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Revealing of macroinvertebrate communities as ecological integrity of water quality: A case study in Kali Lamong estuary

Kevin Daffa Prasetya1\*, Achmad Chusnun Ni’am2\*

1Department of Environmental Engineering, Chung Yuan Christian University, 200 Chung Pei Road, Chung-Li 320, Taiwan; e-mail: kevindaffaprasetya@gmail.com

2Department of Environmental Engineering, Institut Teknologi Adhi Tama Surabaya, Jalan Arief Rahman Hakim, Surabaya, 60117, Indonesia; e-mail: ach.niam@gmail.com

**Supplementary data**

**Tabel 1.** Hydraulic Data of Lamong River Estuary

| **Sampling point** | **Sampling time** | **Depth (m)** | **River width (m)** |
| --- | --- | --- | --- |
| Station 1 point 1 (A1) | Week I | 0,98 | 63,26 |
| Week II | 1,08 |
| Station 1 point 2 (A2) | Week I | 1,96 |
| Week II | 2,05 |
| Station 1 point 3 (A3) | Week I | 1,1 |
| Week II | 1,2 |
| Station 2 point 1 (B1) | Week I | 0,55 | 49,57 |
| Week II | 0,66 |
| Station 2 point 2 (B2) | Week I | 1,08 |
| Week II | 1,18 |
| Station 2 point 3 (B3) | Week I | 1,20 |
| Week II | 1,30 |
| Station 3 point 1 (C1) | Week I | 0,56 | 14,11 |
| Week II | 0,64 |
| Station 3 point 2 (C2) | Week I | 0,93 |
| Week II | 1,03 |
| Station 3 point 3 (C3) | Week I | 0,53 |
| Week II | 0,63 |

**Table 2.** Biological Monitoring Working Party Average Score Per Taxon (BMWP-ASPT) scoring system (Hansel et al., 2006)

| Taxonomic Class | Taxonomic Families | Score | Taxonomic Class | Taxonomic Families | Score |
| --- | --- | --- | --- | --- | --- |
| Ephemeroptera | Ephemeridae | 10 | Coleoptera | Corixidae | 5 |
| Heptagoniidae | 10 | Haliplitidae | 5 |
| Leptophlebiidae | 10 | Hygrobiidae | 5 |
| Pothamanthidae | 10 | Dytiscidae | 5 |
| Siphonurridae | 10 | Gyrinidae | 5 |
| Plecoptera | Capniidae | 10 | Hydrophilidae | 5 |
| Chloroperlidae | 10 | Helobidae | 5 |
| Leuctridae | 10 | Dryopidae | 5 |
| Perlidae | 10 | Eliminthidae | 5 |
| Taeniopteterygidae | 10 | Chyssomelidae | 5 |
| Hemiptera | Aphelochereididae | 10 | Curcuionidae | 5 |
| Trichoptera | Baraecidae | 10 | Phyrgancineidae | Hydropsychidae | 5 |
| Brachycentridae | 10 | Diptera | Tipulidae | 5 |
| Goeridae | 10 | Simullidae | 5 |
| Lepidostomatidae | 10 | Planaria | Planariidae | 5 |
| Leptoceridae | 10 | Dendrocoelidae | 5 |
| Mollanidae | 10 | Ephemeroptera | Baeitilidae | 4 |
| Odontoceridae | 10 | Megaloptera | Sialidae | 4 |
| Phyrgancineidae | 10 | Hirudinea | Piscicolidae | 4 |
| Sericostomatidae | 10 | Mollusca | Valvatidae | 3 |
| Ephemeroptera | Caenidae | 7 | Hygrobiidae | 3 |
| Plecoptera | Nemouridae | 7 | Lymnaeitidae | 3 |
| Tricoptera | Rhyancophilidae | 7 | Physidae | 3 |
| Polycentropodidae | 7 | Planorbidae | 3 |
| Limnepphilidae | 7 | Pachychidae | 3 |
| Mollusca | Neritidae | 6 | Sphaeriidae | 3 |
| Viviparidae | 6 | Hirudinea | Erpobdellidae | 3 |
| Ancylidae | 6 | Glossiphonidae | 3 |
| Unionidae | 6 | Hirudidae | 3 |
| Trichoptera | Hydroptilidae | 6 | Crustacea | Asellidae | 3 |
| Crustacea | Corophiidae | 6 | Diptera |
| Gammaridae | 6 | Oligochaeta |
| Paleamonidae | 6 | Others | Alderfly | 4 |
| Polychaeta | Nereidae | 6 | Shrimps | 6 |
| Nephthyidae | 6 | Hoglice | 3 |
| Odonata | Plaqthycnemididae | 6 | Blackfly | 5 |
| Coenagriidae | 6 | Cranefly | 5 |
| Hemiptera | Mesovelidae | 5 | Madgse | 2 |
| Hydrometridae | 5 | Worms | 1 |
| Gerridae | 5 |   |
| Nepidae | 5 |
| Naucoridae | 5 |
| Notonectidae | 5 |
| Pletidae | 5 |

**Table 3.** BMWP-ASPT scoring calculation results

| Site | Macroinvertebrates Family | Week 1 | Week 2 |
| --- | --- | --- | --- |
| Amount | Score | Final score | Amount | Score | Final score |
| A1 | Sphaeriidae | 16 | 3 | 5.6 | 31 | 3 | 5.6 |
| Ancylidae | 12 | 6 | 25 | 6 |
| Mollanidae | 2 | 10 | 4 | 10 |
| Neritidae | 18 | 6 | 57 | 6 |
| Pachychidae | 31 | 3 | 42 | 3 |
| A2 | Viviparidae | 3 | 6 | 4.5 | 17 | 6 | 4.5 |
| Neritidae | 2 | 6 | 7 | 6 |
| Pachychidae | 12 | 3 | 29 | 3 |
| Sphaeriidae | 9 | 3 | 22 | 3 |
| A3 | Piscicolidae | 8 | 4 | 4 | 23 | 4 | 4 |
| Pachychidae | 12 | 3 | 26 | 3 |
| Neritidae | 10 | 6 | 12 | 6 |
| Sphaeriidae | 9 | 3 | 15 | 3 |
| B1 | Viviparidae | 8 | 6 | 5 | 16 | 6 | 5 |
| Neritidae | 3 | 6 | 23 | 6 |
| Pachychidae | 4 | 3 | 24 | 3 |
| B2 | Piscicolidae | 12 | 4 | 5.33 | 9 | 4 | 5.33 |
| Viviparidae | 8 | 6 | 21 | 6 |
| Neritidae | 5 | 6 | 28 | 6 |
| B3 | Piscicolidae | 37 | 4 | 4.75 | 10 | 4 | 4.75 |
| Viviparidae | 9 | 6 | 40 | 6 |
| Neritidae | 8 | 6 | 25 | 6 |
| Pachychidae | 4 | 3 | 31 | 3 |
| C1 | Viviparidae | 14 | 6 | 5 | 7 | 6 | 5 |
| Neritidae | 3 | 6 | 6 | 6 |
| Pachychidae | 2 | 3 | 6 | 3 |
| C2 | Chironomidae | 1 | 2 | 3.67 | 13 | 2 | 3.67 |
| Viviparidae | 9 | 6 | 23 | 6 |
| Pachychidae | 2 | 3 | 11 | 3 |
| C3 | Planorbidae | 1 | 3 | 3.5 | 4 | 3 | 3.5 |
| Chironomidae | 2 | 2 | 15 | 2 |
| Viviparidae | 30 | 6 | 46 | 6 |
| Pachychidae | 4 | 3 | 19 | 3 |