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

0.1 Member State	**IT**
0.2.1 Species code	**1344**
0.2.2 Species name	**Hystrix cristata**
0.2.3 Alternative species scientific name	N/A
0.2.4 Common name	N/A

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	2001-2012
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)
The present species assessment (fields 0.1-2.9) has been compiled by Daniele Paoloni, Cristiano Spilinga (Associazione Teriologica Italiana - ATIt) and Anna Alonzi, Piero Genovesi, Francesca Ronchi (Institute for Environmental Protection and Research - ISPRA). Information, unpublished data and experts' judgments have been provided by Gaetano Aloise, Giovanni Amori, Sandro Bertolino, Francesco Bisi, Silvia Capasso, Dario Capizzi, Filomena Carpino, Emiliano Mori, Maurizio Sarà (ATIt).

Agriconsulting S.p.A., 2008. Dati del progetto "Laboratorio della Biodiversità" – Parco Regionale del Matese (rif.: Prog. S PRM PRM 010 nell'ambito del POR Campania 2000/2006, Misura 1.9).

Agristudio srl, Firenze. Dati sensibili, rilevati durante le campagne di monitoraggio finalizzate a rapporti di SIA, ESIA, V.Inc.A., relativi a sondaggi sismici e realizzazione di cantieri, pozzi e impianti petroliferi per conto di Total E&P Italia S.p.A. Rilevatori: Carpino F., Fulco E. Periodo: 2008-2010.

Amori G., Contoli L., Nappi A., 2008. Fauna d'Italia, Mammalia II - Erinaceomorpha, Soricomorpha, Lagomorpha, Rodentia . P. 395-405, MILANO:Calderini - Edizioni Calderini de Il Sole 24 ORE S.p.A..

Boitani L., Corsi F., Falcucci A., Maiorano L., Marzetti I., Masi M., Montemaggiori A., Ottaviani D., Reggiani G., Rondinini C., 2002. Rete Ecologica Nazionale. Un approccio alla conservazione dei vertebrati italiani. Università di Roma "La Sapienza", Dipartimento di Biologia Animale e dell'Uomo; Ministero dell'Ambiente, Direzione per la Conservazione della Natura; Istituto di Ecologia Applicata. http://www.gisbau.uniroma1.it/REN

Capizzi et al., 2012. Progetto atlante dei Mammiferi del Lazio - Regione Lazio - ARP.

Ruffo S., Stock F., 2005 - Checklist e distribuzione della fauna italiana, Database

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N2000.

Ragni B., 2002. Atlante dei mammiferi dell'Umbria. Petruzzi Editore.

2.3 Range

2.3.1 Surface area - Range (km²)	105000
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	increase (+)
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 (km²)
	operator approximately equal to (≈)
	unkown No
	method Expert judgement
2.3.10 Reason for change	Genuine Improved knowledge/more accurate dataUse of different method

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 10x10 km grid cells (grids10x10)
	min 809 max 809
2.4.3 Additional information	Definition of locality
	Conversion method
	Problems Impossible to convert grids to individuals
2.4.4 Year or period	2001-2012
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 Expert judgement
2.4.15 Reason for change	Genuine Improved knowledge/more accurate data

2.5 Habitat for the Species

2.5.1 Surface area - Habitat (km²)	
2.5.2 Year or period	
2.5.3 Method used - habitat	Absent data (0)
2.5.4 a) Quality of habitat	Good

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2.5.4 b) Quality of habitat - method	Expert based
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 (km²)	120040
2.5.10 Reason for change	Use of different method

2.6 Main Pressures

Pressure	ranking	pollution qualifier(s)
roads, motorways (D01.02)	medium importance (M)	N/A
trapping, poisoning, poaching (F03.02.03)	medium importance (M)	N/A
burning down (J01.01)	medium importance (M)	N/A
accidental capture (F03.02.05)	low importance (L)	N/A
anthropogenic reduction of habitat connectivity (J03.02)	low importance (L)	N/A

2.6.1 Method used – pressures	based only on expert judgements (1)

2.7 Main Threats

Threat	ranking	pollution qualifier(s)
roads, motorways (D01.02)	medium importance (M)	N/A
trapping, poisoning, poaching (F03.02.03)	medium importance (M)	N/A
accidental capture (F03.02.05)	low importance (L)	N/A
burning down (J01.01)	medium importance (M)	N/A
anthropogenic reduction of habitat connectivity (J03.02)	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 species can be considered as marginal for the Alpine biogeographical region and therefore the full reporting was compiled only for the Continental and Mediterranean one.
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	

