ANURAN SPECIES DIVERSITY IN THE PASONG HIRO RIVER

IN BRGY. BANAYBANAY, AMADEO, CAVITE

An Undergraduate Research Presented to the
Faculty of the Biological Sciences Department
College of Science and Computer Studies
De La Salle University – Dasmariñas
Dasmariñas City

In Partial Fulfilment of the Requirements
for the Degree Bachelor of Science Major in Human Biology

ERIKA BEATRIZ G. DELA CRUZ

NOREIN M. VINLUAN

May 2014
ABSTRACT

Anurans are great bioindicators of aquatic and terrestrial environment because of their permeable skin that are sensitive to temperature, light, and different environmental stress. The study was made to determine the health condition of Pasong Hiro River by assessing its anuran diversity particularly the presence of native and endemic species. Combinations of strip transect, time-constrained searches, visual encounter survey (VES), and acoustic encounter survey (AES) were used during the sampling, which was done on 2 separate days. Snout-vent length and weight were measured, and the gender, age, and microhabitats were noted for every individual that was collected. The researchers found 7 anuran species in Pasong Hiro River, having *Occidozyga laevis* as the most abundant species. The presence of introduced and tolerant species such as *R. marina, H. erythraea*, and *P. leucomystax* indicated that the river was disturbed but the presence of a native (*O. laevis*) and three endemic species (*P. mimulus, L. woodworthi*, and *L. macrocephalus*) indicated that the river was also capable of supporting these thriving species.
ACKNOWLEDGMENTS

First of all, the researchers are grateful to the Almighty God who has guided and blessed them to complete this research study.

The researchers also wish to express their sincere gratitude to Dr. Rubie Maranan Causaren, thesis adviser. The researchers are extremely grateful and indebted to her for her expert and timely support till the completion of our paper, sincere and valuable guidance, and encouragement. Also, for her patience, constructive criticisms, resources and knowledge that she shared. To her family who provided care, support, and protection during the field surveys.

Profound gratitude is expressed to the panel members, Ms. Cherry Z. Cuevas, Dr. Ronaldo Lagat and Ms. Myra Lagat, who took keen interest on the research study and guided the researchers by providing indispensable advice, support, and all the necessary information.

The researchers are grateful to Alex Perey, Kelvin Angcanan, Andy Angcanan and Kevin Bawalan who extended various assistance during sampling and species collections.

Appreciation is also expressed to the researchers’ parents, Mr. Enrique Dela Cruz and Dr. Sandra Dela Cruz, and Mr. Bienvenido “Ronnie”
R. Vinluan and Ms. Hayley M. Vinluan, who has been a source of encouragement and inspiration to life, for giving them moral, practical, emotional and financial support, and to their siblings Alexandra and Miguel Dela Cruz, and Honnie Laye and Bon Levi Vinluan for their unending support. Without their love, support, guidance and understanding, the researchers would be completely lost. Special thanks to Ryan Raymond P. Romero for the time and help and as well as for the assistance and cooperation for the completion of the field work.
# TABLE OF CONTENTS

- Title Page 1
- Abstract 2
- Approval Sheet 3
- Acknowledgments 4
- Table of Contents 6
- List of Tables 8
- List of Figures 9

## CHAPTER 1 INTRODUCTION

- 1.1 Background of the Study 10
- 1.2 Scope and Limitations 13
- 1.3 Significance of the Study 14
- 1.4 Definition of Terms 16

## CHAPTER 2 LITERATURE REVIEW 18

## CHAPTER 3 METHODOLOGY

- 3.1 Research Setting 28
- 3.2 Study Site 28

## CHAPTER 4 RESULTS AND DISCUSSION

- 4.1 Species Diversity 33
- 4.2 Assessment of Pasong Hiro’s conditions using indicator species 52
CHAPTER 5 CONCLUSION AND RECOMMENDATION  55

Cited References  56

Appendices
   A. Cavite River Network  67
   B. Field Data Sheet for Transect Sampling  68
   C. Photo Documentation  69
   D. Curriculum Vitae  71
### LIST OF TABLE

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>43</td>
</tr>
<tr>
<td></td>
<td>Species richness estimate and diversity based on non-parametric estimators in EstimateS.</td>
</tr>
<tr>
<td>4.2</td>
<td>47</td>
</tr>
<tr>
<td></td>
<td>Microhabitat distribution of anurans</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Some introduced and native anurans from the site</td>
<td>34</td>
</tr>
<tr>
<td>4.2</td>
<td>Some endemic anurans from the site</td>
<td>35</td>
</tr>
<tr>
<td>4.3</td>
<td>The species accumulation curve (Mao Tau) showing efficiency of sampling effort.</td>
<td>36</td>
</tr>
</tbody>
</table>