

# Report on the main results of the surveillance under article 11 for annex II, IV and V species (Annex B)

0.1 Member State	GR
0.2.1 Species code	5337
0.2.2 Species name	Economidichthys pygmaeus
0.2.3 Alternative species scientific name	N/A
0.2.4 Common name	Lourogovios

## 1. National Level

### 1.1 Maps

1.1.1 Distribution Map	Yes
1.1.1a Sensitive species	No
1.1.2 Method used - map	Estimate based on partial data with some extrapolation and/or modelling (2)
1.1.3 Year or period	2007-2012
1.1.4 Additional map	Yes
1.1.5 Range map	Yes

## 2. Biogeographical Or Marine Level

### 2.1 Biogeographical Region

### 2.2 Published sources

#### Mediterranean (MED)

Νταουλάς, Χ., Οικονόμου, Α.Ν., Παπαδάκης, Β. & Λεονάρδος, Ι. (2001). Γεωγραφική κατανομή του λουρογωβιού (*Economidichthys pygmaeus*) στην Αιτωλοακαρνανία και Ήπειρο. Κίνδυνοι και πληθυσμιακή κατάσταση. Παρουσίαση σε POSTER. Πρακτικά 10ου Πανελληνίου Συνεδρίου Ιχθυολόγων, Χανιά, 18-20 Οκτωβρίου, σελ. 341-342.

Νταουλάς, Χ. (2003). Νέες καταγραφές παρουσίας στη Δυτική Ελλάδα των *Economidichthys pygmaeus* (Holly, 1929) (Gobiidae) και *Valencia letourneuxi* (Sauvage, 1880) (Valenciidae). Πρακτικά 11ου Πανελληνίου Συνεδρίου Ιχθυολόγων. Πρέβεζα 10-13 Απριλίου 2003, σελ. 109-112.

Gkenas, Ch., Malavasi, S., Georgalas, V., Leonardos, I.D. & Torricelli, P. (2010). The reproductive behavior of *Economidichthys pygmaeus*: secondary loss of sound production within the sand goby group? *Environmental Biology of Fishes* 87: 299-307.

Kottelat, M. and J. Freyhof, 2007. Handbook of European freshwater fishes. Publications Kottelat, Cornol, Switzerland. 646 p.

Economidis P.S., Vogiatzis V.P., Bobori D.C. (1996). Freshwater Fishes. In: S. Dafis, E. Papastergiadou, K. Georghiou, D. Babalonas, T. Georgiadis, M. Papageorgiou, Th. Lazaridou, V. Tsiaoussi (Eds), Directive 92/43/EEC, The Greek "Habitat" Project NATURA 2000: An overview, pp. 604-635. Life Contract B4-3200/94/756 Commission of the European Communities DG XI, The Goulandris Natural History Museum - Greek Biotope/Wetland Center.

Geiger M.F., Herder F., Monaghan M.T., Almada V., Barbieri R., Bariche M., Berrebi P., Bohlen J., Casal-Lopez M., Delmastro G.B., Denys G.P.J., Dettai A., Doadrio I., Kalogianni E., Kärst H., Kottelat M., Kovačić M., Laporte M., Lorenzoni M., Marčić M., Özuluğ M., Perdices A., Perea S., Persat H., Porcelotti S., Puzzi C., Robalo J., Šanda R., Schneider M., Šlechtová V., Stoumboudi M., Walter S. & Freyhof J. (2014). Spatial heterogeneity in the Mediterranean Biodiversity

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Hotspot affects barcoding accuracy of its freshwater fishes. Molecular Ecology Resources 2014.

