UNIVERSITI TEKNOLOGI MARA

FISH DIVERSITY, ABUNDANCE, AND DISTRIBUTION IN SUNGAI SEPANG BESAR ESTUARY, SELANGOR, MALAYSIA

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MSc

June 2020

AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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Faculty   :   Applied Sciences

Thesis Title   :   Fish Diversity, Abundance, and Distribution in Sungai Sepang Besar Estuary Estuary, Selangor, Malaysia

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ABSTRACT

This study was conducted from April 2014 to February 2015 to determine fish diversity and distribution along Sungai Sepang Besar (SSB), Selangor, Malaysia. Fish sampling was conducted utilizing gill nets (mesh sizes 1.25", 1.5", 2.25", 2.5", 2.75", 3") and longlines. Fish and water parameters sampling were conducted at nine stations along SSB. The dissolved oxygen (DO), salinity, pH, and ammonia were significantly different ($p<0.05$) from sampling reaches while salinity, pH, and turbidity showed significant difference ($p<0.05$) between spring and neap tides. A total of 832 fish representing 50 fish species from 32 families were recorded. The Toxotidae was the most abundant (56.97%) followed by the Engraulidae (9.62%), Leiognathidae (5.05%), Plotosidae (4.81%), and Ariidae (4.45%). The most abundant fish species was *Toxotes jaculatrix* (34.6%). The lower reaches recorded the highest abundance of fishes (62.2%) followed by the upper reaches (19.3%) and the middle reaches (18.39%). The Shannon Index was 2.37, Evennes Index was 0.21, and Margalef Index was 7.29. Higher fish diversity was recorded during spring tide (H=2.85). There was significant differences ($p<0.05$) of the diversity indices between spring and neap tides where the former recorded higher values. One way ANOVA showed that density was significantly different between gillnets ($p<0.05$) being highest from the 1.5" mesh while biomass showed no significant difference ($p>0.05$) between mesh sizes. The 1.5' mesh gillnet recorded highest density (0.43 no/m^2/hr) and biomass (32.00 g/m^2/hr) during neap tide. The fish density and biomass from gillnets was not significant between tides ($p>0.05$). The length-weight relationship for the 7 most abundant species showed that 5 species (*Arius sagor*, *Photopectoralis. bindus*, *Toxotes jaculatrix*, *Stolephorus. indicus*, and *Thryssa dussumieri*) recorded positive allometric growth (b >3) while 2 species (*Plotosus lineatus* and *Toxotes chatareus*) recorded negative allometric growth (b<3). The Canonical Correspondence Analysis (CCA) indicated that DO, turbidity, salinity, and pH were most important abiotic factors affecting fish diversity and distribution in SSB.

ACKNOWLEDGEMENT

I would like to start with the Alhamdulillah, which without Allah's will and blessing this thesis would never have been possible. Next, I would like to express my appreciation and gratitude to many people who have given me immeasurable support and guidance.

Firstly, I would like to thank my supervisor Dr Harinder Rai Singh, and co-supervisor Dr Nur Hasyimah Binti Ramli and Madam Hasratul Nadiah Binti Mohd Rashid. Thank you for the invaluable guidance and assistance, the boundless patience and the great efforts for giving me ideas and assisting me in this project. Without the numerous knowledge and advice, the completion of this thesis would not have been possible.

I also would like to express my gratitude to the laboratory staff in Kuala Pilah and Shah Alam which are Madam Norshamsina Daud, Madam Norazahana Baharudin, and Mr Jamal Abd. Nasser Che Deraman, for providing the facilities, knowledge, and assistance during labworks.

My appreciation goes to Mr Jufree Maharal who provided boats and assistance during fieldworks. Special thanks to my colleagues and friends for helping me with this project especially my husband Mohd Hasbullah Iqba Ghani who had helped me a lot during the sampling activity. Without their assistance, this thesis completion may not be possible. This research was funded by Research Acculturation Grant Scheme (RAGS) with project number 600-RMI/RAGS 5/3 (24/2013).

Finally, I would also like to express my love and gratitude to my lovely parents Ya Hitam and Esah Idris for your unconditional love, patience and putting up with me for the last few years. Also, to my in-laws and family, thank you for their understanding and never-ending support through the duration of my study.

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