Triturus alpestr	is			F	Region:	10					
Taxonomic Authority:	(Laurenti, 1768)										
Synonyms:				(Common Na	mes:					
				1	Alpiiskii Trito	n		Russia	n		
				,	Alpine Newt			English	1		
				-	Traszka Gors	ska		Polish			
				-	Tritón Alpino			Spanis	h		
				t	tritone alpino	ı		Italian			
Order: Caudata					Family:	Salaman	dridae				
Notes on taxonomy:	ral traits	s that suppor ecies (Aranc	and Arnt	zen 1987;	Andreone e	at the species level) et al. 1993). Populations in Lymberakis pers. comm.).					
General Informatio	<u>n</u>										
Biome		✓ Terrestri	al	✓ Fre	shwater		Marine	!			
Geographic Range of sp	pecies:			ı	Habitat and	Ecology	Informatio	n:			
This species is found through the French Atlantic coastline Romania, and Bulgaria at populations are present in present in Portugal). The al. (2001). It has been su [distribution not mapped I (Madrid Province, central around 2,500m asl (Switzer).	ed of pet in the second of the	This is a very aquatic species generally found close to water. It is widespread in both alpine and lowland habitats including wet, shaded coniferous, mixed and deciduous forests, sub alpine meadows and pastureland. The species breeds, and larval development takes place, in all stagnant waters (except large lakes) including shallow ponds, temporary pools, lakes, and ditches, drinking troughs, ruts and sometimes slow-moving streams. There is a generation time is between 2 and 10 years depending of the locality. The species life expectancy might be more than 20 years, but is usually around 7 years. Several dozens to hundreds of eggs are deposited per female each year. Neotenous populations occur in mountain lakes of Slovenia, Bosnia and Montenegro. The species can be found in slightly modified habitats, although it is less common in large cultivated fields.									
Conservation Measures	:				Threats:						
This species is listed on Appendix III of the Bern Convention. It is present in many protected areas, and protected by national legislation over much of its range. The species is recorded in a number of many national and sub national Red Data Books and Lists. New breeding sites for the species have been created in parts of its range (e.g., Hungary). Conservation measures needed include the removal of predatory fishes in mountain lakes, reduction of overgrazing in mountain pastures, and the restoration of traditional livestock troughs as breeding sites. There is an urgent need to conserve the unique paedomorphic mountain isolates of T. alpestris. In parts of this species range, mitigation measures to reduce road kill have been established. Species population information:				ny r ((c c ns l sies 1	southeastern continental Greece are facing severe habitat loss.						
It is generally common in be rare in Hungary and B vulnerable in Spain (T.a. Belgium, Luxembourg an comm.).	ulgaria; threatene cyreni) and endar	ed in Austria ngered in the	and Denmar Netherlands	k; s,							
		Native - Presence	Native - Presence	Extino	ct Reintrodu	iced Intr	oduced \	√agrant			
Country Distribution	<u>on</u>	Confirmed	Possible								
Albania		✓									
Austria		✓									
Belgium		✓									
Bosnia and Herzegovina		✓									
Bulgaria		✓									
Croatia		✓									
Czech Republic		✓									
Denmark		✓									
France		~									
Germany		~									
Greece		✓									
Hungary		✓									
Italy		✓									
Liechtenstein		✓									

Luxembourg	✓			
Macedonia, the former Yugoslav Republ	✓			
Netherlands	✓			
Poland	✓			
Romania	✓			
Slovakia	✓			
Slovenia	✓			
Spain	✓		✓	
Switzerland	✓			
Ukraine	✓			
United Kingdom			✓	
Serbia and Montenegro	✓			

