

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	1352
0.2.2 Species name	Canis lupus
0.2.3 Alternative species scientific name	N/A
0.2.4 Common name	Likos

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	2012
1.1.4 Additional map	No
1.1.5 Range map	Yes

2. Biogeographical Or Marine Level

2.1 Biogeographical Region

2.2 Published sources

Mediterranean (MED)

1. Iliopoulos, Y., 2003: "Distribution of the wolf (Canis lupus L.) in Antihasia mountains – important breeding areas". Project ETERPS: "Free livestock raising and conservation of endangered vulture species and large carnivores in the Natura 2000 site Antihasia mountains- GR1440003", Arcturos, Hellenic Ornithological Society, Greek Ministry of Environment and Public Works.☒
2. Iliopoulos Y., 2005. "Linkage areas of wolf distribution in the alignment of EGNATIA highway – section 4.1- Grevena", Pp.198-287 in: "Monitoring and evaluation of Egnatia highway construction (section 4.1.) on large mammals and their habitats". Project final report (Arcturos NGO- EGNATIA S.A.), 120pp. + GIS maps,(in greek).☒
3. Iliopoulos Y., 2005. "Distribution, population estimates, conservation problems and management of five large mammal species (bear, wolf, wild boar, roe deer and Balkan chamois), in Tzoumerka mountains", pp 120. Epirus S.A. In: Special Environmental study for the establishment of the Tzoumerka National Park. Epirus Regional Authority,(in greek).☒
4. Iliopoulos Y., Argyropoulos D., Aravidis I., Kallimanis T., Tragos T., Giannakopoulos A., 2006. "Study on wolf behavior in the alignment of the New High Speed Railway- Lamia/Domokos- proposals for the de-fragmentation of wolf population". Project final report (ERGOSE, Argyropoulos environmental office, Callisto NGO,), 150pp. + GIS maps (in Greek). ☒
5. Iliopoulos Y., 2008. "Effects of Egnatia construction on local wolf population in the alignment of EGNATIA highway – section 4.1- Grevena", in: "Monitoring and evaluation of Egnatia highway construction (section 4.1.) on large mammals and their habitats – PHASE II". Project final report (Callisto NGO- EGNATIA S.A.), 100pp. + GIS maps (in Greek).☒
6. Iliopoulos Y., 2008. "Distribution, population estimates, conservation problems and management of wolf, in Northern Pindus National Park", pp 100. Callisto NGO, Management authority of Northern Pindus National Park. In: Special Environmental study (monitoring) of the Northern Pindus National Park.☒
7. Iliopoulos, Y., Giannakopoulos A., Petridou M., Galinos S., Aravidis, I., 2010. Fauna monitoring project prior the construction of central Greece motorway-E65 (2009-2011): Proposals for mitigating effects of habitat fragmentation in the

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- alignment of E65 highway in Central Greece, considering large mammals (wolf, wild boar and roe deer) and medium sized mammals. Callisto NGO, (in Greek).²
8. Iliopoulos, Y., 2010. Wolf biology and ecology in Central Greece. - Habitat selection, movements and effects on livestock. PhD Thesis. University of Thessaloniki, School of Biology, Department of Zoology.
<http://invenio.lib.auth.gr/record/124523?ln=e>²
9. Iliopoulos Y., 2011. Wolf baseline study and mitigation proposals for construction of TAP-West (trans-adriatic pipeline). Segment Vermio-Albania. Exergia SA, ERM, TAP.²
10. Iliopoulos Y., 2012. Wolf baseline study and mitigation proposals for construction of TAP-East (trans-adriatic pipeline- Alexandroupoli segment). Exergia S.A., ERM, TAP.²
11. Iliopoulos Y., Petridou M., 2012. Population assessment of wolf and brown bear populations and preliminary assessment of damage prevention methods in Oiti National Park. Management authority of Oiti NP.²
12. Iliopoulos Y., 2013. Wolf baseline study and mitigation proposals for construction of TAP-East (trans-adriatic pipeline- Kavala-Serres segment). NCC S.A., TAP.²
13. Iliopoulos, Y., Youlatos, D., Sgardelis, S., 2013. Selection of wolf rendezvous sites in Greece is mainly affected by anthropogenic landscape features. European journal of wildlife research (DOI: 10.1007/s10344-013-0746-3).
<http://www.springerlink.com/openurl.asp?genre=article&id=doi:10.1007/s10344-013-0746-3>²
14. Iliopoulos, Y., 2014. Preliminary results on wolf-dog hybridization in Kerkini National Park. Management authority of Kerkini NP, Callisto, Greek Ministry of Environment.²
15. Iliopoulos, Y., 2014. Wolf population status in the Kalamas-Aheron National Park. 2d Interim report. Management authority of Kalamas-Aheron National Park, Callisto, OIKOM S.A.

