

CITIZEN SCIENCE SDG CONFERENCE

14.–15.10.2020

Knowledge for Change: A decade
of Citizen Science (2020–2030)
in support of the Sustainable
Development Goals



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Natura Alert



Monitoring biodiversity threats using citizen science

Sofia Capellan, Ivan Ramirez, Linda See, Anto Subash, Inian Moorthy, Steffen Fritz, Octavio Infante, Lalu Abdi Wirastami

Center for Earth Observation & Citizen Science
International Institute for Applied Systems Analysis



The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement no 689812



CHALLENGE

**Comprehensive monitoring of
Important Bird and Biodiversity Areas (IBAs)**



13000+ sites



200+ countries



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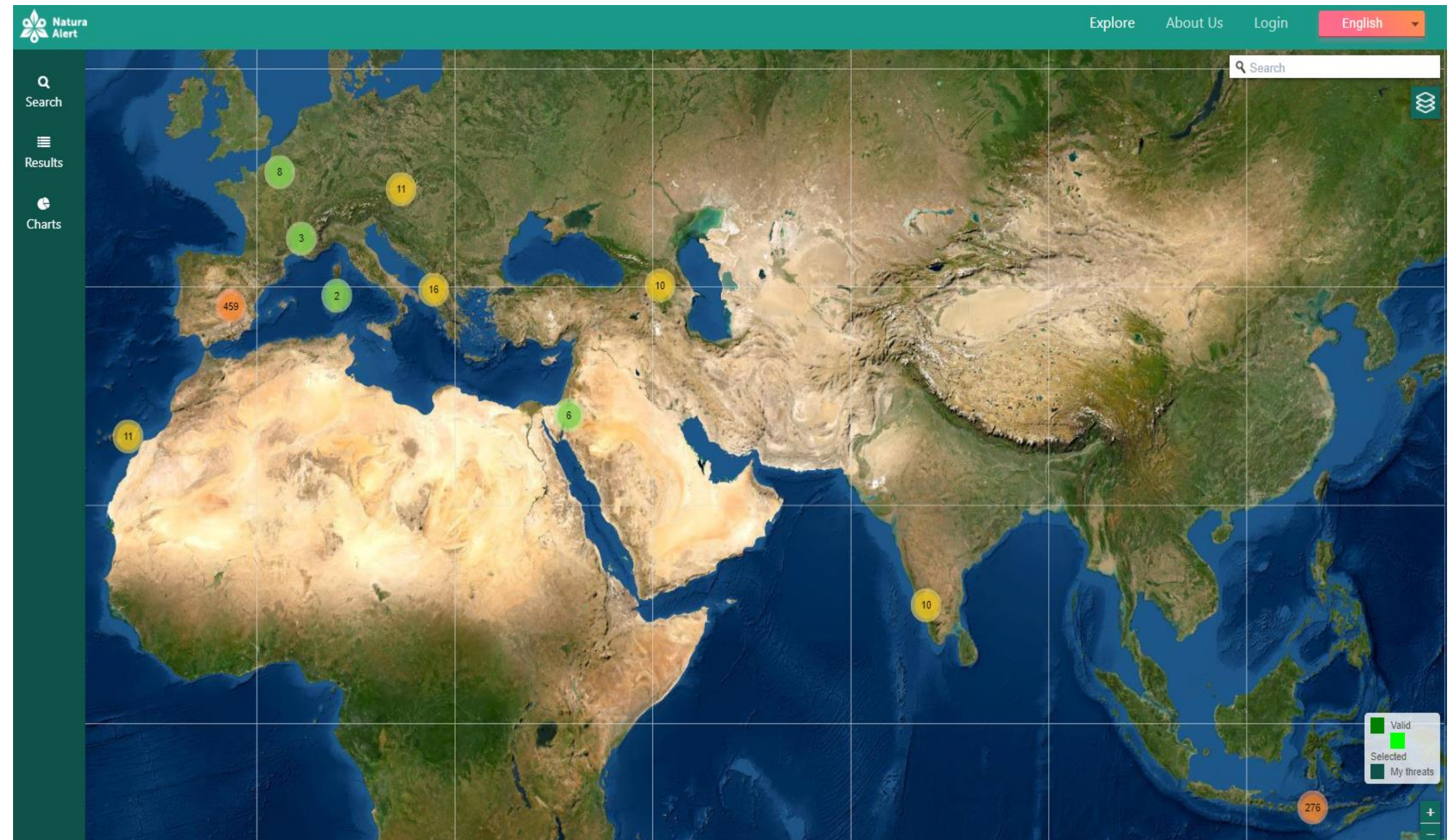
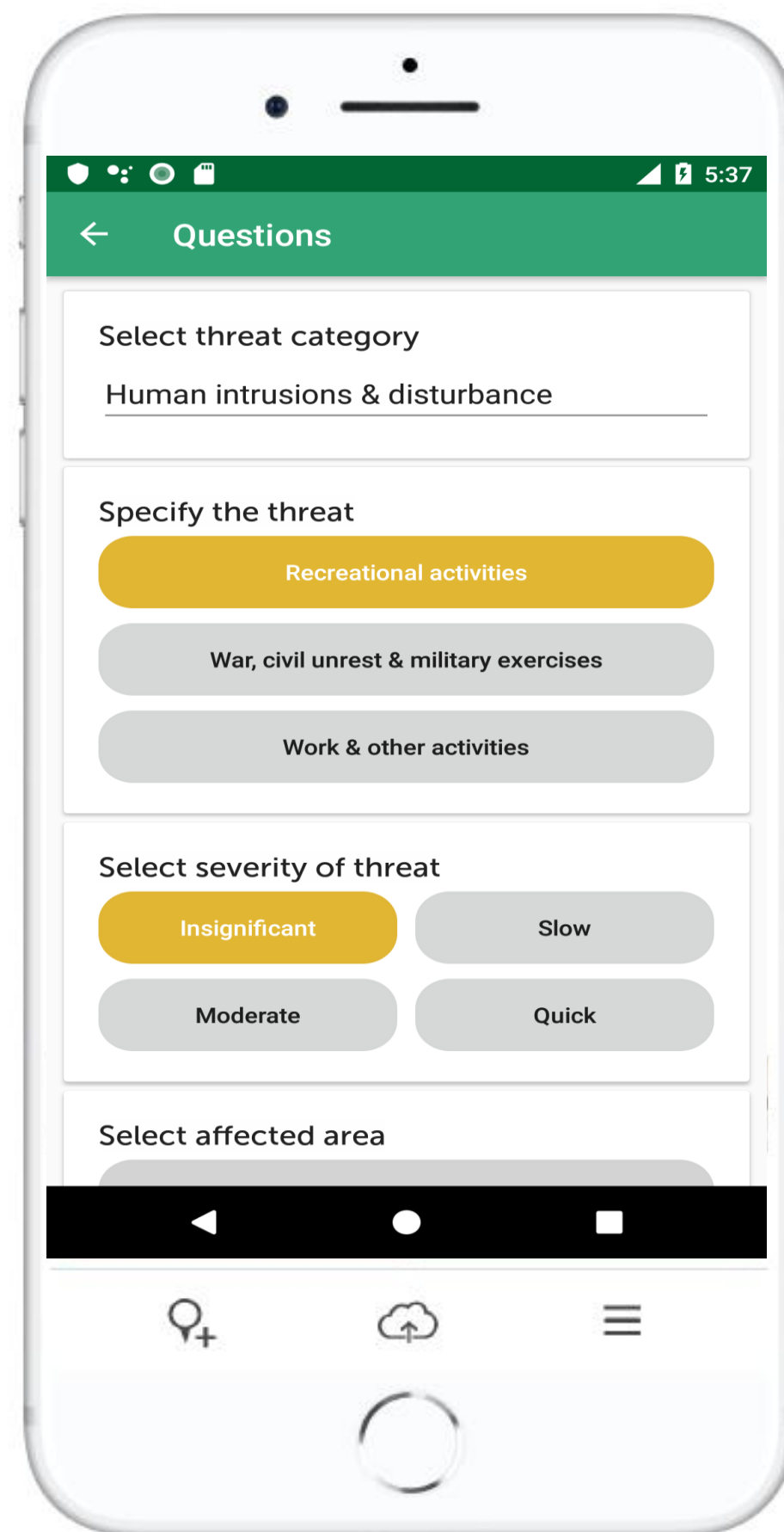
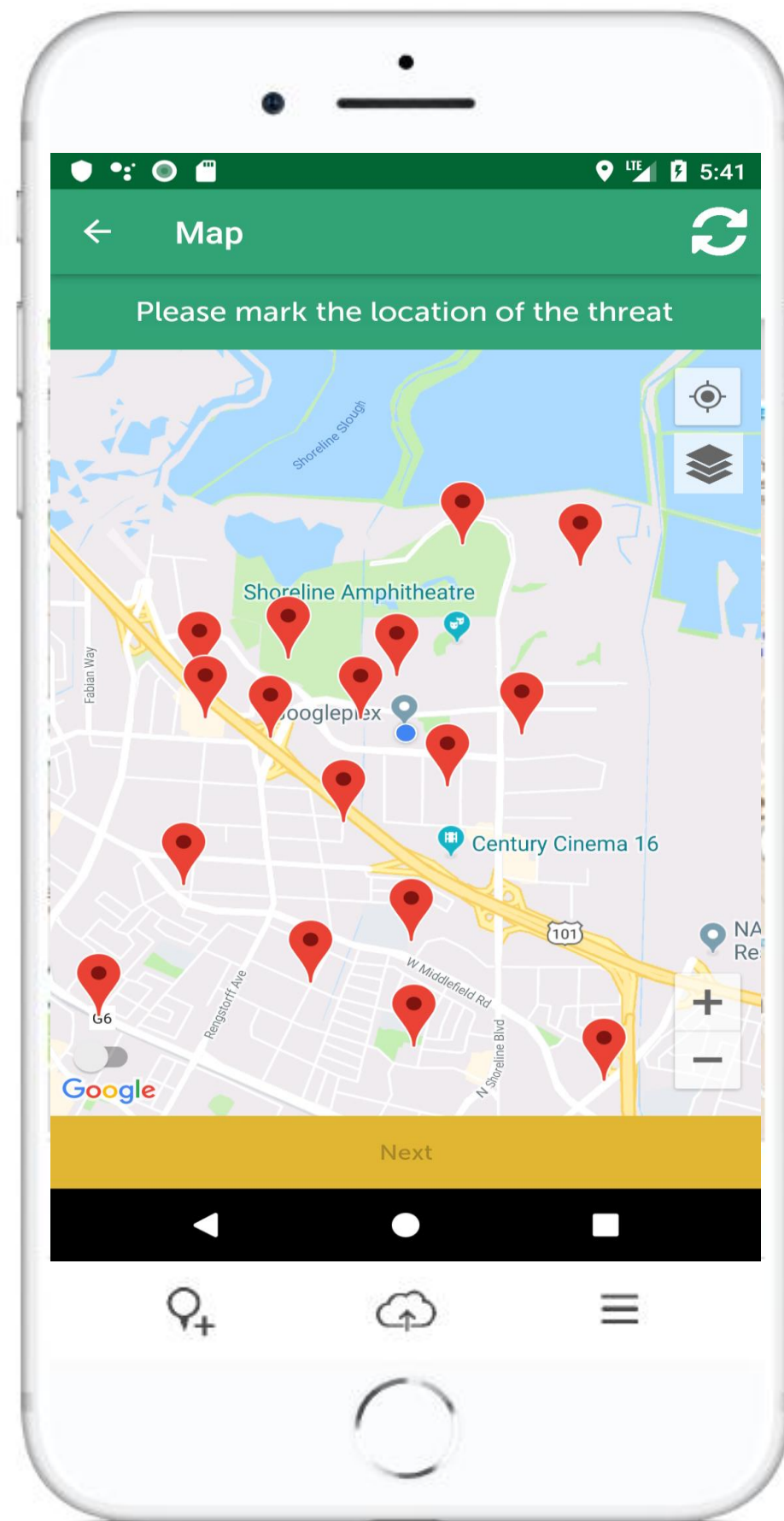
Biodiversity threat monitoring

