**Hsien-Yung Lin**

Department of Biology, Carleton University

Ottawa, ON, Canada

hylin0625@gmail.cm

+1 517 488 6554

# EDUCATION

* **Ph.D.**, Centre for Biodiversity and Conservation Science (2013-2017)

Thesis: Conserving migratory species under human impacts and climate change.

Supervisors: Prof. Hugh Possingham, Dr. Chris Brown, Dr. Simon Linke, Dr. Ross Dywer and Dr. Richard Fuller

The University of Queensland, Australia

* **M.Sc.**, Division of Marine Biology and Fisheries, Institute of Oceanography (2009-2011)

Thesis: Life history of deep-sea demersal fishes revealed by otolith microstructure and stable isotopic composition.

 National Taiwan University, Taiwan

* **B.Sc.**, Life Science (2005-2009)

 National Taiwan University, Taiwan

# RESEARCH & WORK EXPERIENCE

I have well developed skills and experience in ecological modelling, population dynamics modelling, statistical modelling, freshwater and marine ecology. My primary research interests are (1) applying quantitative methods on ecological conservation and natural resource management and (2) incorporating scientific findings and modelling results into decision-making process.

* **Postdoctoral Research Fellow,** Carleton University, Canada (2019-present). Supervisor: Prof. Joseph Bennett and Prof. Steven Cooke

**Main project:** (1)Setting national priorities for threatened species conservation in Canada and (2) Identifying optimal management actions for national historic waterways, the Rideau Canal and the Trent-Severn Waterway.

* **Postdoctoral Research Fellow,** Michigan State University, USA (2017-2019). Supervisor: Prof. Kelly Robinson

**Main project:** Prioritizing connectivity restoration projects in Michigan watersheds.

Evaluating the performance of decision support tools for prioritizing connectivity restoration projects and discussing with watershed managers and stakeholders through a structured decision making process. Some results have been published in *Journal of Great Lakes Research* and reviewed in *River Research and Applications*. One manuscript is in preparation.

**Consulting projects:** Estimating fish population dynamics after barrier removal/construction. Results have been published in *Theoretical Ecology*. Predicting the effect of climate change and barrier removal on migratory fish populations in the Great Lakes. One manuscript is in preparation and one MSc student is under supervision.

**Certified training:** Structured Decision Making in National Conservation Training Center, USA (2018)

* **PhD Research**, The University of Queensland, Australia (2013-2017). Primary supervisor: Prof. Hugh Possingham

**Project:** Conserving migratory species under human impacts and climate change.

Quantifying and integrating the impacts of multiple stressors on migratory fish species and prioritize management actions for managing local populations, species, and communities. Study results have been published in *Freshwater Biology*, *Diversity and Distributions*, and *Aquatic Conservation: Marine and Freshwater Ecosystems*.

* **Research Assistant**, Division of Marine Biology and Fisheries, Institute of Oceanography, Taiwan (2012-2013)

**Project:** Investigating and reconstructing deep-sea trophic structure of megabenthic food webs and studying migratory life history of sea mullet (*mugil cephalus*). Some results have been published in *Marine Ecology Progress Series*.

**Duties:** Write research papers and proposals, mentor and supervise undergraduate and Master students.

* **Political Warfare Officer**, Republic of China Air Force, 401 Tactical Composite Wing, 26 Operations Group (2011-2012)

**Duties:** Leading and organizing activities/course for counseling, psychological warfare, military discipline and law education, cultural activities and social events. Be responsible for the team spirit of about 80 people.

* **MSc Research**, Division of Marine Biology and Fisheries, Institute of Oceanography, Taiwan (2009-2011). Supervisor: Prof. Jen-Chieh Shiao

**Project:** Life history of deep-sea demersal fishes revealed by otolith microstructure and stable isotopic composition.

Results have been published in *Deep Sea Research Part I*.

