucky; a well-established colony occurs in the vicinity of Reelfoot National Wildlife Refuge in Fulton County, and a single specimen has been found at Ballard Wildlife Management Area in Ballard County (Kentucky Herpetology Database 2004, Kentucky State Nature Preserves Commission Database 2004).

S-Trend Unknown

S-Trend Comment Population levels for this species are apparently stable rangewide and stable to unknown in Kentucky. Recent records for the western ribbon snake (1984-2004) are all from the Reelfoot Lake area in southwestern Fulton County; J.R. MacGregor, W. Bird, and P. Peak found 5 specimens at Long Point (Reelfoot NWR) in September 2004 (J.R. MacGregor data), and a number of "alive on road" and fresh "dead on road" individuals have been found nearby on State

Route 94 and State Route 1282 during the 2000's. The natural range of the western ribbon snake was likely never very extensive in this state; the eastern ribbon snake seems to replace it in suitable habitat to the north and east of Hickman in the Obion Creek and Bayou du Chien drainages. No attempt has been made to locate additional specimens at Ballard Wildlife Management Area.

Habitat / Life History

Like the Eastern ribbon snake, this species is usually associated with wetland habitats that harbor good populations of amphibians, mosquito fish (Gambusia), and/or topminnows (Fundulus). These snakes typically inhabit old fields, wet meadows and sunny openings with low herbaceous vegetation along the margins of sloughs, bayous, oxbows, and other slow-moving or standing water habitats. Some individuals may be present in fair numbers on grassy dikes and highway/railroad fill slopes bordered by shallow wetlands (J.R. MacGregor, pers. obs.).

Key Habitat

Habitat condition is only FAIR at best, although the habitat condition for the western ribbon snake is GOOD around the north end of Reelfoot Lake in Fulton County.

Following Key Habitats (good):

1. Fulton County

CLASS REPTILIA

Western Ribbon Snake ***Thamnophis proximus proximus***

Guilds Emergent and shrub-dominated wetlands, forested wetland, standing water.

Statewide Map WesternRibbonSnake.pdf

Conservation Issues

Aquatic habitat degradation

2E Stream channelization/ditching

2H Wetland loss/drainage/alteration . Loss of wetland connectivity and wetland drainage/conversion.

Biological/ consumptive uses

5F Low population densities. Always rare/local.

5H Isolated populations (low gene flow)

5Q Declining prey base. Reduction in amphibian prey base.

Miscellaneous Mortality Factors

6A Traffic/road kills

Terrestrial habitat degradation

3A Row-crop agriculture (conversion to, annual reuse of fields, etc)

3R Habitat and/or Population Fragmentation. Loss of wetland connectivity.

3U Loss, lack and degradation of special and unique microhabitats

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