

ZENG YIWEN

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EDUCATION

- 2013–2017** Ph.D in Biological Sciences, National University of Singapore (NUS), Singapore
- 2008–2012** B.Sc (Hons) in Biological Sciences, National University of Singapore (NUS), Singapore

RESEARCH EXPERIENCE

- 2018–Present** **Post-doctoral fellow**, Department of Biological Sciences, NUS
- Monitoring global progress towards meeting Sustainable Development Goals (SDGs)
 - Study global state and trends towards addressing conservation-related SDGs
 - Identify trade-offs and synergies among SDGs
 - Establish tipping points/assess the relationship between SDGs achievement and planetary boundaries.
- 2018** **Post-doctoral fellow**, Department of Biological Sciences, NUS
- Mechanisms and regulation of freshwater stream communities for habitat restoration
 - Studied the ecological processes that regulate the faunal communities of freshwater streams in Singapore from a microbial to macro-faunal level.
- 2013–2017** **Ph.D candidate**, Department of Biological Sciences, NUS
- Natural and human-mediated interactions between freshwater crabs and crayfish
 - Studied the spatial patterns of freshwater crab and crayfish species richness globally.
 - Developed and utilized two novel methods of selecting environmental variables in Maxent to improve prediction accuracy.
 - Accessed risk associated with climate change and invasive crayfish to native freshwater crabs within Southeast Asia.
 - Studied interacting ecology of invasive crayfish and native freshwater crabs in Singapore via in-situ surveys, stable isotope analyses and behavioral experiments.

- 2013–2014** **Graduate Student Researcher**, Tropical Marine Science Institute, NUS
- Ecological evaluation of the Active, Beautiful, Clean (ABC) waters programme of the Public Utilities Board in Pandan and Tampines
 - Performed field surveys as part of a team to quantify and characterize aspects of the fish community within Pandan Canal.
- 2012–2013** **Research Assistant**, Department of Biological Sciences, NUS
- Ecological study of secondary forest regeneration in Singapore
 - Performed field surveys as part of a team to quantify and characterize aspects of the plant community within secondary forests.
- 2011–2012** **Honors Research**, Department of Biological Sciences, NUS
- Performed a global trait-based assessment of invasiveness and vulnerability of freshwater crayfish through statistical modeling techniques and data-mining
- 2010–2011** **Undergraduate Research**, Department of Biological Sciences, NUS
- Identified a new behaviour in burrowing alpheid shrimps; and a previously unknown symbiotic pair of goby and alpheid shrimp
 - Investigated the visual capabilities of symbiotic alpheid shrimp through behavioral experiments

PUBLICATIONS

Zeng Y, Twang F, Carrasco LR (in review) Threats to the environmental defenders in nature's last strongholds. *Conservation Letters*.

Chan FT, Beatty SJ, Gilles AS Jr, ..., **Zeng Y**, ..., Copp GH (in press) Leaving the fishbowl: the ornamental trade as a global vector for freshwater fish invasions. *Aquatic Ecosystem Health & Management*.

Zeng Y, Shakir KK, Yeo DCJ (2019) Competition between a native freshwater crab and an invasive crayfish in tropical Southeast Asia. *Biological Invasions* 21(8): 2653–2663

Vilizzi L, Copp GH, Adamovich B, ..., **Zeng Y** (2019) A global review and meta-analysis of applications of the freshwater Fish Invasiveness Screening Kit. *Reviews in Fish Biology and Fisheries* 29(3): 529–568

Zeng Y, Yeo DCJ (2018) Assessing the aggregated risk of invasive crayfish and climate change to freshwater crabs: a Southeast Asian case study. *Biological Conservation* 223: 58–67

Zeng Y, Low BW, Yeo DCJ (2016) Novel methods to select environmental variables in MaxEnt: A case study using invasive crayfish. *Ecological Modelling* 341: 5–13

Tan HH, **Zeng Y** (2015) Matoro stingray in stream at Lorong Banir. *Singapore Biodiversity Records* 2015: 141

Zeng Y, Chong KY, Grey EK, Lodge DM, Yeo DCJ (2015) Disregarding human pre-introduction selection can confound invasive crayfish risk assessment. *Biological Invasions* 17(8): 2373–2385

Chua KWJ, Ng DJJ, **Zeng Y**, Yeo DCJ (2015) Habitat characteristics of tropical rainforest freshwater crabs in Singapore. *Journal of Crustacean Biology*. 35(4): 533–539

Zeng Y, McLay C, Yeo DCJ (2014) Capital or income breeding crabs: Who are the better invaders? *Crustaceana* 87(14): 1648–1656

