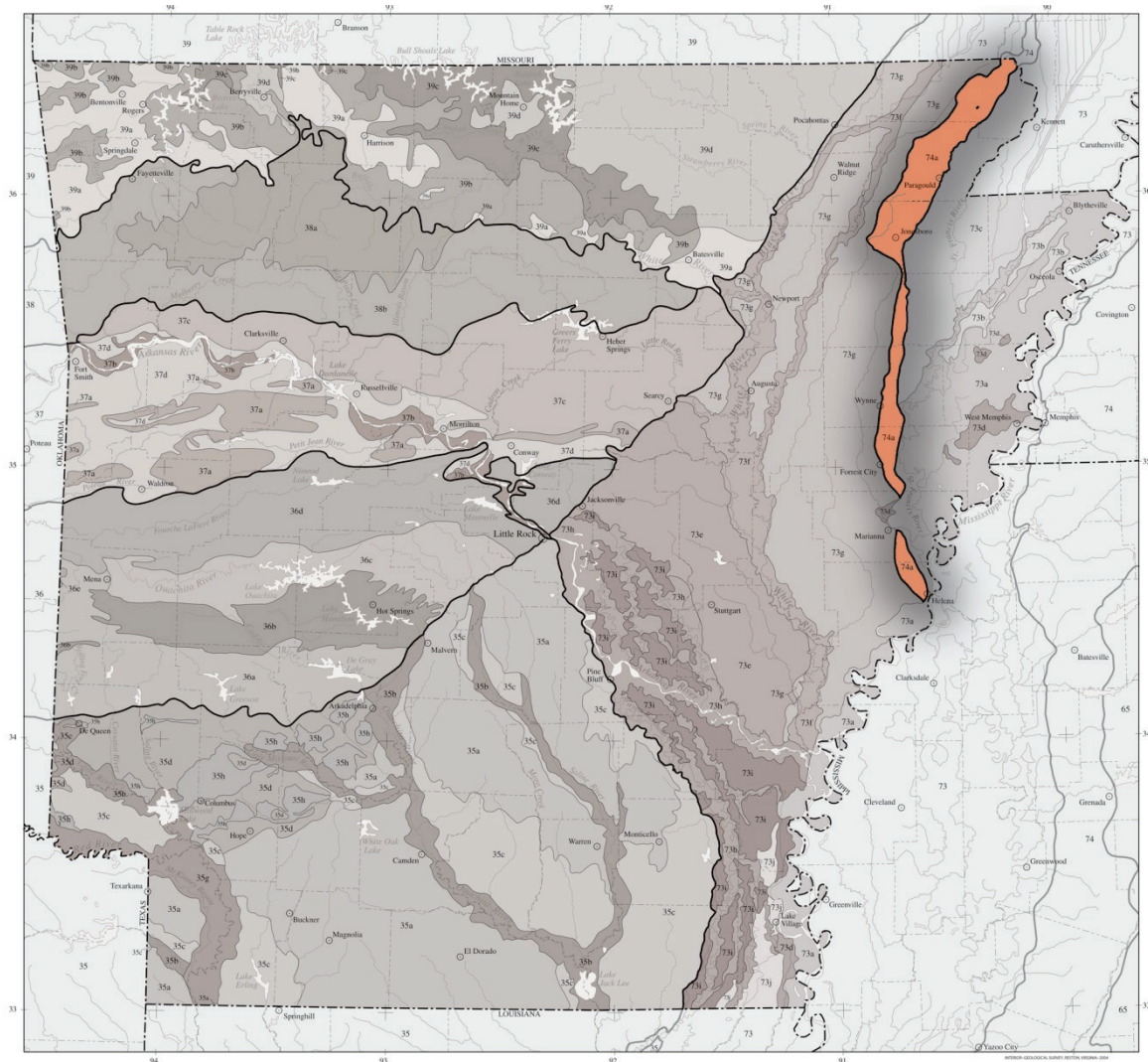


Mississippi Valley Loess Plains (Ecoregion 74)

Ecoregion 74 stretches from the Ohio River in western Kentucky all the way to Louisiana. It is characteristically veneered with windblown silt deposits (loess) and underlain by erosion-prone, unconsolidated coastal plain sediments; loess is thicker than in the Southeastern Plains (65). Western areas, including Arkansas, have hills, ridges and bluffs, but further east in Mississippi and Tennessee, the topography becomes flatter. Overall, irregular plains are common.

