



Target 6 Invasive Alien Species Training materials

KMGBF Target 6 - Priority sites and areas

The Kunming-Montreal Global Biodiversity Framework has 23 action-oriented global targets for urgent action over the decade to 2030, and one of these, target 6, aims to address threats posed by invasive alien species (Box 1).

Box 1. What are invasive alien species?

An alien species is a species, subspecies or lower taxon, introduced outside its natural past or present distribution; includes any part, gametes, seeds, eggs, or propagules of such species that might survive and subsequently reproduce¹. An invasive alien species is an alien species whose introduction and/or spread threaten biological diversity.

Invasive alien species are one of the major drivers of biodiversity loss, and cause dramatic, and in some cases irreversible changes to ecosystems². They have contributed solely or alongside other drivers to 60 per cent of recorded global extinctions and are the only driver in 16 per cent of documented global extinctions³. Their impacts occur through different interactions, such as out-competing or preying upon native species, hybridisation, transmission of diseases, or biofouling.

The target aims to eliminate, minimize, reduce and/or mitigate the impacts of invasive alien species on biodiversity and ecosystems. To achieve this, the target sets out three overarching actions, two of which aim to prevent introductions and establishments of new invasive alien species, and the third aims to eradicate or control existing

invasive alien species, **especially in priority sites**, such as islands (Box 2).

The identification of these sites, and their prioritisation for management actions is to be undertaken by national governments, but what are these sites, how can they be prioritised, and what actions need to be taken in them?

1 [CBD COP Decision VI/23](#) Alien species that threaten ecosystems, habitats or species.

2 IPBES. (2019). Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. S. Díaz, J. Settele, E.S. Brondizio, H.T. Ngo, M. Guèze, J. Agard, A. Arneth, P. Balvanera, K.A. Brauman, S.H.M. Butchart, K.M.A. Chan, L.A. Garibaldi, K. Ichii, J. Liu, S.M. Subramanian, G.F. Midgley, P. Miloslavich, Z. Molnár, D. Obura, A. Pfaff, S. Polasky, A. Purvis, J. Razzaque, B. Reyers, R. Roy Chowdhury, Y.J. Shin, I.J. Visseren-Hamakers, K.J. Willis, and C.N. Zayas eds.. IPBES secretariat, Bonn, Germany. <https://zenodo.org/records/3553579>

3 IPBES. (2023). Summary for policymakers of the thematic assessment report on invasive alien species and their control of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Roy, H.E., Pauchard, A., Stoett, P., Renard Truong, T., Bacher, S., Galil, B.S., Hulme, P.E., Ikeda, T., Sankaran, K.V., McGeoch, M.A., Meyerson, L.A., Nuñez, M.A., Ordonez, A., Rahlao, S.J., Schwindt, E., Seebens, H., Sheppard, A.W., and Vandvik, V. (eds.). IPBES secretariat, Bonn, German. <https://doi.org/10.5281/zenodo.7430692>

Box 2. Target 6 on invasive alien species

The target text is presented below, broken down by colour into its overall aim and elements (actions), one of which has a quantitative aspect.

Eliminate, minimize, reduce and or mitigate the impacts of invasive alien species on biodiversity and ecosystem services by:

- i. identifying and managing pathways of the introduction of alien species,
- ii. preventing the introduction and establishment of priority invasive alien species, reducing the rates of introduction and establishment of other known or potential invasive alien species by at least 50 per cent, by 2030,
- iii. eradicating or controlling invasive alien species **especially in priority sites, such as islands.**

The identification and prioritisation of sites is important for different aspects of invasive alien species management. There are two broad categories of 'sites'⁴, sites that are **sensitive or vulnerable to impacts** from invasive alien species, and sites that are **susceptible to introductions**.

Sensitive or vulnerable sites

These are sites where if impacts from invasive alien species were to occur, there would be severe consequences to biodiversity or ecosystem services.

Island ecosystems, especially those that are remote⁵ and other isolated ecosystems such as mountains, and lake and river systems often

support high numbers of species that are found nowhere else on the planet and are known to be highly vulnerable to impacts from invasive alien species. Many of these sites are already under serious threat from biological invasions, as the overwhelming majority of global species extinctions caused by invasive alien species are known to have occurred on islands or other isolated ecosystems⁶. There are other sites that may also be considered as vulnerable, including those that support species or ecosystems of national or global conservation concern or those that are important for the provision of ecosystem services. The identification of these vulnerable sites needs to be done at a national level, but there are several existing international site designation mechanisms and datasets that can be used to support this process (Box 3).

4 McGeogh, M.A., Genovesi, P., Bellingham, P.J., Costello, M.J., McGrannachan, C. and Sheppard, A. (2016). Prioritising species, pathways, and sites to achieve conservation targets for biological invasion. *Biological Invasions*, Vol. 18 (November). <https://doi.org/10.1007/s10530-015-1013-1>

5 Moser, D., Lenzner, B., Weigelt, P., Dawson, W., Kreft, H., Pergl, J., Pyšek, P., Kleunen, M.v., Winter, M., Capinha, C., Cassey, P., Dullinger, S., Economo, E.P., García-Díaz, P., Guénard, B., Höfhansl, F., Mang, T., Seebens, H. and Essl, F. (2018). Remoteness promotes biological invasions on islands worldwide. *PNAS*, Vol. 115, Issue 37 (August) <https://doi.org/10.1073/pnas.1804179115>