Native - Native -

Presence Presence Extinct Reintroduced Introduced Confirmed Possible

FAO Marine Habitats

Major Lakes

Major Rivers

<u>Up</u>	per Level Habitat Preferences	Score	Lower Level Habitat Preferences	Score
1.4	Forest - Temperate	1	Broadleaf Forest	1
3.4	Shrubland - Temperate	1	Conifer Forest	1
4.4	Grassland - Temperate	1	Cool Broadleaf Forest	1
5.1	Wetlands (inland) - Permanent Rivers/Streams/Creeks	2	Cool Conifer Forest	1
	(includes waterfalls)		Cool Mixed Forest	1
5.4	Wetlands (inland) - Bogs, Marshes, Swamps, Fens, Peatla	ınds 1	Deciduous Broadleaf Wood	1
5.5	Wetlands (inland) - Permanent Freshwater Lakes (over 8h	a) 2	Marsh Wetland	1
5.6	Wetlands (inland) - Seasonal/Intermittent Freshwater Lake (over 8ha)	s 1	Mire, Bog, Fen	1
5.7	Wetlands (inland) - Permanent Freshwater Marshes/Pools	1	Mixed Forest	1
	(under 8ha)		Urban	2
5.8	Wetlands (inland) - Seasonal/Intermittent Freshwater Marshes/Pools (under 8ha)	1		
11.2	Artificial/Terrestrial - Pastureland	1		
11.4	Artificial/Terrestrial - Rural Gardens	2		
12.1	Artificial/Aquatic - Water Storage Areas (over 8ha)	1		
12.2	? Artificial/Aquatic - Ponds (below 8ha)	1		
12.5	Artificial/Aquatic - Excavations (open)	1		
12.9	Artificial/Aquatic - Canals and Drainage Channels, Ditches	2		

Major threats				Conservation Measures					
Code	Description of threat		Past Present Future		Code	Conservation measures	In place Needed		
1	Habitat Loss/Degradation (human induced)	_	✓	✓	1	Policy-based actions	✓	✓	
1.1	Agriculture	✓	✓	✓	1.2	Legislation	✓	✓	
1.1.4	Livestock	✓	✓	✓	1.2.1	Development	✓	✓	
1.1.4.3	Agro-industry	✓	✓	✓	1.2.1.1	International level	✓	✓	
1.3	Extraction	✓	✓	✓	1.2.1.2	2 National level	✓	✓	
1.3.3	Wood	✓		✓	1.2.2	Implementation	✓	✓	
1.3.3.3	Clear-cutting	✓		✓	1.2.2.1	International level	✓	✓	
1.4	Infrastructure development	✓		✓	1.2.2.2	2 National level	✓	✓	
1.4.1	Industry	✓	✓	✓	2	Communication and Education		✓	
1.4.2	Human settlement	✓		✓	2.2	Awareness		✓	
2	Invasive alien species (directly affecting the	✓	✓	✓	3	Research actions		✓	
0.0	species)	_			3.1	Taxonomy		✓	
2.2	Predators	✓		✓	3.2	Population numbers and range		✓	
3	Harvesting (hunting/gathering)	✓		✓	3.3	Biology and Ecology		✓	
3.5	Cultural/scientific/leisure activities	✓		✓	3.4	Habitat status		✓	
3.5.2	Sub-national/national trade	✓	✓	✓	3.5	Threats		✓	

3.5.3 6 6.3 6.3.1 6.3.3	Regional/internat Pollution (affectir Water pollution Agriculture Commercial/Indu	g habitat and/or species				3.6 3.8 3.9 4 4.1 4.2 4.4 4.4.2 5 5.1 5.1	Conserva Trends/M Habitat a Maintena Restorati Protected Establish Manager Species- Re-introd	ance/Consion d areas nment ment based act	sures ased actions servation			
Utilisat	ion of Species											
•	e/Type of Use s/display animals, earch	horticulture		sistence	N	ationa		ational ✓ ✓	Other purpose:			
Primary forms removed from the wild 1. Whole animal/plant			100% ✓	>75% 	51-	75%	26-50%	<25% 	Other forms removed from Presumed to be 100%. So are more impacted than of	me subspe	subspecies	
Wild Trend i		•	numb	51-75% 26-50%			Other source of specime Unknown Unknown					
CITES:	Not listed	produced through doi	ilesticati	on/cuitiv	valion	Over 1	asi iive ye	ais.	OHRHOWH			
Red Lis	isting of Assessment: of Criteria: ale for the Red Li	pres	umed lar		ation, a	iew of		stribution,	tolerance of a broad range of be declining fast enough to	,		
Current Population Trend: Decreasing Date of Assessment: 12/17/2004												
Assessor(s): Jan Willem Arntzen, Mathieu Denoël, Sergius Kuzmin, Vladimir Ishchenko, Pedro Beja, Franco Andreone, Robert Jehle, Per Nys Notes on Red listing: Some taxa within Triturus alpestris, including polyphenisms (populations with no observed genetic variation from T. alpestris) are severely threatened and close to extinction. This is the case for most of the 87 known paedomorphic populations (only a few of these are considered not to be threatened). Subspecies of T. alpestris that probably qualify for listing in a threatened category include T.a. veluchiensis, T.a. inexpectatus, T.a. lacusnigri and T.a. cyreni (M. Denoël pers. comm.). The neotenous subspecies T.a. serdarus, endemic to Zminicko Lake, in Montenegro, is considered to be highly endangered by Kalezic and Dzukic (2001). The subspecies T.a. inexpectatus, restricted to a few sites on the Catena Costiera in Calabria, southern Italy, is threatened through significant alteration of the aquatic habitats (F. Andreone pers. comm.). Populations from southern Greece, which might be taxonomically distinct, are probably also threatened.												
	graphy											
	oak, N.N. and Szo		mnovodr	nye i Pres	smykay	/ushch	iiesya Ukra	ainskikh K	arpat [Amphibians and Rept	iles of Ukra	ainian	

