

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	1201
0.2.2 Species name	Bufo viridis
0.2.3 Alternative species scientific name	Bufo balearicus
0.2.4 Common name	Rospo smeraldino

1. National Level

1.1 Maps

1.1.1 Distribution Map	Yes
1.1.1a Sensitive species	No
1.1.2 Method used - map	Complete survey/Complete survey or a statistically robust estimate (3)
1.1.3 Year or period	2000-2012
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 Anna Rita Di Cerbo, Francesco Ficetola, Roberto Sindaco (Societas Herpetologica Italica). Information, unpublished data and experts' judgments have been provided by Anna Rita Di Cerbo, Francesco Ficetola, Roberto Sindaco.

Balletto E., Bologna M.A., Giacoma C., 2007. Bufo viridis Laurenti, 1768 complex. In: Fauna d'Italia, vol. XLII, Amphibia. A cura di Lanza B., Andreone F., Bologna M.A., Corti C., Razzetti E., p. 296-305. Calderini, Bologna.

Bologna M.A., Giacoma C., 2006. Rana dalmatina Bonaparte, 1838. In: Atlante degli Anfibi e dei Rettili d'Italia / Atlas of Italian Amphibians and Reptiles, Sindaco R., Doria G., Razzetti E. & Bernini F. (Eds), p. 306-311. Societas Herpetologica Italica. Edizioni Polistampa, Firenze.

Colliard C., Sicilia A., Turrisi G.F., Arculeo M., Perrin N., Stöck M., 2010. Strong reproductive barriers in a narrow hybrid zone of West-Mediterranean green toads (Bufo viridis subgroup) with Plio-Pleistocene divergence. BMC Evolutionary Biology 2010, 10:232. <http://www.biomedcentral.com/1471-2148/10/232>

Rondinini, C., Battistoni, A., Peronace, V., Teofili, C. (compilatori). 2013. Lista Rossa IUCN dei Vertebrati Italiani. Comitato Italiano IUCN e Ministero dell'Ambiente, del Territorio e del Mare, Roma

Stöck M., Moritz C., Hickerson M., Frynta D., Dujsebayaeva T., Eremchenko V., Macey J.R., Papenfuss T.J., Wake D.B., 2006. Evolution of mitochondrial relationships and biogeography of Palearctic green toads (Bufo viridis subgroup) with insights in their genomic plasticity. Molecular Phylogenetics and Evolution 41: 663–689

Stöck M., Sicilia A., Belfiore N.M., Buckley D., Lo Brutto S., Lo Valvo M., Arculeo M., 2008. Post-Messinian evolutionary relationships across the Sicilian channel: Mitochondrial and nuclear markers link a new green toad from Sicily to African

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relatives. BMC Evolutionary Biology 2008, 8:56
http://www.biomedcentral.com/1471-2148/8/56

2.3 Range

2.3.1 Surface area - Range (km ²)	116300
2.3.2 Method - Range surface area	Estimate based on expert opinion with no or minimal sampling (1)
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 ²) operator approximately equal to (≈) unknown No method Expert judgement
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 606 max 606
2.4.3 Additional information	Definition of locality Conversion method Problems
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	Improved knowledge/more accurate data

2.5 Habitat for the Species

2.5.1 Surface area - Habitat (km ²)	
2.5.2 Year or period	2000-2012
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	Decrease of habitats and connectivity due to pollution, infilling of water bodies

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	and agricultural intensification. Continuous urbanisation and roads affect toad migration..
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 ²)	
2.5.10 Reason for change	Improved knowledge/more accurate data

