Letter of intent

File number 175.2021.009

Grant 2021/2022

Applicant

Title
WAKE-UP: WildLife biobAnKing for rEsearch UPscaling on emerging diseases and climate change

Abstract
WAKE-UP will be the national infrastructure (database and sample collections) of wildlife samples to study impacts and risks of emerging infectious diseases, climate change and related topics for the well-being of human kind.

Samples of wild animals that died of natural or anthropogenic causes contain a wealth of information on the occurrence of diseases and pests, impacts of climate change, prevalence of environmental pollutants and other long-term and global change processes. Wild animal victims are currently not preserved or databased centrally, unlike in surrounding countries, and thus are not available for future examination, e.g. detection of novel pathogens, pests and pollutants. The WAKE-UP infrastructure will provide structured storage of wild animal samples (e.g. tissue, blood, skins, whole specimens), centralize and open-up this information for future research, particularly when it concerns longitudinal cohorts of samples. WAKE-UP will also reduce disturbance and discomfort of wildlife animal sampling by facilitating easy access and sharing of previously collected materials and metadata.

WAKE-UP is broadly supported by the community of researchers, sample providers and existing collections. It will make optimal use of and link to existing storage, databases and data sharing infrastructures (e.g. ARISE, Naturalis, DWHC, ERASMUS MC, GRIEL), add facilities where and when applicable, and comply with international RI data and architecture conventions (e.g. by building on EU ESFRI DISSCO, VEO-Europe, EOSC, EVAg).

Planned activities will include:
1. Set-up data architecture (database structure, data management, FAIR exchange, interface, etc.), use and governance (data sharing and handling, links to other RIs)
2. Investigate best practices for long-term storage of wildlife samples (based on existing biobanking protocols and databasing practices)
3. Inventory and connect existing wildlife biobanks and collections
4. Set-up sustainable sample collection of longitudinal cohorts of wildlife samples (e.g. from bird surveillance/ringing, border control, road kills, beach surveys, live traps, pest and disease control)
5. Support and develop long term storage facilities (‘biobanks’)
6. Develop a strategy for maintaining long-term viability of WAKE-UP (e.g. institutional embedding, access and licensing, costing and storage).

Consortium partners:
Naturalis Biodiversity Center (leading organisation; PI Koos Biesmeijer)
KNAW-NIOO
ErasmusMC

WAKE-UP is broadly supported by the community. The following partners will develop WAKE-UP further:
- Naturalis (collections, ARISE, ESFRI DISSCO, biodiversity research)
- NIOO-KNAW (ecology, bird monitoring)
- ERASMUS MC (emerging diseases, microbiology, collections)
- WUR / WENR (zoonoses, ecotoxicology, wildlife diseases, samples)
- CML-University Leiden (vector-borne diseases, environmental sciences, ecotoxicology)
- NIOZ (ecology, birds, marine mammals, samples)
- DWHC-Dutch Wildlife Health Center (samples, detection of diseases)
- RIVM (environmental pressures, pests and diseases)
- WBVR - Wageningen Bioveterinary Research (animal health)
- EU Biobanks (EU consortium of wildlife biobanks)
- Academic hospitals (emerging diseases, zoonoses)
- Universities and Research Institutes (ecology, biodiversity, epidemiology, microbiology, climate change)

WAKE-UP links closely to the GWI Roadmap:
ARISE (lead Naturalis), National Marine Facility (lead NIOZ), LTER-LIFE (Lead NIOO), LifeWatch, RIVM NEMNET
BioSafetyLab3: (lead ERASMUS MC)
NWO-domein: ENW/ ZonMW
21.90.00 Levenswetenschappen
22.10.00 Microbiologie
22.40.00 Ecologie
22.70.00 Toxicologie
22.90.00 Biologie, overig
23.80.00 Epidemiologie
24.00.90 Diergeneeskunde

Organisation responsible for the application

Confirm letter of intent
With submitting this form via ISAAC I declare to have filled in this form completely and truthfully.

☑

Applicant