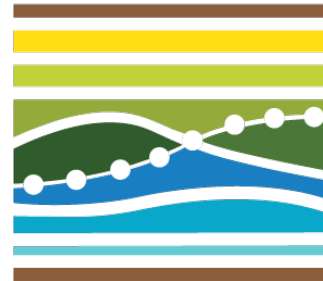




Moorea Coral Reef

Deron Burkepile
LTER SCIENCE COUNCIL MEETING 2018
MADISON, WI



NATIONAL SCIENCE FOUNDATION
LTER NETWORK
LONG TERM ECOLOGICAL RESEARCH

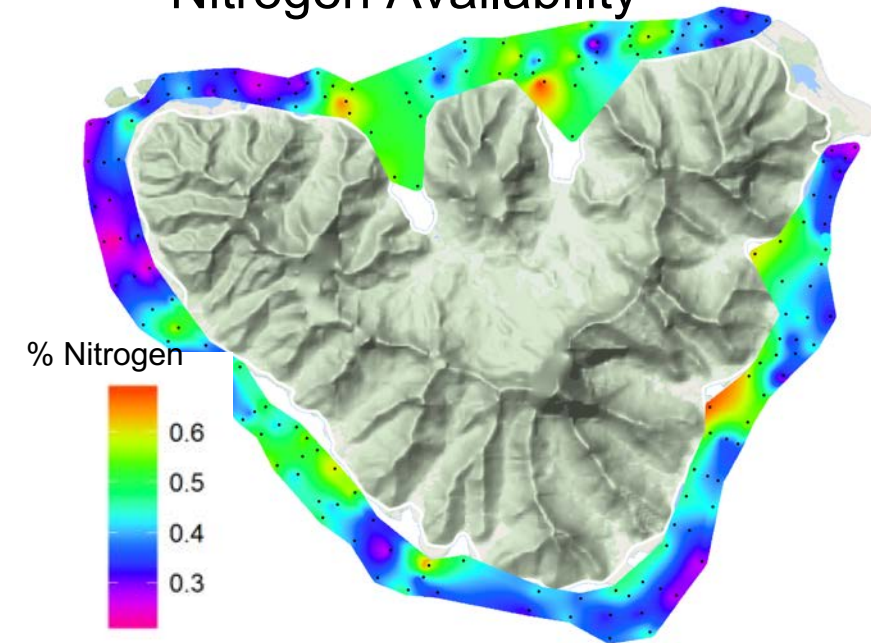
MCR News

- NSF CNH – socio-ecological feedbacks between fishing and reef resilience
- 3D-modeling coral reefs – ETH Zurich, Microsoft, University of Modena
- Island-wide mapping inorganic nutrients
- NSF OA - Free Ocean CO₂ Enrichment (FOCE) – natural reef communities

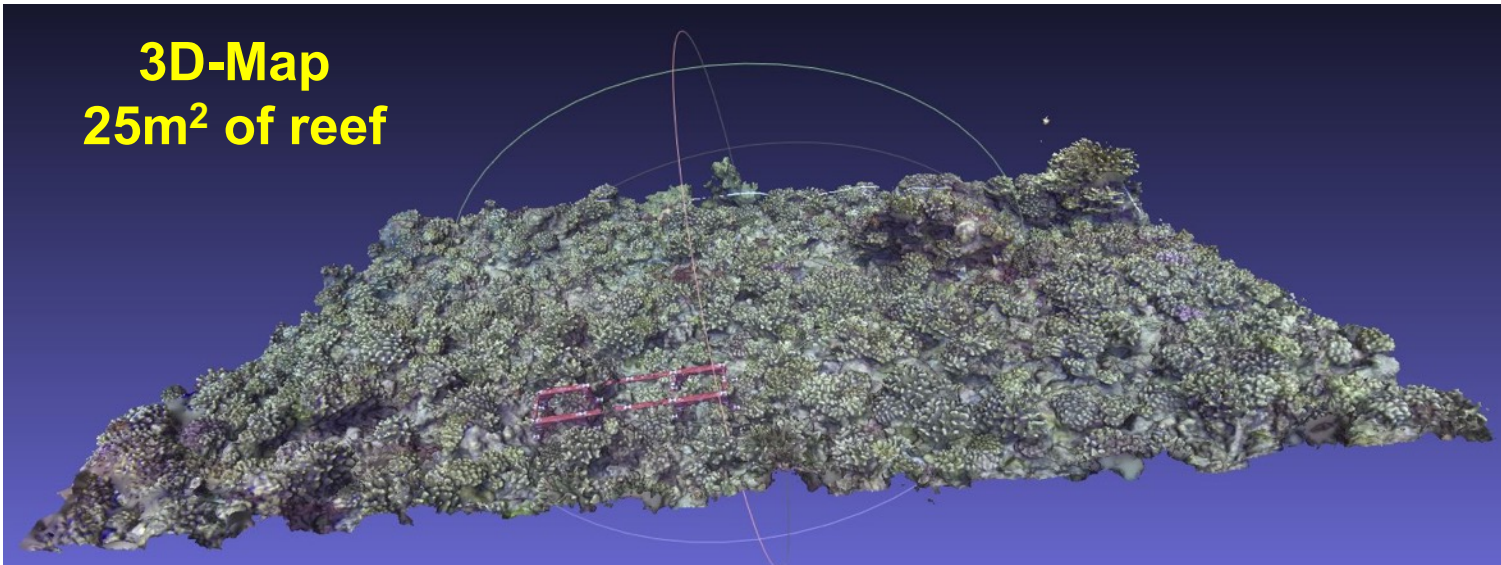
Free Ocean CO₂ Enrichment (FOCE) experiment



