The IUCN Red List of Threatened Species™
ISSN 2307-8235 (online)
IUCN 2008: T172024A1339018
Scope: Global
Language: English

Phrynops williamsi, Williams' Side-necked Turtle

Assessment by: Rhodin, A.G.J., Bressan, R.F., Buskirk, J.R., Cabrera, M.R., Carreira, S., Estrades, A., Mittermeier, R.A., Vinke, S. & Vinke, T.

View on www.iucnredlist.org

Citation: Rhodin, A.G.J., Bressan, R.F., Buskirk, J.R., Cabrera, M.R., Carreira, S., Estrades, A., Mittermeier, R.A., Vinke, S. & Vinke, T. 2018. *Phrynops williamsi*. The IUCN Red List of Threatened Species 2018: e.T172024A1339018. http://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T172024A1339018.en

Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Reptilia	Testudines	Chelidae

Taxon Name: *Phrynops williamsi* Rhodin & Mittermeier, 1983

Common Name(s):

- English: Williams' Side-necked Turtle
- Spanish: Tortuga de Arroyo, Tortuga de Herradura

Taxonomic Source(s):

TTWG (Turtle Taxonomy Working Group: Rhodin, A.G.J., Iverson, J.B., Bour, R. Fritz, U., Georges, A., Shaffer, H.B. and van Dijk, P.P.). 2017. Turtles of the World: Annotated Checklist and Atlas of Taxonomy, Synonymy, Distribution, and Conservation Status (8th Ed.). In: Rhodin, A.G.J., Iverson, J.B., van Dijk, P.P., Saumure, R.A., Buhlmann, K.A., Pritchard, P.C.H., and Mittermeier, R.A. (eds), *Conservation Biology of Freshwater Turtles and Tortoises: A Compilation Project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group*, pp. 1-292. Chelonian Research Monographs.

Assessment Information

Red List Category & Criteria: Vulnerable A4cd ver 3.1

Year Published: 2018

Date Assessed: February 19, 2018

Justification:

Phrynops williamsi has a limited and disjunct distribution in southern Brazil and northern Uruguay, with marginal distribution in southeastern Paraguay and northeastern Argentina. It has been regionally assessed as Endangered in Uruguay (Carreira *et al.* 2007, Canavero *et al*. 2010, Carreira and Maneyro 2013), Endangered in Paraguay at a Red Listing workshop in 2017 (Bauer *et al.* unpubl. data), Vulnerable in Argentina (Prado *et al*. 2012), Vulnerable in Paraguay (Motte *et al*. 2009, Cacciali *et al*. 2016), Vulnerable in the Brazilian states of Paraná (Bérnils *et al.* 2004) and Santa Catarina (CONSEMA 2011), and Near Threatened in Uruguay (Carreira and Maneyro 2015) and in the Brazilian state of Rio Grande do Sul (FZB 2014). The species was previously assessed by the IUCN Tortoise and Freshwater Turtle Specialist Group as Least Concern in 1996, but reassessed as globally Vulnerable or possibly Endangered at a Red Listing workshop in 2012 (Vinke and van Dijk, unpubl. data). The species is a lotic habitat specialist, preferring shallow rocky streams with rapids and small rivers and in general does not occur in lentic stillwater habitats such as lakes, large slow-moving rivers, or reservoirs. It is threatened by the construction of multiple large hydroelectric dams, notably in Brazil, with creation of reservoirs and impoundments in the watershed basins it inhabits (Kunz *et al*. 2018). The species is fairly inconspicuous and somewhat uncommon, and many subpopulations are small and isolated; as such, the destruction and degradation of its limited lotic habitat by dams, reservoirs, and other perturbations, including deforestation, exploitation for the pet trade (notably in Uruguay, less so in Brazil), and by-catch mortality from subsistence fishing and trapping, threatens the species under criterion A4cd, and we assess the

http://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T172024A1339018.en

species as Vulnerable VU A4cd, with an estimated *ca* 30% decline over three turtle generations.

