

# Italy's biodiversity at risk

A call for action



NOT EVALUATED	DATA DEFICIENT	LEAST CONCERN	NEAR THREATENED	VULNERABLE	< ENDANGERED >	CRITICALLY ENDANGERED	REGIONALLY EXTINCT	EXTINCT IN THE WILD	EXTINCT
NE	DD	LC	NT	VU	EN	CR	RE	EW	EX

Italy hosts a large proportion of the species that are threatened at the European level, and has the important responsibility for protecting these species within its territory. Species in Italy require greater action to improve their status. While many species already receive some conservation attention, others do not. Species can be saved from extinction but this requires a combination of sound research and carefully coordinated efforts. Italy as an EU Member State has committed to halting biodiversity loss by 2020 but urgent action is needed to meet this target and better monitoring capacity is required to measure if the target is met.

Considerable conservation investment is needed from Italy to ensure that the status of European species improves in the long term. This document provides an overview of the conservation status of species in Italy based on the results of all European Red Lists completed to date. It does not provide the status of the species in the country, therefore we invite the reader to cross check national and sub-national Red Lists. Together, they can be used to help guide policies and local conservation strategies.

## The European Red List

The European Red List of Species is a review of the conservation status of more than 6,000 species in Europe according to the IUCN Red List Categories and Criteria and the regional Red Listing guidelines. It identifies species that are threatened with extinction at the European level so that appropriate conservation actions can be taken to improve their status. The geographical scope is continent-wide, including European parts of the Russian Federation and Turkey as well as the Macaronesian Islands. The Caucasus region is not included.

To date, European regional assessments have been completed for all mammals, reptiles, amphibians, butterflies, dragonflies, freshwater fishes and freshwater molluscs and a selection of saproxylic beetles, terrestrial molluscs, and vascular plants. Assessments of pollinators, medicinal plants, birds and marine fishes are currently under development.

The European Red List is compiled by IUCN Global Species Programme, with funding from the European Commission.

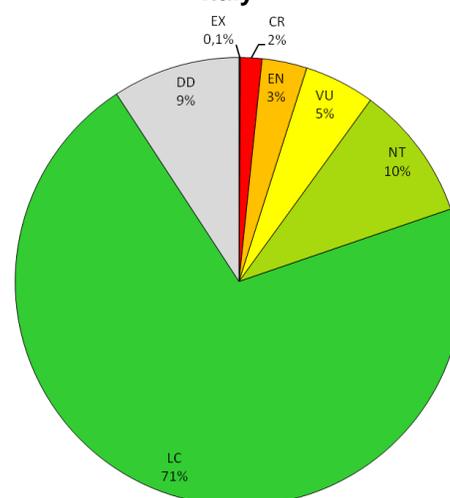
## Conservation status

Italy is host to an estimated 67,500 species of animals and plants. This number represents 43% of the total species described for Europe and could represent around 4% of the species in the world. According to the table below, approximately 35% of the species assessed by the European Red List of Species are present in Italy. For some of the taxonomic groups, the percentages of European species that occur in Italy are particularly high; such as dragonflies, butterflies and saproxylic beetles.

Of the 2,059 species assessed that occur in Italy, the groups comprising the highest number of species are vascular plants, terrestrial molluscs, butterflies and saproxylic beetles. Of the total number of species assessed in the country around 11%\* are considered threatened and at least 10% are Near Threatened at the European level and two species are already Extinct. Many of these species are endemic to Europe and are found nowhere else in the world.

Species that are considered threatened at the European level and occur in Italy are found mostly in wetlands, forests, rocky areas and shrublands. These ecosystems require particular attention in order to ensure the habitats of these sensitive species remain.

