

*Curriculum vitae***Zachary Thomas Olsen**

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**Current Address:**

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**Education**

Doctorate of Philosophy in Coastal and Marine Systems Science      Fall 2019 (expected)

Texas A&M University- Corpus Christi

Dissertation: 'Defining essential fish habitat in an ecosystem context: practical identification and relevance to management'

Advisor: Dr. Gregory Stunz

GPA: 4.00/4.00 (current)

Master of Science in Coastal Sciences

August 2012

University of Southern Mississippi, Gulf Coast Research Laboratory

Thesis: 'Determining the trophic role of Gulf Menhaden (*Brevoortia patronus*) using carbon and nitrogen stable isotopes'

Co-Advisors: Dr. Richard Fulford and Dr. Kevin Dillon

GPA: 4.00/4.00

Bachelor of Arts in Biology

May 2010

Malone University (Canton, Ohio)

*Minor: Chemistry*

Advisor: Dr. Christopher Carmichael

GPA: 3.79/4.00

**Relevant Work Experience**

- Texas Parks and Wildlife Department

Corpus Christi, Texas

*Natural Resource Specialist II/III- Coastal Habitat Assessment Team Biologist*

June 2016 – present

- Texas Parks and Wildlife Department

Corpus Christi, Texas

*Natural Resource Specialist I/II- Upper Laguna Madre Ecosystem Biologist*

December 2012 – May 2016

- Texas Parks and Wildlife Department

Corpus Christi, Texas

*Fish and Wildlife Technician I- Upper Laguna Madre Ecosystem Region*

June 2012 - November 2012

- University of Southern Mississippi, Gulf Coast Research Laboratory  
 Ocean Springs, Mississippi  
*Graduate Research Assistant- Quantitative Fisheries Ecology/Chemical Oceanography*  
 May 2010 - May 2012

- Malone University  
 Canton, Ohio  
*Laboratory Assistant-Herpetology Laboratory*  
 Fall 2006 - Fall 2008

*Laboratory Teaching Assistant-Department of Natural Sciences*  
 Spring 2009 -Spring 2010

- Smithsonian Environmental Research Center  
 Edgewater, Maryland  
*Intern-Marine Invasive Species Laboratory*  
 Summer 2009

### **Teaching Activities**

- Adjunct Faculty at Texas A&M University- Corpus Christi
- ‘Statistics with R’ - Regular workshops for basic applied statistics using the R software package. Workshops are given for Texas Parks and Wildlife Department personnel.
- ‘Remote sensing using acoustic techniques- applications for habitat and fisheries assessments’ - Three hour workshop given at the 2017 Texas Chapter American Fisheries Society Annual Meeting in Corpus Christi, Texas (Co-lecturers: Emma Clarkson, Bill Rodney, Adam Reimer).

### **Professional Affiliations**

- American Fisheries Society (AFS)

### **Professional Activities**

#### ***Current***

- Texas Seagrass Workgroup and the Aerial Imagery subcommittee (workgroup chair)
- Texas Parks and Wildlife Department Statistics and Experimental Design Workgroup (workgroup co-chair)
- Texas House Bill 51 Implementation Committee

- RESTORE Expert Advisory Panel for funded project entitled ‘Gulf-wide assessment of habitat use and habitat specific production estimates of nekton in turtlegrass (*Thalassia testudinum*)’

- American Academy of Underwater Sciences certified diver with Texas Parks and Wildlife Department

### **Current Research Projects**

- Habitat mapping using TOP15 aerial imagery (Collaborators: Emma Clarkson (TPWD))

- The selection of stocking locations for fisheries enhancement in the coastal environment: a decision support tool.