2.6 Main Pressures

Pressure	ranking	pollution qualifier(s)
use of biocides, hormones and chemicals (A07)	medium importance (M)	N/A
Landfill, land reclamation and drying out, general (J02.01)	medium importance (M)	N/A
Water abstractions from groundwater (J02.07)	low importance (L)	N/A
Roads, paths and railroads (D01)	medium importance (M)	N/A
human induced changes in hydraulic conditions (J02)	medium importance (M)	N/A
continuous urbanisation (E01.01)	medium importance (M)	N/A
Pollution to surface waters (limnic & terrestrial, marine & brackish) (H01)	medium importance (M)	N/A
antagonism arising from introduction of species (K03.05)	medium importance (M)	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)
use of biocides, hormones and chemicals (A07)	medium importance (M)	N/A
Landfill, land reclamation and drying out, general (J02.01)	medium importance (M)	N/A
Water abstractions from groundwater (J02.07)	medium importance (M)	N/A
Roads, paths and railroads (D01)	medium importance (M)	N/A
human induced changes in hydraulic conditions (J02)	medium importance (M)	N/A
continuous urbanisation (E01.01)	medium importance (M)	N/A
Pollution to surface waters (limnic & terrestrial, marine & brackish) (H01)	medium importance (M)	N/A
antagonism arising from introduction of species (K03.05)	medium importance (M)	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

2.8.3 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

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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	
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)

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Balletto E., Bologna M.A., Giacoma C., 2007. Bufo viridis Laurenti, 1768 complex. In: Fauna d'Italia, vol. XLII, Amphibia. A cura di Lanza B., Andreone F., Bologna M.A., Corti C., Razzetti E., p. 296-305. Calderini, Bologna.

Bologna M.A., Giacoma C., 2006. Rana dalmatina Bonaparte, 1838. In: Atlante degli Anfibi e dei Rettili d'Italia / Atlas of Italian Amphibians and Reptiles, Sindaco R., Doria G., Razzetti E. & Bernini F. (Eds), p. 306-311. Societas Herpetologica Italica. Edizioni Polistampa, Firenze.

Colliard C., Sicilia A., Turrise G.F., Arculeo M., Perrin N., Stöck M., 2010. Strong reproductive barriers in a narrow hybrid zone of West-Mediterranean green toads (Bufo viridis subgroup) with Plio-Pleistocene divergence. BMC Evolutionary Biology 2010, 10:232. <http://www.biomedcentral.com/1471-2148/10/232>

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Stöck M., Moritz C., Hickerson M., Frynta D., Dujsebayeva T., Eremchenko V., Macey J.R., Papenfuss T.J., Wake D.B., 2006. Evolution of mitochondrial relationships and biogeography of Palearctic green toads (Bufo viridis subgroup) with insights in their genomic plasticity. Molecular Phylogenetics and Evolution 41: 663–689

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Stöck M., Sicilia A., Belfiore N.M., Buckley D., Lo Brutto S., Lo Valvo M., Arculeo M., 2008. Post-Messinian evolutionary relationships across the Sicilian channel: Mitochondrial and nuclear markers link a new green toad from Sicily to African relatives. BMC Evolutionary Biology 2008, 8:56
<http://www.biomedcentral.com/1471-2148/8/56>

2.3 Range

2.3.1 Surface area - Range (km ²)	76500
2.3.2 Method - Range surface area	Complete survey/Complete survey or a statistically robust estimate (3)
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 ²) operator approximately equal to (≈) unknown No method Expert judgement
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 522 max 522
2.4.3 Additional information	Definition of locality Conversion method Problems
2.4.4 Year or period	2000-2012
2.4.5 Method – population size	Complete survey/Complete survey or a statistically robust estimate (3)
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	Improved knowledge/more accurate data

2.5 Habitat for the Species

2.5.1 Surface area - Habitat (km ²)	
2.5.2 Year or period	2000-2012

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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	Decrease of habitats and connectivity due to pollution, infilling of water bodies and agricultural intensification. Continuous urbanisation and roads affect toad migration.
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 ²)	
2.5.10 Reason for change	Improved knowledge/more accurate data