Nitrogen Availability



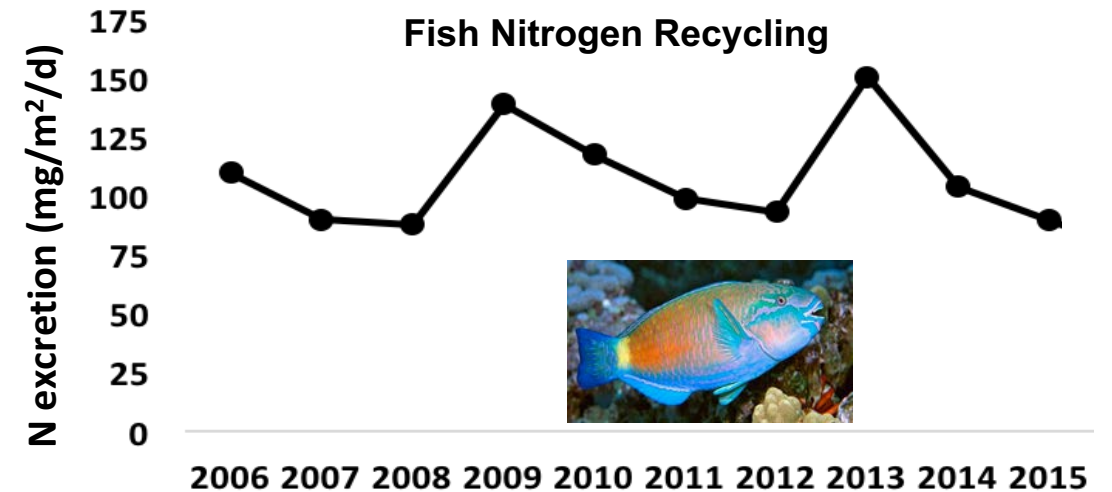
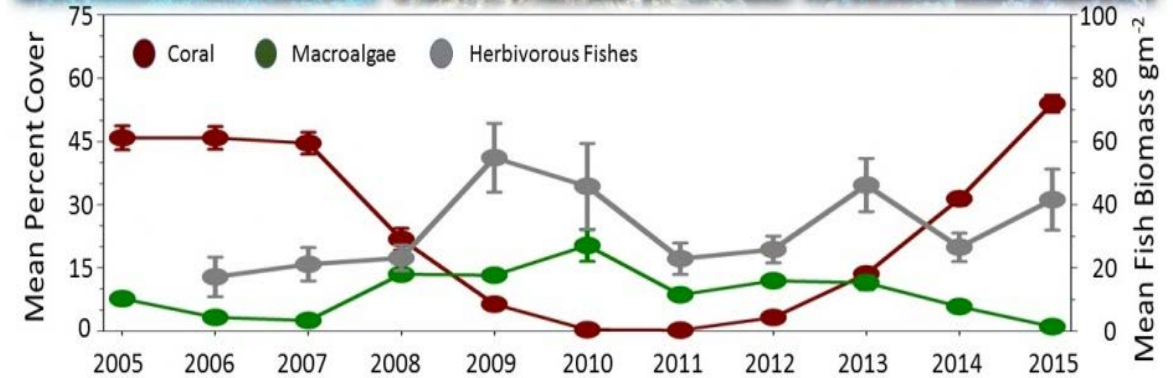
3D-Map 25m² of reef