- Classification of benthic habitat types with coupled side-scan and echosounder implementation: impacts of study design, data pretreatment and classification routines (Collaborators: Emma Clarkson (TPWD), Stephanie Taylor (TPWD))

- Trends and patterns in Blue Crab (*Callinectes Sapidus*) sex ratios in Texas bays (Collaborators: Tom Wagner (TPWD), Joel Anderson (TPWD), Glen Sutton (TPWD), Carey Delphi (TPWD))

### **Publications Currently Under Review**

**Olsen, Z.**, F. Grubbs, M. Starek, and J. Berryhill. (*under review*) Logistical considerations for the use of unmanned aerial vehicles in coastal habitat monitoring: a case study in high resolution sub-aquatic vegetation assessment (Currently under TPWD internal review)

**Olsen, Z.** (*under review*) Variation in habitat suitability and stage structured demography of Black Drum (*Pogonias cromis*) on the Texas coast. Target Publication: (Currently under TPWD internal review)

**Olsen, Z.** (*under review*) Quantifying nursery habitat function: variation in habitat suitability linked to mortality and growth for juvenile black drum in a hypersaline estuary. (Currently under review with Marine and Coastal Fisheries)

**Olsen, Z.** (*under review*) Quantifying the spatial extent and distribution of estuarine nursery habitat with changing salinity: does salinity gradient predispose an estuary to a certain level of impact. (Currently under review with Estuaries and Coasts)

### **Peer Review Publications**

#### ***External Publications***

Ballew, H. and **Z. Olsen** (2018) Salinity and temperature influence on scyphozoan jellyfish abundance in the Western Gulf of Mexico. Hydrobiologia

**Olsen, Z.**, D. McDonald, and B. Bumguardner (2018) Intraspecific variation in life history strategies and implications for management: a case study of black drum (*Pogonias cromis*) in Baffin Bay, Texas. Fisheries Research 207: 55-62.

Anderson, J., D. McDonald, B. Bumguardner, **Z. Olsen**, and J.W. Ferguson (2018) Patterns of maturity, seasonal migration, and spawning of Atlantic Croaker in the Western Gulf of Mexico. Gulf of Mexico Science

Anderson, J., **Z. Olsen**, T. Wagner, G. Sutton, C. Gelphi, and D. Topping (2017) Environmental drivers of the spatial and temporal distribution of spawning blue crabs, *Callinectes sapidus*, in the western Gulf of Mexico. North American Journal of Fisheries Management 37:920-934.

**Olsen, Z.**, J. Anderson, and D. McDonald (2016) Morphological and molecular variation among populations of tidewater (*Menidia peninsulae*) and inland (*M. beryllina*) silversides: insight into drivers of adaptation and speciation of silverside fishes. Environmental Biology of Fishes 99:857-871.

**Olsen Z.**, T. Wagner, and G. Sutton (2016) Regional and temporal variation in size at maturity of female Blue Crabs (*Callinectes sapidus*) in Texas coastal waters. Transactions of the American Fisheries Society 145:1059-1067.

**Olsen, Z.T.** (2016) Emaciated black drum (*Pogonias cromis*) in the upper Laguna Madre, Texas: recovery of the population over two years. Texas Journal of Science 68:79-90.

**Olsen, Z.T.** (2014). Potential impacts of extreme salinity and surface temperature events on population dynamics of black drum, *Pogonias cromis*, in the upper Laguna Madre, Texas. Gulf of Mexico Science 32:1.

**Olsen, Z.T.**, F.P. Grubbs, A.D. Morris, A.X. Nuñez, and J.M. Tolan (2014). Reports of emaciated black drum (*Pogonias cromis*) in the upper Laguna Madre, Texas. Texas Journal of Science 66 *in press*.

**Olsen, Z.**, R. Fulford, K. Dillon, W. Graham. (2014). Trophic role of Gulf menhaden (*Brevoortia patronus*) examined with carbon and nitrogen stable isotope analysis. Marine Ecology Progress Series 497:215-227.

#### ***TPWD Management Data Series***

**Olsen, Z.** and C. Mace. (2015). A summary of the 2014 federal recreational red snapper harvest monitoring pilot study'. Texas Parks and Wildlife Department, Coastal Fisheries Division, Management Data Series Number 286. Austin.

**Olsen, Z.**, T. Wagner, and W. Cupit. (2014). Summary of the 2007 nighttime roving counts and pre-trip flounder gig surveys. Texas Parks and Wildlife Department, Coastal Fisheries Division, Management Data Series Number 282. Austin.

**Olsen, Z.** and T. Wagner. (2014). Use of trail cameras for 24-hour monitoring of boat ramp activity. Texas Parks and Wildlife Department, Coastal Fisheries Division, Management Data Series Number 281. Austin.