Lodge DM, Deines A, Gherardi F, ..., **Zeng Y (2012)** Global introductions of crayfishes: Evaluating the impact of species invasions on ecosystem services. *Annual Review of Ecology, Evolution, and Systematics* 43:449-472

Zeng Y, Jaafar Z (2012) Repetitive-motion display: A new behavior in a burrowing Alpheid Shrimp. *Journal of Crustacean Biology* 32(5): 693-697

Jaafar Z, **Zeng Y (2012)** Visual acuity of the goby-associated shrimp, *Alpheus rapax*. *Crustaceana* 85(12-13): 1487-1497

Papers in-prep:

Zeng Y, Maxwell S, Runting RK, Venter O, Watson JEM, Carrasco R (in prep) Global progress towards the biodiversity-related Sustainable Development Goals.

Zeng Y, Nyanasengeran M, Yeo DCJ (in prep) Microbial missing link: quantifying the trophic role of biofilms in tropical freshwater streams.

Zeng Y, Yeo DCJ (In prep) Clawing their way through the tropics: Drivers and impacts of the redclaw crayfish spread in Singapore.

Zeng Y, Yeo DCJ (In prep) Global species richness patterns of crayfish and crabs: their biogeography and the role of inter-taxa interactions.

Chua KWJ, **Zeng Y**, Yeo DCJ (In prep) Environmental filtering and biotic resistance control community-scale invasibility of tropical forest streams by introduced fishes.

Tan CLY, **Zeng Y**, Yeo DCJ (In prep) Competitive superiority of freshwater shrimp in native habitat hinders alien congener's spread (Decapoda, Palaemonidae).

Chan J, Zeng Y, Yeo DCJ (In prep) Invasive species risk assessment for non-native freshwater fishes in a tropical city.

Reviewed papers for the following journals: Freshwater Biology, Biological Conservation, Biodiversity and Conservation, OIKOS, PLoS One, Raffles Bulletin of Zoology, Journal of Crustacean Biology.

SELECTED CONFERENCES

Zeng Y, Maxwell S, Runting RK, Venter O, Watson JEM, Carrasco R (2019) Biodiversity-related SDGs: measuring the performance of 180 countries towards mitigating biodiversity loss. 29th International Congress for Conservation Biology, Kuala Lumpur, Malaysia; 07/ 2019

Zeng Y, Shakir KK, Tan RCQ, Yeo DCJ (2019) Spread, impacts, and risk of non-indigenous redclaw crayfish, *Cherax quadricarinatus*, in Singapore and Southeast Asia. The Crustacean Society Mid-Year Meeting 2019, Hong Kong; 05/2019

Zeng Y, Nyanasengeran M, Yeo DCJ (2018) Leaf litter species influence the regulation of tropical stream assemblages. 2nd Philippine Symposium on Freshwater Biodiversity and Ecosystems, Quezon City, Philippines; 12/2018

¹**Zeng Y**, Chua KWJ, Yeo DCJ (2018) Stemming the spread: trophic complexity regulates fish invasion into Singapore's forest streams. Marine and Freshwater Invasive Species—China, Beijing, China; 08/2018

- Zeng Y**, Chua KWJ, Tan CLY, Shakir KK, Tan RCQ, Yeo DCJ (2018) Drivers of spread and impacts of freshwater non-indigenous species in a tropical city. *Marine and Freshwater Invasive Species—China, Beijing, China*; 08/2018
- Zeng Y**, Yeo DCJ (2017) Clawing their way through the tropics: drivers and impacts of the redclaw crayfish spread in Singapore. 20th International Conference on Aquatic Invasive Species, Florida, USA; 10/2017
- Zeng Y**, Yeo DCJ (2017) Climate change increases the risk of invasive crayfish impacts on primary freshwater crabs in Southeast Asia. 3rd Southeast Asian Gateway Evolution Meeting, Bogor, Indonesia; 08/2017
- Zeng Y**, Yeo DCJ (2017) The Singapore crayfish story: understanding the drivers and impacts of *Cherax quadricarinatus* invasion. *Aquatic Invasive Alien Species in Southeast Asia (AIASSEA) Symposium*, Singapore; 07/2017
- Zeng Y**, Yeo DCJ (2016) Selecting environmental variables in MaxEnt for predictions of invasive crayfish spread. *Marine & Freshwater Invasive Species: Ecology, Impact, and Management*, Buenos Aires, Argentina; 05/2016
- Zeng Y**, Yeo DCJ (2014) Global review of freshwater decapod introductions. 8th International Crustacean Conference (ICC-8), Frankfurt, Germany; 08/2014
- Zeng Y**, Chong KW, Grey EK, Lodge DM, Yeo DCJ (2014) Human pre-introduction selection can confound invasive crayfish risk assessments. *Climate Change Adaptation: Aquatic Invasives and Coastal Restoration*, Singapore; 02/2014
- Zeng Y**, Chong KW, Yeo DCJ (2013) Pre-introduction selection of traits in crayfish: forgotten factors in trait-based invasive species risk assessments. *International Conference on Challenges in Aquatic Sciences*. Keelung, Taiwan; 02/2013

