Covering the Basics

Preparing yourself by utilizing all available resources for a career path in Earth Science

Courtney Hart
B.A. 2006 • EPS – Marine Science
UC BERKELEY

- Core Classes
- Field Classes
- Electives (in department)
- OFFICE HOURS
- Interaction w/ Undergrads
- Interaction w/ Graduates
- Graduate Seminars
- Research experience
- Campus work
RESEARCH

British Columbia
Ecstall Pluton – B.C. Baja Hypothesis

Data Collection / Geochronology

Gumps Marine Station
Biology and Geomorphology of Tropical Islands

Project Design / Data Collection & Analysis
Formal Presentation and Journal Paper

http://ib.berkeley.edu/moorea/UC_Berkeley_Moorea_Class.html
SUBSTRATE PREFERENCE OF FUNGIA ON PROTECTED REEFS ON
MOORAA, FRENCH POLYNESIA

COURTNEY E. HAYT

Department of Earth and Planetary Science, University of California, Berkeley, California 94720 US

Abstract: Fungia are individual free-living corals that tend to form local aggregations. Although they are typically noted for living on coral reef slopes near heavy wave action, they are also commonly found on living reefs in the lagoons of Moora, French Polynesia and many other tropical islands in the Pacific. This study investigates the factors involved in determining the spatial distribution of Fungia. Initial observations suggest that Fungia tend to live on substrates that shelter them from the sun in the shallower and wave-protected areas of the lagoon. In this study, substrates type, substrates condition and shelter type of the available substrate were compared to the substrate preferred by Fungia. The data revealed that Fungia and the three other coral genera (Pocillopora, Porites, and Agaricia) preferred to live on dead coral covered in algae that provided shelter from direct sunlight. This distribution was non-random; statistical analysis showed that the preferred location of Fungia was significantly different than the available distribution of substrate. The findings of this study provide a cornerstone for future research on the life history of Fungia and possible reproductive and larval strategies.

Key words: Fungia, substrate, habitat preference, coral life cycles, Scleractinia, Fungiidae, reef growth.

INTRODUCTION

Around the world, coral reef ecosystems are threatened by overfishing, development, pollution, possible climate change, human encroachment and many other factors. At a time of worldwide decline in coral reef health, it is important to understand the basic biology and interactions of the individual coral species as well as the complex community that comprises an entire reef. A key aspect of reef history is corals in habitat selection and preference. Habitat selection may involve imprinting a form of associative learning characterized by a rapid establishment of a perceptual preference for an object (Smith, 1990). It is not rigid; it is ever changing throughout time, space and species type. There is an urgent need for natural history in constructing the plight of marine ecosystems (Dayton, 2003). In order to better understand the processes and enhance the basic knowledge of Fungia, it is important to unique natural history information about coral reef habitats. This particular study examines the habitat preferences of species within the four genera of Fungia present in protected lagoons of Moora, French Polynesia from October through November.

Species of the genus Fungia (Scleractinia, Fungiidae) are the most abundant and widespread of all the mushroom corals (see Fig. 1). Of the all major genera, Fungia are the most restricted to tropical waters (Versloot, 2000). Fungia are individual free-living corals and tend to form local aggregations. Morphologically, Fungia species have similar short branching needles that extend in the night and retract when disturbed (Versloot, 1986).

Mobility is particularly highly developed in the family Fungiidae, and free-living adults are documented to 36 out of 41 species (Hoeksema 1989, Hoeksema and Del 1991). Their life history strategies include both sexual and asexual reproduction. Asexual reproduction occurs from the mouth, which is a damaged parent coral that can not repair its tissues by regeneration (Kemper-Winter, Loya, 1994). Sexually, different sexes release gametes into the water column which eventually fuse, develop into planula larvae, and settle on hard surfaces after taking up nonmotile. This process can last from two weeks to two years (Grant & Malcolm, 2000). After settlement, the single stalk that attaches the larva to a substrate dissolves and the coral becomes mobile and begins to grow and mature.