Geographic Range

Range Description:

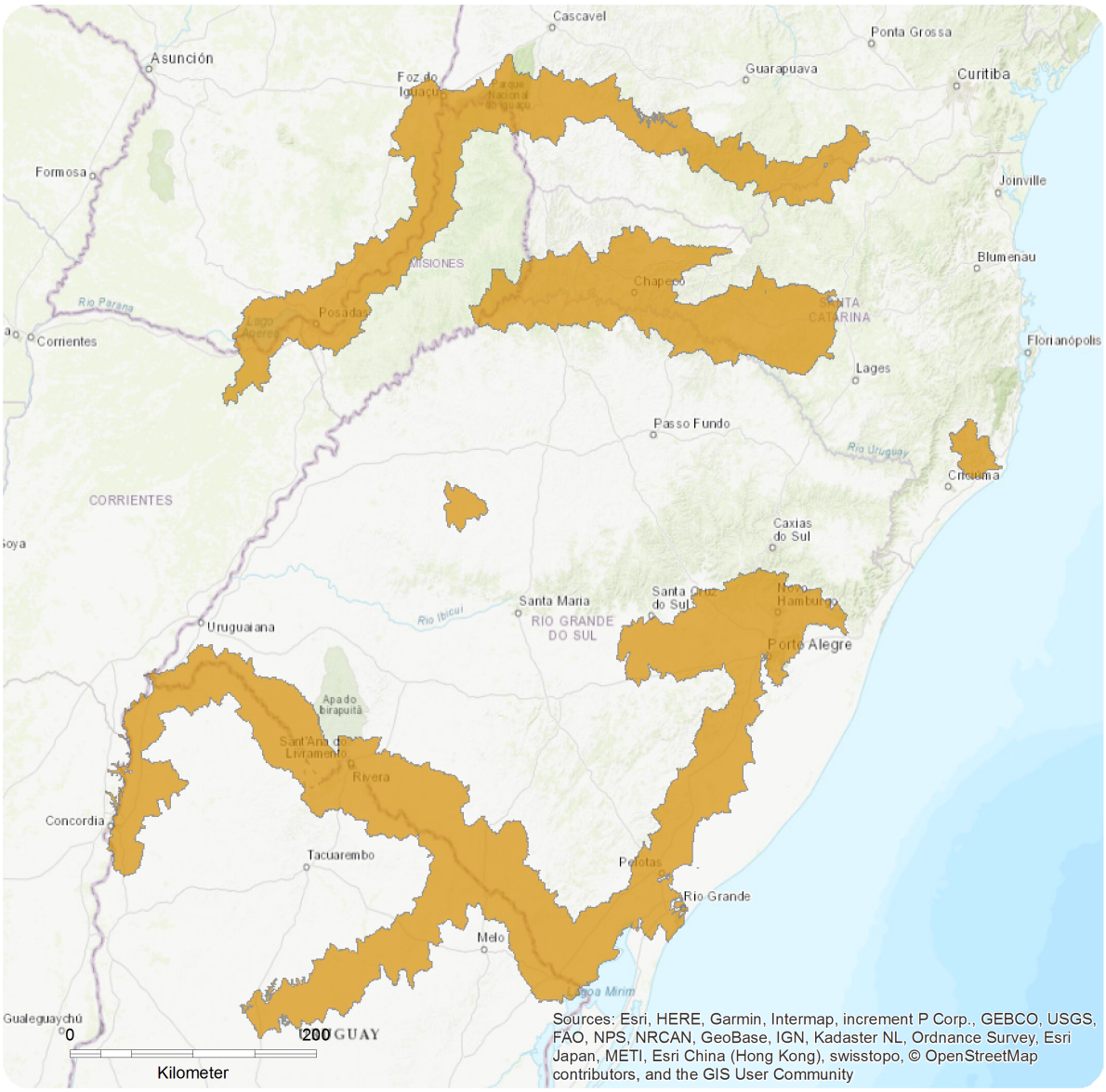
Phrynops williamsi occurs disjunctly primarily in southern Brazil (Paraná, Santa Catarina, and Rio Grande do Sul) and northern Uruguay, with marginal distributions in extreme northeastern Argentina (Corrientes and Misiones) and extreme southeastern Paraguay (Rhodin and Mittermeier 1983, Waller and Chebez 1987, Rhodin *et al*. 1988, Buskirk 1990, Cabrera 1998, Carreira *et al*. 2005, Borteiro *et al.* 2015, Cacciali *et al*. 2016, TTWG 2017, Kunz *et al.* 2018). It occurs in the upper Rio Paraná and Rio Uruguay watershed basins as well as in some of the coastal watersheds of southeastern Brazil and northeastern Uruguay. The species has been recorded from the eastern watershed of the lower Rio Uruguay in northwestern Uruguay, but not from the western watershed in eastern Entre Rios, Argentina, where it might possibly occur.

