

ROV Lu'ukai Report 2020 and 2021

Bruce Howe

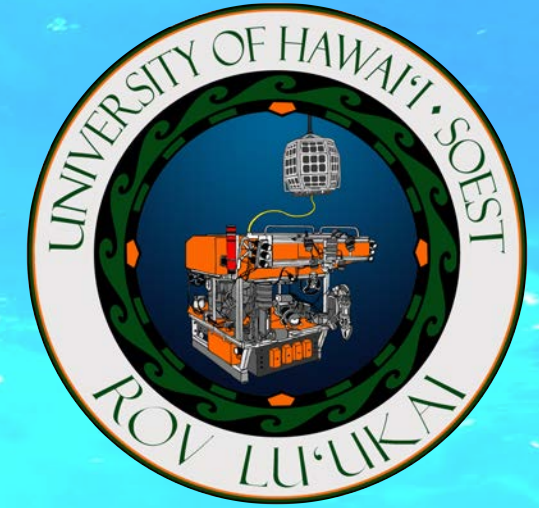
With input from Max Cremer and Jeff Drazen

School of Ocean and Earth Science and Technology
University of Hawaii at Manoa

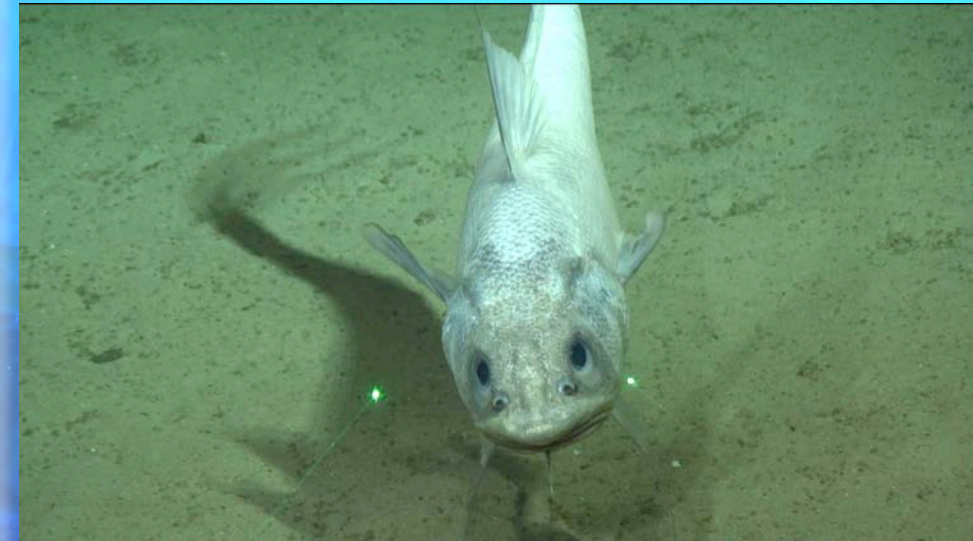
2020 DeSSC Annual Community Meeting

4 December 2020

ROV LU'UKAI 2020:



- **Jan17-26 Abyssal Food Web II:**
 - Moderate success, samples and data were retrieved but technical issues forced early return to port.
- **July 24-August 3 Abyssal Food Web III:**
 - Completed under COVID restrictions
 - Satisfactory results for the Food Web Study
 - [First telepresence for Lu'ukai](#)
 - [Voice of the Sea documentary produced](#)
- **Fall expedition to NWHI:**
 - Cancelled due to COVID complications.

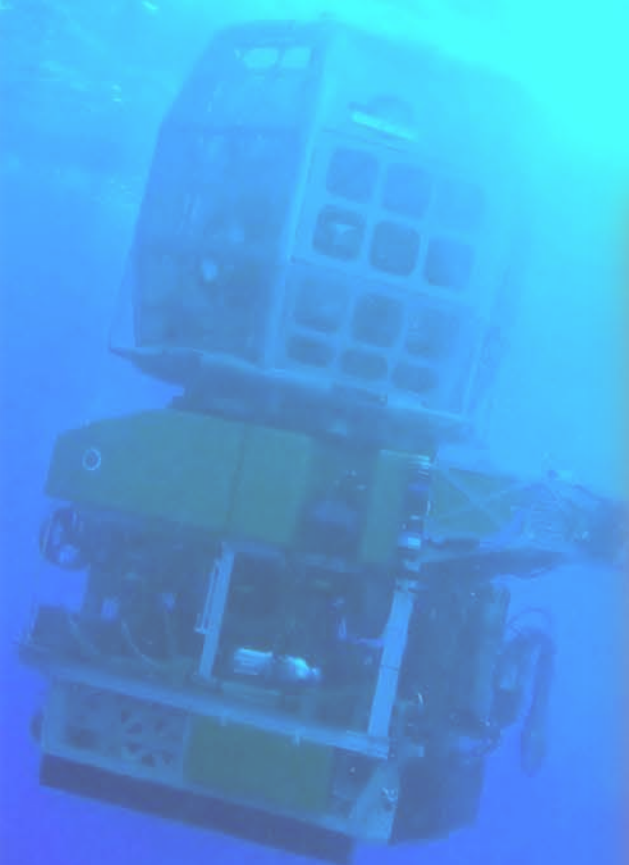


Abyssal Food-Web Research with ROV Lu'ukai

- Pls J. Drazen, Brian Popp, Craig Smith (UH), Claudia Benitez-Nelson (USC)
- 3 cruises – KM1914, KM2002, KM2008, dives to 4700m
- Significant problems during first two cruises with ROV
 - Yearly NSF funded test cruise needed as for Jason, testing should not be done on science funded days
- Third cruise very successful – animal collections, sediment cores, video/stills transects, live streaming of video to shore, Voice of the Sea TV special made
 - <https://youtu.be/zztRVyAoX0U>
- Future plans – seeking additional funding for work in CCZ region, seafloor and possibly midwater dives

ROV LU'UKAI 2021

- Lu'ukai currently in major refit undergoing telemetry system upgrade.
- **May 26-31 ALOHA Cabled Observatory**
- **Sept 24-Nov8 Defying Dissolution:** Deep water coral systematics in the NWHI, carried over from 2020.



ROV STATS

- 135 dives
- 920hrs submerged
- 400hrs on bottom
- Longest dive 29hrs (22.5 on bottom)
 - LK-114: 7/12/19 @ ACO
- Deepest dive 5480m
 - LK-082: Maui Deep test dive

ALOHA Cabled Observatory work with ROV Lu'ukai

- PIs Bruce Howe and Jim Potemra
- 2020 cruise canceled - covid
- 2021 on R/V *Kilo Moana*
 - Deploy CAM2
 - Deploy icListen hydrophone
 - Recover Basic Sensor Package 2 (with elevator)
 - Use Port Test Tool (PTT) to check timing (use ROV dedicated fiber + power)
 - Clean sea ground, other housekeeping
 - Deploy memorial plaque for Fred Duennebier
 - REU students