2.3 Range

2.3.1 Surface area - Range (km ²)	71000
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	2002-2012
2.3.4 Short-term trend direction	increase (+)
2.3.5 Short-term trend magnitude	min 0,09 max 0,09
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 ²) operator approximately equal to (≈) unkown No method Maximum range at species first complete national survey in 1998, adequate also to fully sustain approximately 100 wolf packs.
2.3.10 Reason for change	Genuine

2.4 Population

2.4.1 Population size (individuals or agreed exception)	Unit number of individuals (i) min 717 max 875
2.4.2 Population size (other than individuals)	Unit N/A min max

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2.4.3 Additional information	<p>Definition of locality</p> <p>Conversion method</p> <p>Population estimates for wolf stand better by extrapolating total population size by multiplying estimated number of social units (packs) with average wolf pack size. Population was estimated by multiplying number of occupied territories with average number of wolves per pack with the use of confidence intervals for pack size. It is very difficult to estimate number of individual wolves not belonging to packs (lone wolves and dispersers). Population size should be considered as minimum with min-max confidence intervals given.</p>
2.4.4 Year or period	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	2002-2012
2.4.7 Short term trend direction	increase (+)
2.4.8 Short-term trend magnitude	min 0,31 max 0,4 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	<p>number</p> <p>operator approximately equal to (≈)</p> <p>unknown No</p> <p>method Estimate based on expert opinion.</p>
2.4.15 Reason for change	Genuine
2.5 Habitat for the Species	
2.5.1 Surface area - Habitat (km ²)	61000
2.5.2 Year or period	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	Moderate
2.5.4 b) Quality of habitat - method	Evaluation based on statistical procedures (habitat suitability analysis) is ongoing /pending. Current evaluation was based on expert estimations. It is considered "moderate" as there is a simultaneous a) positive trend on wild ungulate population in most wolf occupied areas, b) suitable denning habitat is also highly available while c) free ranging livestock availability is decreasing (main food resource for wolves)
2.5.5 Short term trend period	2002-2012
2.5.6 Short term trend direction	increase (+)
2.5.7 Long-term trend period	
2.5.8 Long term trend direction	N/A
2.5.9 Area of suitable habitat (km ²)	65000
2.5.10 Reason for change	Genuine
2.6 Main Pressures	

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Pressure	ranking	pollution qualifier(s)
intensive mixed animal grazing (A04.01.05)	high importance (H)	N/A
Hunting (F03.01)	medium importance (M)	N/A
trapping, poisoning, poaching (F03.02.03)	high importance (H)	N/A
predator control (F03.02.04)	high importance (H)	N/A

2.6.1 Method used – pressures based exclusively or to a larger extent on real data from sites/occurrences or other

2.7 Main Threats

Threat	ranking	pollution qualifier(s)
abandonment of pastoral systems, lack of grazing (A04.03)	high importance (H)	N/A
reduction of prey availability (including carcasses) (J03.01.01)	high importance (H)	N/A
anthropogenic reduction of habitat connectivity (J03.02)	medium importance (M)	N/A
roads, motorways (D01.02)	medium importance (M)	N/A
genetic pollution (animals) (I03.01)	medium importance (M)	N/A
trapping, poisoning, poaching (F03.02.03)	high importance (H)	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

2.4.1 Population units: Social units - Number of breeding pairs with offspring in late winter-early spring (wolf packs) Important factor for the long-term species survival is the continuity of the distribution, (minimizing habitat fragmentation due to infrastructure construction) and management of wild ungulate populations (wild boar and roe deer). 2.3.4 Reasons for reported trend: - Rural abandonment: Improved habitat (spontaneous natural restoration of wild boar and roe deer , Increased natural food availability) - sustainable illegal human caused mortality: Abandonment of bounties - Abandonment of KCN and strychnine poison use - Improvement of legislation regime for the species - Improvement of damage compensation regime for farmers - Natural recolonization - improvement on denning habitat 2.4.7 Reasons for reported trend: There are areas where wolf population has increased and also areas where wolf population has decreased. Overall trend though positive -Areas with positive trends: - Indirect anthropo(zoo)genic influence: rural abandonment - Improved habitat (spontaneous natural restoration of wild herbivores, Increased food availability) - improved denning habitat-sustainable illegal human caused mortality: - Abandonment of bounties - Abandonment of KCN and strychnine poison use - Improvement of legislation regime for the species - Improvement of damage compensation regime for farmers. Areas with negative trends: -Rapid reduction in livestock populations, (reduction of food availability)- shortage of available livestock carcasses - widespread Illegal use of poison baits 2.5.6 Reasons for reported trend: - Rural abandonment: Improved habitat especially for denning, sustainable of human caused mortality: Abandonment of bounties - Abandonment of KCN and strychnine poison use. - Improvement of legislation regime for the species. - Improvement of damage compensation regime for farmers. - Natural recolonization by wild ungulates. 2.7 Main threats related to long term viability: Unknown if positive trends on wild ungulate natural restoration will continue (lack of appropriate hunting management)- Free ranging livestock grazing rapid decrease in many areas - a density dependend relation

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between livestock and wolf presence is present with possible threshold values still define wolf occurrence in most wolf distribution - multiple local extinctions are suspected to occur in the future if rapid livestock decline continues with no parallel and extensive wild herbivore population restoration- Wolf-dog hybridization is widespread and needs assessment- habitat fragmentation due to infrastructures needs better assessment.

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 Inadequate (U1) qualifiers improving (+)
2.9.4. Future prospects	assessment Inadequate (U1) qualifiers improving (+)
2.9.5 Overall assessment of Conservation Status	Inadequate (U1)
2.9.5 Overall trend in Conservation Status	improving (+)

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

3.1 Population

3.1.1 Population Size	Unit number of individuals (i) min 125 max 151
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	N/A

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
Establish protected areas/sites (6.1)	Legal Administrative	high importance (H)	Inside	Maintain Long term
Specific management of traffic and energy transport systems (8.2)	Recurrent	high importance (H)	Both	Long term