Country Occurrence:

Native: Argentina (Corrientes, Misiones); Brazil (Paraná, Rio Grande do Sul, Santa Catarina); Paraguay; Uruguay

Distribution Map

Phrynops williamsi

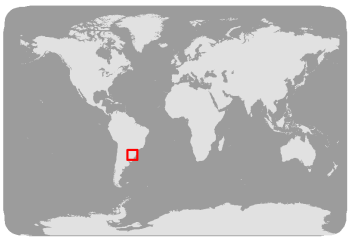


Range

Extant (resident)

Compiled by:

IUCN (International Union for Conservation of Nature)



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.

http://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T172024A1339018.en

Population

Phrynops williamsi is relatively inconspicuous and somewhat uncommon and many subpopulations tend to be small and isolated. Subpopulations are being adversely affected by the construction of dams and the creation of artificial reservoirs and impoundments in which the species does not survive, as well as habitat loss from deforestation.

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

Phrynops williamsi inhabits lotic moving water habitats, notably shallow rocky streams with rapids, and smaller rivers, and in general does not inhabit large lentic deep stillwater habitats such as reservoirs or impoundments (Rhodin and Mittermeier 1983, Buskirk 1989, Kunz *et al*. 2018). The species often basks on exposed rocks in its riparian habitat, but not on sandbanks. The largest male recorded had a carapace length (CL) of 355 mm (Cabrera 1998), the largest female had 330 mm CL; hatchlings are about 35 mm CL. The smallest recorded male (with large tail) was 141 mm CL. Diet in the wild is unknown, but *P. williamsi* has a robust skull with relatively wide maxillary triturating surfaces which suggest that the species feeds primarily on small snails, bivalves, aquatic arthropods, and possibly scavenges on dead fish. Sexual maturity of females is estimated as 10-12 years, with nesting apparently occurring in the spring and summer (August/September through February/March). Clutch size in a female measuring 252 mm CL was nine eggs with an average egg size of 33.3 by 27.0 mm (Rhodin and Mittermeier 1983). Generation time is estimated as 15-20 years.

Systems: Terrestrial, Freshwater

Use and Trade

There is moderate exploitation of *Phrynops williamsi* targeting the national and international pet trade, notably in Uruguay, but not apparently in Brazil, and significant by-catch mortality associated with subsistence fishing and trapping in some streams and rivers where it occurs.

Threats (see Appendix for additional information)

Phrynops williamsi is threatened by dams and the lentic reservoir habitats created by them. Since the species is a lotic habitat specialist that inhabits running waters in free flowing rivers with rocky bottoms, it does not thrive in lentic stillwater reservoirs and impoundments; significant mortality is sustained by individual turtles falling from high dams while attempting to leave reservoirs (Kunz *et al*. 2018). See the 'Use and Trade' section for additional threats.

Conservation Actions (see Appendix for additional information)

Phrynops williamsi apparently occurs in only a few protected areas. It has been recorded in Iguazu National Park in Misiones, Argentina, and Parque Nacional do Iguaçu in Paraná, Brazil, and may occur in Reserva de Biosfera Bioma Pampa and Valle del Lunarejo National Park in Uruguay as well as possibly in other smaller protected areas in the watersheds it inhabits. A subpopulation at Centurión, Rio Yaguaron, Cerro Largo, Uruguay, has local municipal protection by decree; this area is currently in the process of being considered for inclusion in the national network of protected areas (Sistema Nacional de Áreas Naturales Protegidas de Uruguay – SNAP), possibly in the Protected Landscape category. Surveys of

presence in protected areas is needed, as well as monitoring of trends in population levels and habitat loss and degradation, notably the loss of suitable riparian habitat through dam construction and reservoir creation. Genetic evaluation of potential lineage divergence and distinctiveness should be carried out on the various disjunct subpopulations of the species, especially as regards to those in the Rio Paraná basin vs. those in the Rio Uruguay drainage.

Credits

Assessor(s): Rhodin, A.G.J., Bressan, R.F., Buskirk, J.R., Cabrera, M.R., Carreira, S., Estrades, A., Mittermeier, R.A., Vinke, S. & Vinke, T.

Reviewer(s): van Dijk, P.P., Stanford, C.B. & Clavijo-Baquet, S.

Facilitators(s) and Compiler(s): van Dijk, P.P.