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

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

3.1 Population

3.1.1 Population Size	Unit	N/A
	min	max
3.1.2 Method used	N/A	
3.1.3 Trend of population size within	N/A	

3.2 Conversation Measures

2. Biogeographical Or Marine Level

2.1 Biogeographical Region
2.2 Published sources

Continental (CON)

The present species assessment (fields 0.1-2.9) has been compiled by Daniele Paoloni, Cristiano Spilinga (Associazione Teriologica Italiana - ATIt) and Anna Alonzi, Piero Genovesi, Francesca Ronchi (Institute for Environmental Protection and Research - ISPRA). Information, unpublished data and experts' judgments have been provided by Gaetano Aloise, Giovanni Amori, Sandro Bertolino, Francesco Bisi, Silvia Capasso, Dario Capizzi, Filomena Carpino, Emiliano Mori, Maurizio Sarà (ATIt).

Amori G., Contoli L., Nappi A., 2008. Fauna d'Italia, Mammalia II - Erinaceomorpha, Soricomorpha, Lagomorpha, Rodentia . P. 395-405, MILANO:Calderini - Edizioni Calderini de Il Sole 24 ORE S.p.A..

Boitani L., Corsi F., Falcucci A., Maiorano L., Marzetti I., Masi M., Montemaggiori A., Ottaviani D., Reggiani G., Rondinini C., 2002. Rete Ecologica Nazionale. Un approccio alla conservazione dei vertebrati italiani. Università di Roma "La Sapienza", Dipartimento di Biologia Animale e dell'Uomo; Ministero dell'Ambiente, Direzione per la Conservazione della Natura; Istituto di Ecologia Applicata. http://www.gisbau.uniroma1.it/REN

Capizzi et al., 2012. Progetto atlante dei Mammiferi del Lazio - Regione Lazio - ARP.

Ruffo S., Stock F., 2005 - Checklist e distribuzione della fauna italiana, Database N2000.

Ragni B., 2002. Atlante dei mammiferi dell'Umbria. Petruzzi Editore.

Regione Piemonte. Banche dati Naturalistiche + Banca dati IPLA.

Seglie D., Sindaco R., 2011. Segnalazioni Faunistiche Piemostesi e Valdostane, IV. Rivista piemontese di Storia naturale, 32: 419-438.

Seglie D., Sindaco R., 2012. Segnalazioni Faunistiche Piemostesi e Valdostane, V. Rivista piemontese di Storia naturale, 33: 457-472.

2.3 Range

2.3.1 Surface area - Range (km²)	48900
2.3.2 Method - Range surface area	Estimate based on partial data with some extrapolation and/or modelling (2)

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

2.3.3 Short-term trend period	2001-2012
2.3.4 Short-term trend direction	increase (+)
2.3.5 Short-term trend magnitude	min max
2.3.6 Long-term trend period	1989-2012
2.3.7 Long-term trend direction	increase (+)
2.3.8 Long-term trend magnitude	min max
2.3.9 Favourable reference range	area (km²)
	operator approximately equal to (≈)
	unkown No
	method Expert judgement
2.3.10 Reason for change	Genuine Improved knowledge/more accurate dataUse of different method

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 10x10 km grid cells (grids10x10)
	min 326 max 326
2.4.3 Additional information	Definition of locality
	Conversion method
	Problems Impossible to convert grids into individuals
2.4.4 Year or period	2001-2012
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	increase (+)
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 Expert judgement
2.4.15 Reason for change	Genuine Improved knowledge/more accurate data

2.5 Habitat for the Species

2.5.1 Surface area - Habitat (km²)	
2.5.2 Year or period	
2.5.3 Method used - habitat	Absent data (0)
2.5.4 a) Quality of habitat	Good
2.5.4 b) Quality of habitat - method	Expert based
2.5.5 Short term trend period	2001-2012
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 (km²)	33210

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

2.5.10 Reason for change	Improved knowledge/more accurate data Use of different method

2.6 Main Pressures

Pressure	ranking	pollution qualifier(s)
roads, motorways (D01.02)	medium importance (M)	N/A
trapping, poisoning, poaching (F03.02.03)	low importance (L)	N/A
continuous urbanisation (E01.01)	low importance (L)	N/A
agricultural intensification (A02.01)	low importance (L)	N/A

2.6.1 Method used – pressures	based only on expert judgements (1)

2.7 Main Threats

Threat	ranking	pollution qualifier(s)
roads, motorways (D01.02)	medium importance (M)	N/A
trapping, poisoning, poaching (F03.02.03)	low importance (L)	N/A
continuous urbanisation (E01.01)	low importance (L)	N/A
agricultural intensification (A02.01)	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 species can be considered as marginal for the Alpine biogeographical region and therefore the full reporting was compiled only for the Continental and Mediterranean one.
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	

