

RUI YING

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EDUCATION

Sun Yat-sen University (SYSU)

Expected Graduation: June 2020

Master of Science in Hydrobiology

Guangzhou, China

- Master's Thesis: Fishery Resource Status and Community Structure Analysis of Daya Bay, China
- Relevant coursework: Biodiversity, Ecological Methodology, Fish Physiology, Experiment Design and Statistical Analysis, Biology Instrument and Equipment Technology, Academic Norms and Paper Writing

Northwest A&F University

June 2017

Bachelor of Science in Aquaculture

Yangling, China

- Bachelor's Thesis: Effects of Cadmium on Apoptosis in Ovarian of Rare Minnow *Gobiocypris rarus*

PUBLICATIONS

Ying, R., Yin, F., Jiang, L., Li, Z., Huang, J., Wang, Y., Lu, J., & Feng, J. (2019). Fitting methods and seasonality effects on the assessment of pelagic fish communities in Daya Bay, China. *Ecological Indicators*, 103, 346–354.

Jiang, L., Feng, J., **Ying, R.**, Yin, F., Pei, S., Lu, J., Cao, Y., Guo, J., & Li, Z. (2019). Individual and combined effects of ammonia-N and sulfide on the immune function and intestinal microbiota of Pacific white shrimp *Litopenaeus vannamei*. *Fish & Shellfish Immunology*, 92, 230–240.

Ying, R., Jiang, L., Yin, F., Huang, J., Li, Z., Wang, Y., & Feng, J. (2019). Analysis of community structure and diversity of nekton in Kaozhouyang Bay using gill nets and cages. *South China Fisheries Science*, 15, 1.

Feng, J., Wang, S., Wang, S., **Ying, R.**, Yin, F., Jiang, L., & Li, Z. (2019). Effects of Invasive *Spartina alterniflora* Loisel. and Subsequent Ecological Replacement by *Sonneratia apetala* Buch.-Ham. on Soil Organic Carbon Fractions and Stock. *Forests*, 10(2), 171.

Ying, R., Chen, J., Gao, S., Li, Z., & Feng, J. (2018). Single and synergistic effects of *Ulva lactuca* and *Sesuvium portulacastrum* on the purification of mariculture wastewater. *Chinese Journal of Ecology*, 37(9), 2745–2753.

RESEARCH INTERESTS

The effects of global changes on the marine/freshwater ecosystem and its function

- Specifically, how global warming, ocean acidification, and other environmental changes affect aquatic communities, such as individual body size, fish migration patterns, and biodiversity loss. I plan to research the most effective ways of quantifying these potentially negative influences, and develop preventative solutions.

The long-term dynamic of the biogeochemical cycle

- The exchange of nutrient elements between the seabed and surface, ocean and terrene, and biotic and abiotic factors is a constant cycle. Through this process of circulation, the earth has experienced the Cambrian Explosion and several biological extinctions. A study of paleoecology can determine the impact of these rapid changes on past environments and provide important insights for the study of current patterns of change.

ACADEMIC EXPERIENCE

Laboratory for Improved Variety Reproduction of Aquatic Economic Animals

Nov. 2017 – Present

Graduate Researcher, Advised by Prof. Feng Jianxiang and Prof. Li Zufu

Guangzhou, China

- Investigate the community structure of Huizhou's Daya Bay and Kaozhouyang Bay using two

complementary gears (otter trawl and pair trawl for Daya Bay, gill net and cage for Kaozhouyang Bay) to identify the anthropogenic impacts on the regional marine ecology.

- Conduct four-season sampling to identify species present in Daya Bay and Kaozhouyang Bay. Analyze community structure using diversity indices and a cluster analysis of the nekton biomass, abundance, and other environment variables. Published analysis of Kaozhouyang Bay in *South China Fisheries Science*.
- Analyze the nonlinear biomass-size relationship of the Daya Bay community using size spectra. Compared the analyzed results of various size spectra methods and models, and suggested the use of the Maximum Likelihood Estimation method as most effective. Published the result of this analysis in *Ecological Indicators*.
- Conduct trait-based functional structure analysis and stable isotopic analysis of 33 different species of pelagic fish, demersal fish, and benthic crustacean, to analyze the pelagic-benthic coupling effects in Daya Bay. Found that >55% of nekton organisms are largely fueled by pelagic production and exhibit highly trophic overlapping. The results of this study are currently under review in *Limnology & Oceanography*.

Laboratory for Improved Variety Reproduction of Aquatic Economic Animals

Oct. 2017

Graduate Researcher, Advised by Prof. Feng Jianxiang

Guangzhou, China

- Conducted an experiment in which two aquatic plants, *U. lactuca* and *S. portulacastrum*, were utilized to purify mariculture wastewater.
- As hypothesized, the experiment demonstrated that the COD, TN, Ammonia-N, and DIP concentrations in the wastewater decreased over time. The removal rate varied according to the plant density, with the most effective density being recorded at 2.0 g/L for *U. lactuca* and 4.8 g/L for *S. portulacastrum*.
- Reported that the synergistic removal effect was clearly demonstrated to be greater than both single removal effects in a paper that was published in *Chinese Journal of Ecology*.

Wang's Lab

March 2017 – June 2017

Undergraduate Researcher/Intern, Advised by Prof. Wang Zaizhao and Dr. Zhang Guo

Yangling, China

- Utilized AO-EB fluorescence staining to detect the apoptosis rate of the ovary cells from 180 rare minnows, *Gobiocypris rarus*, after exposing the cells to cadmium for 7 days.
- Performed qRT-PCR to detect apoptosis-related gene expression following the cadmium exposure.
- Created paraffin sections to observe histological changes among the cells, including cell vacuoles, nuclear retraction, and cytoplasmic retraction.

FELLOWSHIPS & AWARDS

- Academician Lin Hao-ran Scholarship, 2019
- National scholarship, 2019
- Outstanding Graduate Student of SYSU, 2019
- First-class Graduate Student Fellowship, SYSU, 2017 – 2020

SKILLS

- Programming: R, Python, C, Java, Shell
- Software: Emacs, LaTeX, SPSS, Primer, MS Office
- Language: Mandarin Chinese (native), English (proficient)
- Field and Lab Skills: qPCR, paraffin slice, fish identification, stable isotope analysis