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Number of Species in Switzerland Facing Global Extinction

Switzerland is home to a large number of species facing global extinction. Should any one of them disappear from this country, the loss is likely to be irreversible. For this reason, conservation measures targeting species facing global extinction must be prioritized.

Currently, Switzerland harbors at least 49 species classified as endangered on a worldwide level by the International Union for Conservation of Nature IUCN. That number has remained virtually the same for the past 25 years, the only exception being the Long-fingered Bat who reappeared in this country a few years ago after having been presumed lost for over a hundred years.

Major losses have been incurred in the past, however, primarily in the first half of the last century. Fishes were hit especially hard: At least seven species whose occurrence had been solely confined to Switzerland went irretrievably extinct during that time.

Among vertebrate species occurring in Switzerland and facing global extinction, there is a large number of endemic lake fish species found in merely a few or even just one lake. These lakes represent habitat islands that, in the course of time, each brought forth distinct species who evolved nowhere else. Unfortunately, some of these species have gone extinct in the last century. Recent research revealed the existence of further endemic fish species who, although not officially classified by the IUCN yet, fall under the global conservation responsibility of Switzerland alone.

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Contents

Development in Switzerland

Categorized by animal and plant groups, the table below summarizes the number of species in Switzerland facing global extinction, showing the development during the monitoring period of 1990 to 2015. Globally endangered species that have disappeared from this country before 1990 are listed in the rightmost column.

Tab. 1: Number of species in Switzerland facing global extinction

	1990	1995	2000	2005	2010	2015	Lost before 1990 (last evidenced)
Vertebrates[1]	8	8	8	8	9	9	Sturgeon (extinct before 1900), Brownstripe Red Snapper (char species—around 1910), Gravenche, Kröpfer and Lavaret (whitefish species—before 1950), Féra (whitefish species—around 1950), Bodensee-Kilch (whitefish species—around 1970), Tiefseesaibling (char species—around 1970), Danube Salmon (around 1980).
Mollusks	11	11	11	11	11	11	*Microcondylaea bonellii* (freshwater mussel species, 1923), *Vertigo heldi* (minute snail species, 1945)
Articulates[2]	19	19	19	19	19	19	*Dytiscus latissimus* (predacious diving beetle species—before 1935)
Mosses	1	1	1	1	1	1	*Jamesoniella undulifolia* (liverwort species—1894)
Vascular plants[2]	9	9	9	9	9	9	Nodding Waternymph (around 1930), Lake Constance Saxifrage (1956), Sea Thrift (before 1960)
Total	48	48	48	48	49	49	

[1]) Ongoing research shows Switzerland to harbor further endemic fish species, even though some taxonomic issues still need to be settled. Still, since a number of those species undoubtedly meet IUCN criteria for global endangerment, they are bound to be redlisted by the IUCN within the next few years.

[2]) The occurrence of another 23 articulates (among them 17 ant species and 3 hypogean small crustacean species) and 1 vascular plant cannot be thoroughly verified in Switzerland.

Comments

- Numbers have been staying almost the same in the past 25 years, with large losses mainly incurred in the first half of the past century.
- The Long-fingered Bat (*Myotis capaccinii*) has increased the number of vertebrate species in Switzerland facing global extinction within the past 25 years from 8 to 9. Redlisted as vulnerable by the IUCN and presumed lost in this country since 1910, the species has been rediscovered above the Swiss part of Lake Maggiore in 2010.
- For Switzerland to have lost six fish and one plant species that only occurred in this country and its transboundary waterbodies is particularly regrettable. Switzerland was unable to fulfill the responsibility it had for the survival of these species with regard to the rest of the world.
- It is not by chance that vertebrate species in Switzerland facing global extinction comprise an especially large share of lake fish species, as Northern alpine rim lakes harbor several endemic whitefish and char species, each of them occurring in only a few lakes or even just one lake. These lakes represent habitat islands that, in the course of time, each brought forth distinct species found nowhere else. In the past century, five such whitefish species have disappeared from their former habitats, with only one—the Lake Geneva Lavaret—surviving in a lake outside of Switzerland. All of

them have mainly been wiped out due to water pollution. Two char species, one of them endemic to Lake Constance, the other to Lake Neuchâtel, have gone extinct in the past century as well.