European status of species in Italy



Number of species assessed within each IUCN Red List category at the European level

Species group	No. of sp. in Europe	No. of sp. in Italy	% of European sp. occurring in Italy	No. of threatened sp. in Italy (status at European level)		
				CR	EN	VU
Mammals	233	110	47%	1	0	9
Reptiles	140	44	31%	1	0	1
Amphibians	83	41	49%	0	3	6
Freshwater fishes	522	85	16%	4	4	5
Butterflies	435	263	60%	0	4	7
Dragonflies	137	88	64%	0	0	6
Saproxylic beetles**	431	255	59%	0	8	8
Terrestrial molluscs**	1,233	268	22%	6	8	33
Freshwater molluscs	854	146	17%	3	8	14
Vascular plants**	1,826	759	42%	17	32	16
<b>TOTAL</b>	<b>5,894</b>	<b>2,059</b>	<b>35%</b>	<b>32</b>	<b>67</b>	<b>105</b>

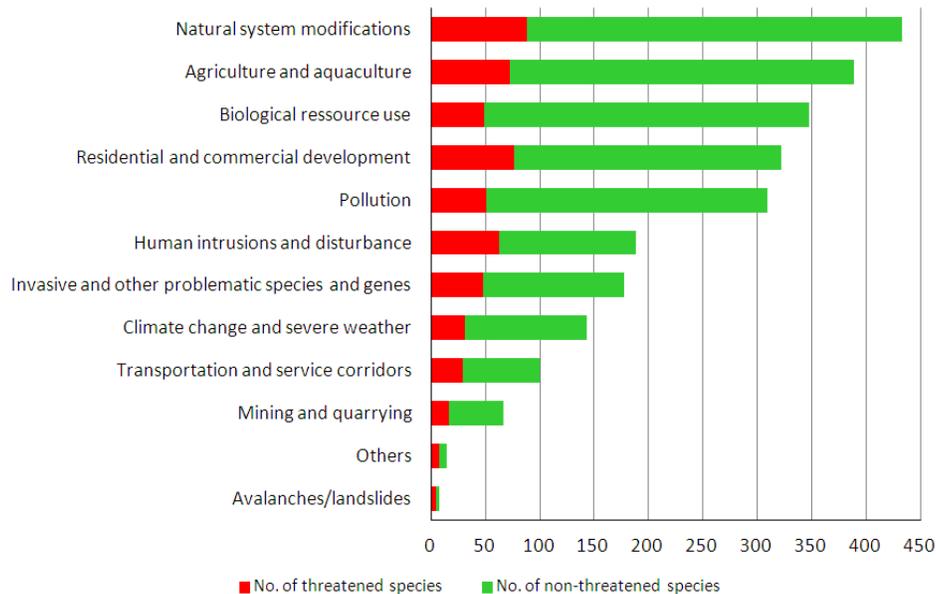
\*\*Not comprehensively assessed, selected species only.

This table does not include the Not Applicable (NA) species in Europe (species introduced after AD 1500 or species of marginal occurrence). The data are based on the results of the European Red List (European region wide assessment).

## Major threats

Habitat loss, fragmentation and degradation are the most significant threats at the European level to species that occur in Italy. For freshwater species, major threats include changing water flow patterns and over-extraction, which in many cases is further exacerbated by increasing droughts due to climate change, pollution and the introduction of alien species. Other major threats come from farming and ranching as a result of agricultural expansion and intensification, urbanization and tourism.

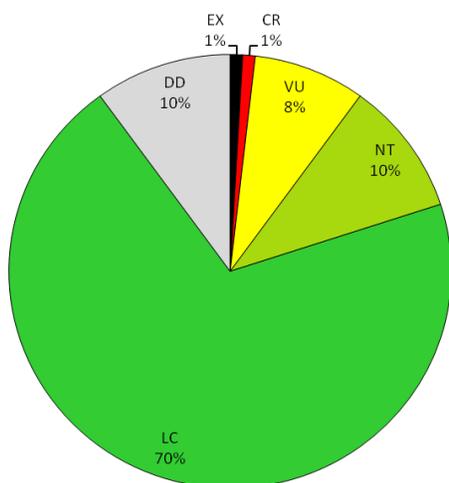
### Major threats at the European level to species occurring in Italy