# PUBLICATIONS

**Peer reviewed papers**

* **Lin HY**, Robinson K, Milt A, Walter L. In press. The application of web-based decision support tools and the value of local information in prioritizing barrier removal, a case study in northwest lower Michigan, USA. *Journal of Great Lakes Research*. https://doi.org/10.1016/j.jglr.2019.01.008
* **Lin HY**, Robinson K. In press. How do migratory fish populations respond to barrier removal in spawning and nursery grounds? *Theoretical Ecology*. https://doi.org/10.1007/s12080-018-0405-0
* Brown C, Jupiter S, Albert S, Anthony K, Hamilton R, Fredston-Hermann A, Halpern B, **Lin HY**, Maina J, Mangubhai S, Mumby P, Possingham H, Saunders M, Tulloch Vivitskaia, Wenger A, Klein C. In press. A guide to modelling priorities for management of land-based impacts on coastal ecosystems. *Journal of Applied Ecology*.
* **Lin HY**, Brown CJ, Dwyer RG, Harding DJ, Roberts DT, Fuller RA, Linke S, Possingham HP. (2018) Impacts of fishing, river flow and connectivity loss on the conservation of a migratory fish population. *Aquatic Conservation: Marine and Freshwater Ecosystems*. 28:45-54. https://doi.org/10.1002/aqc.2831
* Braczkowski A, Holden MH, O’Bryan C, Choi CY, Gan X, Beesley N, Gao Y, Allan J, Tyrrell P, Stiles D, Brehony P, Meney R, Brink H, Takashina N, Lin MC, **Lin HY**, Rust N, Salmo SG, Watson JEM, Kahumbu P, Maron M, Possingham HP, Biggs D. (2018) Reach and messages of the world's largest ivory burn. *Conservation Biology*. https://doi.org/10.1111/cobi.13097
* Brown CJ, Jupiter S, **Lin HY**, Albert S, Klein C, Maina JM, Tulloch V, Wenger A, Mumby PJ. (2017) Habitat change mediates the response of coral reef fish populations to terrestrial run-off. *Marine Ecology Progress Series*. 576:55-68. https://doi.org/10.3354/meps12221
* **Lin HY**, Jupiter SD, Jenkins AP, Brown CJ (2017) Impact of anthropogenic disturbances on a diverse riverine fish assemblage predicted by functional traits. *Freshwater Biology*. 62:1422-1432. <https://doi.org/10.1111/fwb.12955>
* **Lin HY**, Bush A, Linke S, Possingham HP, Brown CJ (2017) Climate change decouples marine and freshwater habitats of a threatened migratory fish. *Diversity and Distributions*. 23:751-760. https://doi.org/10.1111/ddi.12570
* McGowan J, Beger M, Lewison RL, Harcourt R, Campbell H, Priest M, Dwyer RG, **Lin HY**, Lentini P, Dudgeon C, McMahon C, Watts M, Possingham HP (2016) Integrating research using animal-borne telemetry with the needs of conservation management. *Journal of Applied Ecology*. 54:423-429. doi:10.1111/1365-2664.12755
* **Lin HY**, Lin PY, Chang NN, Kao SJ, Shiao JC (2014) Trophic structure of megabenthic food webs along depth gradients in the South China Sea and off northeastern Taiwan. *Marine Ecology Progress Series*. 501:53-66. doi: 10.3354/meps10681
* **Lin HY**, Shiao JC, Chen YG, Iizuka Y (2012) Ontogenetic vertical migration of grenadiers revealed by otolith microstructures and stable isotopic composition. *Deep-Sea Research Part I*. 61: 123-130. doi: 10.1016/j.dsr.2011.12.005

**Manuscripts under review or in preparation**

* **Lin HY**, Robinson K, Walter L. Under review. Trade-offs between prioritizing road-stream crossing upgrades based on erosion risk control and connectivity restoration. *River Research and Applications*.
* Lennox RJ, Bravener G, **Lin HY**, Madenjian C, McLaughlin R, Muir A, Remucal CK, Robinson K, Rous AM, Siefkis M, Wilkie, Cooke SJ. et al. In preparation. A discussion of the potentiall changes and chanllenges to the biology and management of invasive sea lamprey *Petromyzon marinus* in the Great Lakes.
* **Lin HY**, Robinson K, Jones M, Walter L. In preparation. Using structured decision making to overcome scale mismatch challenges in barrier removal for watershed restoration.

**Book**

* Dai CF, Yu HS, Chiao LY, Wang J, Chern CS, Jan S, Yang YJ, Chiou MD, Kuo JY, Kuo TH, Wen LS, Chen S, Lee YC, Shiao JC, Hsieh CH, Chang NN, **Lin HY**, Lin PY (2015) Regional Oceanography of Taiwan. National Taiwan University Press, Taipei, Taiwan.