Ecoregion 74 is lithologically and physiographically distinct from the Ouachita Mountains (36), Boston Mountains (38), Ozark Highlands (39), Interior Plateau (71) and Interior River Valleys and Hills (72).

Figure 3.22. Mississippi Valley Loess Plains ecoregion.





Mississippi Valley Loess Plains - Crowley's Ridge

Potential natural vegetation is primarily oak–hickory forest or oak–hickory–pine forest and is unlike the southern floodplain forests of the Mississippi Alluvial Plain (73). Streams tend to have gentler gradients and more silty substrates than in the Southeastern Plains (65).

Crowley's Ridge

74a. Crowley's Ridge, the only portion of the Bluff Hills ecoregion in Arkansas, is a disjunct series of loess-capped hills surrounded by the lower, flatter Mississippi Alluvial Plain (73). Crowley's Ridge, with elevations of up to 500 feet, is of sufficient height to have trapped wind-blown silt during the Pleistocene Epoch. It was formed by the aggregation of loess and the subsequent erosion by streams.

The loess is subject to vertical sloughing when wet. Spring-fed streams and seep areas occur on the lower slopes and in basal areas where Tertiary sands and gravels, that were never removed by the Mississippi River, are exposed.

Soils are generally well-drained; they are generally more loamy than those found in the surrounding Northern Pleistocene Valley Trains (73b) and St. Francis Lowlands (73c).

Wooded land and pastureland are common; only limited cropland is found in Ecoregion 74a. Post oak–blackjack oak forest, southern red oak–white oak forest and beech–maple forest occur. Undisturbed ravine vegetation can be rich in meso-phytes, such as beech and sugar maple. Oaks still dominate most of these meso-phytic communities. The forests of the Bluff Hills (74a) are usually classified as oak–beech. They are related to the beech–maple cove forests of the Appalachian Mountains; like the Appalachian cove forests, tulip poplar dominates early successional communities, at least in the southern ridge. In Arkansas, tulip poplar is native only to the Bluff Hills (74a). Shortleaf pine grows on the sandier soils of the northern ridge (adapted from Woods and others 2004).

Mississippi Valley Loess Plains: Species of Greatest Conservation Need (SGCN)

Species of greatest conservation need (SGCN) in the Mississippi Valley Loess Plains are presented by taxa association (Table 3.32). A higher priority score indicates a greater need for actions to conserve the species. A ranked list of all SGCN associated with the ecoregion is presented in Table 3.33.

Table 3.32. SGCN by taxa association.

Taxa Association	Common Name	Scientific Name	Priority Score
Amphibian	Spotted Dusky Salamander	<i>Desmognathus conanti</i>	23
	Crawfish Frog	<i>Lithobates areolatus</i>	23
	Eastern Spadefoot	<i>Scaphiopus holbrookii</i>	19
	Mole Salamander	<i>Ambystoma talpoideum</i>	15
Bird	Henslow's Sparrow	<i>Ammodramus henslowii</i>	33
	Rusty Blackbird	<i>Euphagus carolinus</i>	29
	Bewick's Wren	<i>Thryomanes bewickii</i>	29
	Common Nighthawk	<i>Chordeiles minor</i>	24
	Migrant Loggerhead Shrike	<i>Lanius ludovicianus migrans</i>	24
	Yellow-crowned Night-Heron	<i>Nyctanassa violacea</i>	24
	American Woodcock	<i>Scolopax minor</i>	24
	Cerulean Warbler	<i>Setophaga cerulea</i>	24
	American Bittern	<i>Botaurus lentiginosus</i>	23
	Willow Flycatcher	<i>Empidonax traillii</i>	23
	Le Conte's Sparrow	<i>Ammodramus leconteii</i>	21
	Sedge Wren	<i>Cistothorus platensis</i>	21
	Sharp-shinned Hawk	<i>Accipiter striatus</i>	19
	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	19
	Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	19
	Dunlin	<i>Calidris alpina</i>	19
	Stilt Sandpiper	<i>Calidris himantopus</i>	19
	Chimney Swift	<i>Chaetura pelagica</i>	19
	Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	19
	Northern Bobwhite	<i>Colinus virginianus</i>	19
	Purple Finch	<i>Haemorhous purpureus</i>	19
	Wood Thrush	<i>Hylocichla mustelina</i>	19
	Least Bittern	<i>Ixobrychus exilis</i>	19
	Short-billed Dowitcher	<i>Limnodromus griseus</i>	19
	Swainson's Warbler	<i>Limnithlypis swainsonii</i>	19
	Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	19
	Bell's Vireo	<i>Vireo bellii</i>	19
	Trumpeter Swan	<i>Cygnus buccinator</i>	17
	American Kestrel	<i>Falco sparverius</i>	15