6 Bacher, S., Galil, B.S., Nuñez, M.A., Ansong, M., Cassey, P., Dehnen-Schmutz, K., Fayvush, G., Hiremath, A.J., Ikegami, M., Martinou, A.F., McDermott, S.M., Preda, C., Vilà, M., Weyl, O.L.F., Fernandez, R.D., and Ryan-Colton, E. (2023). Chapter 4: Impacts of invasive alien species on nature, nature's contributions to people, and good quality of life. In: Thematic assessment report on invasive alien species and their control of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Roy, H.E., Pauchard, A., Stoett, P., and Renard Truong, T. eds. IPBES secretariat, Bonn, Germany. <https://doi.org/10.5281/zenodo.7430731>

Box 3. Examples of site designation mechanisms and datasets that can be used to support the identification of vulnerable sites:

- **Natural World Heritage Sites**⁷ - designated for outstanding biodiversity, ecosystem and geological values.
- **Ramsar Sites**⁸ – designated wetlands of international importance.
- **Protected and Conserved Areas**⁹ - protected areas and other effective area-based conservation measures (OECMs).
- **Key Biodiversity Areas**¹⁰ - sites that support critical populations of the world's threatened species.
- **IUCN Red List of Threatened Species**^{TM11} - comprehensive information source on the global extinction risk status of animal, fungus and plant species.

Susceptible sites

These are sites where there is a high risk of introductions of alien species and that provide opportunity for their establishment. They are often habitats that are already degraded and close to areas of high levels of human activity, for example, ports and harbours, large urban areas, tourist sites, or major traffic routes.

Prioritise sites

To prioritise sites, information on the conservation value of the site can be used, for example the number of endemic or threatened species present and the magnitude of impacts from invasive alien species, with the aim of identifying those where the consequences of impacts from invasive alien species are, or would be, the greatest. In addition, information on the proximity to high-risk areas of introduction and data on presence of alien species can be used to identify those sites that have the highest risk of introductions that can also support their establishment.

Sites where the consequences of impacts are or would be the greatest, and that have a high risk of introduction and establishment, should be considered as a priority. However, before any action is taken, management objectives and feasibility of actions need to be considered.

Management actions at priority sites

Site based management actions targeting invasive alien species can be highly effective and are known to result in major conservation gains¹². However, there are different management objectives that should be considered depending upon the circumstances of each site (Box 4).

For sites that are currently undergoing major impacts from invasive alien species, their eradication should be undertaken where feasible¹³. In addition, it is important to also consider eradication of existing alien species that may not be resulting in harmful impacts at present, but could do so in the near future, for example due to climate change.

7 IUCN World Heritage Outlook <https://worldheritageoutlook.iucn.org/>

8 Ramsar sites <https://www.ramsar.org/our-work/wetlands-international-importance/ramsar-list>

9 Protected Planet <https://www.protectedplanet.net/en>

10 Key Biodiversity Areas <https://www.keybiodiversityareas.org/>

11 IUCN Red List of Threatened Species <https://www.iucnredlist.org/>

12 Langhammer, P.F., Bull, J.W., Bicknell, J.E., Oakley, J.L., Brown, M.H., Bruford, M.W., Butchart, S.H.M., Carr, J.A., Church, D., Cooney, R., Cutajar, S., Foden, W., Foster, M.N., Gascon, C., Geldmann, J., Genovesi, P., Hoffmann, M., Howard-McCombe, J., Lewis, T., Macfarlane, N.B.W., Melvin, Z.E., Merizalde, R.S., Morehouse, M.G., Pagad, S., Polidoro, B., Sechrest, W., Segelbacher, G., Smith, K.G., Steadman, J., Strongin, K., Williams, J., Woodley, S., Brooks, T.M. (2024). The positive impact of conservation action. *Science*, Vol. 384, Issue 6694 (April) <https://doi.org/10.1126/science.adj6598>

13 Booy, O. Mill, A.C., Roy, H.E., Hiley, A., Moore, N., Robertson, P., Baker, S., Brazier, M., Bue, M., Bullock, R., Campbell, S., Eyre, D., Foster, J., Hatton-Ellis, M., Long, J., Macadam, C., Morrison-Bell, C., Mumford, J., Newman, J., Parrott, D., Payne, R., Renals, T., Rodgers, E., Spencer, M., Stebbing, P., Sutton-Croft, M., Walker, K.J., Ward, A., Whittaker, S. and Wyn, G. (2017). Risk management to prioritise the eradication of new and emerging invasive non-native species. *Biological Invasions*, Vol. 19 (May) <https://doi.org/10.1007/s10530-017-1451-z>

Where eradication is not feasible, containment and control measures should be considered to prevent further spread and reduce impacts.

All vulnerable sites, including those where there are only minor, or even no current impacts from invasive alien species, would benefit from biosecurity practices to prevent new introductions.

Surveillance within susceptible and vulnerable sites is also important to detect new alien species at an early stage of invasion, followed by rapid eradication measures. These surveillance actions can target priority invasive alien species and be undertaken both inside and outside of the priority site, for example in areas adjacent to protected areas.

Box 4. Possible management objectives for priority sites:

- Eradication of existing IAS leading to greatest impacts
- Eradication of existing IAS that may lead to harmful impacts in the near future
- Where eradication is not feasible, consider containment and control measures to prevent spread and reduce impacts
- Biosecurity to prevent new introductions
- Surveillance to detect new alien species at an early stage of invasion, along with rapid eradication

The full toolkit developed to support Parties in the implementation of Target 6 can be accessed here
www.cbd.int/invasive/cbdtoolkit

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More information on Kunming-Montreal Global Biodiversity Framework: <https://www.cbd.int/gbf>

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