# PRESENTATIONS

* **Lin HY**, Robinson K. How do migratory fish populations respond to barrier removal in spawning and nursery grounds? American Fisheries Society Annual Meeting, Atlantic City, USA, 2018.
* **Lin HY**, Robinson K, Milt A, Walter L. The application of web-based decision support tools and the value of local information in prioritizing barrier removal, a case study in northwest lower Michigan, USA. Society for Freshwater Science Annual Meeting, Detroit, USA, 2018
* **Lin HY**, Brown CJ, Linke S, Bush A, Possingham HP.Asynchrony in climate change across marine and freshwater ecosystems threatens the persistence of a migratory fish. Centre for Marine Science seminar, Brisbane, Australia, 2016.
* **Lin HY**, Brown CJ, Dwyer RG, Fuller RA, Linke S, Possingham HP. Moving target: Conserving migratory fish under human impacts and climate change. Centre for Biodiversity and Conservation Science seminar, Brisbane, Australia, 2016.
* **Lin HY**, Brown CJ, Linke S, Bush A, Possingham HP.Climate change in marine and freshwater systems threatens the persistence of a threatened migratory fish. New Zealand Marine Sciences Society and Australian Marine Sciences Association Joint Conference, Wellington, New Zealand, 2016.
* **Lin HY**, Brown CJ, Dwyer RG, Harding DJ, Roberts DT, Fuller RA, Linke S, Possingham HP. Fishing and loss of connectivity interact to threaten persistence of a migratory population in Australia. 52nd Australian Marine Sciences Association Conference, Geelong, Australia, 2015.
* **Lin HY**, Brown CJ, Dwyer RG, Harding DJ, Roberts DT, Fuller RA, Linke S, Possingham HP. Conserving migratory fish under multiple disturbances. 2nd International Symposium of Decision Science. Kyushu University, Fukuoka, Japan, 2015.
* **Lin HY**, Brown CJ, Fuller RA, Possingham HP. Interactive impacts of fishing and climate change on conservation of Australian diadromous fish. 51st Australian Marine Sciences Association Conference, Canberra, Australia, 2014.
* **Lin HY**, Shiao JC. **Ontogenetic vertical migration of macrourids revealed by otolith microstructures and stable isotopic composition.** 35th Annual Larval Fish Conference, Early Life History Section of American Fisheries Society, Wilmington, North Carolina, USA, 2011.
* **Lin HY**, Shiao JC, Chen TG, Shen CC. **Ontogenetic vertical migration of macrourids revealed by otolith microstructures and stable isotopic composition.** Workshop for 2011 Oceanographic Research Programs, Miaoli, Taiwan, 2011.
* **Lin HY**, Shiao JC. **Ontogenetic vertical migration of macrourids revealed by otolith microstructures and stable isotopic composition.** 7th meeting of The Ichthyological Society of Taiwan, NTU, Taipei, Taiwan, 2011.
* **Lin HY**, Shiao JC. Otolith size, weight and sensory area ratio in fish communities from different depth and taxonomic group. The Fisheries Society of Taiwan 2010 Annual Meeting, National Taiwan Ocean University, Keelung, Taiwan, 2010.

# TEACHING EXPERIENCE

* Co-supervise MSc student with Prof. Kelly Robinson, Michigan State University (2019)
* **Tutor**, Introduction to R workshop, Australian Marine Science Association, The University of Queensland (October, 2015)
* **Tutor**, Introduction to R workshop, The University of Queensland (June, 2015)
* **Teaching assistant**,Introduction to Marine Science (undergraduate students), National Taiwan University (2009-2011)
* **Teaching assistant**, Selected Readings of C. S. Lewis’ Works (undergraduate students), National Taiwan University (2009-2010)
* **Counsellor for undergraduate students**, Department of Life Science, National Taiwan University (2007-2009)

# AWARDS AND HONORS

* **International Postgraduate Research Scholarship**, Department of Education and Training, Australia Government (2013-2016)
* **UQ Centennial Scholarship**, The University of Queensland, $24,653 AUD per annum (2013-2016)
* **Top poster presentation**, Workshop For 2011 Oceanographic Research Programs, Taiwan (2011)
* **The Dean Award**, National Taiwan University (2009)
* **Presidential Award**, National Taiwan University (2005-2006)

# PROFESSIONAL MEMBERSHIPS & ENGAGEMENTS

* Judged for **Graduate Student Organization Symposium, Department of Fisheries and Wildlife, Michigan State University**, USA (2018)
* Organized **Online tools, structured decision-making, and barrier removal** workshop for managers and stakeholders in Ohio, USA (2018)
* Member of **Society for Freshwater Science** (2018-present)
* Member of **New Zealand Marine Sciences Society** (2016-present)
* Member of **Society for Conservation Biology (SCB), UQ Chapter** (2015-2017)
* Reviewed paper for peer-reviewed journals such as: **Aquatic Conservation: Marine and Freshwater Ecosystems**, **Global Change Biology**, **Ecology and Evolution**, and **Diversity and Distributions**
* Involved and presented in binational (Canada and USA) barrier removal relevant projects and meetings such as **Barrier Task Force, Great Lakes Fishery Commission** (2018)
* Led and involved projects in **Tribal Stream and Michigan Fruitbelt Collaborative Partnership** (2017-present)
* Led and involved projects in **Science for Nature and People Partnership (SNAPP) Ridge to Reef Fisheries Working Group** (2014-2017)
* Involved projects in **Connecting telemetry of highly mobile threatened species and spatial conservation** workshop (2015)

# ADDITIONAL SKILLS

* **Languages**:

Chinese (native), Taiwanese (native), English (fluent), Cantonese

* **Computer software**:

R, Matlab, Primer, SPSS, SAS, ArcGIS, QGIS, MARXAN, Conefor, OptiPass