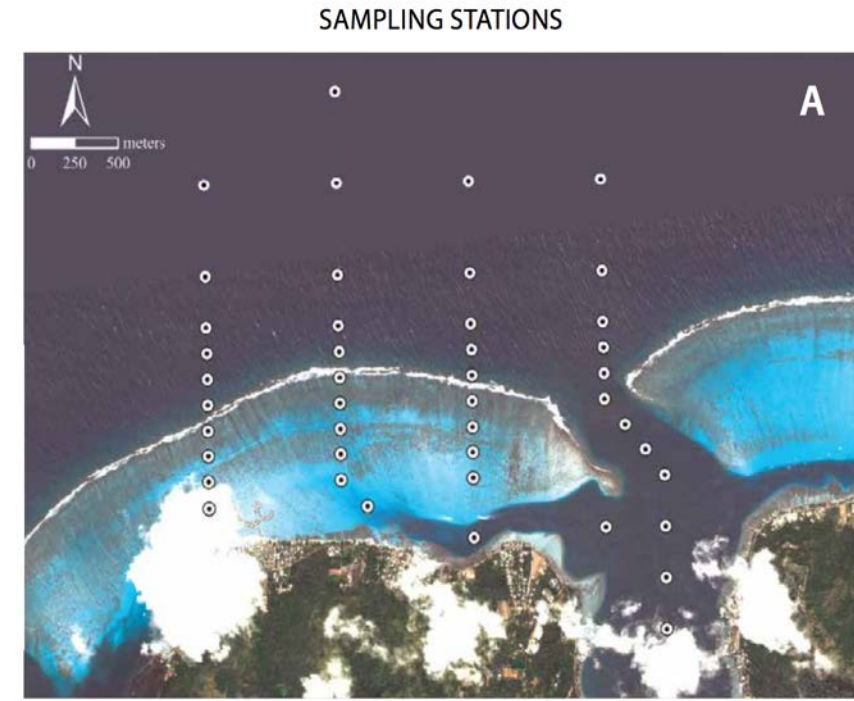
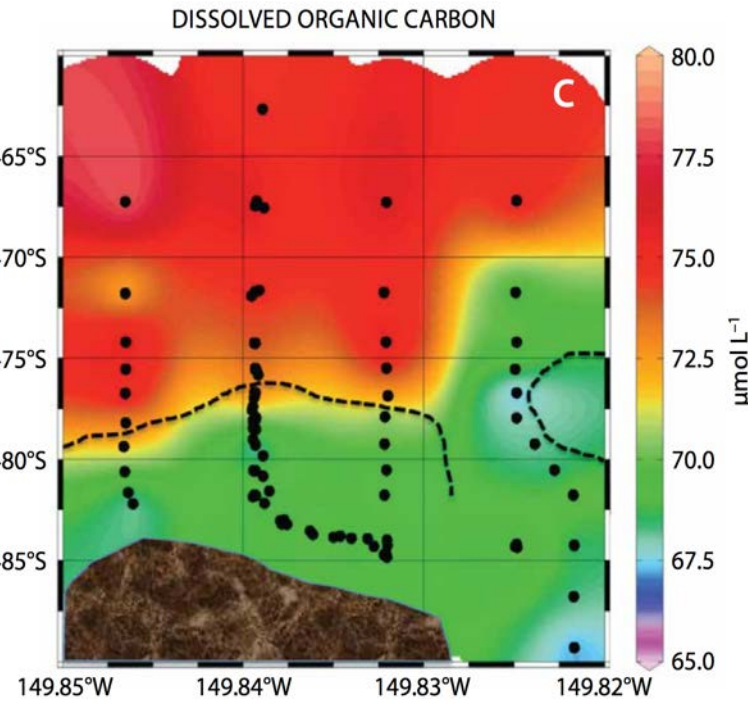
MCR Organic Matter

Current/Past/Future Measurements

- Primary productivity – benthic/pelagic
- Dissolved organic matter – origins, fates and effects on coral health
- Biomass of fishes/algae/invertebrates – accumulation/turnover and relation to inorganic nutrients
- Dissolved organic nitrogen (urea from fishes) vs. inorganic nitrogen (human derived)



MCR Organic Matter



DIN but not DON exacerbated coral bleaching prevalence, duration, and mortality

