



IUCN Restoration Intervention Typology for Terrestrial Ecosystems

Deserts and semi-deserts

Users can choose to indicate top-level approaches such as artificial regeneration OR provide more detail by selecting specific intervention types under approaches.

- Improving water access for native wildlife
- Natural regeneration
 - Passive natural regeneration
 - Reducing or eliminating the sources of degradation and allowing recovery time (resting periods)
 - Other (option to provide more detail)
 - Assisted natural regeneration
 - Scarification
 - Grazing management
 - Vegetation management (incl. composition)
 - Fire management
 - Reintroduction of native species
 - Other (option to provide more detail)
- Artificial regeneration
 - Planting / seeding
 - Terracing / other forms of soil manipulation
 - Interventions targeted at water management and / or sustainable use including harvesting, catchment, reticulation, etc.
 - Other (option to provide more detail)
- Land / water protection
 - Site / area / habitat protection e.g. .establishment of Community
 - Conserved Areas / Protected Areas
 - Other (option to provide more detail)
- Invasive/problematic species control
- Management of invasive native species (incl. diseases)
- Other (option to provide more detail)

Forests and woodlands

- Land / water protection / Conservation actions *establishing new forest areas, protecting and expanding existing forest remnants, buffers of protected areas / community conserved areas*
 - Site / area / habitat protection
 - Planting/seeding/natural regeneration of buffers (mixed stands of native species)
 - Planting steppingstones (cluster, nucleation)
 - Planting/seeding corridors of mixed stands of native species
 - Restoring cultural forest ecosystems
 - Reintroducing wildlife and bird species
 - Other (option to provide more detail)

- Natural regeneration
 - Passive natural regeneration (restoring degraded forests)
 - Reducing or eliminating the sources of degradation and allowing recovery time (removing disturbances)
 - Other (option to provide more detail)
 - Assisted natural regeneration *restoring degraded forests, reclaiming severely degraded sites*
 - Farmer-assisted natural regeneration
 - Native recolonisation
 - Restoring natural flooding regimes (remove dams or barriers, create wetlands)
 - Site stabilisation
 - Soil improvement (fertilizer, liming, biostimulants)
 - Phytoremediation
 - Re-establish hydrologic connectivity or physical processes for watersheds
 - Other (option to provide more detail)
- Artificial natural regeneration *establishing new forests, restoring degraded forests*
 - Artificial regeneration (through planting of seedlings or seeds in mixtures)
 - Reconnecting fragmented forests by planting mixed stands of native species
 - Planting on steep slopes and along waterways to avoid or recover from erosion
 - Other (option to provide more detail)
- Silviculture *restoring degraded forests, sustainable forest management*
 - Replacing non-native species with native species to increase diversity Transformation (continuous cover, gap creation and natural regeneration or underplanting)
 - Conversion (clearfell non-natives and plant mixtures of natives)
 - Partial overstorey removal (gap creation, retention thinning), w/wo under planting
 - Thinning (cleaning, density reduction or gap creation) to alter structure
 - Retaining legacy trees and deadwood or creating artificial cavities, wounding, fell and leave, etc., to create habitats
 - Restoring natural fire regime (incl. re-introduction, fuel reduction, prescribed burning)
 - Post-fire reforestation via erosion control, mulching, planting etc.
 - Maintaining or closing and decommissioning roads
 - Selective logging (manage / reduced impact logging)
 - Watershed protection and erosion control
 - Fire management (including controlled burning)
 - Climate impact mitigation and adaptation (assisted migration, density reduction)
 - Other (option to provide more detail)
- Planted forests and woodlots *establishing new forests, restoring forests, establishing trees outside forests, reclaiming severely degraded sites*
 - Nucleation or cluster planting (planting of small patches of trees as focal area for recovery)
 - Planting or direct seeding with native spp. (interplanting w/ nurse crop, taungya, planting group, framework species, or Miyawaki methods)
 - Windbreaks to mitigate wind impact while increasing crop yields
 - Reclamation of mined lands with native or non-native species
 - Enrichment planting or underplanting

- Woodlot management (and controlled fuelwood gathering)
 - Other (option to provide more detail)
- Agroforestry/Silvopastoral systems *establishing trees outside forests*
- Streamside buffers (riparian zones)
 - Home gardens
 - Combining trees with crops and/or animals
 - Combining trees with grazing on pastures, rangelands, or on-farms
 - Planting native trees on private pastoral farmlands
 - Other (option to provide more detail)
- Watershed protection and erosion control
- Invasive/problematic species control
- Management of invasive native species (incl. diseases)
- Other (option to provide more detail)

Grasslands, shrublands and savannahs

Users can choose to indicate top-level approaches such as artificial regeneration OR provide more detail by selecting specific intervention types under approaches.

