Blue Lists of the successfully stabilized or promoted animal and plant species of the Red Lists : methods and application in northern Switzerland

BLUE LISTS OF THE SUCCESSFULLY STABILIZED OR PROMOTED ANIMAL AND PLANT SPECIES OF THE RED LISTS – METHODS AND APPLICATION IN NORTHERN SWITZERLAND

ABSTRACT

Nature conservation is successful! Many endangered animal and plant species of the Red Lists could already be promoted or maintained, at least on a local scale, and appropriate conservation techniques are known for many more of them. For representing the success of nature conservation, particularly in public relations, a new instrument has been developed: the "Blue Lists", defined as "registers of those Red List species that have shown a durable overall stabilization or an increase in abundance in the region considered". For a 3'431 km^2 (1'324 sq. miles) study region in northern Switzerland, information was compiled on the changes in abundance of 217 animal species (vertebrates, butterflies, grasshoppers, and dragonflies) and 722 plant species, all of which appear on the Red Lists (RL) of the study region. Approximately one third of these species could be included in the Blue Lists for the study region. On the other hand about one fifth of the RL species still declines, and for almost half of the RL species the development is not known, but the abundance of many of them has probably declined. Techniques to maintain or promote the majority of these species have been successfully applied on a local scale in the studied region or are at least known to exist. If applied on a larger scale, these techniques could effectively stop the ongoing decline of RL species in the study region. There are various possibilities for a further development of the Blue Lists, including their extension to other groups of species or to other regions, periodic updating, and publishing by official conservation institutions. As a psychological counterweight to the Red Lists with their alarming data on species decline, the Blue Lists stress success and possibilities for concrete action. The Blue Lists thus provide positive information which can strengthen the motivation for the protection of nature.

SUMMARY

Part A: The Blue Lists: a new instrument for nature conservation

As a psychological counterweight to the often depressing Red Lists (RL), which are registers of the endangered or extinct species, a new instrument for nature conservation is proposed: the "Blue Lists". These lists assemble all instances of successful species conservation in a clear, systematic and comprehensive manner. The term "Blue List" gives these instances a name (and thus, an identity) which can be used for the information of the general public. The present version of the Blue Lists has been substantially changed and enlarged compared with preceding versions.

1. The Blue Lists are registers of those Red List species that have shown a durable overall stabilization or an increase in abundance in the region considered. The change in abundance may either result from the intentional application of nature conservation techniques, or be due to other factors. The time period for which the change in abundance is assessed must be clearly stated.
2. Three categories have been defined within the Blue Lists: (1) "delisting", i.e. increase in abundance so large that the species can be removed from the RL; (2) increase in abundance, but insufficient for delisting; (3) stabilization of the abundance. These

categories can be further divided into subcategories depending on whether or not the increase or stabilization observed is the result of the application of nature conservation techniques.

3. Three additional categories have been defined to classify Red List species that cannot be included in the Blue Lists: (4) decrease in abundance; (5) extinction during the investigation period; and (6) change in abundance unknown. All species, except those in the category "delisting", remain part of the Red Lists, i.e. remain endangered.
4. For practical applications, it is useful to indicate for each species which nature conservation techniques (NCTs) can be applied to maintain or to promote it. These NCTs are measures that have a direct positive effect on species, e.g. improving light conditions in certain forest types to promote orchids and butterflies, digging ponds for endangered amphibians, regular mowing of limestone grasslands, and prohibition of hunting or of using pesticides.
5. Six categories are defined to evaluate the effect of nature conservation techniques on each of the Red List species in the study region: (1) species promoted by the NCT, at least locally; (2) species maintained at least locally due to the application of NCTs; (3) NCT applied, but without success; (4) NCT possibly successful, but effect not demonstrated yet; (5) NCT known but not applied; (6) no NCT known.
6. The following additional information is given for each species: a short description of the applicable NCT; the frequency with which the NCT has been applied so far; probability of successfully promoting the species through this technique; habitat of the species within the study region.
7. Similarities and differences between the newly established Blue Lists and the well known Red Lists are discussed in the report.
8. The strengths, weaknesses and possibilities for further development of the Blue Lists are discussed. These possibilities are: an extension to other groups of species and other regions, periodic updating simultaneously with the RL, and publication by official conservation institutions.
9. Blue Lists, with their indications on the NCTs, prove to be a useful instrument for technology assessment in nature conservation.
10. The concept of the Blue Lists can also be applied to other lists of threatened species, e.g. those of the Endangered Species Act and of The Nature Conservancy of the U.S., and that on the global, national, state, regional, and other conservation status ranks.

Part B: Blue Lists of animal and plant species in the cantons Aargau, Schaffhausen, and Zurich, with information concerning the promotion of endangered species

The Blue Lists concept was tested in a study region comprising 3'431 km^2 (1'324 sq. miles) in the northern Swiss cantons Aargau, Schaffhausen, and Zurich. Approximately half of the region is situated on the Swiss Plateau, one third in the Jura mountains and the remainder in the Prealps. The region has been strongly influenced by man. Both its fauna and flora have been well studied, and the current expenses for nature conservation are relatively high. The present study assesses the success of nature conservation in this region during the last 10–15 years.

Of the 482 animal species (vertebrates, butterflies, grasshoppers, and dragonflies) and 1624 vascular plant species occurring in the study region, all those listed in Red Lists were examined, except the 44 animal species and the 177 plant species which have become extinct (IUCN-categories CR, EN, and VU, or 1–3, or E and V in the study region). This corresponds to 217 animal species (= 100 %) and 722 plant species (100 %). Most of these

animal species, and a third of the plant species are also on the Red Lists of Switzerland; only few of the species are endangered on a European scale.
Most of the data were provided by the nature conservation authorities or by independent specialists. Published literature and our own investigations were an additional source of data.

11. The Blue Lists contain a total of 317 species, namely 20 animal species (9 %) and 54 plant species (7 %) whose abundance has increased, as well as 60 animal species (28 %) and 183 plant species (26 %) whose abundance has been stabilized. For the animals, two thirds, and for the plants four fifths of these positive developments are due to the application of nature conservation techniques. It is proposed to delist 12 species from the Red Lists.
12. The distribution of the animal species among the Blue Lists categories strongly varies among systematic groups. The same is true for the groups of plant species, but to a lesser degree.
13. In the category "decrease in abundance" are 58 animal species (27 %) and 140 plant species (20 %). No sufficient information is available for 79 animal species (36 %) and 345 plant species (48 %); many of these species may be in decline.
14. Nature conservation techniques that have, at least on a local scale, led to successful promotion in the study region are known for 38 animal species (18 %) and for 135 plant species (19 %) of the RL. Techniques for long-term maintenance, at least locally, are known for 72 animal species (33 %) and 251 plant species (35 %). If these locally successful NCT were applied on a larger scale, the length of the Blue lists could almost be doubled.
15. For 65 animal species (30 %) and 224 plant species (31 %) of the RL, promoting NCTs are known but have not yet been applied in the study region. Thus, for over 80 % of the studied regional RL species, NCT for maintenance or promotion have been successfully applied or are at least known to exist.
16. Nature conservation techniques to promote species should in general be applied by professionals, or at least With adequate supervision. The fact that individual species can be successfully promoted does not mean that degraded ecosystems in which they occur can easily be restored.
17. The predominantly negative tone of most information about nature conservation can be counteracted by the positive and encouraging message of the Blue Lists.