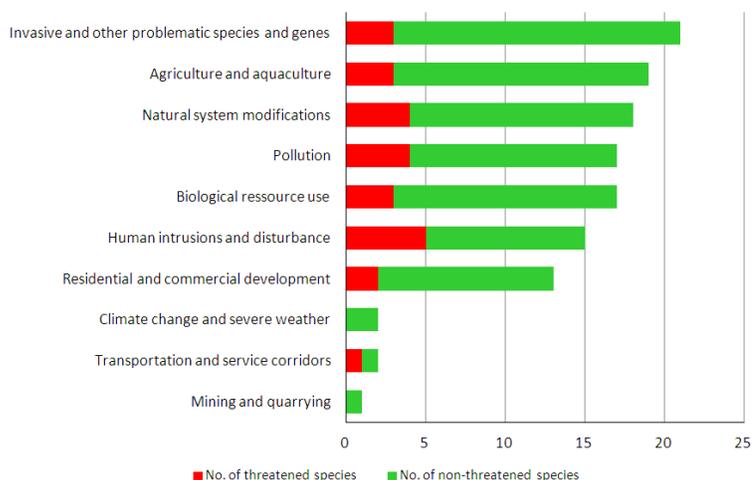
## Mammals

Italy hosts 47% of all the mammals that occur in Europe. Of these 110 species of mammals, 10%\* are threatened at the European level and at least an additional 10% are considered Near Threatened. The major threats at the European level that can possibly (or potentially) affect mammals in Italy are invasive and other problematic species, both native and non-native. Mammal populations are also highly threatened mainly by agricultural and forestry effluents and noise pollution. Hunting, trapping, logging and wood harvesting also pose serious threats to mammals in the country.

**Status at European level**



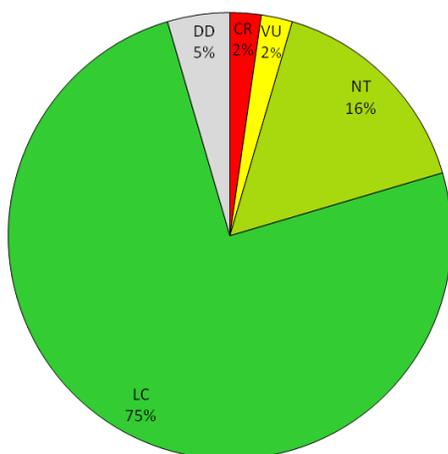
**Threats at European level**



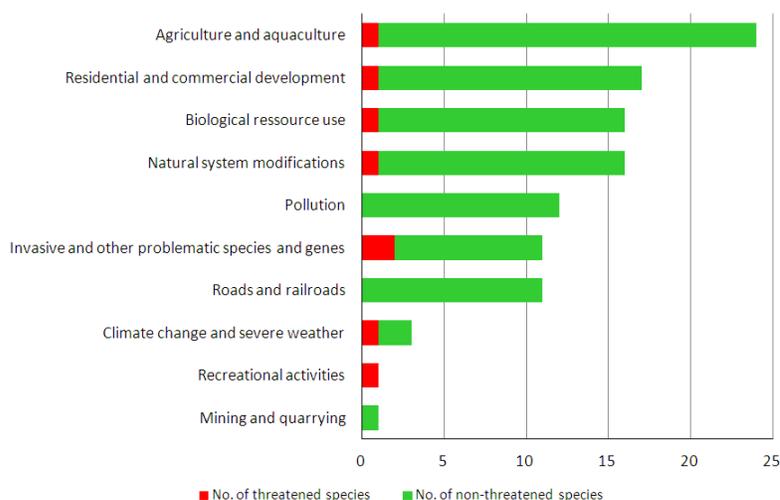
## Reptiles

Reptile species in Italy represent 31% of all the reptiles in Europe. Approximately 5%\* of the reptile species that occur in Italy are considered threatened at the European level. Habitat loss, fragmentation and degradation especially due to agricultural intensification and urbanization are the main threats to this group at the European level. It is also interesting to note that at least 32% of the reptile species in Italy may be threatened by human persecution and control, especially snakes and vipers.

