



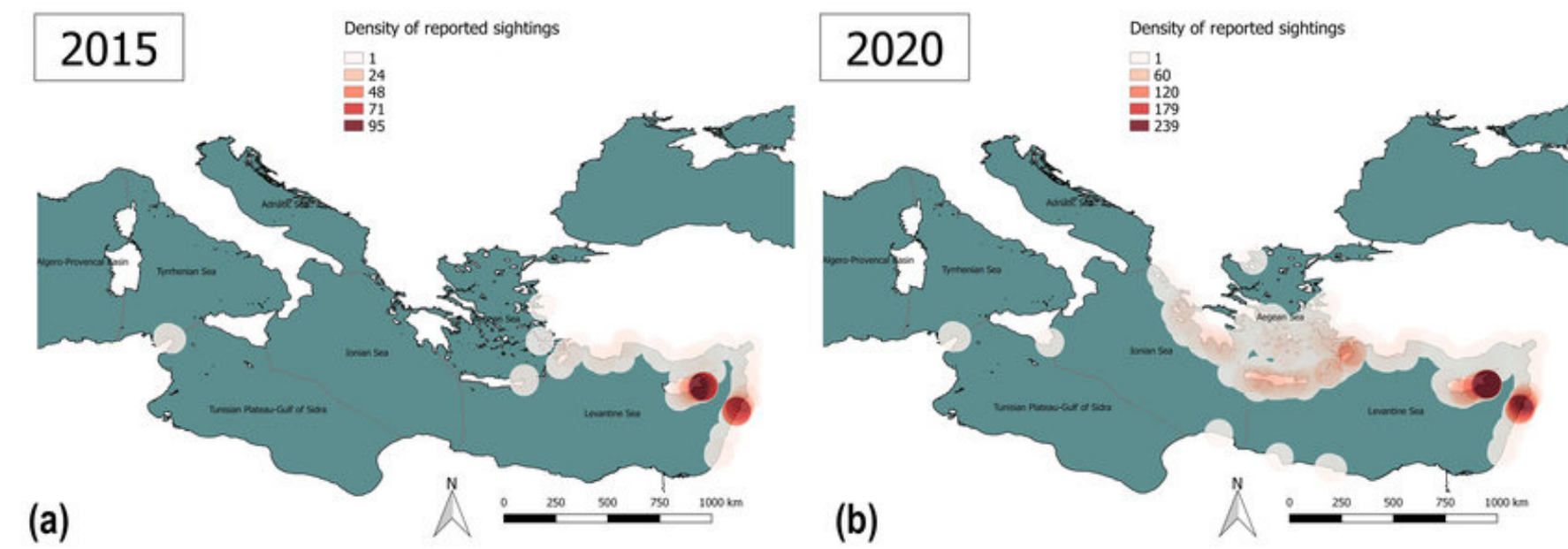
Project Lioness

Awareness to Action: Building Digital Communication Tools for Sustainable Lionfish Management in the Mediterranean

Problemspace

Coral reefs face severe threats from climate change, pollution, and overfishing, leading to coral bleaching and ecosystem imbalances. These conditions enable invasive species like lionfish (*Pterois miles*), a voracious predator native to the Indo-Pacific, to thrive.

Since 2012, lionfish have rapidly spread in the Mediterranean, migrating from the Red Sea via the enlarged Suez Canal. Warming waters and overfished reefs have created ideal conditions for their invasion, causing significant ecological and economic damage, including threats to biodiversity and local fisheries.



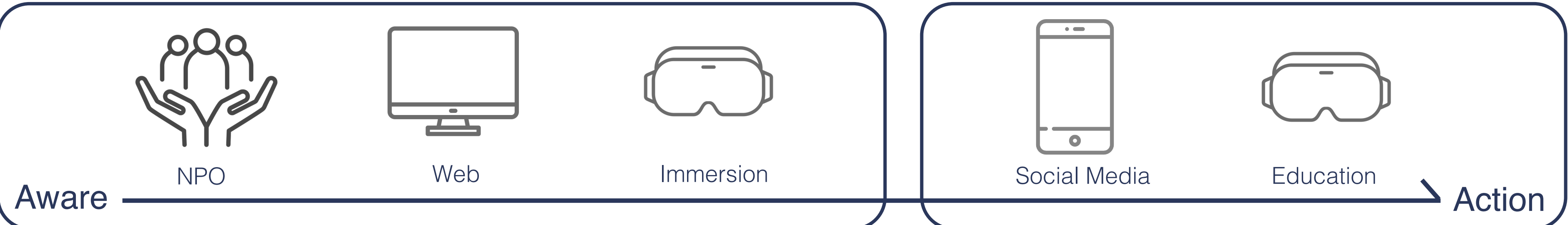
Management Approach



The EU-funded project RELIONMED demonstrated that targeted lionfish removal using scuba divers and spearguns is the only effective way to control their populations. This method is precise, minimizing harm to native species and ecosystems, and ensures sustainable management. This method ensures a quick, minimally painful kill for lionfish, respecting their role as a stakeholder while prioritizing ecosystem balance.