Denoël, M. and Joly, P., 2000, Neoteny and progenesis as two heterochronic processes involved in paedomorphosis in Triturus alpestris (Amphibia: Caudata), Proceedings of the Royal Society, London, Series B, Biological Sciences, , , 267, 1481-1485, ,

, 1995, , , Amphibian Populations in the Commonwealth of Independent States: Current Status and Declines, Kuzmin, S.L. Dodd Jr, C.K. and Pikulik, M.M., , , Pensoft, Moscow

Puky, M. et al., 2003, , , Preliminary herpetological atlas of Hungary, , , pp. 86, Varangy Akciócsoport Egyesület, Budapest

Arnold, E.N., 2003, , , Reptiles and amphibians of Europe, , , 288, Princeton University Press,

Vogrin, M., 2002, Amphibians, , Nature in municipality Kidricevo, Vogrin, M., , 99-106, Municipality Kidricevo,

Puky, M., 2000, A kétéltûek védelme Magyarországon (Conservation of amphibians in Hungary), , Gerinces állatfajok védelme (Conservation of vertebrate species), Faragó, S., , 143-158, Nyugat-Magyarországi Egyetem Erdőmérnöki Kar, Sopron

Kuzmin, S.L., 1995, , , Die Amphibien Russlands und Angrenzender Gebiete, , , , Westarp – Spektrum, Magdeburg - Heidelberg

Thorn, R., 1968, Les Salamandres d'Europe, d'Asia, et d'Afrique du Nord, , , , , 376 pp, Éditions Paul Lechevalier, Paris

Arano, B., Arntzen, J.W., Herrero, P. and García-París, M., 1991, Genetic differentiation among Iberian populations of the Alpine newt, Triturus alpestris, Amphibia-Reptilia, , , 12, 409-421, ,

Dely, G., 1967, , , Kétéltűek-Amphibia: Magyarország Állatvilága, Faunae Hungariae, , , , Ákadémiai Kiadó, Budapest

Mlynarski, M., 1966, Plazy I Gady Polski, Panstwowe Zaklady Wydawnictw Szkolnych, Warszawa, , , 75, , ,

Smit, G., 1998, DAPTF-Netherlands Report, FrogLog, , , 28, , ,

Kuzmin, S.L., 1999, , , The Amphibians of the Former Soviet Union, , , , Pensoft, Sofia-Moscow

Arnold, H.R., 1995, Atlas of amphibians and reptiles in Britain, ITE research publication, , , 10, 40, , London, UK

Grossenbacher, K., 1994, Rote Liste der gefährdeten Amphibien der Schweiz, , Rote Liste der gefährdeten Tierarten in der Schweiz, BUWAL, , 33-34, BUWAL (Bundesamt für Umwelt, Wald und Landschaft), Bern

Kalezic, M. and Dzukic, G., 2001, Amphibian status in Serbia and Montenegro (FR Yugoslavia), FrogLog, ., 45, .,

Kuzmin, S.L., 1996, Threatened amphibians in the former Soviet Union: the current situation and the main threats, Oryx, . . 30, 24-30, .