**Status at European level**



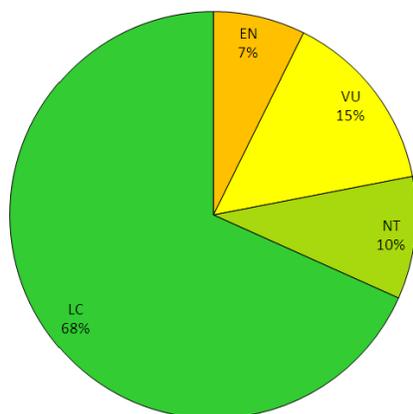
**Threats at European level**



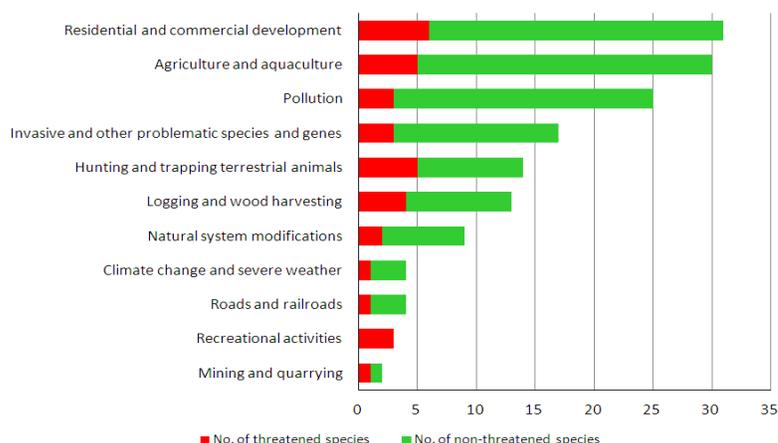
## Amphibians

Amphibians in Italy represent 49% of all amphibians occurring in Europe. This group shows high endemic species richness in the Italian Peninsula, which also has one of the greatest concentrations of threatened species of amphibians. Twenty-two percent\* of the amphibian species that occur in Italy are threatened at the European level and an additional 10% of the species are Near Threatened. The main threat to this group at the European level is the loss and degradation of suitable breeding habitat mainly due to urban development and agricultural activities through excessive water withdrawal and water pollution by agrochemicals.