- Natural regeneration
- Passive natural regeneration
 - Reducing or eliminating the sources of degradation and allowing recovery time (Rest (from grazing) and recovery)
 - Other (option to provide more detail)
 - Assisted natural regeneration
 - Reviving fire management regimes (controlled burns)
 - Intensive kralling / restriction of herd movement
 - Cloud seeding
 - Reviving herd movements (e.g. de-fragmentation) / traditional management systems
 - Reintroduction of native species
 - Other (option to provide more detail)
- Artificial regeneration
- Reseeding with native species
 - Shrub planting
 - Terracing and other soil manipulation measures
 - Soil augmentation (e.g. biochar, large scale fertilisation)
 - Promoting water capture and infiltration to locally increase soil moisture e.g. irrigation, reticulation, terracing, stone boundaries)
 - Other (option to provide more detail)
- Land / water protection
- Site / area / habitat protection e.g. .establishment of Community Conserved Areas / Protected Areas
 - Corridor re-creation and / or establishment
 - Other (option to provide more detail)
- Invasive/problematic species control
- Management of invasive native species (incl. diseases)
- Implementing participatory management systems with local land users
- Other (option to provide more detail)

Rivers, streams and lakes (wetlands)

In recognition of how these wetlands are usually restored, we have separated intervention types into this that are conducted at point i.e. in the river / stream / lake and those conducted in the landscape i.e. at the diffuse level.

Users can choose to indicate top-level approaches such as artificial regeneration OR provide more detail by selecting specific intervention types under approaches.

Point

- Natural regeneration
 - Passive natural regeneration
 - Reducing or eliminating the sources of degradation and allowing recovery time
 - Assisted natural regeneration / Actions related to species management and conservation
 - Reintroduction of native species (e.g. stocking of fish)
 - Other (option to provide more detail)

- Artificial regeneration / Actions to improve and / or enhance water quality and / or flow
 - Removal of unused or disused dams
 - Management of dams to ensure dynamic E-flow releases, improve / ensure longitudinal and vertical connectivity
 - Improvement of water quality e.g. dredging, reducing industrial waste flow, improving wastewater treatment
 - Other (option to provide more detail)

- Invasive/problematic species control
- Management of invasive native species (incl. diseases)
- Land / water protection
 - Site / area / habitat protection e.g. establishment of Community Conserved Areas / Protected Areas
- Other (option to provide more detail)

Diffuse

- Natural regeneration
 - Passive natural regeneration
 - Reducing or eliminating the sources of degradation and allowing recovery time
 - Assisted natural regeneration
 - Removal of non-native terrestrial vegetation within the landscape to improve river flow
 - Removal of overgrown (native) vegetation in flood plains
 - Other (option to provide more detail)

- Artificial regeneration
 - Catchment management e.g. prevention of soil loss through agricultural interventions
 - Channel management e.g. stabilisation through vegetation
 - Ensuring room for the river including connection between river and flood plain and improving channel structure e.g. creation of log jams
 - Groundwater management / aquifer recharge activities e.g. allowing natural flooding
 - Prevention of illegal mining / ensuring mining compliance
 - Other (option to provide more detail)

- Invasive/problematic species control
- Management of invasive native species (incl. diseases)
- Land / water protection
 - Site / area / habitat protection e.g. .establishment of Community Conserved Areas / Protected Areas
- Other (option to provide more detail)

Peatlands

- Natural regeneration
 - Passive natural regeneration
 - Reducing or eliminating the sources of degradation and allowing recovery time
 - Assisted natural regeneration:
 - Fire prevention change to management to account for wetlands where fire regimes may be beneficial e.g. prescribed burns for bogs
 - Reintroduction of native species
 - Other (option to provide more detail)
- Artificial regeneration
 - Re-wetting / raising water table
 - Re-vegetation by characteristic species
 - Reduction of erosion
 - Influencing water abstraction from supply aquifer
 - Reducing / halting nutrient input from catchment
 - Re-establishment of traditional mowing / grazing systems (only for Fen)
- Land / water protection
 - Site / area / habitat protection e.g. .establishment of Community Conserved Areas / Protected Areas
 - Other (option to provide more detail)
- Invasive/problematic species control
- Management of invasive native species (incl. diseases)