### **Public Educational Writings**

**Olsen, Z.** and E. Clarkson (2018). Keeping Your Ear to the Ground: How SONAR is Used to Monitor Aquatic Habitat in Texas Bays. Texas Saltwater Fishing Magazine. January 2018.

**Olsen, Z.T.** (2017) Of Drones and Datasets: Glimpsing the Underwater World from the Sky. Texas Saltwater Fishing Magazine. July 2017.

**Olsen, Z.T.** (2014). TPWD's New Catch Reporting System for Red Snapper to Take Effect June 1, 2014. Texas Saltwater Fishing Magazine. June 2014.

Hartman, L.D. **Z.T. Olsen** (2013). Lionfish Stalking our Bays? Texas Saltwater Fishing Magazine. November 2013.

**Olsen Z.T.** (2013). Brown Tide in Baffin Bay: A look at what we have learned and what the future may hold. Texas Saltwater Fishing Magazine. June 2013.

### **Selected Scientific Presentations**

**Olsen, Z.**, J. Anderson, T. Wagner, G. Sutton, C. Gelphi, D. Topping, and N. Carrillo. 2018. A shell of its former self: investigating drivers of the Texas blue crab fishery decline. Benthic Ecology Meeting, March 2018, Corpus Christi, Texas [**Oral presentation**]

**Olsen, Z.** 2017. Seagrass monitoring and mapping efforts in Texas. Gulf-wide Seagrass Monitoring and Assessment Needs Workshop, October 2017, Pensacola, Florida.

Anderson, J., **Z. Olsen**, T. Wagner, G. Sutton, C. Gelphi, and D. Topping. 2017. Environmental drivers of the spatial and temporal distribution of spawning blue crabs, *Callinectes sapidus*, in the western Gulf of Mexico. Texas Chapter of the American Fisheries Society Annual Meeting, January 2017, Corpus Christi, Texas. [**Poster presentation**]

**Olsen, Z.**, T. Wagner, and G. Sutton. 2016. Regional and temporal variation in size at maturity of female Blue Crabs (*Callinectes sapidus*) in Texas coastal waters. American Fisheries Society National Meeting, Kansas City, Missouri, August 2017. [**Oral Presentation**]

**Olsen, Z.** and D. McDonald. 2015. Early maturation of black drum (*Pogonias cromis*) in Baffin Bay, Texas. Texas Bays and Estuaries Meeting, Port Aransas, Texas, April 2015. [**Oral Presentation**]

**Olsen, Z.** 2014. Emaciated black drum in the upper Laguna Madre: tracking the recovery of the population two years later. Gulf Estuarine Research Society Biennial Meeting, Port Aransas, Texas, October 2014. [**Oral presentation**]

**Olsen, Z.** 2014. Assessing variation in recruitment seasonality of sciaenids along the Texas coast. American Fisheries Society Southern Division Meeting, Charleston, South Carolina, January 2014. [**Poster presentation**]

**Olsen, Z.** 2014. Impacts of extreme salinity and surface temperature events on population dynamics of black drum, *Pogonias cromis*, in a hypersaline lagoon. American Fisheries Society Southern Division Meeting, Charleston, South Carolina, January 2014. [**Oral presentation**]

**Olsen, Z.** 2013. Unique population dynamics of black drum (*Pogonias cromis*) in the upper Laguna Madre. Texas Bays and Estuaries Meeting, Port Aransas, Texas, April 2013. [**Oral presentation**].

**Olsen, Z., R. Fulford, K. Dillon, W. Graham.** 2012. Determining the trophic role of Gulf menhaden (*Brevoortia patronus*) using carbon and nitrogen stable isotopes. American Fisheries Society Southern Division Meeting, Biloxi, Mississippi January 2012. [**Oral presentation**]

**Olsen, Z., R. Fulford, K. Dillon, W. Graham.** 2011. Using stable isotopes as a management tool for Gulf menhaden (*Brevoortia patronus*). Gulf States Marine Fisheries Commission Spring Meeting, Gulf Menhaden Advisory Committee, Houston, Texas, March 2011. [**Invited oral presentation**]