Bibliography

Bérnils, R.S., Moura-Leite, J.C. and Morato, S.A.A. 2004. Répteis. In: S.B. Mikich and R.S. Bérnils (eds), *Livro Vermelho da Fauna Ameaçada no Estado do Paraná*, pp. 501-535. Instituto Ambiental do Paraná., Curitiba, Brazil.

Borteiro, C., Kolenc, F. and Prigioni, C. 2015. A new noteworthy record of *Phrynops williamsi* Rhodin & Mittermeier (Testudines, Chelidae) in Uruguay. *Cuadernos de Herpetología* 29(1): 95-96.

Buskirk, J.R. 1989. Field observations on *Phrynops williamsi* and other Uruguayan chelonians. *Vivarium* 1(4): 8–11.

Buskirk, J.R. 1990. Geographic distribution: *Phrynops williamsi*. *Herpetological Review* 21(1): 26.

Cabrera, M.R. 1998. *Las Tortugas Continentales de Sudamérica Austral*. Privately printed, Córdoba, Argentina.

Cacciali, P., Scott, N.J., Ortíz, A.L.A., Fitzgerald, L.A. and Smith, P. 2016. The reptiles of Paraguay: Literature, distribution, and an annotated taxonomic checklist. *Special Publication of the Museum of Southwestern Biology* 11: 1-373.

Canavero, A., Carreira, S., Langone, J.A., Achaval, F., Borteiro, C., Camargo, A., Rosa, I., Estrades, A., Fallabrino, A., Kolenc, F., López-Mendilaharsu, F.F., Maneyro, R., Meneghel, M., Nuñes, D., Prigioni, C.M. and Ziegler, L. 2010. Conservation status assessment of the amphibians and reptiles of Uruguay. *Iheringia, Série Zoologia* 100: 5-12.

Carreira, S. and Maneyro, R. 2013. *Guía de Reptiles del Uruguay*. Ediciones de la Fuga, Montevideo.

Carreira, S. and Maneyro, R. 2015. *Lista Roja de los Anfibios y Reptiles del Uruguay. Una evaluación del estado de conservación de la herpetofauna de Uruguay sobre la base de los criterios de la Unión Internacional para la Conservación de la Naturaleza*. Dirección Nacional de Medio Ambiente, Montevideo, Uruguay.

Carreira, S., Estrades, A. and Achaval, F. 2007. Estado de conservacíon de la fauna de tortugas (Reptilia, Testudines) de Uruguay. *Boletin de Sociedad de Zoologia de Uruguay* 2(16): 20-25.

Carreira, S., Meneghel, M. and Achaval, F. 2005. *Reptiles de Uruguay*. DIRAC, Facultad de Ciencias, Universidad de la República, Montevideo.

CONSEMA. 2011. Resolução CONSEMA N° 002, de 06 de dezembro de 2011. Reconhece a Lista Oficial de Espécies da Fauna Ameaçadas de Extinção no Estado de Santa Catarina e dá outras providências. Diario Oficial de Santa Catarina, Florianopolis, Brazil.

FZB [Fundação Zoobotânica do Rio Grande do Sul]. 2014. Avaliação do Estado de Conservação de Espécies - Fauna - RS - 2014. Porto Alegre, FZB. Available at: https://secweb.procergs.com.br/livlof/?id_modulo=1&id_uf=23&ano=2012.

IUCN. 2018. The IUCN Red List of Threatened Species. Version 2018-2. Available at: www.iucnredlist.org. (Accessed: 15 November 2018).

Kunz, T.S., Ghizoni-Jr., I.R., Cherem, J.J., Bressan, R.F., Leonardi, S.B. and Zanotelli, J.C. 2018. New records, threats and conservation of *Phrynops williamsi* (Testudines: Chelidae) in southern Brazil. *Herpetology Notes* 11: 147–152.

Motte, M., Núñez, K., Cacciali, P., Brusquetti, P., Scott, N. and Aquino, A.L. 2009. Categorización del estado de conservación de los anfibios y reptiles de Paraguay. *Cuadernos de Herpetología* 23: 5-18.

Prado, W.S., Waller, T., Albareda, D.A., Cabrera, M.R., Etchepare, E., Giraudo, A.R., Carman, V.G., Prosdocimi, L. and Richard, E. 2012. Categorización del estado de conservación de las tortugas de la República Argentina. *Cuadernos de Herpetología* 26: 375-387.

