

## CURRICULUM VITAE - FREDRICK JOEL FODRIE

### PLACE OF BIRTH:

Jacksonville, North Carolina

### DATE OF BIRTH:

December 21, 1976

### EDUCATION:

2006            Scripps Institution of Oceanography; University of California, San Diego  
                  Ph.D. Biological Oceanography  
1999            University of North Carolina at Chapel Hill  
                  B.A. Biology with Highest Honors and History  
1995            East Carteret High School- Graduated Valedictorian

### RESEARCH EXPERIENCE:

2006-            Post-Doctoral Researcher (Dr. KL Heck, Jr), Dauphin Island Sea Lab, Dauphin Island,  
                  AL 36528  
2000-2006      Graduate Research Assistant, Biological Oceanography (Dr. LA Levin), Scripps  
                  Institution of Oceanography, UCSD, La Jolla, CA 92093  
1999-2000      Marine Biology Technician, Benthic Ecology Laboratory (Dr. CH Peterson), Institute of  
                  Marine Sciences, UNC-CH, Morehead City, NC 28557  
1998            Marine Biology Technician, Coastal Environmental and Microbiological Laboratory (Dr.  
                  HW Paerl), Institute of Marine Sciences, UNC-CH, Morehead City, NC 28557

### RESEARCH INTERESTS:

Fisheries ecology, with emphasis on (1) habitat utilization, (2) ecosystem function in relation to habitat patchiness, fragmentation, orientation and connectivity, and (3) metapopulation dynamics of marine fauna in fragmented coastal seascapes. Additionally, I have conducted experiments related to restoration ecology, recruitment processes and mechanisms, and trophic interactions. Research tools have included manipulative field experiments, intensive field surveys, GIS simulations, stable isotope analyses and trace element fingerprinting.

### RESEARCH SETTINGS:

The benthic environments of lagoonal estuaries, protected sounds, coastal embayments, salt marshes, tidal flats, the rocky intertidal, exposed coastlines, and the continental shelf.

### MEMBERSHIPS:

2005-            American Fisheries Society  
2001-            Ecological Society of America  
2001-2004      Sigma Xi

### AWARDS:

2006            E.W. Fager Memorial Award for Outstanding Graduate Student Contributions to Scripps  
                  Institution of Oceanography  
2006            Texas Institute of Oceanography Postdoctoral Fellow - Declined

2001- National Science Foundation (NSF) Graduate Research Fellowship  
2001 National Defense Science and Engineering Graduate (NDSEG) Fellowship - Declined  
1999 R.E. Coker Award for Excellence in Undergraduate Research in Ecology for “Site-specific test of source-sink dynamics of a bay scallop population”  
1998 Phi Beta Kappa  
1995-1998 James M. Johnston Scholar; University of North Carolina at Chapel Hill

#### **GRANTS:**

2006-2009 National Marine Fishery Service (\$382,044) “Estimating the relative importance of northern Gulf nursery habitats to adult fish populations: studies of gray snapper (*Lutjanus griseus*) and gag grouper (*Mycteroperca microlepis*)”  
2005-2006 California Sea Grant Rapid Response (\$9,999) “Development of LA-ICPMS methods to chart movements of fish”  
2004-2006 California Department of Boating and Waterways (\$70,000) “Assessing the ecological value of southern California marinas as nursery habitat”  
2003-2004 UC MEXUS Dissertation Research Grant (\$11,500) “Tracking movements of juvenile fish via elemental fingerprinting and stable isotope analysis”  
2002 California Coastal Environmental Quality Initiative Graduate Research Award (\$10,000) “Evaluating the relative importance of coastal habitat types as productive nursery grounds for the California halibut”  
2001 California Coastal Environmental Quality Initiative Graduate Research Award (\$10,000) “Retroactive tracking of nursery habitat use by California halibut”

#### **PUBLICATIONS:**

**Fodrie, FJ** and LA Levin (submitted to CJFAS) Consequences of nursery habitat selection for demography of California halibut populations.

**Fodrie, FJ** and LA Levin (submitted to L&O) Linking habitat utilization to population dynamics of a coastal finfish: nursery contribution, connectivity and compensation

Becker, BJ, LA Levin, **FJ Fodrie** and PA McMillan (submitted to PNAS) Population connectivity patterns differ in closely related coastal bivalve species.

**Fodrie, FJ**, and SH Herzka (submitted to MEPS) Tracking juvenile fish movement and nursery contribution within arid coastal embayments via otolith microchemistry

Griffiths, R, SZ Herzka, ID McCarthy and **FJ Fodrie** (submitted to Environmental Biology of Fishes) Distribution, Abundance and Movement Patterns of Juvenile Flatfishes in the Punta Banda Estuary, Baja California, Mexico

**Fodrie, FJ**, SZ Herzka, AJ Lucas and V Francisco (2006 In Press) Intraspecific density regulates positioning and feeding mode selection of the sand dollar *Dendraster excentricus*. Journal of Experimental Marine Biology and Ecology. **XX**: X-X.

**Fodrie, FJ** and G Mendoza (2006) Availability, usage and expected contribution of potential nursery habitats for the California halibut. Estuarine, Coastal and Shelf Science **68**(1-2): 149-164.

Becker, BJ, **FJ Fodrie**, P McMillan and LA Levin (2005) Spatial and temporal variability in trace elemental fingerprints of Mytilid mussel shells: A precursor to invertebrate larval tracking. *Limnology and Oceanography* **50**(1): 48-61.