![Image](image-url)
NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

- International Volunteer Service
- Research Associate Program
- Conservation Corps

AUERBACH ENGINEERING CORP.

- Environmental Planning
- Permit Facilitation
- Multi-Agency Coordination
- Best Management Practices
- Wetland Mitigation
USDA FOREST SERVICE
Sierraville Ranger District – Tahoe National Forest

- Biological & Physical Habitat Monitoring
- Electro-Fishing
- Mission Indicator Species
- Type II Firefighter / CPR & 1st Aid / Blood Borne Pathogens
- Yellow Legged From Survey
INTERNSHIPS

Tahoe Environmental Research Center

Water Quality Chemistry & Data Collection

Trout Unlimited
Conserve Protect Restore

Grant Writing & Permitting & Field Work

http://terc.ucdavis.edu/index.html

http://www.tu.org/
SEARCHING & APPLYING

STEP 1: CV or RESUME
It is critical to have your resume in order prior to starting our search for a job or internship. NOW is the perfect time to start.

STEP 2: NETWORKING
Networking truly is the #1 way to find opportunities. Don't overlook this strategy when conducting a job search. Talk to as many people you can to learn more about the industry you are interested. I approach this using Informational Interviews.

STEP 3: JOB SEARCH & EMPLOYEE RESEARCH
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http://www.stlawu.edu/studentlife/departments/career-services/page/235
### Resume

- Short (1 page)
- Summary of your skills, experience and education.
- Used when applying for jobs

### C.V.

- Longer (at least 2 pages)
- Includes a more detailed summary of:
  - educational & academic backgrounds
  - teaching and research experience,
  - publications & presentations,
  - awards, honors, & affiliations and other details.
- Used when applying for academic, education, scientific or research positions.
- Also applicable when applying for fellowships or grants
Curriculum Vitae

EDUCATION

BA - Earth and Planetary Science - University of California, Berkeley
Emphasis in Marine Science. GPA 3.934 (Upper division GPA 3.8) 2012 - 2006

WORK EXPERIENCE

Truckee River Watershed Council - Truckee, CA
Conservation Assistant: Independent erosion control evaluations and management reports
for properties in the Truckee River watershed. 2012 - Present

North River Chapter of Trout Unlimited - Graig, CA
Author and contract administrator for the Little Truckee River Watershed Assessment — Request for Proposal 2012 - Present

US Forest Service, Sierra Nevada Ranger District - Sierraville, CA
Fisheries Biologist Technician: collecting, analyzing, and assessing biological, physical, and ecological data; fish population studies, team leader 2011 - 2009

Amtrak Engineering Corporation - Tahoe City, CA
Environmental Planner and Permit Specialist: Multi-agency permits, CEQA & NEPA compliance 2007 - 2009

Great Basin Institute/Nevada Department of Environmental Protection - Reno, NV
Bio- Assessment Field Technician: physical and biological data collection/analysis, aquatic stream surveys in a variety of ecosystems 2006 - 2009

Lake Tahoe Towing - Lake Tahoe, CA
Private tutor at high school level in Math (Algebra I & II, Trigonometry, Geometry, and Calculus), Science, English & Spanish 2006 - Present

RESEARCH EXPERIENCE

USDA Forest Service - Sierraville, CA
Worked with a supervisor and a team to design, coordinate and implement a fish species diversity and abundance study for a large scale meadow restoration project 2011 - 2010

Trout Unlimited - Truckee, CA
Intern: Meadow & Wild Trout Restoration (administration & report writing), grant writing, permit facilitation, data collection 2011 - 2010

Tahoe Environmental Research Center - Incline Village, NV
Lab Technician: UC Davis chemistry and biology lab, water quality research, fatty acid content in algae 2010 - 2006

National Park Service - San Francisco, CA
Research Associate: studied the survivability of tropical marine fishes and compiling data in the Reef Fish Guide, a comprehensive product guide promoting sustainability of aquarium fish 2005 - 2001

REPORTS & PAPERS


Hart C. Substrate Preference of Fishes on Protected Reefs of Moorea, French Polynesia. Student Research Papers, Fall 2006, UCSB Marine Science Institute, UC Berkeley

Reef Fish Guide — a pocket guide to increase public awareness about the ethical implications of keeping coral reef fish. Reef Protection International, Earth Island Institute 2007 (contributing researcher/author)
Courtney Elizabeth Hart
C.V.