Rhodin, A.G.J. and Mittermeier, R.A. 1983. Description of *Phrynops williamsi*, a new species of chelid turtle of the South American *P. geoffroanus* complex. In: A.G.J. Rhodin and K. Miyata (eds), *Advances in Herpetology and Evolutionary Biology. Essays in Honor of Ernest E. Williams*, pp. 58–73. Museum of Comparative Zoology, Cambridge, MA.

Rhodin, A.G.J., Mittermeier, R.A. and Buskirk, J.R. 1988. *Phrynops williamsi*. *Catalogue of American Amphibians and Reptiles* 439: 1–2.

TTWG (Turtle Taxonomy Working Group: Rhodin, A.G.J., Iverson, J.B., Bour, R. Fritz, U., Georges, A., Shaffer, H.B. and van Dijk, P.P.). 2017. Turtles of the World: Annotated Checklist and Atlas of Taxonomy, Synonymy, Distribution, and Conservation Status (8th Ed.). In: Rhodin, A.G.J., Iverson, J.B., van Dijk, P.P., Saumure, R.A., Buhlmann, K.A., Pritchard, P.C.H., and Mittermeier, R.A. (eds), *Conservation Biology of Freshwater Turtles and Tortoises: A Compilation Project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group*, pp. 1-292. Chelonian Research Monographs.

Waller, T. and Chebez, J.C. 1987. Notas sobre las tortugas de la Provincia de Misiones, Argentina e inclusión de *Phrynops williamsi* Rhodin y Mittermeier, 1983 (Testudines: Chelidae) en la herpetofauna argentina. *Historia Natural (Corrientes)* 7: 53-59.

Citation

Rhodin, A.G.J., Bressan, R.F., Buskirk, J.R., Cabrera, M.R., Carreira, S., Estrades, A., Mittermeier, R.A., Vinke, S. & Vinke, T. 2018. *Phrynops williamsi*. The IUCN Red List of Threatened Species 2018: e.T172024A1339018. http://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T172024A1339018.en

Disclaimer

External Resources

For Images and External Links to Additional Information, please see the Red List website.

Appendix

Habitats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Habitat	Season	Suitability	Major Importance?
5. Wetlands (inland) -> 5.1. Wetlands (inland) - Permanent Rivers/Streams/Creeks (includes waterfalls)	Resident	Suitable	Yes

Threats

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Threat	Timing	Scope	Severity	Impact Score
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.2. Intentional use: (large scale) [harvest]	Ongoing	Minority (50%)	Unknown	Unknown
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
5. Biological resource use -> 5.4. Fishing & harvesting aquatic resources -> 5.4.3. Unintentional effects: (subsistence/small scale) [harvest]	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	2. Species Stresses -> 2.1. Species mortality		
7. Natural system modifications -> 7.2. Dams & water management/use -> 7.2.10. Large dams	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		
7. Natural system modifications -> 7.2. Dams & water management/use -> 7.2.9. Small dams	Ongoing	Majority (50-90%)	Slow, significant declines	Medium impact: 6
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality 2. Species Stresses -> 2.2. Species disturbance		

Conservation Actions in Place

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Actions in Place
In-Place Land/Water Protection and Management
Conservation sites identified: Yes, over part of range
Occur in at least one PA: Yes

Conservation Actions Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Conservation Actions Needed
1. Land/water protection -> 1.1. Site/area protection
1. Land/water protection -> 1.2. Resource & habitat protection
4. Education & awareness -> 4.3. Awareness & communications
5. Law & policy -> 5.1. Legislation -> 5.1.2. National level

Research Needed

(http://www.iucnredlist.org/technical-documents/classification-schemes)

Research Needed
1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.3. Life history & ecology
1. Research -> 1.5. Threats
3. Monitoring -> 3.1. Population trends
3. Monitoring -> 3.4. Habitat trends

Additional Data Fields

Distribution
Lower elevation limit (m): 80
Upper elevation limit (m): 1000
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: Yes
Generation Length (years): 15-20

http://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T172024A1339018.en

The IUCN Red List Partnership

The IUCN Red List of Threatened Species™ is produced and managed by the IUCN Global Species Programme, the IUCN Species Survival Commission (SSC) and The IUCN Red List Partnership.

The IUCN Red List Partners are: Arizona State University; BirdLife International; Botanic Gardens Conservation International; Conservation International; NatureServe; Royal Botanic Gardens, Kew; Sapienza University of Rome; Texas A&M University; and Zoological Society of London.