Status at European level



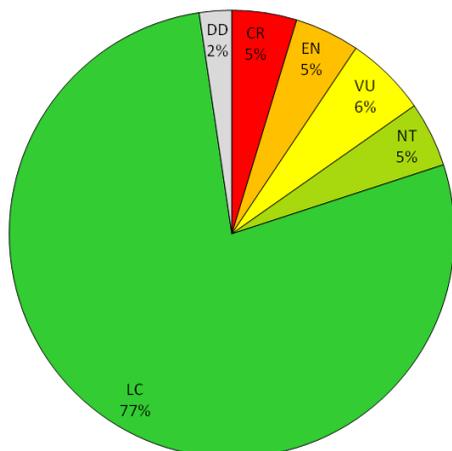
Threats at European level



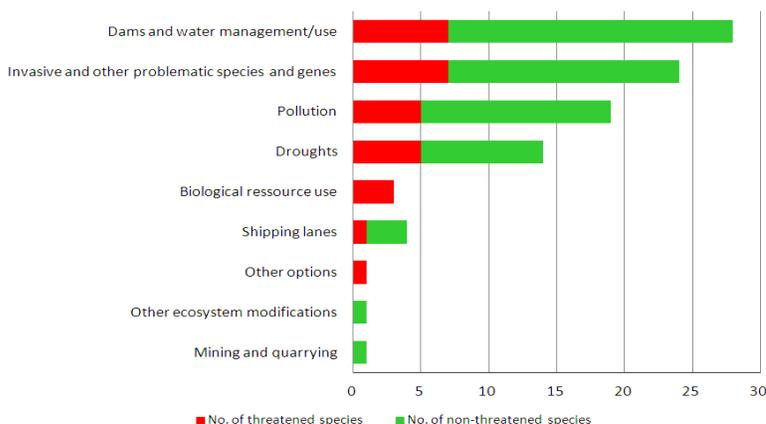
## Freshwater fishes

Freshwater fishes are one of the most threatened groups at the European level. Sixteen percent\* of the species that occur in Italy are threatened at the European level. This group has a high percentage of endemism in the European region: up to 80%. Although areas with the highest species richness clearly coincide with the lower parts of large rivers flowing to the Black and Caspian Seas, some of the highest concentrations of threatened freshwater fish species are found in the northern Mediterranean coast, which includes Italy. The most important threat to this group at the European level is the change of water flow patterns due to dam construction and operation and the abstraction of water from underground or from the streams and rivers themselves. Invasive alien species also pose serious threats to freshwater fishes in the country.

Status at European level



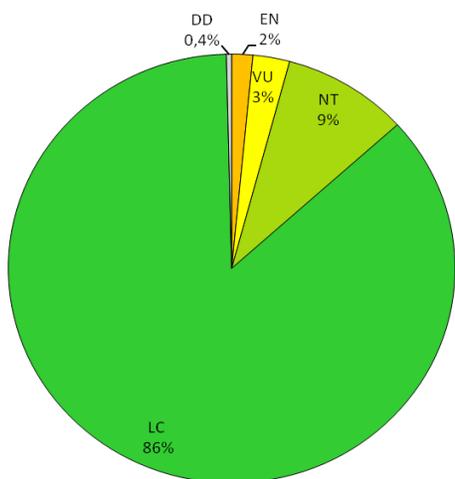
Threats at European level



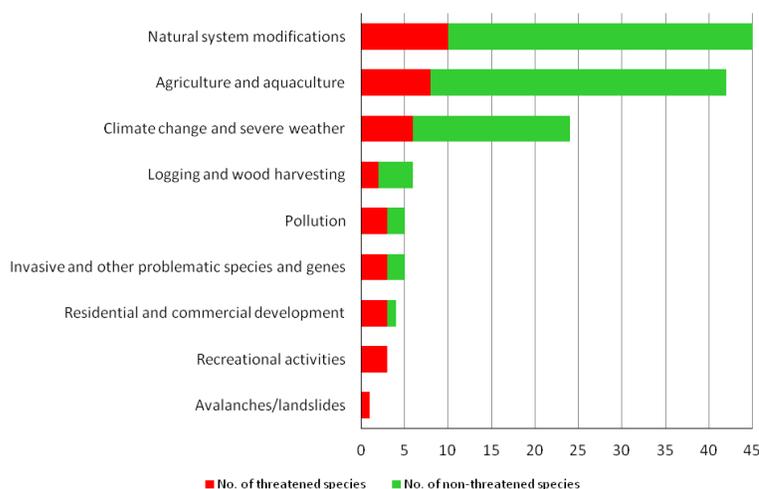
## Butterflies

Italy hosts 60% of all butterfly species in Europe and 4%\* of them are considered threatened at the European level. The mountainous areas of Italy (Alps and Apennines) have a rich variety of butterfly species as well as a high number of endemic species. The conservation status of butterflies in Italy based on the European Red List data is relatively good since approximately 86% of the species are classified as Least Concern. However, butterflies have very specific food and habitat requirements at different stages of their life cycle so they are very sensitive to changes in their environment, especially to habitat management such as overgrazing, undergrazing or changes in forestry practices.