## 2.3 Range

2.3.1 Surface area - Range (km <sup>2</sup> )	2525
2.3.2 Method - Range surface area	Estimate based on partial data with some extrapolation and/or modelling (2)
2.3.3 Short-term trend period	2001-2012
2.3.4 Short-term trend direction	stable (0)
2.3.5 Short-term trend magnitude	min max
2.3.6 Long-term trend period	
2.3.7 Long-term trend direction	N/A
2.3.8 Long-term trend magnitude	min max
2.3.9 Favourable reference range	area (km <sup>2</sup> ) operator approximately equal to (≈) unkown No method Basic assumption: Favourable Reference Range = Surface Area Range (current range)

### 2.3.10 Reason for change

## 2.4 Population

2.4.1 Population size (individuals or agreed exception)	Unit N/A min max
2.4.2 Population size (other than individuals)	Unit number of map 5x5 km grid cells (grids5x5) min 101 max 101
2.4.3 Additional information	Definition of locality Conversion method Problems Most data are described as semi-quantitative or qualitative. Few quantitative data. Too much variability between existing samples, especially between different river basins, making it difficult to extrapolate a number or a class for reporting population unit.
2.4.4 Year or period	2006-2012
2.4.5 Method – population size	Estimate based on partial data with some extrapolation and/or modelling (2)
2.4.6 Short-term trend period	2001-2012
2.4.7 Short term trend direction	stable (0)
2.4.8 Short-term trend magnitude	min max confidence interval
2.4.9 Short-term trend method	Estimate based on partial data with some extrapolation and/or modelling (2)
2.4.10 Long-term trend period	
2.4.11 Long term trend direction	N/A
2.4.12 Long-term trend magnitude	min max confidence interval
2.4.13 Long-term trend method	N/A
2.4.14 Favourable reference population	number operator approximately equal to (≈) unknown No method Basic assumption. Favourable Reference Population = value extracted from Additional Range Map

### 2.4.15 Reason for change

## 2.5 Habitat for the Species

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2.5.1 Surface area - Habitat (km <sup>2</sup> )	2525
2.5.2 Year or period	2006-2012
2.5.3 Method used - habitat	Estimate based on partial data with some extrapolation and/or modelling (2)
2.5.4 a) Quality of habitat	Good
2.5.4 b) Quality of habitat - method	Based on partial data with some extrapolation and expert judgment.
2.5.5 Short term trend period	2001-2012
2.5.6 Short term trend direction	stable (0)
2.5.7 Long-term trend period	
2.5.8 Long term trend direction	N/A
2.5.9 Area of suitable habitat (km <sup>2</sup> )	0
2.5.10 Reason for change	

## 2.6 Main Pressures

Pressure	ranking	pollution qualifier(s)
Discharges (E03)	low importance (L)	N/A
surface water abstractions for agriculture (J02.06.01)	low importance (L)	N/A
small hydropower projects, weirs (J02.05.05)	low importance (L)	N/A
Urbanised areas, human habitation (E01)	low importance (L)	N/A
modifying structures of inland water courses (J02.05.02)	low importance (L)	N/A
invasive non-native species (I01)	low importance (L)	N/A

2.6.1 Method used – pressures mainly based on expert judgement and other data (2)

## 2.7 Main Threats

Threat	ranking	pollution qualifier(s)
Discharges (E03)	low importance (L)	N/A
surface water abstractions for agriculture (J02.06.01)	low importance (L)	N/A
small hydropower projects, weirs (J02.05.05)	low importance (L)	N/A
Urbanised areas, human habitation (E01)	low importance (L)	N/A
modifying structures of inland water courses (J02.05.02)	low importance (L)	N/A
invasive non-native species (I01)	low importance (L)	N/A

2.7.1 Method used – threats expert opinion (1)

## 2.8 Complementary Information

2.8.1 Justification of % thresholds for trends

2.8.2 Other relevant Information

The % threshold could not be used for the assessment since: a) a different method for assessing range was employed, compared to the 2nd Reporting 1. The equivalent taxa names for Greece's endemic taxa (several formerly considered subspecies units) are interpreted in terms of their taxonomic relatedness and presented in detail in: Economidis P.S., Vogiatzis V.P., Bobori D.C. (1996). This document is analytical in its presentation and is published within the process of adoption and adaptation to the implementation of Directive 92/43/EC under the auspices of the Hellenic Ministry of Environment. The fish names presented as so-called equivalent have in some cases been published as species entities before the enactment of the Directive but this does not mean that biogeographically associated and/or taxonomically related equivalent species cannot be substituted in place of the many endemic and range-restricted forms existing Greece. This is the spirit of the interpretation given in Economidis et al. (1996) and this was adhered to here.