	American Golden-Plover	<i>Pluvialis dominica</i>	15
Fish	Goldstripe Darter	<i>Etheostoma parvipinne</i>	17
Insect	Giant Stag Beetle	<i>Lucanus elephus</i>	25
	Sandy Stream Tiger Beetle	<i>Cicindela macra</i>	17
	Cow Path Tiger Beetle	<i>Cicindela purpurea</i>	15
	Monarch	<i>Danaus plexippus</i>	15
	Bronze Copper	<i>Lycaena hyllus</i>	11
Mammal	Little Brown Bat	<i>Myotis lucifugus</i>	33
	Rafinesque's Big-Eared Bat	<i>Corynorhinus rafinesquii</i>	29
	Southeastern Bat	<i>Myotis austroriparius</i>	24
	Eastern Spotted Skunk	<i>Spilogale putorius</i>	21
	Eastern Harvest Mouse	<i>Reithrodontomys humulis</i>	19
	Southern Bog Lemming	<i>Synaptomys cooperi</i>	19
	American Badger	<i>Taxidea taxus</i>	16
	Long-tailed Weasel	<i>Mustela frenata</i>	15
	Western Harvest Mouse	<i>Reithrodontomys megalotis</i>	15
	Reptile	Midwest Worm Snake	<i>Carphophis amoenus</i>

Table 3.33. Species of greatest conservation need (SGCN) in the Mississippi Valley Loess Plains ranked by priority score. A higher priority score indicates a greater need for actions to conserve the species. Of the 377 SGCN, 50 occur in this ecoregion.

Priority Score	Common Name	Scientific Name	Taxa Association
33	Henslow's Sparrow	<i>Ammodramus henslowii</i>	Bird
33	Little Brown Bat	<i>Myotis lucifugus</i>	Mammal
29	Rafinesque's Big-Eared Bat	<i>Corynorhinus rafinesquii</i>	Mammal
29	Rusty Blackbird	<i>Euphagus carolinus</i>	Bird
29	Bewick's Wren	<i>Thryomanes bewickii</i>	Bird
25	Giant Stag Beetle	<i>Lucanus elephus</i>	Insect
24	Common Nighthawk	<i>Chordeiles minor</i>	Bird
24	Migrant Loggerhead Shrike	<i>Lanius ludovicianus miarans</i>	Bird
24	Southeastern Bat	<i>Myotis austroriparius</i>	Mammal
24	Yellow-crowned Night-Heron	<i>Nyctanassa violacea</i>	Bird
24	American Woodcock	<i>Scolopax minor</i>	Bird
24	Cerulean Warbler	<i>Setophaga cerulea</i>	Bird
23	American Bittern	<i>Botaurus lentianus</i>	Bird
23	Spotted Dusky Salamander	<i>Desmognathus conanti</i>	Amphibian
23	Willow Flycatcher	<i>Empidonax traillii</i>	Bird
23	Crawfish Frog	<i>Lithobates areolatus</i>	Amphibian
21	Le Conte's Sparrow	<i>Ammodramus leconteii</i>	Bird
21	Sedge Wren	<i>Cistothorus platensis</i>	Bird
21	Eastern Spotted Skunk	<i>Spilogale putorius</i>	Mammal
19	Sharp-shinned Hawk	<i>Accipiter striatus</i>	Bird
19	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	Bird
19	Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	Bird
19	Dunlin	<i>Calidris alpina</i>	Bird
19	Stilt Sandpiper	<i>Calidris himantopus</i>	Bird
19	Midwest Worm Snake	<i>Carphophis amoenus</i>	Reptile
19	Chimney Swift	<i>Chaetura pelagica</i>	Bird
19	Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Bird
19	Northern Bobwhite	<i>Colinus virginianus</i>	Bird
19	Purple Finch	<i>Haemorhous purpureus</i>	Bird
19	Wood Thrush	<i>Hylocichla ustulata</i>	Bird
19	Least Bittern	<i>Ixobrychus exilis</i>	Bird
19	Short-billed Dowitcher	<i>Limnodromus ariseus</i>	Bird
19	Swainson's Warbler	<i>Limnothlypis swainsonii</i>	Bird
19	Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	Bird
19	Eastern Harvest Mouse	<i>Reithrodontomys humulis</i>	Mammal
19	Eastern Spadefoot	<i>Scaphiopus holbrookii</i>	Amphibian
19	Southern Bog Lemming	<i>Synaptomys cooperi</i>	Mammal
19	Bell's Vireo	<i>Vireo bellii</i>	Bird
17	Sandy Stream Tiger Beetle	<i>Cicindela macra</i>	Insect
17	Trumpeter Swan	<i>Cyanus buccinator</i>	Bird
17	Goldstripe Darter	<i>Etheostoma parvipinne</i>	Fish
16	American Badger	<i>Taxidea taxus</i>	Mammal
15	Mole Salamander	<i>Ambystoma talpoideum</i>	Amphibian
15	Cow Path Tiger Beetle	<i>Cicindela purpurea</i>	Insect
15	Monarch	<i>Danaus plexippus</i>	Insect

