

Horizon Europe collaboration. Expression of interest

TOPIC: HORIZON-CL6-2027-01-BIODIV-07

Contact	Joan Navarro (Principal Investigator) joan@icm.csic.es
Research Group/Area	Health of ecosystems and wild species, predictions and impacts on human health, in the face of existing and emerging stressors, from a One Health approach
Expertise	Development of early warning systems to mitigate risks and enhance resilience in human-modified ecosystems, including urban environments. We specialize in integrated approaches to ecosystem health surveillance, advancing the use of biological models (particularly synanthropic wildlife) as natural laboratories for monitoring the presence and spread of harmful agents such as pathogens and pollutants. Grounded in a holistic <i>One Health</i> perspective, our work bridges environmental, animal, and human health. By functioning as reliable operational sentinels, these biological models serve as valuable allies in detecting and tracking environmental risks. Their application supports evidence-based decision-making and informs the design, implementation, and evaluation of preventive and corrective measures, ultimately contributing to the protection and sustainable management of human-impacted ecosystems.
Background in EU projects	Participation as researchers in different EU projects: https://imares.science/research/current-projects/
Role	Partner or eventually WP Leader
Key results (WHAT?) Results delivered aligned with the topic Potential contribution	Expertise and contribution to sentinel-based ecosystem health monitoring. We have extensive expertise in investigating the use of opportunistic wildlife (specifically synanthropic gulls) as sentinels in human-modified environments. Through an interdisciplinary approach integrating ecology, environmental pollution, microbiology, and health metrics, and grounded in a <i>One Health</i> framework, our work has generated robust evidence on environmental health risks. Our research has characterized the occurrence and dynamics of pollution (plastics and persistent organic pollutants) in urban gull populations and identified a range of pollutants and pathogens associated with human activities. Beyond detection, our work has provided actionable insights to support long-term environmental management and policy-making, demonstrating the value of sentinel wildlife in tracking anthropogenic impacts. Building on this foundation, we offer targeted expertise on how sentinel wildlife can be used to assess the health of ecosystems, wildlife, and human populations coexisting in human-altered habitats. Our focus lies in understanding the presence, interactions, and dynamics of both biological stressors (e.g., pathogens) and abiotic stressors (e.g., pollutants) within a unified <i>One Health</i> perspective. We are uniquely positioned to contribute through our well-established long-term study system in the Barcelona urban ecosystem, which encompasses both terrestrial and marine impacted environments. Since 2018, we have continuously monitored this system using yellow-legged gulls as sentinel species, generating a strong track record of scientific outputs, including peer-reviewed publications and funded research projects. Specifically, our potential contribution will focus on: 1. Advancing integrative risk assessment, by developing holistic approaches to evaluate how harmful pathogens and pollutants interact with wildlife, environmental compartments, and trophic resources over time, thereby improving predictions of impacts on both animal and human health. 2. Elucidating underlying mechanisms, by identifying the drivers of emergence, persistence, and dissemination of harmful agents in complex urban ecosystems, which is essential for designing effective and evidence-based management strategies. Overall, our input to the project will position synanthropic wildlife as key allies in environmental monitoring, contributing to the development of early warning systems

	and supporting proactive, science-based management of urban ecosystem health within an integrative <i>One Health</i> framework.
Infrastructure Resources that can be beneficial for the solution	A long-term monitored urban ecosystem leveraging synanthropic gulls as sentinel species, supported by laboratory services (pollutants and pathogens) and ongoing collaboration with public health institutions to investigate the links between environmental stressors and human health outcomes.
Gender Equality and Open Science	Gender Equality Plan. In 2024, ICM joined a Community of Practice established through the European research project LeTSGEPs Leading Towards Sustainable Gender Equality Plans in research performing organisations and also participates at the EU project RESponsible research and innovation grounding practices in BIOSciencies. Since February 26th 2021, CSIC is awarded with the "HR Excellence in Research" award from the European Commission.
Network	Scientific member of: ▪ TEC: Trophic Ecology and Connectivity ▪ Stable Isotopic Lab- Estación Biologica de Doñana CSIC ▪ Observadores del Mar ▪ Associated Researcher at CTFC Citizen science (bird observations): https://marquesespecials.cat/

