

ATTACHMENT SS2

REGION 2 SENSITIVE SPECIES EVALUATION FORM

Species: ***Apalone spinifera* (Linnaeus 1827) – spiny softshell**

Comments: Much of the recent literature is found under the name *Trionyx spiniferus*. There is continuing debate in the literature regarding the correct generic allocation (e.g., Webb 1990) for this turtle.

Although 6 subspecies of this widespread turtle are recognized in North America north of Mexico, only the western spiny softshell, *A. S. hartwegi*, occurs in R2.

Criteria	Rank	Rationale	Literature Citations
1 Distribution within R2	B	Widespread in eastern portions of R2 (KS; NE); reaching western limits of range in larger rivers and reservoirs of western portions of R2 (CO, WY).  Confidence in Rank <b>High</b>	<ul style="list-style-type: none"> <li>• Caldwell and Collins 1981</li> <li>• Conant and Collins 1998</li> <li>• Ernst et al. 1994</li> </ul>
2 Distribution outside R2	C	Wide distribution outside of R2; throughout Eastern North America.  Confidence in Rank <b>High</b>	<ul style="list-style-type: none"> <li>• Conant and Collins 1998</li> <li>• Ernst et al. 1994</li> </ul>
3 Dispersal Capability	B	Highly aquatic turtle with limited overland dispersal capabilities.  Confidence in Rank <b>High</b>	<ul style="list-style-type: none"> <li>• Ernst et al. 1994</li> </ul>
4 Abundance in R2	C	Common to abundant in suitable habitat.  Confidence in Rank <b>High</b>	<ul style="list-style-type: none"> <li>• Baxter and Stone 1980</li> <li>• Caldwell and Collins 1981</li> <li>• Collins 1982</li> <li>• Ernst et al. 1994</li> <li>• Hammerson 1999</li> <li>• Lynch 1985</li> </ul>
5 Population Trend in R2	B	Common to abundant in suitable habitat.  Confidence in Rank <b>High</b>	<ul style="list-style-type: none"> <li>• Baxter and Stone 1980</li> <li>• Caldwell and Collins 1981</li> <li>• Collins 1982</li> <li>• Ernst et al. 1994</li> <li>• Hammerson 1999</li> <li>• Lynch 1985</li> </ul>
6 Habitat Trend in R2	B	Habitat is riverine. Also inhabits marshy creeks, oxbow lakes, and large impoundments. These habitats are relatively stable in R2.  Confidence in Rank <b>Medium</b>	<ul style="list-style-type: none"> <li>• Ernst et al. 1994</li> </ul>

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Criteria	Rank	Rationale	Literature Citations
7 Habitat Vulnerability or Modification	D	Aquatic habitat is generally vulnerable and subject to pollution from a number of sources. However, these turtles generally occupy larger water bodies that are less subject to long-term modification OR the species is able to persist in highly environmentally disturbed areas.  Confidence in Rank <b>Medium</b>	<ul style="list-style-type: none"> <li>Hammerson 1999</li> </ul>
8 Life History and Demographics	C	Softshell turtles are primarily carnivorous, consuming a wide variety of animal protein.  Clutch size averages 12-18 (4-39) depending upon female size.  Predation rates on eggs and hatchlings high; low on adults.  Confidence in Rank <b>High</b>	<ul style="list-style-type: none"> <li>Ernst et al. 1994</li> </ul>
Initial Evaluator(s): Charles W. Painter, Endangered Species Program, New Mexico Department of Game and Fish, Santa Fe, New Mexico 87504			Date:

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National Forests in the Rocky Mountain Region where species is KNOWN (K) or LIKELY(L)<sup>1</sup> to occur:

<u>Colorado NF/NG</u>	<u>Known</u>	<u>Likely</u>	<u>Kansas NF/NG</u>	<u>Known</u>	<u>Likely</u>	<u>Nebraska NF/NG</u>	<u>Known</u>	<u>Likely</u>	<u>South Dakota NF/NG</u>	<u>Known</u>	<u>Likely</u>	<u>Wyoming NF/NG</u>	<u>Known</u>	<u>Likely</u>
Arapaho-Roosevelt NF	N	N	Cimmaron NG	N	Y	Samuel R. McKelvie NF	N	N	Black Hills NF	N	N	Shoshone NF	N	N
White River NF	N	N				Halsey NF	N	N	Buffalo Gap NG	N	N	Bighorn NF	N	Y
Routt NF	N	N				Nebraska NF	N	N	Ft. Pierre NG	N	N	Black Hills NF	N	N
Grand Mesa, Uncompahgre, Gunnison NF	N	N				Ogalala NG	N	N				Medicine Bow NF	N	N
San Juan NF	N	N										Thunder Basin NG	Y	Y
Rio Grande NF	N	N												
Pike-San Isabel NF	N	N												
Comanche NG	Y													

LITERATURE CITED

Applegarth, J.S. 1969. The variation, distribution, and taxonomy of the eastern fence lizard, *Sceloporus undulatus* Bosc in Latreille, in northeastern New Mexico. Unpubl. MS Thesis Univ. New Mexico, Albuquerque.

