



# Solving the Mystery of MPA Performance

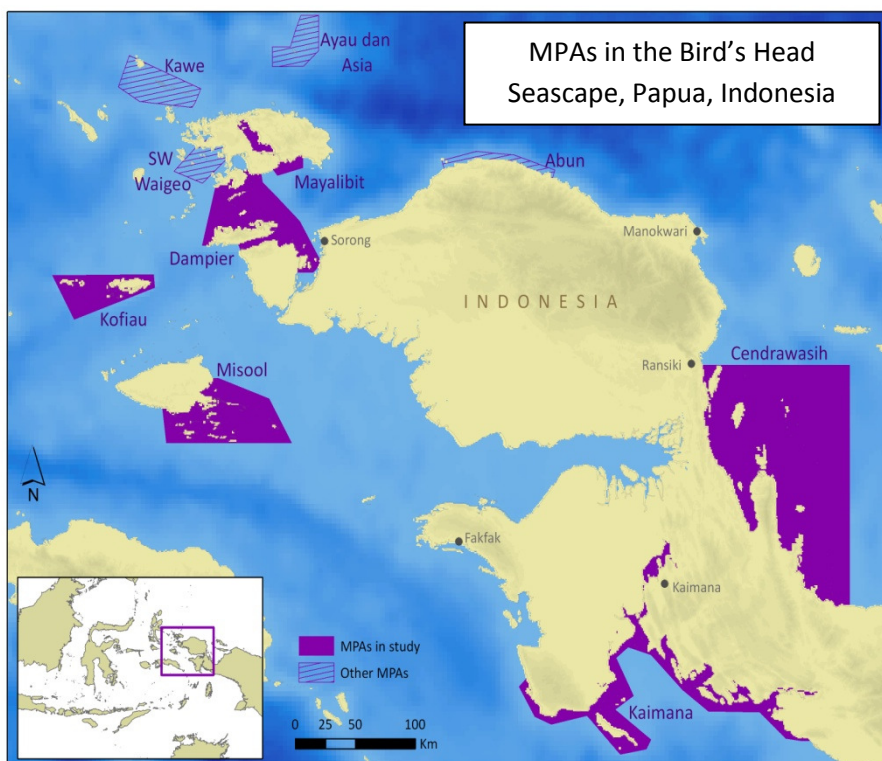
Linking governance, biodiversity conservation, and human well-being

## Statement of Need

Marine protected areas (MPAs) are an integral component of local, national, and international strategies for biodiversity conservation, but their contribution to sustainable development remains contested. The impact of MPAs on local communities, in particular, is the focus of a contentious policy debate: advocates tout MPAs as a win-win strategy for conservation and poverty alleviation, while opponents argue that MPAs place the welfare of fish above the well-being of impoverished fishing communities. In fact, evidence suggests that both perspectives may have merit. Under certain conditions, MPAs can provide both biodiversity and social benefits, while in other settings tradeoffs exist between biodiversity conservation and social welfare. Because scientists have not yet convincingly explained these variations in the social and biological performance of MPAs, decision-makers set marine resource policy in ignorance – not knowing whether their choices will benefit people, the environment, or both. To discover what works, what doesn't, and why, WWF has launched an interdisciplinary research initiative to examine how MPA governance shapes the behavior of local fishers, the condition of the marine environment, and, ultimately, conservation and social outcomes.

## Social Impacts of MPAs

As a first step, WWF-US is leading ground-breaking research on the social impacts of MPAs in the Bird's Head Seascape (BHS) of Papua, Indonesia. In collaboration with the University of Papua (UNIPA), Conservation International, The Nature Conservancy, and WWF-Indonesia, we are monitoring changes in household well-being over time, as well as the underlying attributes of MPA governance likely to shape these social impacts. This study of six MPAs, plus comparison non-MPA sites, will document the impacts of MPA establishment on local communities as well as how these impacts vary--among social groups and across social domains (e.g., economic well-being, health, political empowerment, education, and culture). Initial data collection and analysis confirms the validity and power of our rigorous mix of qualitative and quantitative methods, and the salience of our research to local researchers and decision makers (public sector and NGO), national conservation organizations, and international scholars, conservation practitioners, and donors.



## Goals and Next Steps

To solve the mystery of MPA performance in the BHS, the five partners seek to enhance and complement existing work (NGO partners have been collaboratively monitoring ecological condition in MPAs in the BHS since 2007) with new interdisciplinary analyses to identify guiding principles for policies that foster positive ecological and social MPA impacts, and in so doing demonstrate the value of evidence-based approaches to conservation decision-making.

In particular, we hope to:

- 1) Conduct interdisciplinary analysis of social, ecological, and governance data to document relationships between MPA governance and impacts, and to explain the variation in these impacts.
- 2) Build Papuan and Indonesian capacity in social science methods, monitoring and evaluation, data analysis and policy engagement.
- 3) Establish the intellectual foundation for scaling up BHS methods and analyses to other MPAs in the Coral Triangle region and around the world.

## Activities & Outputs

To achieve these goals, we plan to:

- Synthesize existing data and expand ecological monitoring to include matched control non-MPA sites, a critical gap to establishing MPA impacts on ecosystem integrity.
- Rigorously monitor the social impacts of BHS MPAs (6 MPAs with non-MPA controls) to capture medium-term impacts on economic well-being, health, political empowerment, education, and culture.
- Train Papuan and Indonesian students and researchers in social science research methods & collaboratively conduct data collection, analysis, publication, and policy engagement.
- Develop evidence-based guiding principles (“rules of thumb”) for the development of MPAs that deliver social and ecological benefits and disseminate findings to scientists and managers through conference presentations and peer-reviewed publications, particularly the 2012 International Coral Reef Symposium.
- Mainstream findings in local, national, and international decision making through co-authored briefings and active participation in relevant policy processes, most notably the ongoing Papuan coastal zone planning process.

Expected outputs will include:

- Several dozen Papuans (undergraduate to senior faculty) trained in social science methods for data collection and analysis.
- Novel methods and replicable protocols for collecting and analyzing data on MPA governance and social impacts.
- A database with social, ecological and governance data for MPAs in the Bird’s Head Seascape.
- A series of scientific presentations, peer-reviewed articles, and policy briefs that document and explain the impact of MPAs on marine biodiversity and livelihoods in the BHS.
- Evidence-based guidelines for the development and management of effective MPAs

## Evidence-based Marine Protected Areas

As the global conservation community strives to both halt the loss of biodiversity and better understand the benefits of nature to people, it is essential that we enhance the effectiveness of our interventions by learning from experience. WWF’s Conservation Science Program and partners on the ground are doing just that in the Bird’s Head Seascape, Indonesia, in a rare opportunity to document and explain MPA impacts through smart monitoring and impact evaluation. We have already generated some of the most rigorous evidence for social impacts of MPAs to date, and are planning novel interdisciplinary work in order to “solve the mystery of MPA performance.” By replicating successes, reforming failures, and avoiding future mistakes, the marine conservation community can ensure that MPAs realize their full potential as a conservation strategy.

**WWF-US Research Prospectus.** *Contacts:* Helen Fox ([helen.fox@wwfus.org](mailto:helen.fox@wwfus.org)), Mike Mascia ([michael.mascia@wwfus.org](mailto:michael.mascia@wwfus.org)), Louise Glew ([louise.glew@wwfus.org](mailto:louise.glew@wwfus.org))