Mobile & Web application

Geotagged information

Quality assurance & reporting

A digital workflow for volunteer reporting, validation and subsequent national level assessments



<https://natura-alert.net/>

Threat Category, Severity, Timing, Scope



Residential & commercial development

Housing & urban areas
Commercial & industrial areas
Tourism & recreation areas



Biological resource use

Hunting & collecting terrestrial animals
Gathering terrestrial plants
Logging & wood harvesting
Fishing & harvesting aquatic resources



Pollution

Domestic & urban wastewater
Industrial & military effluents
Agricultural & forestry effluents
Garbage & solid waste
Air-borne pollutants
Excess energy



Agriculture & aquaculture

Annual & perennial non-timber crops
Wood & pulp plantations
Livestock farming & ranching
Marine & freshwater aquaculture



Human intrusions & disturbance

Recreational activities
War, civil unrest & military exercises
Work & other activities



Geological events

Volcanoes
Earthquakes/tsunamis
Avalanches/landslides



Energy production & mining

Oil & gas drilling
Mining & quarrying
Renewable energy



Natural system modifications

Fire & fire suppression
Dams & water management/use
Other ecosystem modifications



Climate change & severe weather

Habitat shifting & alteration
Droughts
Temperature extremes
Storms & flooding



Transportation & service corridors

Roads & railroads
Utility & service lines
Shipping lanes
Flight paths



Invasive & other problematic species, genes & diseases

Invasive non-native/alien species/diseases
Problematic native species/diseases
Introduced genetic material
Problematic species/diseases of unknown origin
Diseases of unknown cause



2019 Spain Pilot



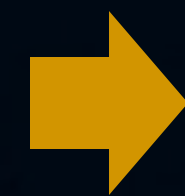
40+
participants



450+
observations



**Volunteers → IBA Caretakers
→ National Coordinators**



Annual assessment on conservation status



2019 Indonesia Pilot



25+
participants



275+
observations



Local Conservation Groups & Village authorities



Validation of satellite-based alerts





Threat details

10. Geological events



10.3. Avalanches/landslides



Quick



Comments

Landslide.
One month ago





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15.1 By 2020, ensure the **conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services**, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements

15.4 By 2030, ensure the **conservation of mountain ecosystems, including their biodiversity**, in order to enhance their capacity to provide benefits that are essential for sustainable development

15.5 Take urgent and significant action to **reduce the degradation of natural habitats, halt the loss of biodiversity** and, by 2020, protect and prevent the extinction of threatened species



**Natura
Alert**

Operationalizing the workflow

**Exploring opportunities to scale
up to Netherlands, Greece and
Argentina**



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