- The latest research of Switzerland's lake fish fauna has uncovered further endemic species, a number of them new to science altogether. Some of these species are likely to be globally redlisted by the IUCN just because of their severely confined habitat (e.g. one single lake).
- Lake Constance has lost two endemic fish species, the Tiefseesaibling (*Salvelinus profundus*) and the Bodensee-Kilch (*Coregonus gutturosus*). Moreover, the Lake Constance Saxifrage (*Saxifraga oppositifolia ssp. amphibia*) disappeared from its shores. Last seen in 1956, the plant has now gone extinct. However, owing to well-targeted conservation measures, the population size of the Lake Constance Forget-me-not (*Myosotis rehsteineri*) has been stabilized, if not even enlarged somewhat.
- The Rhône Streber (*Zingel asper*) a fish species, *Charpentiera dyodon*, a snail species, and *Deschampsia littoralis*, a grass species, are the most critically endangered species occurring in Switzerland. Their populations are very small and, as regards the Rhône Streber and *Deschampsia littoralis*, directly facing global extinction.
- There are only six known locations worldwide where the moss species *Distichophyllum carinatum* is still growing, one of them in Switzerland. While the species was presumed lost in this country until 2005, it was rediscovered on occasion of a dedicated search commissioned by BDM.
- A whole string of "endemic" invertebrates would also qualify as endangered by IUCN criteria. The Southern Alps alone currently give refuge to more than 60 such endemites. However, the degree of endangerment faced by these species in ranges that are very small by nature has not officially been studied yet by the IUCN. To name but two examples, *Trechus laevipes*, a ground beetle, and *Brevantennia siederi*, a bag-worm moth, occur nowhere else in the world but on the face of Monte Generoso in the Tessin. As a result, Switzerland takes particular responsibility for preserving these species with regard to the international community.
- For a complete list of all species in Switzerland classified as facing global extinction by the IUCN please refer to the Appendix.
- In contrast to previous versions of this indicator, feral domestic animals and ornamental plants (the Mouflon, three tulip species) are no longer taken into consideration.

Sources

IUCN Red List of Threatened Species (www.iucnredlist.org)

Info Flora (National Center for Mapping Switzerland's Flora), Coordination Office for the Protection of Amphibians and Reptiles in Switzerland (karch), Swiss Biological Records Center (CSCF).

BDM surveys.

Status

Data: 2015. The indicator is updated every 5 years based on the latest IUCN Red List and on changes in distribution of relevant species in Switzerland.

Development in the regions

Categorized by animal and plant groups, the table below regionalizes the number of species in Switzerland facing global extinction, showing the development during the monitoring period of 1990 to 2015. While a few articulate species are certain to occur in Switzerland as a whole, their presence in some regions has not been evidenced due to lack of intense faunistic surveying.

Tab. 2: Regionalized number of species in Switzerland facing global extinction

	Jura						**Central Plateau**						**Northern Alps**					
	90	**95**	**00**	**05**	**10**	**15**	**90**	**95**	**00**	**05**	**10**	**15**	**90**	**95**	**00**	**05**	**10**	**15**
Vertebrates[1]	3	3	3	3	3	3	4	4	4	4	4	4	1	1	1	1	1	1
Mollusks	2	2	2	2	2	2	3	3	3	3	3	3	2	2	2	2	2	2
Articulates[2]	7[3]	7[3]	7[3]	7[3]	7[3]	7[3]	8[4]	8[4]	8[4]	8[4]	8[4]	8[4]	11[5]	11[5]	11[5]	11[5]	11[5]	11[5]
Mosses	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
Vascular plants[2]	2	2	2	2	2	2	3	3	3	3	3	3	2	2	2	2	2	2
Total	**14[3]**	**14[3]**	**14[3]**	**14[3]**	**14[3]**	**14[3]**	**18[4]**	**18[4]**	**18[4]**	**18[4]**	**18[4]**	**18[4]**	**16[5]**	**16[5]**	**16[5]**	**16[5]**	**16[5]**	**16[5]**
	Western Central Alps						**Eastern Central Alps**						**Southern Alps**					
	90	**95**	**00**	**05**	**10**	**15**	**90**	**95**	**00**	**05**	**10**	**15**	**90**	**95**	**00**	**05**	**10**	**15**
Vertebrates[1]	0	0	0	0	1	1	0	0	0	0	1	1	4	4	4	4	5	5
Mollusks	1	1	1	1	1	1	2	2	2	2	2	2	6	6	6	6	6	6
Articulates[2]	12[4]	12[4]	12[4]	12[4]	12[4]	12[4]	7	7	7	7	7	7	7	7	7	7	7	7
Mosses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vascular plants[2]	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1
Total	**15[4]**	**15[4]**	**15[4]**	**15[4]**	**16[4]**	**16[4]**	**10**	**10**	**10**	**10**	**11**	**11**	**18**	**18**	**18**	**18**	**19**	**19**

[1]) Ongoing research shows Switzerland to harbor further endemic fish species, even though some taxonomic issues still need to be settled. Still, since a number of those species undoubtedly meet IUCN criteria for global endangerment, they are bound to be redlisted by the IUCN within the next few years.

[2]) The occurrence of another 23 articulates (among them 17 ant species and 3 hypogean small crustacean species) and 1 vascular plant cannot be thoroughly verified in Switzerland.

[3]) The occurrence of another 3 articulate species is possible, but has not been ascertained.

[4]) The occurrence of 1 other articulate species is possible, but has not been ascertained.

