**STAKEHOLDERS PARTICIPATION ON THE PERCEIVED MARINE POLLUTION CONTROL MEASURES**

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**Abstract**

Water is the most important substance in the world and a basic need utilized by living things for survival. It is one of the most important resources and very essential to all aspects of life. Water covers seventy percent of the earth’s surface and is significant for both people and environment.

The study was conducted to determine the participation of the stakeholders on the control of marine pollution. The study was also conducted to determine whether the respondents are practicing the proper waste management for which they are aware of. Employing the descriptive correlational design, this study involved of seventy (70) respondents in total. Analysis of data involved the use of frequency and percentage, mean, standard deviation and chi-square for the descriptive statistics. Results of the study showed that when taken as a whole, the resident of both barangays were highly aware of the activities undertaken in marine and coastal areas. When they grouped according to age, sex, civil status and educational attainment, respondents were also aware of these activities. The residents of both barangays also practiced this kind of activities that they were aware most of the time. It was also found out that there is no significant difference in Stakeholders Participation on Marine Pollution Control Measures as a whole. Furthermore, the null hypothesis which state that there is a significant difference in the level of practices in recycling plastic bottles, car tires and other items that are still usable when grouped according to educational attainment.

Based on the findings and conclusions of the study, the following are hereby recommended. To the Barangay Officials of Brgy. Villa Baybay and Calumpang of Iloilo City, that the barangay should continue and sustain their activities to control pollution in marine and coastal areas because it yielded good results. To the City Government of Iloilo City, that the findings of the study will be considered in their planning to further enhance the solid waste management program of other barangays of Iloilo City. To the Residents of Brgy. Villa Baybay and Calumpang of Iloilo City, that they have to sustain their practices to further strengthen the ability of the residents to maintain solid waste management in the barangay.

**INTRODUCTION**

**References**

Ã, I. M. S. (2012). Sustainable tourism development in the red sea of Egypt threats and opportunities, 13 (2005), 83–87. Retrieved from http://doi.org/10.1016/j.jclepro.2003.12.012

Academy, R. S. (2016). Legal Requirements and Wastewater Discharges to Polish Water Bodies, 1945-2, 36(2), 220–228. Retrieved September 18, 2019 from https://lpulaguna.edu.ph/wp-content/uploads/2017/03/Beach-Resorts-Operation-as-Potential-Lake-Water-Pollutants-Sketches-on-Synergy-Among-Stakeholders.pdf

Adam, Paul. (2019). Coastal Wetlands, Second Edition: An Integrated and Ecosystem Approach. Retrieved September 04, 2019 from https://www.sciencedirect.com/topics/earth-and-planetary-sciences/oil-pollution

Adeyemo, O. K., Adedokun, O. A., Yusuf, R. K., & Adeleye, E. A. (2008). Seasonal Changes in Physico-Chemical Parameters and Nutrient Load of River Sediments in Ibadan City, Nigeria, 10(3), 326–336. Retrieved September 16, 2019 from https://journal.gnest.org/publication/458

Andrews, Gabriella. (2018). "Resolving the Water Pollution Crisis in the Philippines: the Implications of Water Pollution on Public Health and the Economy," Pepperdine Policy Review: Vol. 10, Article 2. Retrieved September 18, 2019 from https://digitalcommons. pepperdine.edu/cgi/viewcontent.cgi?article=1163&context=ppr

Artis, Evan John. (2017). Examining Stakeholder Perspectives of Large Marine Protected Areas: A Q-Method Study. The University of Guelp. Retrieved September 17, 2019 from https://atrium.lib.uoguelph.ca/xmlui/bitstream/handle/10214/12116/Artis\_Evan\_201712\_MA.pdf?sequence=1

Awareness. (2019). In Definition.net. Retrieved August 04, 2019 from https://www.definitions.net/definition/awareness

Baudrimont, M., Arini, A., Guégan, C., Venel, Z., Gigault, J., Pedrono, B., Prunier, J., Maurice, L., Halle, AT., & Feurtet-Mazel, A. (2019). Ecotoxicity of polyethylene nanoplastics from the North Atlantic oceanic gyre on freshwater and marine organisms (microalgae and filter-feeding bivalves). Environmental Science and Pollution Research. Retrieved September 20, 2019 from https://link.springer.com/article/10.1007%2Fs11356-019-04668-3

Barry, J. and Proops, J. (1999). Seeking sustainability discourses with Q methodology. Ecological Economics 28(3):337-345. Retrieved September 20, 2019 from https://www.researchgate.net/publication/222491999\_Seeking\_sustainability\_discourses\_with\_Q\_methodology

Bayate¸ et al. (2017) Pollution in Manila Bay Aquaculture Farms. Retrieved September 20, 2019 from http://www.nfrdi.da.gov.ph/tpjf/etc/Pollution%20in%20Manila%20Bay%20 Aquaculture%20Farms\_F.pdf