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

3.1 Population

3.1.1 Population Size	Unit	N/A
	min	max
3.1.2 Method used	N/A	

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

3.1.3 Trend of population size within	N/A

3.2 Conservation Measures

2. Biogeographical Or Marine Level

2.1 Biogeographical Region	**Alpine (ALP)**
2.2 Published sources	The present species assessment (fields 0.1-2.9) has been compiled by Daniele Paoloni, Cristiano Spilinga (Associazione Teriologica Italiana - ATIt) and Anna Alonzi, Piero Genovesi, Francesca Ronchi (Institute for Environmental Protection and Research - ISPRA). Information, unpublished data and experts' judgments have been provided by Gaetano Aloise, Giovanni Amori, Sandro Bertolino, Francesco Bisi, Silvia Capasso, Dario Capizzi, Filomena Carpino, Emiliano Mori, Maurizio Sarà (ATIt).
	Amori G., Contoli L., Nappi A., 2008. Fauna d'Italia, Mammalia II - Erinaceomorpha, Soricomorpha, Lagomorpha, Rodentia . P. 395-405, MILANO:Calderini - Edizioni Calderini de Il Sole 24 ORE S.p.A..
	Boitani L., Corsi F., Falcucci A., Maiorano L., Marzetti I., Masi M., Montemaggiori A., Ottaviani D., Reggiani G., Rondinini C., 2002. Rete Ecologica Nazionale. Un approccio alla conservazione dei vertebrati italiani. Università di Roma "La Sapienza", Dipartimento di Biologia Animale e dell'Uomo; Ministero dell'Ambiente, Direzione per la Conservazione della Natura; Istituto di Ecologia Applicata. http://www.gisbau.uniroma1.it/REN

2.3 Range

2.3.1 Surface area - Range (km²)	6200	
2.3.2 Method - Range surface area	Absent data (0)	
2.3.3 Short-term trend period	2001-2012	
2.3.4 Short-term trend direction	unknown (x)	
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 (km²)	
	operator	N/A
	unkown	Yes
	method	
2.3.10 Reason for change	Use of different method	

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 10x10 km grid cells (grids10x10)
	min 38	max 38
2.4.3 Additional information	Definition of locality	
	Conversion method	
	Problems	Impossible to convert grids into individuals
2.4.4 Year or period	2001-2012	

2.4.5 Method – population size	Absent data (0)
2.4.6 Short-term trend period	
2.4.7 Short term trend direction	unknown (x)
2.4.8 Short-term trend magnitude	min max confidence interval
2.4.9 Short-term trend method	Absent data (0)
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 N/A unknown Yes method
2.4.15 Reason for change	

2.5 Habitat for the Species

2.5.1 Surface area - Habitat (km²)	
2.5.2 Year or period	
2.5.3 Method used - habitat	Absent data (0)
2.5.4 a) Quality of habitat	Unknown
2.5.4 b) Quality of habitat - method	Expert based
2.5.5 Short term trend period	2001-2012
2.5.6 Short term trend direction	unknown (x)
2.5.7 Long-term trend period	
2.5.8 Long term trend direction	N/A
2.5.9 Area of suitable habitat (km²)	2415
2.5.10 Reason for change	Use of different method

2.6 Main Pressures

2.6.1 Method used – pressures	N/A

2.7 Main Threats

2.7.1 Method used – threats	N/A

2.8 Complementary Information

2.8.1 Justification of % thresholds for trends	
2.8.2 Other relevant Information	The species can be considered as marginal for the Alpine biogeographical region and therefore the full reporting was compiled only for the Continental and Mediterranean ones. It has recently arrived to the alpine region, as a consequence of a gradual expansion of the natural range, once limited to the peninsula. The species is in general more adapted to warmed climates, but in central and southern Italy it does use areas above 1000 m asl.
2.8.3 Trans-boundary assessment	

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

2.9.1 Range	assessment N/A qualifiers N/A

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2.9.2. Population	assessment	N/A
	qualifiers	N/A
2.9.3. Habitat	assessment	N/A
	qualifiers	N/A
2.9.4. Future prospects	assessment	N/A
	qualifiers	N/A
2.9.5 Overall assessment of Conservation Status	N/A	
2.9.5 Overall trend in Conservation Status	N/A	

