

**THE GB CODE OF CONDUCT
ON INVASIVE NON-NATIVE SPECIES
FOR ZOOLOGICAL GARDENS AND AQUARIA**

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In drafting this code the authors used ideas and texts from the Council of Europe's publication *European Code of Conduct on Zoos and Aquaria and IAS* prepared by Riccardo Scalera, Piero Genovesi, Danny de man, Bjarne Klausen and Lesley Dickie, on behalf of the Bern Convention.

Invasive non-native (alien) species (INNS) are one of the most important drivers of biodiversity loss worldwide. Prevention is acknowledged as the best means of tackling the threat they pose. Controlling the key potential pathways by means of codes of conduct can be a highly effective way of preventing their arrival or spread. The CBD Strategic Plan for Biodiversity 2011–2020 and the EU biodiversity strategy to 2020 both aim to tackle pathways of INNS introductions and call for: invasive alien species and pathways to be identified and prioritised, priority species to be controlled or eradicated, and measures to be put in place to manage pathways to prevent their introduction and establishment.

Zoos and aquaria are key players in global conservation programmes, and have an important role in public outreach. They host millions of visitors each year and, as such, can contribute to raising awareness to prevent INNS introductions and spread. At the same time, they host many potential INNS in their living collections and in some cases have been responsible for their introduction into the wild. For this reason, this code of conduct aims to establish effective practices for preventing future escapes and the release of potential INNS from zoos. It also recognises that zoos have an important role to educate the public on the impacts of INNS to society. In addition, the recommendations aim to increase the overall commitment and engagement of zoos and aquaria in relation to their role in conservation, research and education because of the urgent need to mitigate the threat of biological invasions. Many of these recommendations support existing legislative requirements, e.g under the Wildlife and Countryside Act and Zoo Licensing Act.

This code of conduct consists of five key measures that all institutions should undertake:

1. Adopt effective preventative measures to avoid unintentional introduction and spread of INNS;
2. Take into account the risks of INNS introductions in all wildlife and habitat management projects;
3. Proactively engage in awareness raising and outreach activities focusing on INNS and their impacts;
4. Adopt best practices to support early warning and rapid response systems for INNS;
5. Be aware of all relevant regulations concerning zoos and INNS.

Detailed suggestions for the implementation of the key measures are described below.

1. Adopt effective preventative measures to avoid unintentional introduction and spread of INNS

The variety of incidents of unintentional introductions of INNS from zoos and aquaria shows that some institutions face challenges in managing their facilities in order to prevent the escape of species (and pathogens) into the wild. For this reason, it is fundamental that each institution implements appropriate measures to reduce the risk of escapes, paying particular attention to the following measures:

- a) Ensure that enclosures are designed to prevent the escape of animals and plants, their propagules, parasites and pathogens;
- b) Ensure regular maintenance of all containment infrastructures, e.g. cages, aviaries, fences, barriers, etc. by establishing an assessment procedure involving responsible and regular monitoring and inspection of the facilities;
- c) Ensure that strict biosecurity protocols to reduce risk of pest and pathogen escape (e.g., management response involving quarantine, waste disposal, etc.) are in place, as well as appropriate contingency plans to mitigate such risks;
- d) Organise dedicated training programmes for staff of zoos and aquaria to ensure that they understand the possible risks related to the escape or accidental discharge of INNS, including pathogens, and that they are adequately trained to mitigate such risks;
- e) Remove NNS from open displays, e.g. displays without roofs, unless all possible measures to prevent their escape/release have been undertaken;
- f) Before a decision is made to enable a species to move freely within or without the zoo facilities (e.g. free-flying psittacine birds or birds of prey in flying displays) ensure that it is possible to retrieve all specimens and that there is minimal risk of the spread of diseases or possible injuries to the public. Contingency plans should be in place to capture, control and contain animals in case of escape. Methods of minimising the likelihood of escape such as training, provision of food or nestboxes, and use of transmitters/telemetry etc. should be used where appropriate. Reducing the invasive potential of species kept in open displays should be undertaken (e.g. using only males/neutered animals, or restricting the ability of birds to fly, through wing clipping or other suitable methods, whenever feasible and appropriate, in accordance with animal health and welfare regulations and best practices);
- g) Given the growing role of plant collections in many zoos and aquaria, it is important to avoid the use of invasive plants which may spread to adjacent natural areas. As an alternative, non-invasive, possibly native, plants should be used to replace known or potential INNS. Refer to the *European Code of Conduct for Botanic Gardens on Invasive Alien Species*;

- h) Mitigate the risk of escapes of species used as live food, for example by considering the origin of such species (i.e. use live food of native origin);
- i) Ensure that water from enclosures and aquaria (or any other water body in the zoo) is not released without being adequately risk assessed;
- j) Establish policies that regulate the responsible acquisition, ownership and disposal of non-native, potentially invasive organisms. Ensure that species kept in captivity are not sold or otherwise distributed to the general public (e.g. exceptions based on register of “reliable buyers” might be considered), and that systems are in place to minimise the risks of theft, malicious damage or release of animals by visitors or other unauthorised people;
- k) Undertake regular emergency planning to reduce the risk of escape during catastrophic events such as extreme weather conditions, fire or flood;
- l) Include detailed plans for responsibly disposing of all non-native species as part of the planning for the closure of any zoo.