**Status at European level**



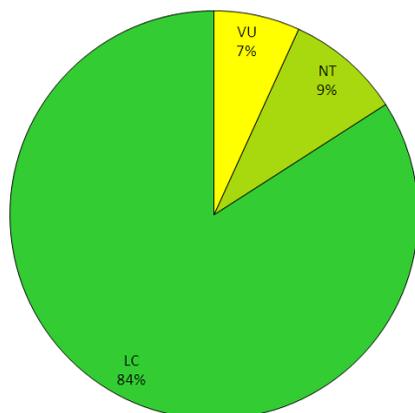
**Threats at European level**



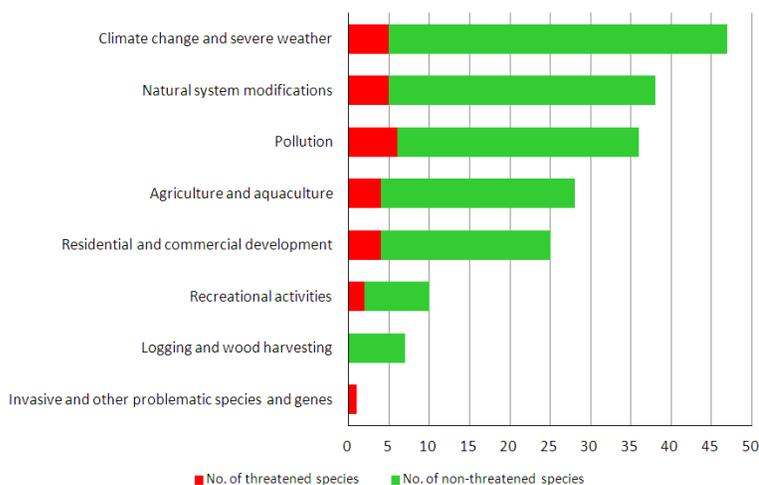
## Dragonflies

Sixty-four percent of all the dragonflies in Europe are present in Italy. After France, Italy hosts the highest number of dragonflies in Europe. In this country, 7%\* of dragonfly species are considered threatened at the European level. This group is adversely affected by desiccation caused by dry weather, fires and increased water extraction for irrigation and human consumption. River species are also affected by ecosystem modifications such as the construction of dams and reservoirs and water quality deterioration.

**Status at European level**



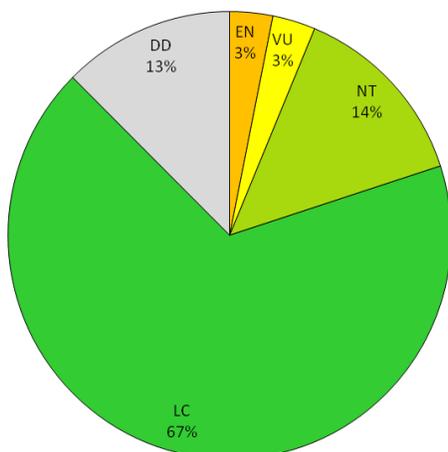
**Threats at European level**



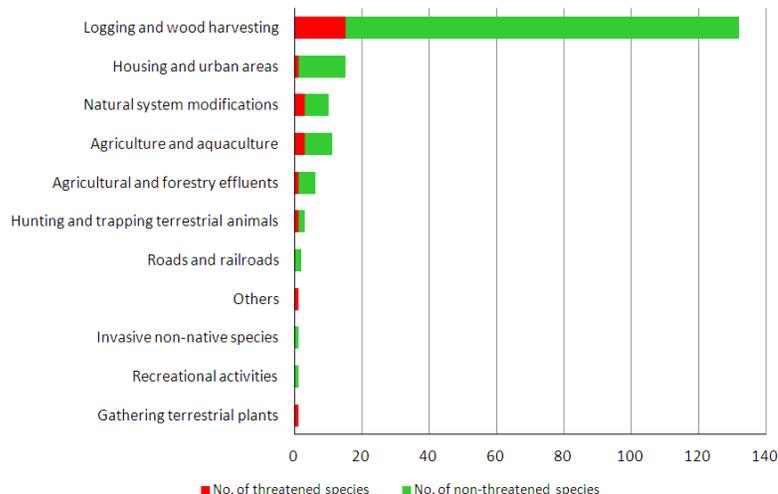
## Saproxylic beetles

Fifty-nine percent of the beetle species assessed by the European Red List are present in Italy. More than 7%\* of the species in this group are considered threatened at the European level, which is less than half of the percentage of threatened saproxylic beetle species in Europe, and none of them are Critically Endangered. Fourteen percent of them are considered as Near Threatened. The species in this group are very dependent on the dynamics of tree aging and wood decay processes. The major threat to this group is logging and wood harvesting; therefore these beetles require sensitive conservation management of tree populations irrespective of their situation.

