



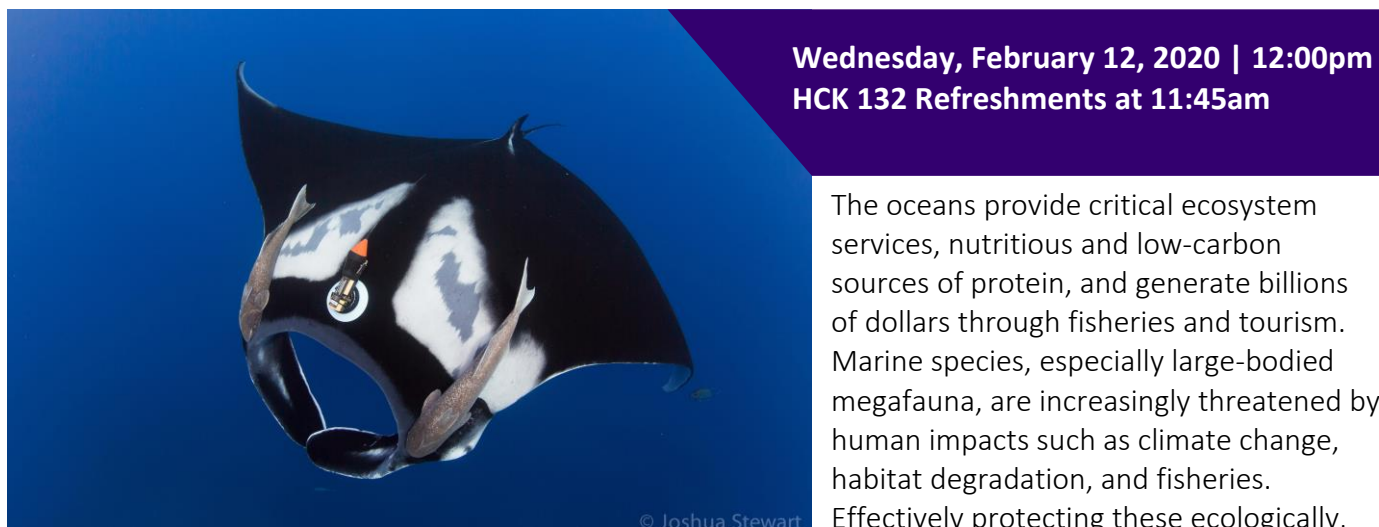
Biology Seminar

By: Dr. Joshua Stewart

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Marine conservation biology through emerging technologies and cooperative research



The oceans provide critical ecosystem services, nutritious and low-carbon sources of protein, and generate billions of dollars through fisheries and tourism. Marine species, especially large-bodied megafauna, are increasingly threatened by human impacts such as climate change, habitat degradation, and fisheries. Effectively protecting these ecologically, economically, and culturally important species with science-based management strategies requires improved data collection and analysis techniques, and increased collaboration with stakeholders. In this talk I will highlight three main themes of my research: (1) Filling Knowledge Gaps to Improve Conservation Action. Developing effective management strategies requires knowledge of the ecology and life history of threatened species. In this section I will outline my work studying the migratory behavior of oceanic manta rays, and how this research led to improved management of the species in three countries. (2) Developing Quantitative Techniques to Support Management. Mathematical models, informed by data, can help us assess management strategies for threatened populations. In this section I will discuss my research on endangered southern resident killer whales and how a combination of drone-based photogrammetry and modeling allows us to identify management priorities. (3) Engaging Stakeholders in Conservation Research. Resources are managed most effectively when stakeholders are involved in the management process, and science translates more efficiently into policy when stakeholders are also engaged in the research process. In this section I will describe two ongoing projects that engage stakeholders in conservation research. One is a research program investigating human impacts on oceanic manta rays that directly involves fishermen and students from the local community. The other is a study aimed at improving the post-release survivorship of manta and devil rays captured as bycatch in commercial tuna fisheries, which is facilitated and supported by the tuna fishing fleets themselves.

Seminar Speaker Hosts: Sarah Converse & Jennifer Ruesink