Ballinger, R.E. 2001. *unpubl. data*. Updated distribution maps of the amphibians and reptiles of Nebraska. Provided to C.W. Painter specifically for use in this USFS R2 Sensitive Species Evaluation Project.

Ballinger, R.E., J.W. Meeker, and M. Thies. 2000. A checklist and distribution maps of the amphibians and reptiles of South Dakota. *Trans. Nebraska Acad. Sci.* 26:29-46.

Bartlett, R.D and A. Tennant. 2000. Snakes of North America. Western Region. Gulf Publ. Co., Houston, Texas. xvi + 312 pp.

Baxter, G.T. and M.D. Stone. 1985. Amphibians and reptiles of Wyoming. 2nd Ed. Wyoming Game and Fish Department. vi + 137 pp.

Berger, L. et al. 1998. Chytridiomycosis causes amphibian mortality associated with population declines in the rain forests of Australia and Central America. *Proc. Nat'l. Acad. Sci. USA* No. 95. pp 9031-9036.

<sup>1</sup> Likely is defined as more likely to occur than not occur on the National Forest or Grassland. This generally can be thought of as having a 50% chance or greater of appearing on NFS lands.

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- Berger, L., R. Speare, and A. Hyatt. 1999. Chytrid fungi and amphibians declines: overview, implications and future directions. Pp. 23-33 in Declines and disappearances of Australian frogs. A. Campbell (ed.). Natural Heritage Trust, Canberra, Australia.
- Blaney, R.M. 1977. Systematics of the common kingsnake, *Lampropeltis getulus* (Linnaeus). Tulane Stud. Zool. Bot. 19(3-4):47-103.
- Caldwell, J.P. and J.T. Collins. 1981. Turtles in Kansas. AMS Publ., Lawrence, Kansas. x + 67 pp.
- Collins, J.T. 1982. Amphibians and reptiles of Kansas. 2nd Ed. Univ. Kansas Mus. Nat. Hist. Publ. Educ. Ser. 8:xiii + 356 pp.
- Collins, J.T. 1990. Standard common and current scientific names for North American amphibians and reptiles. 3rd Ed. Soc. Study Amphib. Rept. Herpetol. circular No. 19. iii + 41 pp.
- Collins, J.T. 2000. A survey of the amphibians, turtles, and reptiles of the eastern portion of the Kiowa National Grasslands of New Mexico (Union County) did the Rita Blanca National Grasslands of adjacent Oklahoma and Texas. Unpubl. Rept. submitted to USDA Forest Service, Monte Vista, Colorado. Submitted by JTC Enterprises, Lawrence, Kansas. 75 pp.
- Collins, J.T., R. Conant, J.E. Huheey, J.L. Knight, E.M. Rundquist, and H.M. Smith. 1982. Standard common and current scientific names for North American amphibians and reptiles. 2nd Ed. Soc. Study Amphib. Rept. Herpetol. Circular No. 12. iv + 28 pp.
- Corn, P.S. and R.B. Bury. 1989. Logging in western Oregon: responses of headwater habitats and stream amphibians. Forest Ecology and Management 29(1989):39-57.
- Conant, R. and J.T. Collins. 1998. A field guide to reptiles and amphibians: Eastern and central North America. 3rd Ed. expanded. Houghton Mifflin Co., Boston. xviii + 616 pp.
- Crother, B.I. (chair). 2000. Scientific and standard English names of amphibians and reptiles of North America north of Mexico, with comments regarding confidence in our understanding. Soc. Study Amphib. Rept. Herpetol. Circular No. 29. iii + 82 pp.
- Cundall, D. 1981. Cranial osteology of the colubrid snake *Opheodrys*. Copeia 1981(2):353-371.
- Degenhardt, W.G., C.W. Painter, and A.H. Price. 1996. Amphibians and reptiles of New Mexico. Univ. New Mexico Press. Albuquerque. xix + 431 pp. ,:
- Dixon, J.R. 1987. Amphibians and reptiles of Texas. Texas A&M Univ. Press, College Station. xii + 434 pp.