SKIVICH

Truckee Tahoe Community Foundation
Q of H Women’s Fund – Outreach Chair, Leadership Committee
Q of H Women’s Fund – Member, Grant Committee
Q of H Women’s Fund – Chair of annual Give-Educate-Motivate-Serve (GEMS) Event

Truckee River Watershed Council
Team Leader & Organizer for Truckee River Day
Team Leader for TRWC Northstar Volunteer Day

North Tahoe Booster Club
Committee Member for “An Elegant Affair” Fundraiser

2012
2012-2013
2008 – 2010

Proficient in Mac & PC, Microsoft Suite (Word, Excel, Power Point), ArcGIS & ArcMap, Huberware/Boreal, Microsoft Access, MatLab, SCUBA Certified, Type 2 Wildland Firefighter and certified chainsaw operator; experienced 4x4 driver.
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NETWORKING

INFORMATIONAL INTERVIEW
• Asking for career industry advice
• Gather information in the field
• Expand professional network

VOLUNTEERING
• Meet peers in the field
• Make connections with similar companies
• Scope out future positions

Ask questions about the objections and vision of an organization and the prospects for future jobs or internships.
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# RESOURCES

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<td>The Nature Conservancy</td>
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<td>Nature Magazine</td>
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EMPLOYEE RESEARCH

Before you apply:
• Call to make a connection
• Ask about the position and get a feel for if you are qualified.
• If you have the time, VISIT!!!
• Making a personal connection is essential in today’s job market

If you can’t get a position with a company or organization ask if there are any volunteer opportunities.

Use Connections: professors, neighbors, family, friends, friends-of-family

As important as it is for a company to hire the right person, it is up to you to decide if your future employer is the right for you. INTERVIEW THEM!
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LETTERS OF RECOMMENDATION

To Whom It May Concern:

This is a letter of recommendation for Courtney Hart to be considered for acceptance into graduate school. Courtney is currently working on the Tahoe National Forest on the Watershed Inventory Crew. This is her second year on the crew, and she has exhibited many qualities that make her an outstanding employee.

The Watershed Inventory Program includes several elements to assess watershed conditions. The work Courtney conducts includes following established protocols to perform stream and amphibian inventories. This involves collecting physical and biological attributes to determine the overall health of the watershed. She has completed data entry into Access databases and Excel spreadsheets, and produces GIS maps to display the information obtained from the survey work. Courtney has also demonstrated capable leadership while working with other agencies and leading volunteer groups in fieldwork.

Courtney has demonstrated the ability to work in a professional manner with her coworkers. She has outstanding field observations, good organizational skills, and demonstrates personal initiative. Courtney has established that she can take minimal direction, turn that information into a plan of action and assure that all the work is completed to meet pre-determined timelines and quality standards.

I am convinced that Courtney will be an excellent graduate student. She works well with others, and has good communication and writing skills. I am confident that she will be able to conduct the necessary work to complete a Master’s Thesis. She also was successful at meeting all of the tasks put before her, which is why I am recommending her to be accepted into a graduate program.

If you have any questions, please feel free to call me at the Truckee Ranger District Office at (530) 587-3558, or the Sierraville Ranger District (530) 994-3401.

Sincerely,

DIBORAH URICH
Tahoe National Forest
East Zone Aquatics Biologist

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March 24, 2006

To Whom It May Concern:

I would like to submit this letter of recommendation on behalf of Courtney Hart. I have been working with Ms. Hart since June 2005 and can attest to not only her outstanding work, but also to her character and professionalism. Courtney would be a fantastic asset to anyone fortunate enough to hire her. If we had the budget, I would be the first to offer her a job.