Coasts and mangroves

- Natural regeneration
 - Passive natural regeneration
 - Reducing or eliminating the sources of degradation and allowing recovery time
 - Assisted natural regeneration e.g. removal of pollutants
- Artificial regeneration
 - Capture or restore sediment flows (e.g., fence barriers)
 - Reduce wave energy (e.g., bamboo walls, offshore reefs)
 - Reprofilling and changing the elevation of the soil, relative to sea level
 - Planting of mangroves
 - Broadcasting of collected seeds/propagules onto an incoming tide and / or from a drone
 - Removal of encroaching vegetation (e.g. on sand dunes)
- Restore hydrology (channel creation, remove or breach aquaculture walls, clear channel blockages, dam removal)
- Site preparation - grazing exclusion, vegetation clearance and suppression
- Invasive/problematic species control

- Improving surface water quality to promote recolonization of native species (seagrasses)
- Artificial fencing to prevent sand loss / erosion (dunes)
- Land / water protection
 - Site / area / habitat protection e.g. .establishment of Community Conserved Areas / Protected Areas
- Other (option to provide more detail)

Urban areas

Users can choose to indicate top-level approaches such as artificial regeneration OR provide more detail by selecting specific intervention types under approaches.

- Conversion of gray infrastructure to green e.g. de paving roads, removing sea walls and restoring mangroves
- Restoration of urban waterways to semi-natural condition (measured in kilometres)
- Creation of blue spaces / semi-natural water reservoirs
- Improvement of water quality in urban waterways / wetlands
- Restoration of catchment zones
- Increasing extent and complexity of tree canopy
- Creation / enhancement of habitat for native species of wildlife
- Creation of wild gardens / yards for native species
- Creation of green spaces / green belts (native flora) for cooling, air filtration and mental health
- Creation of green roofs
- Development of peri-urban food systems
- Invasive/problematic species control
- Management of invasive native species (incl. diseases)
- Utilisation of native species in specific areas such as roadways and islands for erosion control, stormwater runoff
- Rehabilitation of extractive areas, e.g. quarries within city boundaries
- Land / water protection
 - Site / area / habitat protection e.g. .establishment of Community Conserved Areas / Protected Areas
 - Creation of wildlife corridors, improving connectivity between Protected Areas, enlargement and / or enrichment of forest fragments
 - Other (option to provide more detail)
- Other (option to provide more detail)

Farmlands and mixed-use areas

For the purposes of tracking restoration progress, we have divided farmlands and mixed-use areas into three categories that better allow us to capture the type of interventions most suited for the way the land is being used and its associated restoration objectives. Users can choose to indicate top-level approaches such as artificial regeneration OR provide more detail by selecting specific intervention types under approaches.

Farm fields / within farm boundaries

- Improving land management
 - Agroforestry
 - Permaculture
 - Organic farming
 - Other (option to provide more detail)
- Artificial regeneration
 - Growing perennial crops
 - Conservation tillage
 - Crop rotation
 - Integrated manure systems
 - Inclusion of cover and companion crops

- Creating mobile animal shelters to promote regenerative agriculture
- Low external input agriculture (e.g. reduction of herbicides and pesticides) and livestock (good practices for biocides)
- Soil conservation techniques
- Grazing management including free range / lower densities
- Implementation of nature positive agriculture e.g. ensuring % of forest cover on farms
- Nutrient balancing
- Crop diversification
- Mixed crop, intercropping and animal farming
- Mixed farming and forestry
- Other (option to provide more detail)

Along the boundaries of farms and fields

- Assisted natural regeneration
 - Facilitate and create habitat for pollinators (e.g. hedgerows, increasing availability of nesting spaces and materials)
 - Control of pests through habitat creation for natural predators
- Other (option to provide more detail)

Farm landscapes - improve biodiversity

- Establish / manage Woodlots
- Restore riparian zones
- Invasive/problematic species control
- Manage invasive native species (incl. diseases)
- Restore acequias and irrigation rafts
- Land / water protection
 - Create corridors
- Other (option to provide more detail)

Other (option to provide more detail)



Restoration
Barometer