## ATTACHMENT SS2

- Ernst, C.H. and R. W. Barbour. 1989. Snakes of Eastern North America. George Mason Univ. Press, Fairfax, Virginia. 282 pp.
- Ernst, C.H., J.E. Lovich, and R.W. Barbour. 1994. Turtles of the United States and Canada. Smithsonian Inst. Press, Washington D.C. xxxviii + 578 pp.
- Fitch, H.S. 1975. A demographic study of the ringneck snake (*Diadophis punctatus*) in Kansas. Univ. Kansas Mus. Nat. Hist Misc. Pub. No. 62. 53 pp.
- Fitch, H.S. 1999. A Kansas snake community: composition and changes over 50 years. Krieger Publ. Co. Malabar, Florida. xi + 165 pp.
- Froom, B. 1982 (2eprinted 1983). Amphibians of Canada. McClelland and Stewart Limited, Toronto, Canada. 120 pp.
- Green, D.M. 1997. Perspectives on amphibian population declines: defining the problem and searching for answers. Pp. 291-308 in D.M. Green (ed.). Amphibians in decline: Canadian studies of a global problem. Soc. Study Amphib. Rept. Herpetol. Conservation No. 1. xiv + 338 pp.
- Grobman, A.B. 1941. A contribution to the knowledge of variation in *Opheodrys vernalis* (Harlan), with the description of a new subspecies. Misc. Pub. Mus. Zool. Univ. Michigan 50:1-38.
- Grobman, A.B. 1992. Metamerism in the snake *Opheodrys vernalis*, with a description of a new subspecies. J. Herpetol. 26(2):175-186.
- Hammerson, G.A. 2000. Amphibians and reptiles in Colorado. A Colorado field guide. 2nd Ed. xxvi + 484 pp.
- Hammerson, G.A, and H.M. Smith. 1991. The correct spelling of the name for the short-horned lizard of North America. Bull. Maryland Herpetol. Soc. 27(3):121-127.
- Hudson, G.E. 1942 (reprint 1972). The amphibians and reptiles of Nebraska. Nebraska Conservation Bull. No. 24. Univ. Nebraska. 146 pp.
- Jacobs. L. 1991. Waste of the west: Public lands ranching. Privately published and distributed by L. Jacobs, P.O. Box 5784, Tucson, AZ. 602 pp.
- Korky, J.K. 1999. *Bufo punctatus*. SSAR Cat. Amer. Amphib. Rept. 689.1-689.5.
- Livo, L.J. 1998 (revised). Identification guide to montane amphibians of the Southern Rocky Mountains. 25 pp.

## ATTACHMENT SS2

- Lynch, J.D. 1985. Annotated checklist of the amphibians and reptiles of Nebraska. Trans. Nebraska Acad. Sci. 13:33-57.
- Mackessy, S.P. A survey of the herpetofauna of the Comanche National Grasslands in southeastern Colorado. Unpubl. Rept submitted to USDA Forest Service. Submitted by Dept. Biological Sciences, Univ. Northern Colorado. Greeley. 62 pp + A-DD.
- Malmos, K., R. Reed, and B. Starret. 1995. Hybridization between *Bufo woodhousii* and *Bufo punctatus* from the Grand Canyon region of Arizona. Great Basin Nat. 55:368-371.
- Maslin, T.P. 1956. *Sceloporus undulatus erythrocheilus* spp. nov. (Reptilia: Iguanidae), from Colorado. Herpetologica 12(4):291-294.
- McCoy, C.J. H.M. Smith, and J.A. Tihen. 1967. Natural hybrid toads, *Bufo punctatus* x *Bufo woodhousei*, from Colorado. Southwest. Nat. 12:45-54.
- Mittermeier, R.A. and J.L. Carr. 1994. Conservation of reptiles and amphibians: a global perspective. Pp. 27-35 in Murphy et al. (eds.). Captive management and conservation of amphibians and reptiles. Soc. Study Amphib. Rept. Contributions to Herpetol. Vol. 11. Ithaca, New York.
- NMDGF. 2000. Threatened and endangered species of New Mexico. Biennial review and recommendations. New Mexico Dept. Game and Fish, Santa Fe, New Mexico. ix + 116 pp.
- Oldham, J.C. and H.M. Smith. 1991. The generic status of the smooth green snake, *Opheodrys vernalis*. Bull. Maryland Herpetol. Soc. 27(4):201-215.
- Orange, D.I., B. Ridde, and D.C. Nickle. 1999. Phylogeography of a wide-ranging desert lizard, *Gambelia wislizenii* (Crotaphytidae). Copeia 1999(2):267-273.
- Pace, A.E. 1974. Systematic and biological studies of the leopard frogs (*Rana pipiens* complex) of the United States. Misc. Publ. Mus Zool. Univ. Michigan NO. 148. 140 pp.
- Painter, C.W. and A.R. Wilds. 2000. 1999 Kiowa National Grasslands herpetological survey, Mills Canyon Section, Mora County and Harding County, New Mexico. Unpubl. Rept. submitted to USDA Forest Service, Monte Vista, Colorado. Submitted by NM Dept. Game and Fish, Santa Fe . 50 pp + 6 appendices.
- Parker, W.S. and E.R. Pianka. 1976. Ecological observations on the leopard lizard (*Crotaphytus wislizeni*) in different parts of its range. Herpetologica 32(1):95-114.