* *Presenting Author*; ¹ Invited talk

TEACHING EXPERIENCE

2017–Present **Guest Lecturer**, Department of Biological Sciences, National University of Singapore, Singapore

- Graduate studies module: Invasion Biology; Lecture on modelling species distributions (Mean teaching feedback score = 4.79/5.00)
- Undergraduate module: Aquatic Biodiversity; Lecture on non-indigenous crustaceans (Mean teaching feedback score = 4.86/5.00)

2011–2017 **Part Time Teaching assistant**, Department of Biological Sciences, National University of Singapore, Singapore

- Biodiversity (4 Semesters; Mean teaching feedback score = 4.76/5.00)
- Ecology and Environment (4 Semesters; Mean teaching feedback score = 4.37/5.00)
- Ecology of Aquatic Environments (4 Semesters; Mean teaching feedback score = 4.34/5.00)
- Freshwater Biology (2 Semesters; Mean teaching feedback score = 4.00 / 5.00)
- Field Studies in Biodiversity (2 Semesters)
- Aquatic Biodiversity (1 Semester)
- Darwin and Evolution (1 Semester)

**Department average teaching feedback score = 4.05/5.00*

ADVISEES/MENTORSHIP (GRADUATE & UNDERGRADUATE)

Masters Research: 2019 – Fabienne Wiederkehr [Imperial College London]

Honors Research: 2019 – Joel Ng Xuan Hao, Elysia Toh Xin Pei, Mia Sara Choo, Twang Fangqi; 2017 – Regina Tan Chun Qi; 2016 – Claudia Tan Li Ying, Kenny Chua Wei Jie, Khaizar Khuzema Shakir; 2015 – Joleen Chan; 2014 – Ng Boon Hong, Lim Zi Yun

Undergraduate Research: 2015 – Claudia Tan Li Ying; 2013 – Kenny Chua Wei Jie, Lim Zi Yun

AWARDS

- 2019** **National Research Foundation—International Collaborative Fellowship for The Commonwealth Award**, National Research Foundation, Prime Minister’s Office, Singapore
- 2016** **Graduate Student Travel Award**, Department of Biological Sciences, National University of Singapore, Singapore
- 2013–2017** **President’s Graduate Fellowship**, Department of Biological Sciences, National University of Singapore, Singapore
- 2013** **Teaching Assistant (Part-time) Award**, Department of Biological Sciences, National University of Singapore, Singapore
- 2011** **Raffles Prize**, Department of Biological Sciences, National University of Singapore, Singapore

GRANTS AWARDED

- 2019** National Research Foundation—International Collaborative Fellowship for The Commonwealth Award
“Monitoring global progress towards meeting Sustainable Development Goals”
Awardee
\$250,000 (2 Years 6 Months)
- 2018** National Parks Board
“The mechanisms and regulation of freshwater stream communities for habitat restoration”
Co-Investigator
\$174,960 (1 Year 2 Months)
- 2014** Third Ah Meng Memorial Conservation Fund
“Investigating the impacts of aquatic invasive species on Singapore’s native freshwater biodiversity”
Co-Investigator
\$27,500 (3 Years)

UNIVERSITY SERVICE

- 2017** **Organizing Committee (Finances)**, Aquatic Invasive Alien Species in Southeast Asia (AIASSEA) Symposium, Singapore (July, 2017)
- 2016** **Organizing Committee (Logistics and Manpower)**, The Crustacean Society Mid-Year Meeting 2016, Singapore (July, 2016)
- 2014** **Organizing Committee (Secretariat)**, Climate Change Adaptation: Aquatic Invasives and Coastal Restoration; Singapore (February, 2014)

SKILLS

- Computer** R, Maxent, NetLogo, QGIS, ArcGIS, Bash, HTML, Adobe Photoshop, Microsoft Office
- Languages** English (fluent), Chinese (fluent), Cantonese (beginner), Thai (beginner), Japanese (beginner), Malay (beginner)
- Licenses** Singapore Driving License, BSAC Ocean Diver