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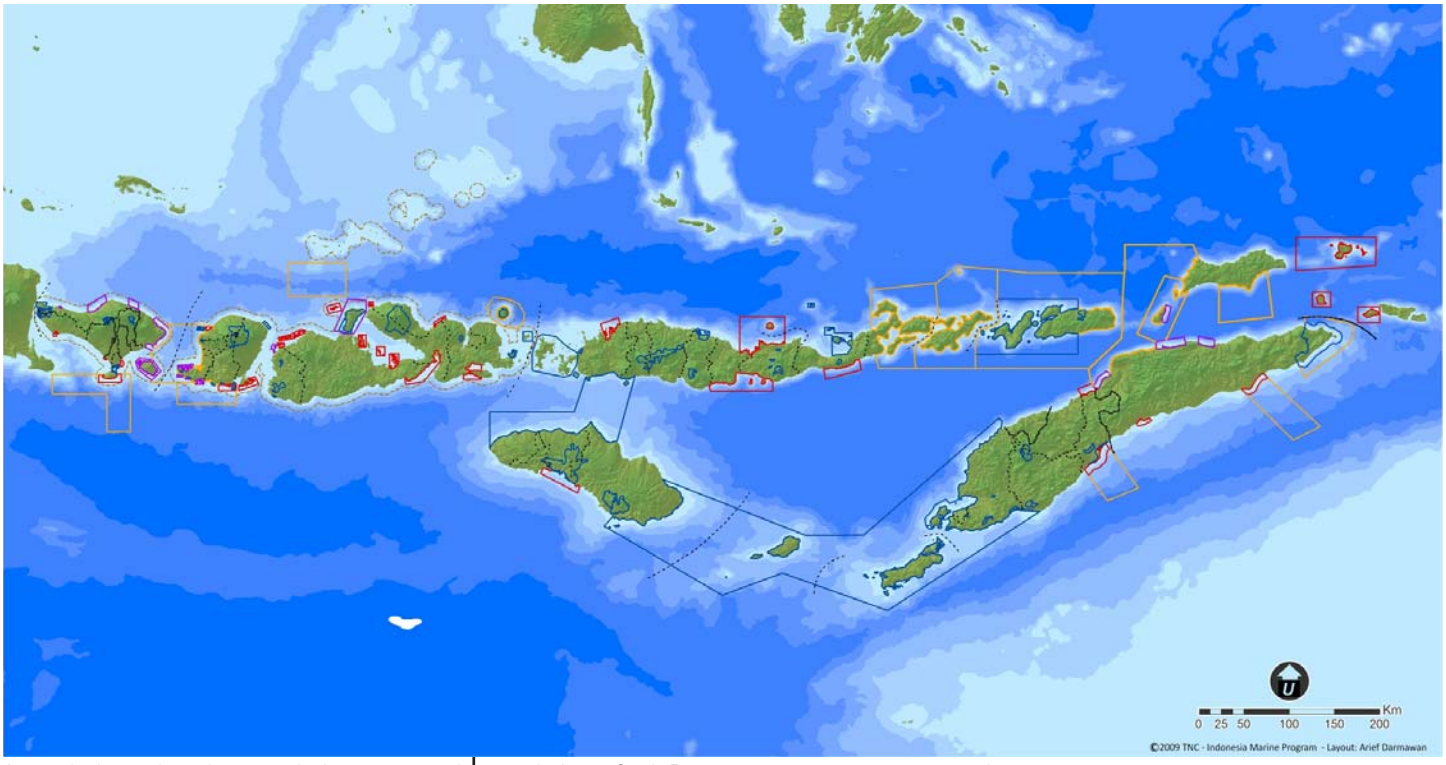
Asia-Pacific / Indonesia Program

The Lesser Sunda Ecoregion

Designing a resilient network of MPAs - linking coastal and deep sea ecosystems



A scientific design of a resilient network of marine protected areas in the Lesser Sunda Ecoregion, encmpassing 3 pronvinces and two countries

At the southern end of the Coral Triangle, the Lesser Sunda Ecoregion stretches from Bali to Timor Leste, covering an area of more than 45 million hectares. Linking the Indian and Pacific Oceans, the Lesser Sunda region supports diverse and highly productive reef and pelagic habitats, and is a major migratory corridor for cetaceans. Several islands in the area provide important nesting sites for endangered species of sea turtles, and the region experiences dynamic oceanographic conditions including exceptionally strong currents of the Indonesian through flow. The combination of strong currents and steep underwater cliffs causes major cold-water upwellings that could be a key factor in conferring resilience to the growing threat of rising sea surface temperatures associated with climate change. If properly protected, the Lesser Sunda Ecoregion could become a refuge for marine life and productive fisheries amid global climate change.

