Closing the gap between conservation and communities

March 26 2013

(Phys.org) —In a world first study, researchers have developed a way for governments to balance the needs of society and industry with those of endangered wildlife and environments.

Work by researchers in the ARC Centre of Excellence for Environmental Decisions (CEED) could help to dispel some of the deep, bitter and long-running tensions between conservationists and industry or communities.

They have developed a novel approach that shows the specific outcomes of a conservation plan, including how effective it will be, how much it will cost and how the benefits or costs will be distributed across different communities or industries.

The approach enables decision makers to balance the needs of biodiversity, economics, and people whose livelihoods are affected by conservation measures, says Dr Carissa Klein from the CEED and The University of Queensland.

"The ideal outcome of many conservation plans is meeting its biodiversity goals cost effectively and distributing the benefits or costs equally," Dr Klein says. "These three aims are also known as 'triple bottom line solutions' – efficient, cost-effective and equitable."

Whether it's designing protected areas, or prioritising restoration activities or locations, conservation plans usually come at a cost to

someone, Dr Klein says. For example, setting up a marine protected area (MPA) affects commercial fishers, recreational fishers and even the oil and gas industry.

So CEED researchers have developed an approach that focuses on the three goals in a conservation plan. They tested it in three places: central coast in California, Raja Ampat in Indonesia and the Coral Triangle region.

"Our approach includes information on the habitats that we want to conserve, how different communities or fishing groups use the environment, including where the people fish, how much and what they fish for, and in some cases, how much money the fishing industry makes," Dr Klein says.

"This will show us how much it will cost to achieve a certain conservation goal – such as protecting a particular habitat – and how the benefits and costs will be distributed across different communities."

"The study shows that if you want to achieve perfect equity, the conservation outcome will be compromised," she says.

"However, we also found that highly inequitable scenarios threaten the success of the plan because the people who are excluded from the benefits or have to pay more have little motivation to adhere to the agreement."

Dr Klein says that the needs are different for every conservation plan: "It may not be desirable to be equitable in all cases. For instance, you may not want to distribute the benefits or costs equally between a commercial fisher and a recreational one.

"But a plan that at least considers equity during the decision making

process is more likely to succeed than one that disregards it altogether."

"If we can find out what the exact trade-offs are in a plan, and how well we can accomplish the three main goals, we can better decide what we want to prioritise and what we're willing to compromise, and this is exactly what our research does," she says.

"This leads to a decision that has considered the needs and interests of different groups, whether it be fishing industries or communities, which means that the conservation plan is more likely to succeed."

The study "Achieving the triple bottom line in the face of inherent trade-offs among social equity, economic return, and conservation" by Benjamin S. Halpern, Carissa J. Klein, Christopher J. Brown, Maria Beger, Hedley S. Grantham, Sangeeta Mangubhai, Mary Ruckelhaus, Vivitskaia J. Tulloch, Matt Watts, Crow White and Hugh P. Possingham will be published in the latest issue of *PNAS* on 27 March 2013. See: www.pnas.org/

Provided by ARC Centre of Excellence for Environmental Decisions