, 1997, , , Atlas of Amphibians and Reptiles in Europe, Gasc, J.-P., , 494, Societas Europea Herpetologica & Museum National d'Histoire Naturelle, Paris

Joly, P., Miaud, C., Lehmann, A. and Grolet, O., 2001, Habitat matrix effect on pond occupancy in newts, Conservation Biology, , , 15, 239-248, ,

Andreone, F., Giacoma, C. and Sartoris, L., 1993, Subspecific differentiation in the courtship behaviour of Triturus alpestris alpestris and T. a. apuanus, Ecology, Ethology and Evolution, , , 5, 380-381, ,

Miaud, C., 1993, Predation of Newt Eggs (Triturus alpestris and T. helveticus) - Identification of Predators and Protective Role of Oviposition Behaviour, Journal of Zoology, , , 231(4), 575-582, ,

Denoël, M. and Schabetsberger, R., 2003, Resource use in two heterochronic populations of Greek Alpine newts, Triturus alpestris veluchiensis (Wolterstorff, 1935), Acta Oecol., , , 24, 55-64, ,

Andreone, F. and Dore, B., 1993, Adaptations of the reproductive cycle in Triturus alpestris apuanus to an unpredictable habitat, Amphibia-Reptilia, , , 13, 161-179, ,

Denoël, M. and Joly, P., 2001, Adaptive significance of facultative paedomorphosis in Triturus alpestris (Amphibia, Caudata): resource partitioning in an alpine lake, Freshwater Biology, , , 46, 1387-1396, ,

Vogrin, N., 1997, The Status of Amphibians in Slovenia, FrogLog, , , 20, , ,

Miaud, C., 1993, Identification of newt (Triturus alpestris and T. helveticus) eggs predators and protective role of oviposition behaviour, Journal of Zoology, , , 231, 575-582, ,

Kalezic, M.L., Cvetkovic, D., Djorovic, A. and Dzukic, G., 1996, Alternative life-history pathways: paedomorphosis and adult fitness in European newts (Triturus vulgaris and T. alpestris), Journal of Zoological Systematics and Evolutionary Research, , , 34, 1-7, ,

Pleguezuelos, J.M., Márquez, R. and Lizana, M., 2002, , , Atlas y Libro Rojo de los Anfibios y Reptiles de España, , , pp 584, Dirección General de la Conservación de la naturaleza-Associación Herpetológica Española, Madrid

Bell, B.D. and Bell, A.P., 1995, Distribution of the introduced Alpine newt Triturus alpestris and of native Triturus species in north Shropshire, England, Australian Journal of Ecology, , , 20(3), 367-375, ,

Perret, N., Pradel, R., Miaud, C., Grolet, O. and Joly, P., 2003, Transience, dispersal and survival rates in newt patchy populations, Journal of Animal Ecology, , , 72, 567-575, ,

Pleguezuelos, J.M. and Villafranca, C., 1997, Distribución altitudinal de la herpetofauna ibérica, , Distribución y Biogeografia de los Anfibios y Reptiles en España y Portugal, Pleguezuelos, J.M., , pp. 321-34, Monografías de Herpetología 3. Universidad de Granada-Asociación Herpetológica Española, Granada,

Miaud, C., Guyetant, R. and Faber, H., 2000, Age, size and growth of the alpine newt, Triturus alpestris (Urodela: Salamandridae), at high altitude and a review of life-history trait variation throughout its range, Herpetologica, , , 56(2), 135-144, ,

Puky, M., 2003, Amphibian mitigation measures in Central-Europe, , Proceedings of the International Conference on Ecology and Transportation, 26-31 August, 2003, Lake Placid, New York, USA, Irwin, L.C., Garrett, P. and McDermott, K.P., , 413-429, Center for Transportation and the Environment, North Carolina State University, USA,

Denoël, M., Duguet, R., Dzukic, G., Kalezic, M.L. and Mazzotti, S., 2001, Biogeography and ecology of paedomorphosis in Triturus alpestris (Amphibia, Caudata), Journal of Biogeography, , , 28, 1271-1280, ,

Denoël, M., 2002, Paedomorphosis in the Alpine newt (Triturus alpestris): decoupling behavioural and morphological change, Behavioral Ecology and Sociobiology, , , 52, 394-399, ,

Martínez-Solano, I., Bosch, J. and García-París, M., 2003, Demographic trends and community stability in a montane amphibian assemblage, Conservation Biology, , , 17(1), 238-244, ,

Denoël, M., 2003, How do paedomorphic newts cope with lake drying?, Ecography, , , 26, 405-410, ,