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

3.1 Population

3.1.1 Population Size	Unit	N/A
	min	max
3.1.2 Method used	N/A	
3.1.3 Trend of population size within	N/A	

3.2 Conversation Measures

Notes

Species name: Hystrix cristata (1344) Region code: ALP

Field label	Note	User
2.5.9 Area of suitable habitat (km2)	The area of suitable habitat (2.5.9) has been calculated by intersecting habitat suitability models with each biogeographical region in which the species is present. The habitat suitability models are those included in the Italian Ecological Network (Rete Ecologica Nazionale – REN; Boitani et al. 2002), and were developed at the national scale for all vertebrate species, based on species-environments relationships defined with inputs from leading species' experts. The models were created integrating into a Geographic Information System geographic and environmental data, such as Corine Land Cover, Digital Terrain Model, water and road networks. Source: Boitani L., Corsi F., Falcucci A., Maiorano L., Marzetti I., Masi M., Montemaggiori A., Ottaviani D., Reggiani G., Rondinini C., 2002. Rete Ecologica Nazionale. Un approccio alla conservazione dei vertebrati italiani. Università di Roma "La Sapienza", Dipartimento di Biologia Animale e dell'Uomo; Ministero dell'Ambiente, Direzione per la Conservazione della Natura; Istituto di Ecologia Applicata. Http://www.gisbau.uniroma1.it/REN	ISPRA_AUNA

Species name: Hystrix cristata (1344) Region code: CON

Field label	Note	User
2.3.1 Surface area - Range (km²)	The area of the range (2.3.1) has been calculated also summing up the grid cells of species' presence in the adjacent biogeographical region of marginal presence. Only cells entirely overlapped to the marginal area have been summed up, in order to avoid an overestimation of the overall species' range.	ISPRA_AUNA
2.5.9 Area of suitable habitat (km2)	The area of suitable habitat (2.5.9) has been calculated by intersecting habitat suitability models with each biogeographical region in which the species is present. The habitat suitability models are those included in the Italian Ecological Network (Rete Ecologica Nazionale – REN; Boitani et al. 2002), and were developed at the national scale for all vertebrate species, based on species-environments relationships defined with inputs from leading species' experts. The models were created integrating into a Geographic Information System geographic and environmental data, such as Corine Land Cover, Digital Terrain Model, water and road networks. Source: Boitani L., Corsi F., Falcucci A., Maiorano L., Marzetti I., Masi M., Montemaggiori A., Ottaviani D., Reggiani G., Rondinini C., 2002. Rete Ecologica Nazionale. Un approccio alla conservazione dei vertebrati italiani. Università di Roma "La Sapienza", Dipartimento di Biologia Animale e dell'Uomo; Ministero dell'Ambiente, Direzione per la Conservazione della Natura; Istituto di Ecologia Applicata. Http://www.gisbau.uniroma1.it/REN	ISPRA_AUNA

Species name: Hystrix cristata (1344) Region code: MED

Field label	Note	User
2.4.7 Short term trend direction	The trend of population is various within biogeographical region: populations are actually increasing in Tuscany, Calabria, Lazio and Liguria but they are declining in Puglia and Sicily. In Molise and Campania the presence is restricted to some areas.	ISPRA_AUNA

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2.3.1 Surface area - Range (km²)	The area of the range (2.3.1) has been calculated also summing up the grid cells of species' presence in the adjacent biogeographical region of marginal presence. Only cells entirely overlapped to the marginal area have been summed up, in order to avoid an overestimation of the overall species' range.	ISPRA AUNA
2.5.9 Area of suitable habitat (km2)	The area of suitable habitat (2.5.9) has been calculated by intersecting habitat suitability models with each biogeographical region in which the species is present. The habitat suitability models are those included in the Italian Ecological Network (Rete Ecologica Nazionale – REN; Boitani et al. 2002), and were developed at the national scale for all vertebrate species, based on species-environments relationships defined with inputs from leading species' experts. The models were created integrating into a Geographic Information System geographic and environmental data, such as Corine Land Cover, Digital Terrain Model, water and road networks. Source: Boitani L., Corsi F., Falcucci A., Maiorano L., Marzetti I., Masi M., Montemaggiori A., Ottaviani D., Reggiani G., Rondinini C., 2002. Rete Ecologica Nazionale. Un approccio alla conservazione dei vertebrati italiani. Università di Roma "La Sapienza", Dipartimento di Biologia Animale e dell'Uomo; Ministero dell'Ambiente, Direzione per la Conservazione della Natura; Istituto di Ecologia Applicata. Http://www.gisbau.uniroma1.it/REN	ISPRA AUNA