## ATTACHMENT SS2

- Petranka, J.W. 1998. Salamanders of the United States and Canada. Smithsonian Inst. Press, Washington, D.C. xvi + 587 pp.
- Platt, D.R., J.T. Collins, and R.E. Ashton. 1974. Rare, endangered and extirpated species in Kansas. II. Amphibians and reptiles. Trans. Kansas Acad. Sci. 76(3): 185-192.
- Reeve, W.L. 1952: taxonomy and distribution of the homed lizards genus *Phrynosoma*. Univ. Kansas Sci. Bull. 34(Pt. 2, 14):817-960.
- Resetar, A.R. 1998. Locating historical information on amphibian populations. Pp. 379-384 in Status and conservation of midwestern amphibians. M. Lannoo (ed.). Univ. Iowa Press, Iowa City. 507 pp.
- Reynolds, T.D. 1979. Response of reptile populations to different land management practices on the Idaho National Engineering Laboratory site. Great Basin Nat. 39:255-262.
- Rossman, D.A. 1963. The colubrid snake genus *Thamnophis*: A revision of the *sauritus* group. Bull. Florida State Mus. 7(3):99-178.
- Rossman, D.A. 1970. *Thamnophis proximus* (Say) Western ribbon snake. Soc. Study Amphib. Rept. Cat. Amer. Amphib. Rept. 98.1-98.3.
- Rossman, D.A., N:B. Ford, and R.A. Seigel. 1996. The garter snakes. Evolution and ecology. Univ. Oklahoma Press, Norman. xx + 332 pp.
- Russell, A.P. and A.M. Bauer. 1993. The amphibians and reptiles of Alberta. Univ. Alberta Press, Edmonton, Alberta, Canada. x + 264 pp.
- Seburn, C.N.L., D.C. Seburn, and C.A. Paszkowski. 1998. Northern leopard frog (*Rana pipiens*) dispersal in relation to habitat. Pp. 64-72 in D.M. Green (ed.). Amphibians in decline: Canadian studies of a global problem. Soc. Study Amphib. Rept. Herpetol. Conservation No. 1. xiv + 338 pp.
- Stebbins, R.C. 1985. A field guide to western reptiles and amphibians. 2<sup>nd</sup> edition, revised. Houghton Mifflin Co., Boston. 336 pp.
- Stebbins, R.C. and N.W. Cohen. 1995. A natural history of amphibians. Princeton Univ. Press. Princeton, New Jersey. xvi + 316 p.
- Smith, H.M., E.D. Bell, J.S. Applegarth, and D. Chiszar. 1992. Adaptive convergence in the lizard superspecies *Sceloporus undulatus*. Bull. Maryland Herpetol. Soc. 28(4): 123-149.
- Smith, H.M., D. Chiszar, and F. Van Breulelen. 1999. The challenge of the plateau and prairie lizards (*Sceloporus undulatus*) of New Mexico. Bull. Maryland Herpetol. Soc. 35(4):143-151.

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- Stuart, J.N. and C.W. Painter. 1993. Notes on hibernation of the smooth green snake, *Ophedrys vernalis*, in New Mexico. Bull. Maryland Herpetol. Soc. 29(3): 140-142.
- Tanner, W.W. and J.E. Krogh. 1973. Ecology of the leopard lizard, *Crotaphytus wislizeni* at the Nevada Test Site, Nye County, Nevada. Herpetologica 30(1):63-72.
- Tennant, A and R.D. Bartlett. 2000. Snakes of North America. Eastern and Central Regions. Gulf Publ. Co., Houston, Texas. xxv + 588 pp.
- Wasserman, A.O.:1970. *Scaphiopus couchii*. Cat. Amer. Amphib. Rept.:217.1-217.4.
- Weller, W.F. and D.M. Green. 1997. Checklist and current status of Canadian amphibians. Pp. 309-328 in D.M. Green (ed.). Amphibians in decline: Canadian studies of a global problem. Soc. Study Amphib. Rept. Herpetol. Conservation No. 1. xiv + 338 pp.
- Werler, J.E. and J.R. Dixon. 2000. Texas snakes. Identification, distribution, and natural history. Univ. Texas Press, Austin. xv + 437 pp.
- Wheeler, G.C. and J. Wheeler. 1966. The amphibians and reptiles of North Dakota. Univ. North Dakota Press, Grand Forks. vii + 104 pp.
- Worthington, R.D. 1973. Remarks on the distribution of the smooth green snake, *Ophedrys vernalis blanchardi* Grobman in Texas. Southwest. Nat. 18(3):344-346.
- Zamudio, K.R., K.B. Jones, and R.H. Ward. 1997. Molecular systematics of short-horned lizards: Biogeography and taxonomy of a widespread species complex. Systematic Biology 46:284-305.