15	American Kestrel	<i>Falco sparverius</i>	Bird
15	Long-tailed Weasel	<i>Mustela frenata</i>	Mammal
15	American Golden-Plover	<i>Pluvialis dominica</i>	Bird
15	Western Harvest Mouse	<i>Reithrodontomys megalotis</i>	Mammal
11	Bronze Copper	<i>Lycaena hyllus</i>	Insect

Habitats that occur in the Mississippi Valley Loess Plains

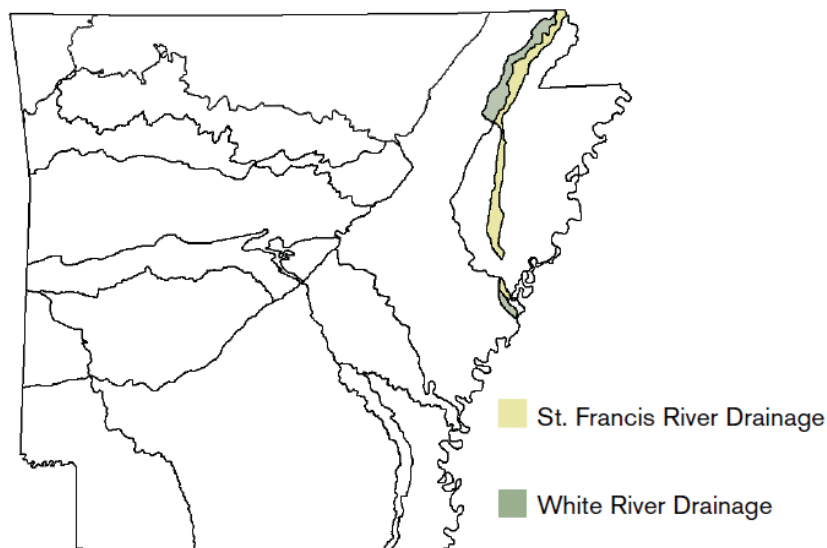
Of the 37 terrestrial habitats in Arkansas, 7 occur in the Mississippi Valley Loess Plains (Table 3.34). Of 18 ecobasins in Arkansas, three occur in the Mississippi Valley Loess Plains ecoregion (Figure 3.23). These associations are described in the Section 4. Terrestrial Habitats and Section 5. Aquatic Habitats.

Table 3.34. Terrestrial Habitats in the Mississippi River Loess Plains.

Habitat Name

Crop Land
Cultivated Forest
Crowley's Ridge Loess Slope Forest
Mud Flats
Pasture Land
Ponds, Lakes, and Water Holes
Urban/Suburban

Table 3.23. Ecobasin distribution in the Mississippi River Loess Plains.