Beiras, Ricardo. (2018). Marine Pollution: Sources, Fate and Effects of Pollutants in Coastal Ecosystems. Retrieved August 04, 2019 from https://www.sciencedirect.com/science/ article/pii/B9780128137369000015

Benneth, N. et al. (2017). Mainstreaming the Social Sciences in Conservation. Wiley: Society for Conservation Biology. Retrieved September 20, 2019 from https://conbio.onlinelibrary.wiley.com/doi/abs/10.1111/cobi.12788

Bowen, G. A. (2002). Document Analysis as a Qualitative Research Method. Qualitative Research Journal, 9(2), 27– 40. Retrieved September 28, 2019 from https://www.researchgate.net/publication/240807798\_Document\_Analysis\_as\_a\_Qualitative\_Research\_Method

Buckinghamshire-Chilterns University College. (2000). Research Trends and Imperatives in Tourism Education. Retrieved September 28, 2019 from https://www.jstor.org/stable/ 23234090?seq=1

Bueno, D.C. and Matriano, E.A. (2016). Research writing: for business and hospitality management students. Publisher: Quezon City : Great Books Trading. Retrieved September 25, 2019 from http://kulturalink.nlp.gov.ph/cgi-bin/koha/opac-detail.pl?biblionumber= 5024&query\_desc=su%3A%7BResearch%7D

Burgos, Nestor P. (2018). Inquirer.Net: Environment Advocates Gather in Iloilo to Discuss Protection of Marine Resources. Inquirer Visayas. Retrieved September 17, 2019 from https://newsinfo.inquirer.net/1057697/environment-advocates-gather-in-iloilo-to-discuss-protection-of-marine-resources

Cebu, Emilio and Orale, Ronald. (2019). Solid Waste Disposal Practices of Green Mussel Farmers in Samar Philippines. Retrieved September 10, 2019 from https://www.researchgate.net/publication/334605028\_Solid\_Waste\_Disposal\_Practices\_of\_Green\_Mussel\_Farmers\_in\_Samar\_Philippines

Check, J. and Schutt, R.K. (2012). Research Methods in Education. Retrieved September 25, 2019 from http://methods.sagepub.com/book/research-methods-in-education

Civil Aeronautics Board Philippines. (2019). Maritime Industry Authority (MARINA). Retrieved August 04, 2019 from https://www.cab.gov.ph/dotc-sectoral-and-attached- agencies/item/ maritime-industry-authority

Civil Aeronautics Board Philippines. (2019). Philippine Ports Authority (PPA). Retrieved from August 04, 2019 from https://www.cab.gov.ph/dotc-sectoral-and-attached-agencies/item/philippine-ports-authority

Congress of the Philippines (2000). RA 9003. Ecological Solid Waste Management Act of 2000. Retrieved September 19, 2019 from https://www.officialgazette.gov.ph/2001/01/26/ republic-act-no-9003-s-2001/

Denchak, Mellisa, (2018). Ocean Pollution: The Dirty Facts. Retrieved September 17, 2019 from https://www.nrdc.org/stories/ocean-pollution-dirty-facts

Department of Environment and Natural Resources Region VI. (2016). Mandate (E.O. 192, s. 1987). Retrieved August 04, 2019 from https://r6.denr.gov.ph/index.php/about-us/mission-vision

Department of Environment and Natural Resources, and Department of the Interior and Local Government (1998). Memorandum Circular No. 98-01. Manual of Procedures for DENR-DILG-LGU Partnership on Devolved and Other Forest Management Functions. Retrieved December 08, 2019 from https://www.mgb.gov.ph/images/stories/DENR-DILG\_ JNT\_MC \_98-01.pdf

Dong, Guo. (2017). Analysis of Global Marine Environmental Pollution and Prevention and Control of Marine Pollution. Barcelona. Retrieved September 17, 2019 from https://upcommons.upc.edu/bitstream/handle/2117/106236/126374\_Dong%20Guo-Analysis%20of%20Global%20Marine%20Environmental%20Pollution%20and%20Prevention%20and%20Control%20of%20Marine%20Pollution.pdf

Dryzek, John S., and Jeffrey Berejikian. (1993). "Reconstructive Democratic Theory." The American Political Science Review 87, no. 1 (1993): 48-60. Retrieved September 28, 2019 from https://www.jstor.org/citation/info/10.2307/2938955

Environment, B., & Series, H. S. (n.d.). Philippine Regulations on Sanitation and Wastewater Systems (Vol. 2). Retrieved September 14, 2019 from https://www.afwakm.com/wp-content/uploads/2019/07/pcws\_philippine\_regulations\_on\_sanitation\_and\_wastewater\_systems\_2006.pdf

Environmental Pollution Centers Organization. (2017). What is Noise Pollution? Retrieved September 17, 2019 from https://www.environmentalpollutioncenters.org/noise-pollution/

EPA (2002). Persistent Organic Pollutants: A Global Issue, A Global Response. Retrieved September 28, 2019 from https://www.epa.gov/international-cooperation/persistent-organic-pollutants-global-issue-global-response