Digital Communication Tools

The urgency of the lionfish invasion demands innovative tools to engage and educate people on the ecological crisis unfolding beneath the surface. VR is uniquely suited to simulate diving, providing an immersive experience that mirrors the feeling of being underwater. However, as VR is limited to one person at a time, a cross-platform solution is essential to amplify awareness. By combining VR with more accessible tools like websites and social media, the message reaches a broader audience, combining immersive education with scalable impact to inspire collective responsibility.



Design Method

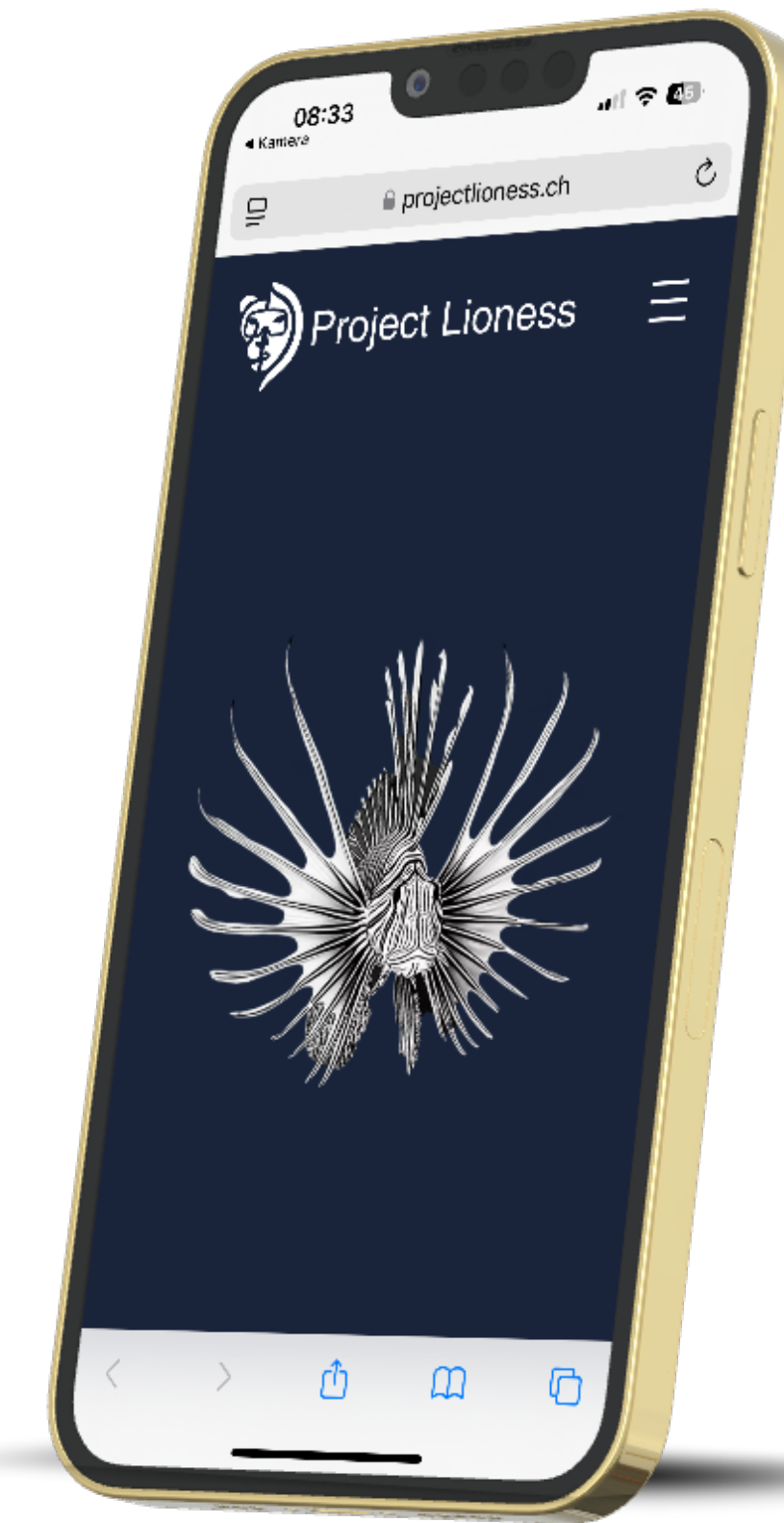
This project adopts a stakeholder-centered design (SCD) approach, expanding beyond traditional human-centered design to include all relevant stakeholders - human and non-human. In addition to divers, local communities, and government agencies, the ecosystem and lionfish themselves are considered integral. By ensuring every perspective is addressed, SCD fosters sustainable, socially responsible, and balanced solutions that prioritize long-term ecological and societal harmony.

Stakeholders



Prototype Web

The web prototype was designed with mobile-first accessibility to ensure ease of use for a wide audience but is fully functional on desktop for greater flexibility and reach.



Timeline



Future Ambitions

Future ambitions for Project Lioness focus on establishing it as a nonprofit organization dedicated to sustainable lionfish management in the Mediterranean. A website will serve as a central platform for education, outreach, and collaboration. VR prototypes will transform research insights into practical tools, while stakeholder interviews ensure diverse perspectives shape the solutions. To stay updated, contribute, and be a part of the solution, scan the code and join the mission to protect our reefs.

