

Aphanius baeticus

Region: 1

Taxonomic Authority: Doadrio, Carmona & Fernandez-Delgado, 2002

Synonyms:

Common Names:

Order: Cyprinodontiformes

Family: Cyprinodontidae

Notes on taxonomy:

General Information

Biome Terrestrial Freshwater Marine

Geographic Range of species:

It is restricted to the lower Guadalquivir region and in streams located on the southern Atlantic slope of Spain, including Coto Donana National Park.

Habitat and Ecology Information:

It lives in freshwater and hypersaline lagoons, tidal channel, and in small streams. It is characterized by a short life span and large fluctuations in population size, as adaptations to a highly variable environment.

Conservation Measures:

Included in Regional Andalusian Law 8/2003 of conservation of flora and fauna.

Threats:

Habitat destruction and water pollution (mine spill in 1998 in Coto Donana), repeated drought, and introduction of exotic fish species *Gambusia holbrooki* and *Fundulus heteroclitus* as well as the swamp crayfish *Procambarus clarkii*.

Species population information:

Decreasing, only 7-8 fragmented populations are known.

Country Distribution

	Native - Presence Confirmed	Native - Presence Possible	Extinct	Reintroduced	Introduced	Vagrant
Spain	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Upper Level Habitat Preferences

Score

Lower Level Habitat Preferences

Score

5.1 Wetlands (inland) - Permanent Rivers/Streams/Creeks (includes waterfalls)	1
10.3 Coastline - Estuarine Waters	1
10.6 Coastline - Coastal Brackish/Saline Lagoons	1

Major threats

Code	Description of threat	Past	Present	Future
1	Habitat Loss/Degradation (human induced)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.3	Extraction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.3.6	Groundwater extraction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1.4	Infrastructure development	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.4.6	Dams	<input type="checkbox"/>	<input 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"/>
6.3.3	Commercial/Industrial	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Natural disasters	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7.1	Drought	<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"/>
9.1	Limited dispersal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9.8	Population fluctuations	<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 type="checkbox"/>	<input checked="" type="checkbox"/>
1.2	Legislation	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.2.1	Development	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.2.1.1	International level	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.2.1.2	National level	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.2.2	Implementation	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.2.2.1	International level	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1.2.2.2	National level	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Research actions	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3.1	Taxonomy	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.2	Population numbers and range	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.3	Biology and Ecology	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.4	Habitat status	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3.5	Threats	<input checked="" type="checkbox"/>	<input 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"/>
4.2	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"/>
5	Species-based actions	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5.1	Re-introductions	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5.4	Recovery management	<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% None
Source of specimens in commercial trade	100%	>75%	51-75%	26-50% <25% Other forms removed from the wild: Other source of specimens:
Trend in wild offtake/harvest in relation to total wild population numbers over last five years:	None			

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

CITES:

Red Listing

Red List Assessment: Endangered (EN)

Possibly Extinct

Red List Criteria: A2ce

Rationale for the Red List Assessment: *A. baeticus* survives in only 7-8 sub populations and is suspected to have undergone a population decline of 50% in last 10 years. Its AOO is <500km² and is in continuous decline due to a loss in habitat caused by pollution, destruction and to introduced species (*Gambusia holbrooki* and *Fundulus heteroclitus* and *procambarus clarkii*) (Carmona, J. pers comm.). Although reintroduction programmes have been undertaken, this species could be extinct in the wild in the next ten years.

Current Population Trend: Decreasing

Date of Assessment: 31/10/2004

Assessor(s): A.J. Crivelli

Evaluator: J. Carmona

Notes on Red listing:

Bibliography

- Perdices, A., Carmona, J.A., Fernandez-Delgado, C. & Doadrio, I., 2001, Nuclear and mitochondrial data reveal high genetic divergence among Atlantic and Mediterranean populations of the iberian killifish *Aphanius iberus* (Teleostei: Cyprinodontidae), *Heredity*, , 87, 314-324, ,
- Doadrio, I., Carmona, J.A. & Fernandez-Delgado, C., 2002, Morphometric study of the Iberian *Aphanius* (Actinopterygii, Cyprinodontiformes), with description of a new species., *Folia Zoologica*, , 51, 67-79, ,
- Schönhuth, S., Luikart, G. & Doadrio, I., 2003, Effects of a founder event and supplementary introductions on genetic variation in a captive breeding population of the endangered Spanish killifish., *Journal of Fish Biology*, , 63, 1538-1551, ,
- Doadrio, I., 2001, , Atlas y libro rojo de los peces continentales de España, , 374, MMA, CSIC, Madrid
- Hrbek & Meyer, 2003, Closing of the Tethys Sea and the phylogeny of Eurasian killifishes (Cyprinodontiformes : Cyprinodontidae), *Journal of Evolutionary Biology*, , 16, 17-36, ,