Title: Spatial patterns of African ungulate aggregation reveal complex but limited risk effects from reintroduced carnivores
Author: Remington Moll
Abstract: Large carnivorous predators receive much attention due to their charismatic appeal and potential to restructure ecosystems through top-down effects. Although large carnivores are declining worldwide, there has been recent interest in reintroducing these predators where they have been absent for long periods of time. Such reintroductions purportedly have the potential to ‘rebalance’ ecosystems, but their precise effects on the ecology of prey species is highly variable and poorly understood. A landscape of fear model has been proposed to conceptualize such effects, where the carnivore influences its ungulate prey via risky times (i.e., when predators are in close proximity) and risky places (i.e., habitat where predators kill prey or tend to occur) in a landscape. We used ungulate aggregation, an important antipredator behavior, to evaluate the strength and scope of the landscape of fear in a multi-ungulate system with recently reintroduced lions (Panthera leo) and spotted hyenas (Crocuta crocuta). We conducted ungulate surveys over a two-year period in South Africa to test the influence of three sources of variation in the landscape on spatial patterns in aggregation: 1) habitat structure, 2) where carnivores tended to occur (i.e., utilization distributions) and 3) where carnivores tended to kill ungulate prey (i.e., probabilistic kill site maps). We analyzed spatial variation in aggregation for six ungulate species exposed to lion and hyena predation. Although we detected larger aggregations of ungulates in risky places, these effects existed primarily for smaller-bodied (<150kg) ungulates and were relatively moderate (change of ≤4 individuals across all habitats). In comparison, ungulate aggregations tended to increase at a slightly lower rate in habitat that was more open. Lion, an ambush (stalking) carnivore, had stronger influence on ungulate aggregation than hyena, an active (coursing) carnivore. In addition, places where lions tended to kill prey more strongly affected ungulate aggregation than places where lions tended to occur, but an opposing pattern existed for hyena. Our study reveals heterogeneity in the landscape of fear and suggests broad-scale risk effects following carnivore reintroduction only moderately influence ungulate aggregation size and vary considerably by predator hunting mode, type of predation risk, and prey species. More broadly, our study suggests the reintroduction of large carnivores can affect an ecosystem in complex ways and that our understanding of such effects at broad scales remains limited.

Title: Transboundary Fishing Conflict in the Palk Strait: Economic and Ecological Sustainability Implications
Author: Mykala Ford
Abstract: The Palk Strait, which is situated between Sri Lanka and India, offers vibrant fishing opportunities, and consequently is also witness to an international conflict over fishing rights. Conflict during the Sri Lankan civil war kept Sri Lankan fishers from utilizing the Palk Strait fishery; therefore, Indian fishers accessed the Palk Bay without competition. With the end of the civil war, Sri Lankan fishers are constrained by local fishing rules, while Indian fishers cross into Sri Lankan waters, often using highly destructive gear such as trawlers. This conflict extends from the international into the local realm with significant impacts on the livelihoods of fishing families. In order to gain an extended understanding of the trends, changes, and developments of the conflict, we have collected and analyzed every article over a twenty five-month period from the
local Indian newspaper, The Hindu, regarding this conflict. Throughout this time period, we have seen variations in the level of conflict measured by fishermen arrests, allowing us to uncover explanations for why this conflict weakens and intensifies. In my presentation, I will discuss the role of negotiations between Sri Lanka and India, their outcomes, the likelihood of a successful resolution, and potential alternative solutions. The resolution to this conflict will have to reconcile economic sustainability and ecological sustainability through an agreement made at the international level but implemented locally.

**Title:** The Role of Perception and Representation in Human-Boto Relationships in the Brazilian Amazon

**Author:** Cadi Fung

**Abstract:** Animal conservation efforts are often complicated by conflicts between humans and wildlife, particularly when the species in question fills multiple, sometimes conflicting, roles in culture and society. The Amazon River dolphin in Brazil is a species simultaneously celebrated, feared, valued, and loathed. Often a contentious animal among different interest groups in the Brazilian Amazon, the dolphin (locally known as the "boto") serves as a symbol of conservation, a cultural and mythological figure, a tourist attraction, and a competitor for resources to fishers. Situated in a region undergoing rapid socioeconomic and developmental change, the boto reflects the conundrum and complexities of the intersection of cultural values, economics, and conservation. This work provides an overview of the different representations of the boto, and explores the ways such representations influence the production of the different boto imaginaries that affect human-boto relations.