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In each case: the above authorities promote the association of “taxonomically equivalent” units related with or formerly considered below the species level; these were presented and defined. Here we give supporting details. Although the two endemic species of small gobies *Economidichthys* had been defined as being taxonomically closer to *Pomatoschistus canestrini* the ETC (2011) notes the following: «*Economidichthys pygmaeus* was described originally as *Gobio pygmaeus* and later cited as *E. pygmaeus* in Economidis & Miller 1990. According to these authors *G. pymeus* was earlier believed to be a subspecies of *P. canestrinii*, opinion which persisted over 1960’s-1970’s. But already the 1980’ authors consider it as a separate species» (ETC 2011).

The species may have been valid just before the enacting of Directive 92/43 however this does not mean that the related endemic forms in Greece must be now ignored as interpreted by Economidis et al. (1996). Since the species taxonomy is in flux especially after the Phylogenetic Species Concept application and widespread acceptance species names have continued to change. A detailed phylogenetic study (Geiger et al. 2014) now places former *Pomatoschistus canestrini* into the genus *Ninnigobius*. Although genetically a different clade, the two small-sized goby groups today’s *Ninnigobius* and *Economidichthys* should in our mind be considered under a single name.

## 2. Basic Assumptions:

i) "Surface Area Range" (field 2.3.1) = value extracted from "Range Map" (field 1.1.5).

ii) "Favourable Reference Range" (field 2.3.9a) = a) "Surface Area Range" (field 2.3.1) OR b) value extracted from "Additional Reference Range Map" (provided). Depends on whether the Favourable range is equal or larger than actual species range.

iii) "Population Size" (field 2.4.2) = value extracted from "Distribution Map" (field 1.1.1) or "Additional Distribution Map" (field 1.1.4) (when provided).

iv) "Favourable Reference Population" (field 2.4.14) = a) "Population Size" (field 2.4.2) OR b) value extracted from "Additional Reference Range Map" (provided). Depends on whether the Favourable population is equal or larger than actual species population.

v) Habitat "Area Estimation" (field 2.5.1) = "Distribution Map" (field 1.1.1) or "Additional Distribution Map" (field 1.1.4) (when provided).

## 2.8.3 Trans-boundary assessment

## 2.9 Conclusions (assessment of conservation status at end of reporting period)

2.9.1 Range assessment Favourable (FV)  
qualifiers N/A

2.9.2. Population assessment Favourable (FV)  
qualifiers N/A

2.9.3. Habitat assessment Favourable (FV)  
qualifiers N/A

2.9.4. Future prospects assessment Favourable (FV)  
qualifiers N/A

2.9.5 Overall assessment of Conservation Status Favourable (FV)

2.9.5 Overall trend in Conservation Status N/A

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## 3. Natura 2000 coverage and conservation measures - Annex II species

### 3.1 Population

3.1.1 Population Size	Unit	number of map 5x5 km grid cells (grids5x5)		
	min	54	max	54
3.1.2 Method used	Estimate based on partial data with some extrapolation and/or modelling (2)			
3.1.3 Trend of population size within	unknown (x)			

### 3.2 Conversation Measures

3.2.1 Measure	3.2.2 Type	3.2.3 Ranking	3.2.4 Location	3.2.5 Broad Evaluation
Legal protection of habitats and species (6.3)	Legal	high importance (H)	Both	Maintain Long term
Establish protected areas/sites (6.1)	Legal Administrative One-off	low importance (L)	Inside	Maintain Long term