Problems faced by Species of Greatest Conservation Need (SGCN)

Taxa association teams listed problems faced by SGCN individually in the Species Reports, pages 44-1113. A summary of the problems faced by SGCN in the Mississippi Valley Loess Plains is presented below. Each problem has a score which is a sum of all Species Priority Scores associated with species for which this problem was assigned. A higher score implies a higher quantity of SGCN and/or more greatly imperiled species associated with problems listed here.

Table 3.35. Problems faced by SGCN in the Mississippi River Valley Loess Plains.

Problem faced	Score
Agricultural practices	1026
Forestry activities	665
Urban development	334
Conversion of riparian forest	270
Fire suppression	257
Parasites/pathogens	161
Exotic species	109
Commercial/industrial development	103
Predation	97
Recreation	93
Water diversion	85
Resource extraction	84
Dam	78
Non-point source pollution	67
Grazing/Browsing	61
Confined animal operations	43
Road construction	43
Municipal/Industrial point source	38
Interspecific competition	29
Excessive groundwater withdrawal	21
Channel alteration	19
Management of/for certain species	17

Conservation actions needed in the Mississippi Valley Loess Plains

Descriptions of conservation actions linked to individual species on the list of SGCN are presented in the Species Reports, pages 44-1113. Below are categories of conservation actions recommended by the taxa association teams (Figure 3.24). An explanation of the categories follows in Table 3.36.

The score associated with the conservation action category is the sum of all priority scores associated with species for which a conservation action has been assigned, weighted by the importance of the conservation action category to the species. A higher score implies a higher quantity of SGCN and/or more greatly imperiled species would be affected by actions within this conservation action category.

These scores may be used as guides to directing the apportionment of funding toward conservation actions benefiting habitats and species of greatest conservation need.

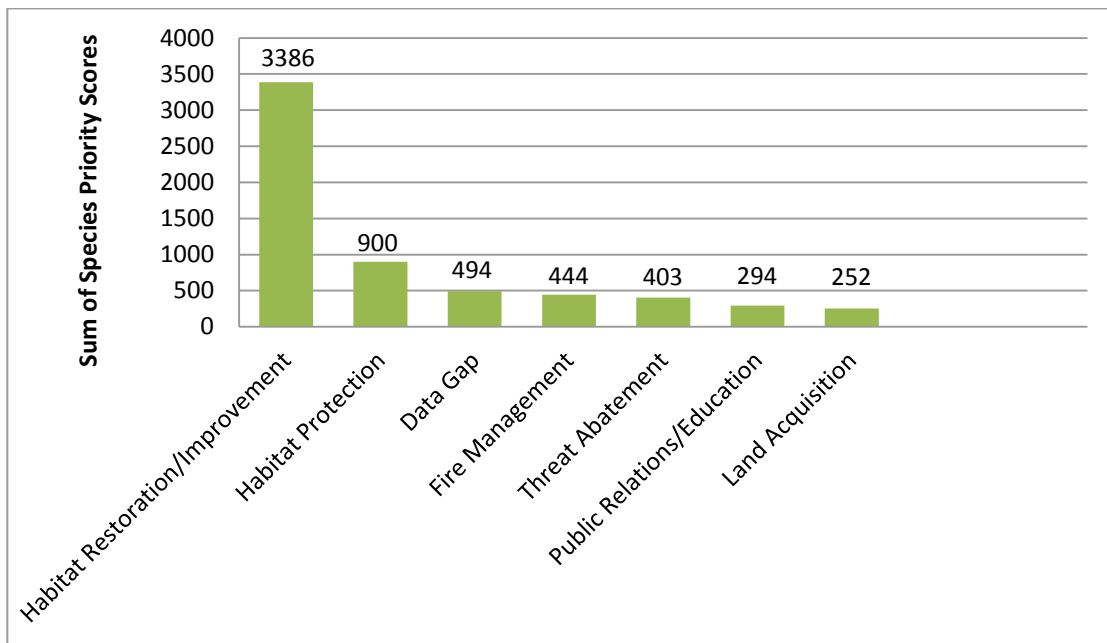


Figure 3.24. Conservation action categories recommended for the Mississippi Valley Loess Plains.