[5]) The occurrence of another 2 articulate species is possible, but has not been ascertained.

Comments

- Switzerland's biogeographical regions are characterized by varying numbers of species facing global extinction. The Southern Alps are home to an especially large number of mollusk species facing global extinction, whereas the Western Central Alps and the Northern Alps hold a particularly large number of articulates that are endangered worldwide.
- In the course of the past 25 years, the Long-fingered Bat (*Myotis capaccinii*) has returned to the Southern Alps, and the wild form of the carp (*Cyprinus carpio*) has entered the watercourses of the Western and Eastern Central Alps.
- Based on the latest research, it must be assumed that particularly the lakes of the Northern Alps harbor further fish species facing global extinction.

- For a regionalized list of all species in Switzerland facing global extinction please refer to the Appendix.

Sources

IUCN Red List of Threatened Species (www.iucnredlist.org)

Info Flora (National Center for Mapping Switzerland's Flora), Coordination Office for the Protection of Amphibians and Reptiles in Switzerland (karch), Swiss Biological Records Center (CSCF).

BDM surveys.

Status

Data: 2015. The indicator is updated every 5 years based on the latest IUCN Red List and on changes in distribution of relevant species in Switzerland.

Significance for biodiversity

The Z4 indicator puts the spotlight on a small fraction of biodiversity that is much more important than its mere size suggests. Species not facing global extinction—such as the Tawny Pipit, the European Otter, or the Mew Gull (cf. indicator "Species Diversity at National and Regional Level (Z3)")—disappearing from this country may be a bitter loss for Switzerland, but it is inconsequential for the overall population of these species. However, populations found in Switzerland are of crucial importance for the survival of some plants and animals. When species like the Brownstripe Red Snapper (*Salvelinus neocomensis*), the Gravenche (*Coregonus hiemalis*) or the Lake Constance Saxifrage (*Saxifraga oppositifolia ssp. amphibia*) went extinct in this country during the past century, they vanished from the face of the Earth.

For this reason, it is very good news indeed that none of the 49 species facing global extinction monitored by Z4 have disappeared from Switzerland in the past 25 years. Better still, BDM is very happy to report that the Long-fingered Bat (*Myotis capaccinii*)—classified as globally vulnerable—has been rediscovered in the Lake Maggiore area. Still, the populations of several species of worldwide importance are critically endangered in Switzerland, among them the Rhône Streber (*Zingel asper*) and the Lake Constance Forget-me-not (*Myosotis rehsteineri*).

Definition

Changes in the sum of all species facing global extinction whose occurrence in Switzerland during at least nine out of ten years can either be established or demonstrated to be probable using standardized methods.

Whether or not a species is classified as facing global extinction is determined by the IUCN applying precisely defined, consistent and reproducible criteria. This classification expresses the risk of global extinction as communicated by the IUCN on June 10, 2014 (further species facing global extinction and occurring in Switzerland have not yet been assessed by the IUCN).

Considered to be at risk in the sense of the Z4 indicator are animal and moss species classified as EX (extinct), EW (extinct in the wild), CR (critically endangered), EN (endangered), and VU (vulnerable), as well as vascular plant species classified as Ex (extinct), Ex/E (possibly extinct), E (endangered) and V (vulnerable).

The criterion “nine out of ten years” is defined in the way used for the indicator “Species Diversity at National and Regional Level (Z3)”.

The indicator is updated every five years.

Surveying methods

In computing the Z4 indicator, changes brought about by species distribution dynamics (extinction, recolonization, neocolonization) are strictly discriminated from changes due to IUCN reclassification. Hence, every update involves careful checking of the relevant IUCN Red List for modifications. BDM monitors all species reported to occur in Switzerland or one of its neighboring countries, since the IUCN cannot have detailed knowledge of the current distribution of all species.

All monitored species are assessed for occurrence in Switzerland or one of its six biogeographical regions during nine out of ten years. Required information—at least regarding species covered by BDM—is supplied by raw data gathered for the indicator “Species Diversity at National and Regional Level (Z3)”. For the remaining species, these assessments are made by consulting flora and fauna databases, usually complemented by obtaining expert opinions.

Further information

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Related indicators

> “Species Diversity at National and Regional Level (Z3)”

> “Population Size of Endangered Species (Z6)”

Additional sources of information

> Federal Office for the environment FOEN: http://www.bafu.admin.ch/index.html?lang=en

> IUCN database of threatened species: http://www.iucnredlist.org/

> Info Flora National Center for Mapping Switzerland’s Flora (no information in English): www.crsf.ch

> Swiss Biological Records Center (some information in English): www.cscf.ch

Species Red List for Switzerland

> Appendix: List of species in Switzerland facing global extinction, 1990-2015

This information is based on the German-language document 1360_Z4_Basisdaten_2015_v1.docx dated Mai 26th, 2016.