Miaud, C., 1994, Analyse quantitative du comportement de ponte du triton palme (Triturus helveticus) et du triton alpestre (Triturus alpestris), Bulletin de la Société Herpétologique de France, , , 71-72, 23-32, ,

Dubois, A., 1983, Le triton alpestre de Calabre: Une forme rare et menacee d'extinction, Alytes, ., . 2(2), 55-62, ,

Fog, K., 1995, Amphibian conservation in Denmark, FrogLog, , , 13, , ,

Braña, F., Frechilla, L. and Orizaola, G., 1996, Effect of introduced fish on amphibian assemblages in mountain lakes of northern Spain, Herpetological Journal, , , 6, 145-148, ,

Andreone, F., Giacoma, C., Cavallotto, L. and Francillon-Vieillot, H., 1996, Le cycle saisonal de Triturus alpestris: influence des facteurs externes, Revue Valdôtaine d'Histoire naturelle (Aosta, Italy), , , , , ,

Joly, P. and Miaud, C., 1993, How does a waterward migrating newt find its pond? An experimental study in the alpine newt Triturus alpestris, Ecology, Ethology and Evolution, , , (1993), 447-455, ,

Andreone, F. and Dore, B., 1991, New data on paedomorphism in Italian populations of alpine newts, Triturus alpestris (Laurenti, 1768) (Caudata: Salamandridae), Herpetozoa, , , 4(3/4), 149-156, ,

Joly, P., 1992, The amphibian fauna of the French Upper-Rhône floodplain. The Lavours marsh and Jons sector, Alytes, ., 10(4), 117-129, ,

Pleguezuelos, J.M., 1997, , , Distribucion y Biogeografia de los Anfibios y Reptiles en España y Portugal, , , , Asociacion Herpetologica Española, Las Palmas de Gran Canarias

García-París, M. and Martín, C., 1987, Amphibians of the Sierra del Guadarrama (1800-2430m altitude), , Proceedings. 4th Ordinary General Meeting of the Societas Europaea Herpetologica, van Gelder, J.J., Strijbosch, H. and Bergers, P.J., , 135-138, , Nijmegen, Netherlands Sotiropoulos, K., Legakis, A. and Polymeni, R.-M., 1995, A review of the knowledge on the distribution of the genus Triturus (Rafinesque, 1815) in Greece, Herpetozoa, , , 8(1/2), 25-34, ,

Griffiths, R.A., 1996, , , Newts and Salamanders of Europe, , , 188 pp, Poyser Natural History, London

Nagl, A., 1996, The Effect of UV-radiation on Alpine Newts, FrogLog, , , 18, , ,

Sotiropoulos, K., Tomovic, L., Dzukic, G. and Kalezic, M.L., 2001, Morphological differentiation of the Alpine Newt (Triturus alpestris) in the Balkans: taxonomic implications, Herpetological Journal, , , 11(1), 1-8, ,

Denoël, M., 2003, Avantages sélectifs d'un phénotype hétérochronique. Eco-éthologie des populations pédomorphiques du Triton alpestre, Triturus alpestris (Amphibia, Caudata), Cah. Ethol., , , 21, 327pp, ,

Miaud, C., Guyétanat, R. and Faber, H., 2000, A review of life history traits in Alpine newts (Amphibia, Urodela, Triturus alpestris) in response to envirormental variation, Herpetologica, , , 56, 131-140, ,

Bannikov, A.G., Darevsky, I.S., Ishchenko, V.G., Rustamov, A.K. and Szczerbak, N.N., 1977, , , Opredelitel Zemnovodnykh i Presmykayushchikhsya Fauny SSSR [Guide to Amphibians and Reptiles of the USSR Fauna], , , , Prosvechshenie, Moscow

 $Dzukic,\,G.\,and\,Kalezic,\,M.L.,\,1984,\,Neoteny\,in\,the\,\,alpine\,\,newt\,\,population\,\,from\,\,the\,\,submediterranean\,\,area\,\,of\,\,Yugoslavia,\,Alytes,\,\,,\,\,,\,\,3(1),\,\,11-19,\,\,,$

Blackwell, K., 2002, Triturus alpestris in Britain, Herpetological Bulletin, , , 79, 32, ,

Böhme, W, Grossenbacher, K. and Thiesmeier, B., 1999, , Handbuch der Reptilien und Amphibien Europas, band 4/I:Schwanzlurche (Urodela)., , , , , Aula-Verlag, Wiesbaden, Germany.