

## Hyla meridionalis

**Taxonomic Authority:** Boettger, 1874

**Synonyms:**

**Region:** 10

**Common Names:**

Mediterranean Tree Frog	English
raganella mediterranea	Italian
Rainette Meridionale	French
Rainette Verte	French
Ranita Meridional	Spanish
Stripeless Tree Frog	English

**Order:** Anura

**Family:** Hylidae

**Notes on taxonomy:** Recent genetic analysis suggests that animals from the Anti Atlas of Morocco are more closely related to populations in Tunisia than to those in the rest of Morocco (Harris et al. 2002).

### General Information

**Biome**

Terrestrial

Freshwater

Marine

**Geographic Range of species:**

The natural distribution of this species is in the western Mediterranean. It is present in southern France, Monaco, coastal northwestern Italy (Liguria and southern Piedmont), Spain, Portugal, and in northern Africa (Morocco, northern Algeria, and northern Tunisia). In the drier parts of its range (for example in parts of north Africa and the Iberia) its distribution is fragmented due to limited available habitat, and it has a small Area of Occupancy within its wider Extent of Occurrence. The species is also present on the Canary Islands (Spain) and Madeira (Portugal) (it was probably introduced in antiquity on these islands, but this has not yet been genetically determined). It is introduced on Menorca (Spain). The distribution in Algeria and Tunisia is poorly known but several authors have mentioned that the species ranges south of the Tell Atlas (D. Donaire-Barraso, pers. comm.). It is generally found at low to mid elevations from sea level, rarely up to 2,650m asl (Morocco).

**Conservation Measures:**

The species is listed on Appendix II of the Berne Convention and on Annex IV of the EU Natural Habitats Directive. It is recorded in a number of national and sub-national Red Data Books and Lists and is protected in parts of its range by national and sub-national legislation. The species occurs in many European and North African protected areas.

**Habitat and Ecology Information:**

This species may be found in trees, shrubs, orchards, vineyards, and grasses generally near to freshwater habitats; the species can occur at high densities within suitable vegetation. Breeding and larval development take place in ponds, springs, irrigation ditches, temporary pools, flooded meadows, lagoons, cattle pools, wells and even swimming pools. It is sympatric in some areas with *Hyla arborea* (and produces infertile hybrids).

**Threats:**

The species is locally threatened by terrestrial habitat loss (intensification of agriculture; infrastructure development), aquatic pollution, (agriculture; mosquito control) and loss of breeding sites (eg. drinking troughs). The introduction of predatory Louisiana Crayfish (*Procamabrus clarkii*), and fishes (such as *Gambusia holbrooki*) to breeding sites is a serious threat to this species. The species appears to show a greater resilience to eutrophication than many other species, possibly as the eutrophic waters promote the growth of reed mace and other favourable vegetation.

**Species population information:**

Generally, it is common across its range. Populations in southeastern Spain and isolated populations in the Basque country, Spain, are declining mostly through loss of breeding habitats. It is locally threatened in Italy.

<u>Country Distribution</u>	Native - Presence Confirmed	Native - Presence Possible	Extinct	Reintroduced	Introduced	Vagrant
Algeria	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
France	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gibraltar	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Italy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Monaco	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Morocco	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Portugal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spain	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Tunisia	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<u>FAO Marine Habitats</u>	Native - Presence Confirmed	Native - Presence Possible	Extinct	Reintroduced	Introduced
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## Major Lakes

## Major Rivers

<u>Upper Level Habitat Preferences</u>		Score	<u>Lower Level Habitat Preferences</u>		Score
1.4	Forest - Temperate	1	Cold Grassland	1	
3.4	Shrubland - Temperate	1	Cool Crops and Towns	2	
3.8	Shrubland - Mediterranean-type Shrubby Vegetation	1	Evergreen Broadleaf Forests	2	
4.4	Grassland - Temperate	1	Forest and Field	1	
5.1	Wetlands (inland) - Permanent Rivers/Streams/Creeks (includes waterfalls)	1	Low Sparse Grassland	1	
5.2	Wetlands (inland) - Seasonal/Intermittent/Irregular Rivers/Streams/Creeks	1	Mediterranean Scrub	1	
5.7	Wetlands (inland) - Permanent Freshwater Marshes/Pools (under 8ha)	1	Mixed Forest	1	
5.8	Wetlands (inland) - Seasonal/Intermittent Freshwater Marshes/Pools (under 8ha)	1	Semi Desert Shrubs	2	
8.2	Desert - Temperate	2	Woody Savanna	2	