2.6 Main Pressures

Pressure	ranking	pollution qualifier(s)
agricultural intensification (A02.01)	medium importance (M)	N/A
Roads, paths and railroads (D01)	medium importance (M)	N/A
human induced changes in hydraulic conditions (J02)	medium importance (M)	N/A
use of biocides, hormones and chemicals (A07)	medium importance (M)	N/A
droughts and less precipitations (M01.02)	low importance (L)	N/A
continuous urbanisation (E01.01)	medium importance (M)	N/A
infilling of ditches, dykes, ponds, pools, marshes or pits (J02.01.03)	medium importance (M)	N/A

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

Threat	ranking	pollution qualifier(s)
surface water abstractions for agriculture (J02.06.01)	medium importance (M)	N/A
droughts and less precipitations (M01.02)	low importance (L)	N/A
infilling of ditches, dykes, ponds, pools, marshes or pits (J02.01.03)	medium importance (M)	N/A
use of biocides, hormones and chemicals (A07)	medium importance (M)	N/A
Roads, paths and railroads (D01)	high importance (H)	N/A
human induced changes in hydraulic conditions (J02)	medium importance (M)	N/A
continuous urbanisation (E01.01)	medium importance (M)	N/A

2.7.1 Method used – threats	expert opinion (1)
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2.8 Complementary Information

2.8.1 Justification of % thresholds for trends

2.8.2 Other relevant Information

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

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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	
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

Alpine (ALP)

The present species assessment (fields 0.1-2.9) has been compiled by Anna Rita Di Cerbo, Francesco Ficetola, Roberto Sindaco (Societas Herpetologica Italica). Information, unpublished data and experts' judgments have been provided by Anna Rita Di Cerbo, Francesco Ficetola, Roberto Sindaco.

Balletto E., Bologna M.A., Giacoma C., 2007. Bufo viridis Laurenti, 1768 complex. In: Fauna d'Italia, vol. XLII, Amphibia. A cura di Lanza B., Andreone F., Bologna M.A., Corti C., Razzetti E., p. 296-305. Calderini, Bologna.

Bologna M.A., Giacoma C., 2006. Rana dalmatina Bonaparte, 1838. In: Atlante degli Anfibi e dei Rettili d'Italia / Atlas of Italian Amphibians and Reptiles, Sindaco R., Doria G., Razzetti E. & Bernini F. (Eds), p. 306-311. Societas Herpetologica Italica. Edizioni Polistampa, Firenze.

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Rondinini, C., Battistoni, A., Peronace, V., Teofili, C. (compilatori). 2013. Lista Rossa IUCN dei Vertebrati Italiani. Comitato Italiano IUCN e Ministero dell'Ambiente, del Territorio e del Mare, Roma

Stöck M., Moritz C., Hickerson M., Frynta D., Dujsebayeva T., Eremchenko V., Macey J.R., Papenfuss T.J., Wake D.B., 2006. Evolution of mitochondrial relationships and biogeography of Palearctic green toads (Bufo viridis subgroup) with insights in their genomic plasticity. Molecular Phylogenetics and Evolution 41: 663–689

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2.3 Range

2.3.1 Surface area - Range (km ²)	23000
2.3.2 Method - Range surface area	Complete survey/Complete survey or a statistically robust estimate (3)
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 ²) operator approximately equal to (≈) unknown No method Expert judgement
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 136 max 136
2.4.3 Additional information	Definition of locality Conversion method Problems
2.4.4 Year or period	2000-2012
2.4.5 Method – population size	Complete survey/Complete survey or a statistically robust estimate (3)
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	

2.5 Habitat for the Species

2.5.1 Surface area - Habitat (km ²)	
2.5.2 Year or period	2000-2001
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	Decrease of habitats and connectivity due to pollution, infilling of water bodies and agricultural intensification. Roads affect toad migration.
2.5.5 Short term trend period	2001-2012
2.5.6 Short term trend direction	stable (0)

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2.5.7 Long-term trend period