Courtney has been working as a research associate helping RPI with the creation of a pocket guide for the aquarium trade. This project has required extensive research using multiple and disparate sources. Courtney was able to masterfully tie together all of the information in a cogent and compelling manner. In addition, we were working under an aggressive timeline and I was very impressed that Courtney was able to manage her time effectively and turn in her work on time and with little supervision.

Not only am I impressed with Courtney’s excellent work habits, but I have also found her to be an extremely bright person able to take direction quickly and effectively. Being that we are a small organization, this was a very important requirement for the research associates as most of the work was done remotely and without direct supervision. Courtney exceeded my expectations in this regard and demonstrated her high maturity, reliability and the professional manner in which she carries herself and her affairs.

In summary, I am happy to recommend Courtney Hart to take on just about any responsibility presented to her. She has the unique and desirable blend of a strong academic background coupled with a very professional and capable business ethic. She will make a fine addition to any organization interested in a talented, hard-working professional.

Please feel free to contact me with any questions.

Sincerely,

[Handwritten Signature]

Drew Welner
Director - Reef Protection International
415-426-2091
dwelner@reefprotection.org
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9 July 2008

J. Scott Fearsabad
California Trout
870 Market Street, Suite 528
San Francisco, California 94102

Dear Mr. Fearsabad:

I would like to express my strong interest in being considered for the position of Tahoe Regional Program Manager for California Trout. In May of 2006 I graduated from the University of California at Berkeley with a degree in Earth and Planetary Science major with a strong background in environmental science, geology, and marines/aquatic science. The combination of that academic training with other environment-related classes provided me with a broad perspective of the environment and the impact that our society’s activities have on regional ecosystems.

My attached resume indicates both research and applied planning work experience. Upon graduation from UC Berkeley, I accepted a job conducting EPA-designed stream surveys for the Nevada Division of Environmental Protection. By collecting a variety of samples, both physical and biological, our research group was able to build a database of health and habitat potential of stream locations throughout northern Nevada. At the conclusion of the 2006 research season I accepted a position as environmental planner with Auerbach Engineering Corporation in Tahoe City. For the past year and a half I have been the environmental permit facilitator for local projects. Through this position I have become very familiar with the politics of my local community as well as the entire Tahoe Basin. Many of the projects I deal with require constant contact with various state and local agencies including TRPA, LRWQCB, USEPA, CDFG, USFS, CalTrucks etc. The healthy working relationships I have built and maintained with these agencies allows me to successfully permit many local projects and see them through completion.

My work experience has exposed me to a broad range of personalities and situations where I had to be decisive, firm, and diplomatic, characteristics that will be important when dealing with the duties of this position. For two of my four years at UC Berkeley I was a co-captain of the women’s club soccer team. Our student-funded and student-run organization spent years building a team from scratch and raising enough money to travel around the country for various tournaments. Now that I live in a small town, I am using similar skills to involve myself in the community in various ways. Tutoring math and science for high school children for the past two years has introduced me to a large number of community members and many local business owners. I have been involved in organizing the silent auction for the North Tahoe Booster Club’s yearly fundraiser, the Elegant Affair. A check of my references will confirm my ability to work independently and deal with difficult situations in a professional manner.

As a 6th generation Californian and full time resident of the Tahoe Basin, I very much want to participate as a steward of this incredible resource. I look forward to the opportunity to visit with you and demonstrate my qualifications.

Sincerely,
Courtney R. Hart

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Your Address
City, State Zip code

Date

Name of Person
Organization Name
Address
City, State Zip code

Dear Mr./Ms. (Insert Name) The first paragraph should indicate what position you are interested in and how you heard about it. Use the names of contact persons, if appropriate, or references to your sources of information.

The second paragraph should relate your experience, skills and background for the position. Highlight the specific skills and competencies that could be useful to the company.

The third paragraph should indicate your plans for follow-up contact and that your resume is enclosed. Although the enclosed resume provides a good summary of your background and experience, I would like to arrange to meet with you to discuss any positions you may have available and my qualifications for them. I will call your office next week to schedule an appointment. Thank you for your time.

Sincerely,

(Sign Name)

Your Name (typed)
BRAD M. – Another Path
QUESTIONS???