## Major threats

Code	Description of threat	Past	Present	Future
1	Habitat Loss/Degradation (human induced)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.1	Agriculture	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.1.1	Crops	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.1.1.3	Agro-industry farming	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.1.5	Abandonment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.4	Infrastructure development	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.4.2	Human settlement	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.4.3	Tourism/recreation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	Invasive alien species (directly affecting the species)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2.2	Predators	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	Pollution (affecting habitat and/or species)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6.3	Water pollution	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6.3.1	Agriculture	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## Conservation Measures

Code	Conservation measures	In place	Needed
1	Policy-based actions	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.2	Legislation	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.2.1	Development	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.2.1.1	International level	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.2.1.2	National level	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.2.2	Implementation	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.2.2.1	International level	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.2.2.2	National level	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Research actions	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.2	Population numbers and range	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.4	Habitat status	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.5	Threats	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.9	Trends/Monitoring	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Habitat and site-based actions	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4.1	Maintenance/Conservation	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.2	Restoration	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.4	Protected areas	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4.4.2	Establishment	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4.4.3	Management	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## Utilisation of Species

Purpose/Type of Use	Subsistence	National	International	Other purpose:
Primary forms removed from the wild	100%	>75%	51-75%	26-50% <25%
Source of specimens in commercial trade	100%	>75%	51-75%	26-50% <25%

Trend in wild offtake/harvest in relation to total wild population numbers over last five years:

Trend in offtake/harvest produced through domestication/cultivation over last five years:

CITES: Not listed

## Red Listing

Red List Assessment: Least Concern (LC)  Possibly Extinct

Red List Criteria:

Rationale for the Red List Assessment: Listed as Least Concern in view of its wide distribution, tolerance of a broad range of habitats, presumed large population, and because it is unlikely to be declining fast enough to qualify for listing in a more threatened category.

Current Population Trend: Stable

Date of Assessment: 12/17/2004

Assessor(s): David Donaire-Barroso, Trevor Beebee, Pedro Beja, Franco Andreone, Jaime Bosch, Miguel Tejedo, Miguel Lizana, Iñigo Martín

Notes on Red listing:

## Bibliography

- Engelmann, W.E., Fritzsche, J., Gunther, R., and Obst, F.J., 1986, , Lurch und Kriechtiere Europas, , 420p, F. Enke Verl., Stuttgart
- Arnold, E.N., 2003, , Reptiles and amphibians of Europe, , 288, Princeton University Press,
- Etxezarreta, J. and Rubio, X., 1998, Notas sobre la biología reproductora y situación actual de la ranita meridional (*Hyla meridionalis*, Boettger, 1874) en el País Vasco, Munibe, , 50, 77-83, ,
- Malkmus, R., 1996, Die herpetofauna der Überschwemmungstümpel des unteren Rio Guadiana (Portugal), Herpetozoa, , 8(3/4), 145-154, ,
- Salvador, A., 1996, Amphibians of northwest Africa, Smithsonian Herpetological Information Service, , 109, 1-43, ,
- Bons, J. and Geniez, P., 1996, , Amphibiens et reptiles du Maroc (Sahara Occidental compris) Atlas Biogéographique, , 319 pp, Asociación Herpetológica Española, Barcelona, Spain
- Crespo, E.G., 1973, Sur la position taxonomique des hylides du Portugal (Amphibia, Salientia). Analyse serologique et caracteres metriques, Arquivos do Museo Bocage. 2nd Ser., , 3, 613-632, ,
- Esteban, I., Filella, E., García-París, M., Menorca, G.O.B., Martín, C., Pérez-Mellado, V. and Zapirain, E.P., 1994, Atlas provisional de la distribución geográfica de la herpetofauna de Menorca (Islas Baleares, España), Revista Española de Herpetología, , 8, 19-28, ,
- , 1997, , Atlas of Amphibians and Reptiles in Europe, Gasc, J.-P., , 494, Societas Europea Herpetologica & Museum National d'Histoire Naturelle, Paris
- Reques, R., 2000, , Anfíbios. Ecología y Conservación, , , Diputación de Córdoba, Córdoba
- Malkmus, R., 1997, Neue Daten zur Höhenverbreitung des Mittelmeerlaubfrosches, *Hyla meridionalis* Boettger, 1874, in Portugal (Anura: Hylidae), Herpetozoa, , 10(3/4), 169-171, ,
- Pleguezuelos, J.M., Márquez, R. and Lizana, M., 2002, , Atlas y Libro Rojo de los Anfíbios y Reptiles de España, , pp 584, Dirección General de la Conservación de la naturaleza-Asociación Herpetológica Española, Madrid
- Luis, R. and Báez, M., 1988, Características de las poblaciones de *Hyla meridionalis* en Tenerife, Islas Canarias, Revista Española de Herpetología, , 3, 97-103, ,
- González de la Vega, J.P., Reposo-González, J.M. and Fernández-Carrasco, J.A., 1994, Primera cita de *Hyla arborea* (L.) en la provincia de Córdoba, , Res. III Congr. Luso-Español y VII Congr. Español Herpet., Badajoz: 57, , , ,
- Rosa, H.D. and Oliveira, M.E., 1994, Genetic Differentiation of the Iberian Tree Frogs *Hyla arborea molleri* and *Hyla meridionalis* (Amphibia, Anura), Zeitschrift Fur Zoologische Systematik und Evolutionsforschung, , 32(2), 117-128, ,
- Ildos, A.S. and Ancona, N., 1994, Analysis of amphibian habitat preferences in a farmland area (Po plain, northern Italy), Amphibia-Reptilia, , 15(3), 307-316, ,
- Malkmus, R., 1995, , Die Amphibien und reptilien Portugals, Madeiras und der Azores, , 192pp, Westarp Wissenschaften, Magdeburg
- Harris, D.J., Carranza, S., Arnold, E.N., Pinho, C. and Ferrand, N., 2002, Complex biogeographical distribution of genetic variation within *Podarcis wall* lizards across the Strait of Gibraltar, Journal of Biogeography, , 29, 1257-1262, ,
- Honegger, R.E., 1981, , Threatened Amphibians and Reptiles in Europe, , , Akademische Verlagsgesellschaft, Wiesbaden
- van der Meijden, A., 2003, AmphibiaWeb account for *Hyla meridionalis* written by Arie van der Meijden (as of Jan 29, 2003), , AmphibiaWeb, , , , <http://elib.cs.berkeley.edu/aw/index.html>,
- Schleich, H.H., Kästle, W. and Kabisch, K., 1996, Amphibians and Reptiles of North Africa, , , , Koeltz scientific books, Koenigstein
- Pleguezuelos, J.M., 1997, , Distribucion y Biogeografia de los Anfíbios y Reptiles en España y Portugal, , , Asociacion Herpetologica Española, Las Palmas de Gran Canarias
- González de la Vega, J.P., 1998, , Anfíbios y Reptiles de la Provincia de Huelva, , 238pp., Ed. Ertisa, Huelva
- Benavides, J., Viedma, A., Clivilles, J., Ortíz, A., and Gutiérrez, J.M., 2001, Cotas máximas para la península ibérica de siete especies de herpetos en la provincia de Granada, Boletín de la Asociación Herpetológica Española, , 12(1), 10-11, ,
- Arribas, O., Rivera, J. and Martí, F., 1996, Nuevos datos sobre la presencia de individuos azules de *Hyla meridionalis* en el noreste Ibérico, Boletín de la Asociación Herpetológica Española, , 7, 25-28, ,
- González de la Vega, J.P., García-Pulido, T., González-García, J.P. and González-García, G., 1996, Nuevos datos sobre la distribución de la ranita de San Antonio (*Hyla arborea*) en la provincia de Córdoba, Boletín de la Asociación Herpetológica Española, , 7(1996), 14-16, ,
- Pasteur, G. and Bons, J., 1959, Les Batraciens du Maroc, Trav. Inst. Scient. Chérifien, Rabat, Ser. Zool., , 17(14), 1-241, ,
- Malkmus, R., 2004, , Amphibians and reptiles of Portugal, Madeira and the Azores-Archipelago, , 448p, A.R.G. Gantner Verlag K.G., Ruggel (Germany)