Status at European level



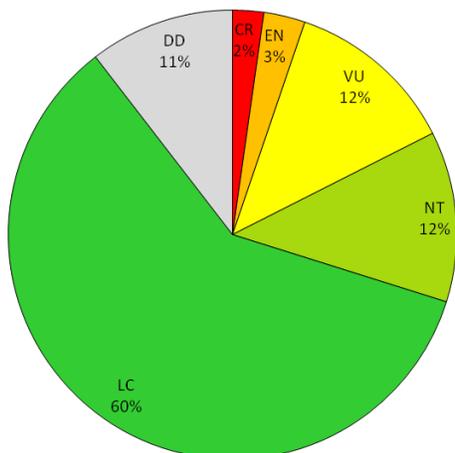
Threats at European level



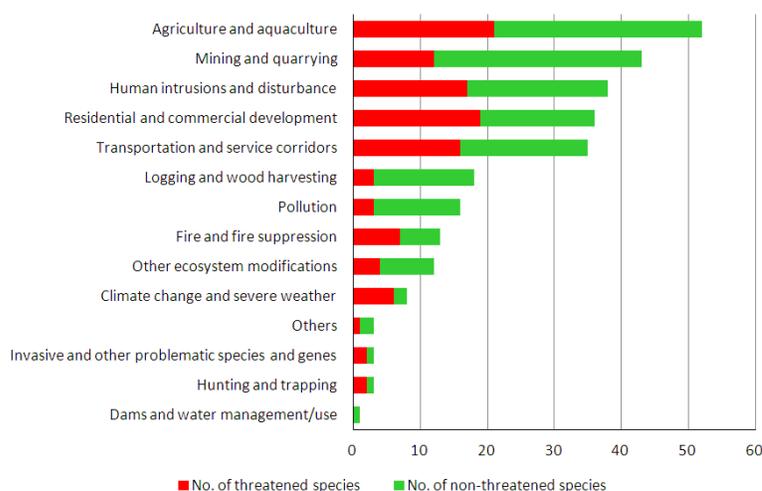
## Terrestrial molluscs

Twenty percent\* of the terrestrial molluscs assessed that are present in Italy are threatened and 12% are Near Threatened at the European level. The country has the third highest species richness of terrestrial molluscs in Europe. The major threat to this group at the European level is continuous destruction of suitable habitat from agriculture and mineral extraction to provide construction material.

