

# Rana cerigensis

Region: 10

**Taxonomic Authority:** Beerli, Hotz, Tunner, Heppich and Uzzell, 1994

**Synonyms:**

**Common Names:**

Karpathos Frog English

**Order:** Anura

**Family:** Ranidae

**Notes on taxonomy:** The taxonomic status of this frog is still unclear. Frogs from Karpathos have a set of unique electrophoretic enzyme alleles, and voice recordings are very different from Anatolian populations of *Rana bedriagae*, but short mtDNA-sequences suggest that the same haplotypes occur in Anatolia and Karpathos (P. Beerli pers. comm.). Frogs on Rhodos are very similar to the ones on Karpathos, but on Rhodos there are electrophoretic enzyme alleles that occur on the mainland and not on Karpathos. This could be simply due to the small population size on Karpathos or it could be due to an introduction of Anatolian frogs onto Rhodos (P. Beerli pers. comm.).

## General Information

**Biome**  Terrestrial  Freshwater  Marine

### **Geographic Range of species:**

This species is known only from Karpathos Island and Rhodos Island [Rhodes], Greece. On Karpathos Island it is currently only known (with certainty) from a single river, near Olimbos in the mountains on the north side of the island, and it does not appear to range more widely; on Rhodos the species is only found in "high" altitude, forested areas.

### **Habitat and Ecology Information:**

It is a mostly aquatic species, largely restricted to permanent still or slow running waters. Breeding and larval development presumably take place in these waterbodies. It appears to be sensitive to habitat change.

### **Conservation Measures:**

It is listed on Appendix III of the Berne Convention. It probably occurs in a protected area on Karpathos. Further research into the range and low population of this species on Karpathos is urgently needed. The taxonomic status of the population on Rhodos needs to be examined.

### **Threats:**

It is severely threatened by degradation and loss of suitable aquatic habitats. The loss of suitable wetlands is largely caused by over extraction of water and pollution by agricultural, tourist and domestic sources. This species is additionally threatened by deforestation and more generally by restricted habitat availability. Implementation of protection is not in place.

### **Species population information:**

The known population on Karpathos is reported to be 'modest' (Beerli et al., 1994). Earlier literature sources from the 1960s have indicated that water frogs were abundant on the island, but around 1992 they were difficult to find (very few adults, several juveniles) (P. Beerli pers. comm.). Recent reports indicate that it is quite common in its single site on Karpathos.

## Country Distribution

Greece  Native - Presence Confirmed  Native - Presence Possible  Extinct  Reintroduced  Introduced  Vagrant

## FAO Marine Habitats

Native - Presence Confirmed  Native - Presence Possible  Extinct  Reintroduced  Introduced

## Major Lakes

## Major Rivers

## Upper Level Habitat Preferences

Score

## Lower Level Habitat Preferences

Score

3.8	Shrubland - Mediterranean-type Shrubby Vegetation	1
5.1	Wetlands (inland) - Permanent Rivers/Streams/Creeks (includes waterfalls)	1
5.2	Wetlands (inland) - Seasonal/Intermittent/Irregular Rivers/Streams/Creeks	1
5.5	Wetlands (inland) - Permanent Freshwater Lakes (over 8ha)	1
5.6	Wetlands (inland) - Seasonal/Intermittent Freshwater Lakes (over 8ha)	2
5.7	Wetlands (inland) - Permanent Freshwater Marshes/Pools (under 8ha)	1
5.8	Wetlands (inland) - Seasonal/Intermittent Freshwater Marshes/Pools (under 8ha)	2
11.1	Artificial/Terrestrial - Arable Land	1
12.2	Artificial/Aquatic - Ponds (below 8ha)	1

## Major threats

## Conservation Measures

**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"/>
1.1.1.2	Small-holder farming	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.1.4	Livestock	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.1.4.2	Small-holder	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.3	Extraction	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.3.3	Wood	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.3.3.1	Small-scale subsistence	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.3.3.2	Selective logging	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.3.6	Groundwater extraction	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.3.7	Other	<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"/>
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"/>
6.3.2	Domestic	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6.3.4	Other non-agricultural	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9	Intrinsic factors	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9.9	Restricted range	<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"/>
1.2.2	Implementation	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1.2.2.1	International level	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Research actions	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.1	Taxonomy	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.2	Population numbers and range	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.3	Biology and Ecology	<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"/>
3.8	Conservation measures	<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 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 type="checkbox"/>	<input checked="" type="checkbox"/>
4.4.1	Identification of new protected areas	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.4.2	Establishment	<input 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% <i>Other forms removed from the wild:</i>
Source of specimens in commercial trade	100%	>75%	51-75%	26-50% <25% <i>Other source of specimens:</i>

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: Endangered (EN)  Possibly Extinct

Red List Criteria: B1ab(iii)+2ab(iii)

Rationale for the Red List Assessment: Listed as Endangered, because its extent of occurrence is less than 5,000 km<sup>2</sup> and area of occupancy is less than 500 km<sup>2</sup>, its distribution is severely fragmented, and there is a continuing decline in the extent and quality of its habitat.

Current Population Trend: Decreasing

Date of Assessment: 12/17/2004

Assessor(s): Peter Beerli, Thomas Uzzell, Petros Lymbakis

Notes on Red listing: If the population on Rhodos belongs to another species, thus restricting this species to Karpathos, *Rana cerigensis* is likely to qualify for listing as Critically Endangered under criteria B1ab(iii)+2ab(iii).**Bibliography**

- Arnold, E.N., 2003, , Reptiles and amphibians of Europe, , 288, Princeton University Press,
- Beerli, P., 1994, , Genetic isolation and calibration of an average protein clock in western Palearctic water frogs of the Aegean region, , 90 pp, PhD thesis: University of Zurich, Switzerland,
- , 1997, , Atlas of Amphibians and Reptiles in Europe, Gasc, J.-P., , 494, Societas Europea Herpetologica & Museum National d'Histoire Naturelle, Paris
- Beerli, P., Hotz, H. Tunner, H., Heppich, S. and Uzzell, T., 1994, Two new water frog species from the Aegean islands Crete and Karpathos (Amphibia, Salientia, Ranidae), *Notulae Naturae*, , 470, 1-9, Academy of Natural Sciences of Philadelphia,
- Beerli, P., Hotz, H. and Uzzell, T., 1996, Geologically dated sea barriers calibrate a protein clock for Aegean water frogs, *Evolution*, , 50(4), 1676-1687, ,