Craig, MT, **FJ Fodrie** and PA Hastings (2004) The nearshore fish assemblage of the Scripps Coastal Reserve, San Diego, California. *Coastal Management* **32**: 341-351.

Peterson CH, **FJ Fodrie**, HC Summerson & SP Powers (2001) Site-specific and density-dependent extinction of prey by schooling rays: generation of a population sink in top-quality habitat for bay scallops. *Oecologia* **129**:349-356.

#### **PUBLICATIONS (IN PREP):**

**Fodrie, FJ** (in prep) Trophic function of ichthyofauna in restored and natural southern California wetlands inferred via stable isotope analysis.

**Fodrie, FJ**, BJ Becker, LA Levin, K Gruenthal and PA McMillan (in prep) Short-term variability in recruitment and elemental fingerprints of bay and open coast Mytilid mussels.

Rathburn, AE, LA Levin, JM Gieskes, W Ziebis, M Tryon, JB Martin, ME Perez, **FJ Fodrie**, CE Neira, GJ Fryer, PA McMillan, A Shepherd, M Abriani, B Wrightsman, J Adamic, J Kluesner, GF Mendoza, JE Leddick and J Do (in prep) Geology and biology of the Aleutian Margin: Seeps, slopes, and canyons at 2000-4200m.

**Fodrie, FJ**, AE Rathburn and LA Levin (in prep) TowCam-observed megafauna of the Aleutian Margin: slopes, canyons and a mudmount at 2000-4200 m.

#### **PUBLICATIONS (NON-REVIEWED):**

Levin, LA, P McMillan, G Mendoza, J Gonzalez, S Moseman, C Janousek, and **J Fodrie** (2003) Restoration of coastal wetlands invertebrates: Methods for colonization enhancement and evaluation of trophic function. CICEET Final Report. 22 pgs.

Herzka, SZ, DE Conklin, M Drawbridge, **FJ Fodrie**, JP Lazo, R Piedrahita (2003) Current research efforts on California halibut focus on aquaculture practices and utilization of nursery habitat. *California Bight Bulletin* **7**:4-9.

#### **PRESENTATIONS (\*: leading presenter):**

- 2006 “Distribution, Abundance and Movement Patterns of Juvenile Flatfishes in the Punta Banda Estuary, Baja California, Mexico” (Poster), American Fisheries Society Annual Meeting, Lake Placid, NY.2006
- 2006 “Combining fingerprinting and physics to assess patterns and mechanisms of larval connectivity” (Oral) International Larval Biology Conference, Coos Bay, OR.2006
- 2006 “Three ‘seas’ of nursery habitat utilization: contribution, concentration and connectivity” Invited Talk (Oral), Dauphin Island Sea Lab, AL.\*
- 2006 “A generalist nursery habitat strategy by California halibut connects coastal seascapes” (Poster) ALSO, Honolulu, HI.\*
- 2005 “Availability, suitability and contribution of potential nursery habitats for the California halibut” (Oral) CAERS, Santa Barbara, CA..\*

- 2004 “Trace element fingerprinting to infer larval trajectories: implications and benefits of high-frequency field collections” (Oral) International Larval Biology Conference, Hong Kong, China.\*
- 2001 “Assessing Larval Dispersal Using Trace Elemental Concentrations in Mytilid Larval Shells” (Poster) ASLO, Victoria, BC, Canada.
- 2000 “Metapopulation Dynamics in the Bay Scallop: Mechanisms Creating Population Sinks Where Least Expected” (Oral) Benthic Ecology Meetings, Wilmington, NC.\*

### **TEACHING:**

- 2007 Instructor: Graduate course “Techniques for Examining Connectivity in Marine Systems”
- 2006 Co-Creator and Organizer: Graduate seminar course “Nearshore Physical Processes”
- 2004 Teaching Assistant: Undergraduate course “Biological Oceanography”
- 2003 Guest Lecturer: “Wetlands Fish Ecology”, Graduate course “Wetlands Ecology and Conservation”

### **SERVICE:**

- 2006 Presenter: “How Can Fish Have Fingerprints?” Expanding Your Horizons Conference to Foster Interest of Young Women for Science
- 2006 Presenter: “Keys to identifying the fish of the Cabrillo National Monument.” Given to park rangers to aid in the enforcement of CNM regulations
- 2005-2006 Student Member: Director’s Committee for the SIO Analytical Facility
- 2003, 2005 Presenter: “Population Connectivity in Coastal Ecosystems of San Diego County.” E.W. Scripps Associates Science Series
- 2001-2002 Organizer: Scripps Ecology Luncheon Seminar Series

Reviewer: Marine Ecology Progress Series (2), US-Israel BARD (2), Maine Sea Grant (1), California Fish and Game (1)

### **COLLABORATORS:**

BJ Becker, MT Craig, SA Herzka, LA Levin, D. Lucas, P McMillian, G Mendoza, CH Peterson, SP Powers, HC Summerson

### **REFERENCES:**

Dr. Lisa A Levin; [llevin@ucsd.edu](mailto:llevin@ucsd.edu); SIO

Dr. Ken L Heck, Jr.; [kheck@disl.org](mailto:kheck@disl.org); DISL

Dr. Charles H Peterson; [cpeters@email.unc.edu](mailto:cpeters@email.unc.edu); UNC-CH

Dr. Sharon Z Herzka; [shertzka@cicese.mx](mailto:shertzka@cicese.mx); CICESE

### **CONTACT INFORMATION:**

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 Dauphin Island, AL 36528  
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