2. Take into account the risks of INNS introductions in all wildlife and habitat management projects

Captive breeding, reintroduction and translocations are invaluable conservation practices that are helping threatened species to recover from the risk of local or global extinction. Nevertheless such conservation measures may carry a risk of inadvertently introducing INNS (and diseases and pathogens) into the wild. Such introductions might have severe negative ecological impacts on native species, for example through predation or competition, and in some cases might affect the genetic integrity of native populations. In some cases the release of such species and their pathogens can compromise the success of the conservation measures themselves. For this reason it is crucial that *ex situ* and *in situ* conservation initiatives implemented or supported by zoological gardens and aquaria are rigorously based on globally recognised guidance documents, such as the *IUCN Guidelines for Reintroductions and other Conservation Translocations*.

3. Proactively engage in awareness raising and outreach activities focusing on INNS and their impacts

A major contribution of zoos and aquaria in relation to the INNS issue lies in their educational role. Education and awareness-raising activities are needed to influence and change the behaviour of the target audience to reduce INNS risks. As many INNS are exhibited in zoos, this can provide an excellent opportunity to raise awareness among the public about the ecological harm associated with the release of such INNS into the wild.

The suggested key recommendations are:

- a) Promote an understanding of the value of biodiversity and ecosystem services and the important risks posed to society and biodiversity by INNS;

- b) Provide information activities for visitors on which of the exhibited species are native to an area and which are not, and on their impact in their introduced range e.g. through temporary or permanent exhibitions and dedicated panels, guides, etc.;
- c) Provide information on INNS, e.g. origin, pathways, and ecological and socio-economic impacts, both to inform zoo staff about the potential risk of INNS within their animal collection and to raise awareness amongst the public about the risk of releasing them into the wild;
- e) Display information about the invasiveness in other biogeographic regions of native species hosted within the relevant facility;
- f) Support awareness raising activities (e.g. seminars, dedicated campaigns, etc.) to inform visitors on the general issue of INNS, to encourage preventative measures against the escape and release of INNS into the wild (e.g. by hosting programmes on the importance of not releasing pets into the wild);
- g) Circulate information on legislation and best practices among the public, e.g. by explaining specific ways to enable compliance with simple, clear and logical messages tailored for a wider audience for example by promoting existing campaigns such as Be Plant Wise and Check, Clean, Dry;
- h) Develop educational toolkits for selected audiences (e.g. schools) to raise awareness of the issue.

4. Adopt best practice to support early warning and rapid response system for INNS

Zoos and aquaria can play a pivotal role as key stakeholders in supporting early warning and rapid response. In particular, the following activities should be encouraged (and some are required by legislation):

- a) Establish and implement an early warning system aimed at informing promptly the competent authorities about each case of escape;
- b) Develop contingency plans in collaboration with relevant conservation and environmental agencies to prevent the spread into the wild of INNS which might escape from the facilities, including clear information on the established chain of responsibility and consider the need to engage in training in relevant conservation skills;
- c) All zoos should ascertain which authorities require reports of escaped INNS in their area as part of their contingency planning;
- d) Consider the introduction of a registry and related marking scheme for all animals kept in captivity to guarantee that they can be identified if they escape;
- e) Promote reporting of, and rapid response for animals and plants that have escaped. Consider participating in developing, implementing or supporting regional, national or local early warning systems for immediate reporting and control;

f) Consider networking with regional and national groups of INNS experts, and collaborating with national policy initiatives, in order to promote an effective exchange of information on invasive non-native species.

g) Consider involving the public and relevant interest groups in monitoring activities, with appropriate training and information materials, and implement targeted awareness-raising activities to increase the chances of early detection of new INNS and build understanding of why eradication may be necessary. Actively encourage the scientific and research community to support these efforts.

h) Consider initiatives, in collaboration with the relevant authorities, aimed at providing temporary or permanent facilities to prevent the spread of INNS, e.g. by establishing rescue centres to host otherwise unwanted/abandoned animals (particularly pets) or for animals removed from the wild whenever culling is not a feasible option in eradication/control programmes;

i) Strengthen the support for conservation of species threatened by INNS including via reintroduction/translocation programmes done in accordance with IUCN Guidelines;

j) Actively promote and engage in research activities on INNS and their impact;

k) Support dedicated INNS management programs including via research, education and management initiatives;

5. Be aware of all relevant regulations concerning zoos and aquaria and INNS

a) Be fully aware of and comply with all relevant laws and regulations relating to the management of animals in zoos and aquaria and particularly ensure that all animals kept in captivity are kept in conditions that prevent the escape of NNS;

b) Ensure all laws on importation, exportation and quarantine are adhered to.

References

Be Plant Wise

<http://www.nonnativespecies.org/beplantwise/>

Check Clean Dry

<http://www.nonnativespecies.org/checkcleandry/>

IUCN/SSC (2013). *Guidelines for Reintroductions and Other Conservation Translocations. Version 1.0*. Gland, Switzerland: IUCN Species Survival Commission, viiii + 57 pp.

Riccardo Scalera, Piero Genovesi, Danny de man, Bjarne Klausen and Lesley Dickie. 2012. *European Code of Conduct on Zoological Gardens and Aquaria and Invasive Alien Species*. Council of Europe. Document T-PVS/Inf (2011) 26 revised.

Vernon Heywood and Suzanne Sharrock. 2012. *European Code of Conduct for Botanic Gardens on Invasive Alien Species*. Council of Europe. Document T-PVS/Inf (2012)1.

Annex 1: Relevant Legislation

EU IAS Regulation

http://ec.europa.eu/environment/nature/invasivealien/index_en.htm

Zoo Licencing Act

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69595/zoo-licensing-act-guide.pdf

Wildlife and Countryside Act

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69205/wildlife-countryside-act.pdf

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