2.5.8 Long term trend direction

N/A

2.5.9 Area of suitable habitat (km²)

2.5.10 Reason for change

Improved knowledge/more accurate data

2.6 Main Pressures

Pressure	ranking	pollution qualifier(s)
invasive non-native species (I01)	low importance (L)	N/A
Biocenotic evolution, succession (K02)	medium importance (M)	N/A
Pollution to surface waters (limnic & terrestrial, marine & brackish) (H01)	medium importance (M)	N/A
Roads, paths and railroads (D01)	high importance (H)	N/A
agricultural intensification (A02.01)	medium importance (M)	N/A
Water abstractions from surface waters (J02.06)	medium importance (M)	N/A
infilling of ditches, dykes, ponds, pools, marshes or pits (J02.01.03)	medium importance (M)	N/A
anthropogenic reduction of habitat connectivity (J03.02)	high importance (H)	N/A
use of biocides, hormones and chemicals (A07)	medium importance (M)	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)
reduction in migration/ migration barriers (J03.02.01)	medium importance (M)	N/A
Pollution to surface waters (limnic & terrestrial, marine & brackish) (H01)	medium importance (M)	N/A
use of biocides, hormones and chemicals (A07)	medium importance (M)	N/A
paths, tracks, cycling tracks (D01.01)	medium importance (M)	N/A
invasive non-native species (I01)	medium importance (M)	N/A
Biocenotic evolution, succession (K02)	medium importance (M)	N/A
agricultural intensification (A02.01)	medium importance (M)	N/A
infilling of ditches, dykes, ponds, pools, marshes or pits (J02.01.03)	medium importance (M)	N/A
surface water abstractions for agriculture (J02.06.01)	medium importance (M)	N/A
Restructuring agricultural land holding (A10)	medium importance (M)	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

2.8.3 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

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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		
3.1.3 Trend of population size within	N/A		

3.2 Conversation Measures

Species name: *Bufo viridis* (1201)

Field label	Note	User
0.2.3 Alternative Speciesname	<p><i>Bufo siculus</i> specie endemica della Sicilia distinta da <i>B. viridis</i> da Stock et al. (2008). Fonti bibliografiche: Stöck M., Sicilia A., Belfiore N., Buckley D., Lo Brutto S., Lo Valvo M., Arculeo M., 2008. Post-Messinian evolutionary relationships across the Sicilian channel: Mitochondrial and nuclear markers link a new green toad from Sicily to African relatives. <i>BMC Evolutionary Biology</i> 8: 56-74.</p>	ISPRA_ AUNA
0.2.3 Alternative Speciesname	<p><i>Bufo balearicus</i> popolazioni peninsulari e insulari (ad eccezione della Sicilia) (Colliard et al, 2012; Stock et al., 2008). In Italia, sono presenti popolazioni di <i>B. viridis</i> solo in Friuli Venezia Giulia, anche se il limite geografico tra le due specie non è del tutto ancora chiaro (Lanza et al., 2007; Sindaco et al. 2006). Fonti bibliografiche: Lanza B., Andreone F., Bologna M.A., Corti C., Razzetti E., 2007. Fauna d'Italia. Amphibia. Calderini, Bologna. Sindaco R., Doria G., Razzetti E., Bernini F., 2006. Atlante degli anfibii e rettili d'Italia. Societas Herpetologica Italica. Edizioni Polistampa, Firenze. Stöck M., Sicilia A., Belfiore N., Buckley D., Lo Brutto S., Lo Valvo M., Arculeo M., 2008. Post-Messinian evolutionary relationships across the Sicilian channel: Mitochondrial and nuclear markers link a new green toad from Sicily to African relatives. <i>BMC Evolutionary Biology</i> 8: 56-74. Caroline Colliard C., Sicilia A., Turrise G.F., Arculeo M., Perrin N., Stöck M., 2010. Strong reproductive barriers in a narrow hybrid zone of West-Mediterranean green toads (<i>Bufo viridis</i> subgroup) with Plio-Pleistocene divergence. <i>BMC Evolutionary Biology</i> 2010, 10:232. http://www.biomedcentral.com/1471-2148/10/232</p>	ISPRA_ AUNA



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