Status at European level



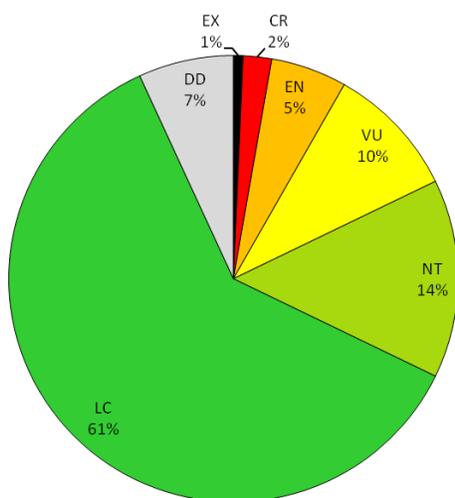
Threats at European level



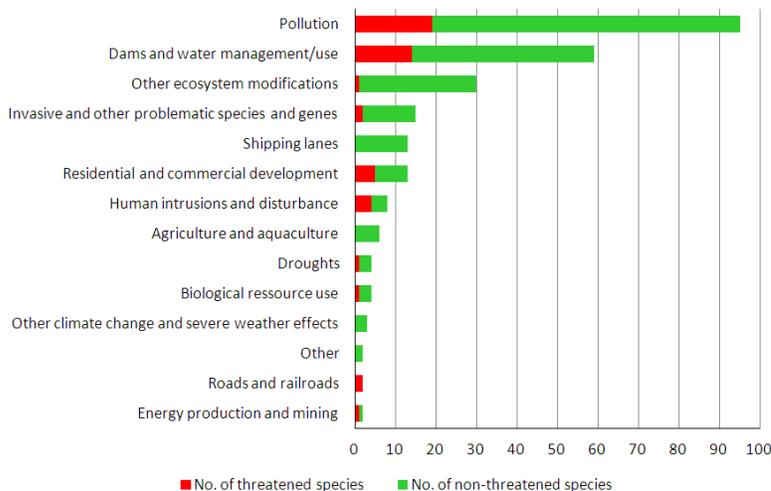
## Freshwater molluscs

Nineteen percent\* of freshwater mollusc that occur in Italy are threatened at the European level. One of the species assessed within this group has already gone Extinct, *Heleobia spinelli*, which was endemic to Italy. Declining water quality in freshwater rivers and lakes caused by urban and agricultural activities is the main threat to this group at the European level. Modification of the physical and chemical characteristics of freshwater rivers and lakes due to dam construction and water abstraction are also some of the major threats to this group.

Status at European level



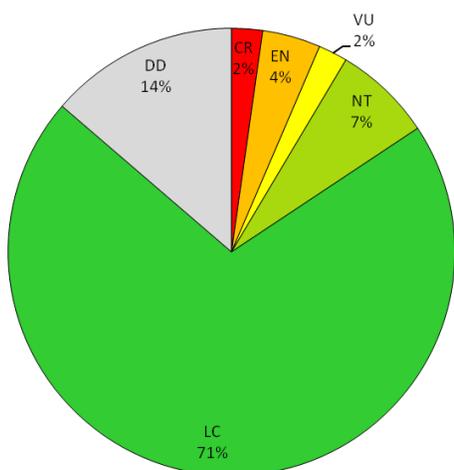
Threats at European level



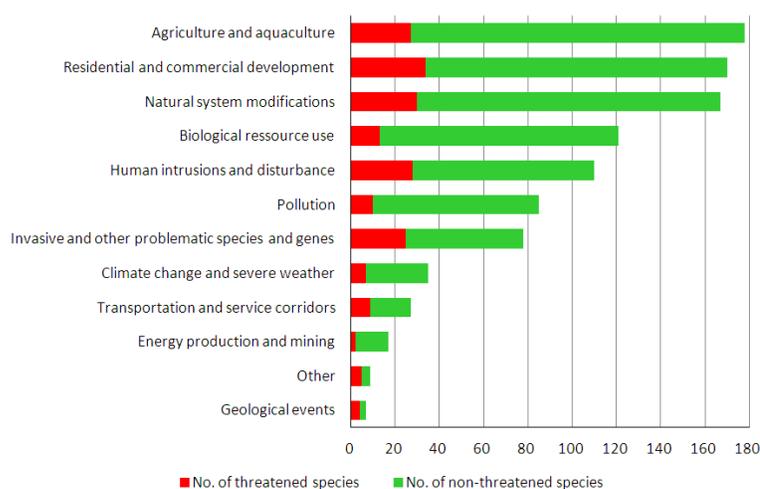
## Vascular plants

At European level, priority crop wild relatives, aquatic plants and all species included in the annexes of the Habitats Directive, Bern Convention and CITES have been assessed. A total of 759 species are found in Italy, which represent 42% of the total of species assessed in Europe. Ten percent\* of the 759 vascular plant species assessed in Italy are considered threatened at the European level. For terrestrial plants, intensified livestock farming, especially intensive grazing activities have the worst impacts. For aquatic species, direct habitat loss caused by draining for development, agriculture and pasture is the main threat.

Status at European level



Threats at European level





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<http://ec.europa.eu/environment/nature/conservation/species/redlist> and  
<http://www.iucnredlist.org/europe>

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Cover photo by Roberto Sindaco (*Bombina pachypus*)

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\*The proportion of threatened species in this document is calculated as follows: (EW + CR + EN + VU) / (total number of species assessed - EX - RE - DD). Since the number of threatened species is often uncertain because it is not known whether DD species are actually threatened or not, this formula considers that DD species are equally threatened as data sufficient species.