Although the islands of the Lesser Sundas are sparsely populated (ca. 13 million), resource management issues include destructive and overfishing and illegal harvesting of cetaceans and turtles, and disposal of mine tailings in the ocean. The proximity of deep-sea ocean habitats to coastal villages means that assemblages of (often endangered) migratory species are highly vulnerable to entanglement in fishing nets and ship strikes. At the same time, this proximity of deep-sea habitats offers unique opportunities for local communities to capitalize upon spectacular nature-based tourism featuring cetaceans, mantas and whale sharks.

Laying the Groundwork for a Resilient Network of MPAs

The Nature Conservancy-Indonesia Marine Program (TNC-IMP) has been working with the national, provincial and district governments, local communities, NGOs and universities since 2006 to designing a resilient network of MPAs in the Lesser Sunda Ecoregion. A wide-range of activities were carried out in the design

The Lesser Sunda Ecoregion is an important migratory corridor for cetaceans © APEX Environmental

process: ecological and sociological assessments were conducted to determine impacts of climate and resource-use changes on the ecosystems and resources; scientific, legal and collaborative frameworks were developed for establishing and managing a resilient network of MPAs; and spatial planning tools were developed and applied that address issues of MPA network design, resilience and changing patterns of resource use.

Working with various partners, TNC-IMP has also conducted: 1) Workshops on Marine Protected Areas attended by more than 1,000 participants, and technical MPA training initiatives for around 200 participants from national and local government agencies, local universities, marine research institutions, local communities, NGOs, as well as the fishing and tourism industries. 2) A series of consultations with national and provincial government agencies to align coastal and marine spatial planning with the proposed MPA network design.

Scientific design of a resilient network of MPAs in the Lesser Sunda Ecoregion

Through the project, a TNC conservation planning team identified a resilient network of Marine Protected Areas in the Lesser Sunda Ecoregion by analyzing key conservation features, applying state of the art conservation planning tools and soliciting input from stakeholders and experts. The MPA network includes 100 protected areas — 86 coastal reserves and MPAs for coral reefs, mangroves and seagrass that are linked to 14 larger offshore MPAs which encompass deep sea habitats important for endangered species such as blue whales.

The Lesser Sunda MPA network builds on existing and planned MPAs and identifies additional areas for future development of coastal and deep sea MPAs. The network includes:

- 23 existing terrestrial reserves that are adjacent to the coast and encompass intertidal habitats, such as mangroves or turtles nesting beaches;
- 14 existing MPAs that represent coral reefs, seagrass, mangroves, turtle nesting beaches and associated habitats and species;
- 19 areas that national, provincial or district governments have proposed as MPAs but have not yet been declared;
- 30 additional areas of interest that have been identified for inclusion. The MPAs proposed during this process have been termed 'Areas of Interest' as final boundaries will need to be decided and declared by district, provincial and national governments before they are established as MPAs.; and
- 14 deep sea areas of interest — three of which encompass transboundary waters between Indonesia and Timor Leste.

The project's greatest achievement was its contribution to the declaration of the 3.5 million hectare Savu Sea Marine National Park on May 13 at the World Oceans Congress in Manado, Indonesia. The Savu Sea is the centerpiece of the Lesser Sunda MPA network and is now the largest marine protected area in the Coral Triangle region and one of the largest in the world. With this declaration, Indonesia fulfilled its commitment to the Convention on Biological Diversity's Program of Work on Protected Areas to create 10 million hectares of MPAs by 2010.

Next steps: implementation

The proposed network of MPAs is based on the best available knowledge and latest scientific principles of resilience to climate change. It provides an excellent roadmap for a key marine ecoregion in the Coral Triangle and is supportive of the Indonesian Government's goal to identify a national system of MPAs by 2011.

To date, TNC-IMP is working in three field-based areas within the region (Komodo National Park, Nusa Penida and Savu Sea), and with the Timor Leste Government in providing training and technical input to policy and MPA design.

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