

Who We Are: The Manager Climate Corps (MCC)

The Manager Climate Corps (MCC) is a manager-driven research program supported by the University of Hawai'i at Hilo and the Pacific Islands Climate Adaptation Science Center (PI-CASC). We function as a boundary organization, connecting university researchers with natural resource managers, cultural practitioners, and policy professionals in order to strengthen adaptive capacity locally. The MCC identifies existing professional networks on Hawai'i Island and expands them through collaborative research projects and interactive forums (1). The research projects encompass multiple disciplines but all share a commitment to an iterative method of knowledge co-production and manager involvement at every stage of the project (2, 3). Because local managers are involved in each research project all the way from initial conception and planning to completion, they develop a vested interest in the research outputs and increase awareness of these products within local natural and cultural resource networks - significantly increasing the functionality and utility of the research products for the stakeholder communities that need them most (Fig. 1).

Our Approach

Extensive research in cognitive science has made clear that our choices are typically more rooted in affective (emotional) factors than rational analysis. Human behavior is profoundly driven by person-to-person and person-to-nature interactions, as well as group norms and values, perceptions, instincts, intuitions, and related visceral factors that collectively define one's identity or worldview (4, 5, 6). In order to build adaptive capacity through major socio-ecological shifts and develop increasingly sustainable lifestyles, it is imperative to account for and directly engage the full breadth of analytic and instinctual capacities (i.e., diverse knowledge forms) that drive human behavior. Thus, our program is designed to build upon existing in-person professional networks and experiences locally through the process of knowledge co-production, in accordance with our four foundational elements:

Build upon long-term trust

Support existing in-person professional networks

Co-produce knowledge via collaborative manager-driven research

Recognize and engage "multiple ways of knowing" such as experience, instinct, individual values, group norms, emotion, intuition, and rational intellect

Knowledge co-production can be utilized at any geographic, organizational, or political scale. We focus on a specific spatial scale – Hawai'i Island. Within Hawai'i, natural and cultural resource managers can be site-specific, focused on larger watershed or moku scales, or island-wide. The central requirement is direct and regular involvement within and, therefore, accountability to a specific, well-defined landscape or seascape as well as accountability to the communities (group norms and values) that utilize the natural resources within the area.

Field managers and local decision makers function as custodians of contextual knowledge for the socio-ecological systems in which they are rooted. Informed by their regular experiences in the places they influence and are influenced by, field managers (e.g. farmers, ranchers, fire managers, cultural practitioners, port/harbor managers, county professionals, native ecosystem managers, invasive species managers, etc.) are directly accountable to explicit extents of land, water, and communities of people. By embedding research projects within place-based manager networks, the MCC develops actionable science products developed and readily utilized by local managers. The MCC, thereby, empowers cultural adaptation amid contemporary climate change impacts.

"Information, in itself, is not knowledge, nor do we become any more knowledgeable through its accumulation. Our knowledgeability consists, rather, in the capacity to situate such information, and understand its meaning within the context of direct perceptual engagements with our environments." (4)

Developing Collaborative Research Projects



Fig. 1. The strategic pathway through which the MCC developed its foundations and ongoing graduate research projects required roughly a year (1). We began by developing a baseline needs assessment through in-depth interviews with 28 managers and distilling a wide range of themes from these open-ended, in-person discussions. The next step was to locate researchers to unite manager and researcher networks and begin knowledge co-production.

MCC in Motion: Manager-Driven Graduate Research Projects



Mulching non-native albizia to support climate change mitigation and sustainable agricultural practices.



Impacts of climate change and ground water shifts on loko i'a management (traditional Hawaiian fishponds).



Estimating coastal erosion rates on Hawai'i Island in relation to SLR to inform coastal development setbacks.



Climate driven shifts in *Staphylococcus aureus* and MRSA in near shore waters.

MCC In Motion: Interactive Forums

The MCC develops interactive forums at local, regional, and national scales that utilize a variety of interactive formats and collaboratively involve managers, cultural practitioners, graduate students, policy professionals, community leaders, and researchers. These in-person experiences are designed to bring diverse backgrounds together and are unique opportunities for professional and community networks to develop new relationships, strengthen existing ones, deepen understanding across worldviews, engage multiple knowledge forms, and expand capacities of adaptation and resilience through socio-ecological change. Examples of previous MCC fora include:

- **Climate Change Immersion Camp**
Ka'u, Hawai'i Island (2016)
- **Early Career Professional Training**
UMASS, Amherst, MA (2016)
- **Hawai'i Conservation Conference**
Honolulu, O'ahu (2017)
- **Pacific Youth Empowerment for Success Conference**
University of Hawai'i at Hilo (2018)
- **Conference for Island Sustainability**
Tumon, Guam (2017 and 2019)
- **National Adaptation Forum**
St. Paul, MN in 2017 and Madison, WI in 2019



Graduate students, community leaders, cultural practitioners, and faculty from social and biological sciences discuss state of the art technologies currently utilized to monitor water chemistry within loko i'a (traditional fishponds) at the MCC's first networking experience (an intensive 4-day, 3-night field immersion camp).

References

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