Evans, P. (n.d.). Government Action, Social Capital and Development : Reviewing the Evidence on Synergy, 178–209. Retrieved September 17, 2019 from http://dlc.dlib.indiana.edu/dlc/ bitstream/handle/10535/4512/Government\_Action%2C\_Social\_Capital\_and\_Development.pdf?sequence=1&isAllowed=y

eSchooltoday. (2019). Types of water pollution. Retrieved September 17, 2019 from https://eschooltoday.com/pollution/water-pollution/types-of-water-pollution.html

Fadul, Jose A. (2010). Epicity: The State and Degree of Being Experiential, Participative, Image-driven, and Connected. USA: Lulu Press Inc. Retrieved August 04, 2019 from https://books.google.com.ph/books?id=m3A3AgAAQBAJ&pg=PA49&dq=epicity&hl=en&sa=X&ved=2ahUKEwjZi6bo1fbrAhWFyIsBHTnWBisQ6wEwAHoECAMQAQ#v=onepage&q=epicity&f=false

Fraenkel, J. R., & Wallen, N. E. (2010). How to design and evaluate research in education. (7th Ed). New York: McGraw-Hill.

Fraenkel, J. R., & Wallen, N. E., & Hyun, H. (2012). How to Design and Evaluate Research in Education. Edition: 8a ed. Publisher: McGraw-Hill Education. Retrieved September 17, 2019 from https://www.researchgate.net/publication/265086460\_How\_to\_Design\_and\_ Evaluate\_Research\_in\_Education

Freeman, R. Edward . Strategic management: A stakeholder approach. Boston: Pitman, 1984 (republished in 2010 by Cambridge University Press). Google Scholar

Frey, Bruce B. (2018). The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation. Sage Publication Online. Retrieved August 04, 2019 from https://methods. sagepub.com/reference/the-sage-encyclopedia-of-educational-research-measurement-and-evaluation/i19688.xml

Gall, M. D., Gall, J. P., & Borg, W. R. (2003). Educational research: An introduction (7th ed.). Boston: Allyn & Bacon.

Garcia, Enrico C. (2016). Beach Resorts Operation as Potential Lake Water Pollutants: Sketches on Synergy among Stakeholders. LPU-Laguna Journal of Multidisciplinary Research Vol. 5 No.1. Lyceum of the Philippines University – Laguna. Retrieved September 04, 2019 from https://lpulaguna.edu.ph/wp-content/uploads/2017/03/Beach-Resorts-Operation-as-Potential-Lake-Water-Pollutants-Sketches-on-Synergy-Among-Stakeholders.pdf

Gheskiere, T., Vincx, M., Marcin, J., Scapini, F., & Degraer, S. (2005). Meiofauna as descriptor of tourism-induced changes at sandy beaches, 60, 245–265. Retrieved September 28, 2019 from http://doi.org/10.1016/j.marenvres.2004.10.006

Given, Lisa M. (2008). The SAGE Encyclopedia of Qualitative Research Methods. Sage Research Method. Retrieved September 04, 2019 from http://dx.doi.org/10.4135/9781412963909

Good, C.V., & Scates, D.E. (1972). In Paler-Calmorin, L., & Calmorin, M.A. (1997). Statistics in education and the sciences. Manila, Philippines: Rex Bookstore

Haley, U. C. V, Haley, G. T., & Haley, G. T. (1997). When the tourists flew in: strategic implications of foreign direct investment in Vietnam’s tourism industry, 595–604. Retrieved September 28, 2019 from https://pdfs.semanticscholar.org/6b0b/c5b1bb2e5a5a58c17158 bb2df437df36372c.pdf

Hallare, A. V, Factor, P. A., Santos, E. K., & Hollert, H. (2009). Assessing the Impact of Fish Cage Culture on Taal Lake (Philippines) Water and Sediment Quality Using the Zebrafish Embryo Assay, 138(June), 91– 104. Retrieved September 28, 2019 from http://philjournalsci.dost.gov.ph/home-1/29-vol-138-no-1-june-2009/381-assessing-the-impact-of-fish-cage-culture-on-taal-lake-philippines-water-and-sediment-quality-using-the-zebrafish-embryo-assay

Health and Safety Authority. (2019). Control Measure. Retrieved August 04, 2019 from https://www.hsa.ie/eng/Topics/Hazards/

IPIECA (International Petroleum Industry Environmental Conservation Association). 2000. Dispersants and Their Role in Oil Spill Response. 2nd edition. London. Retrieved September 28, 2019 from https://www.amn.pt/DCPM/Documents/DispersantsII.pdf

Jambeck, et al. (2015). Marine Pollution: Plastic waste inputs from land into the ocean. Science (The American Association for the Advancement of Science). Retrieved September 17, 2019 from https://www.iswa.org/fileadmin/user\_upload/Calendar\_2011\_03\_AMERICANA /Science-2015-Jambeck-768-71\_\_2\_.pdf

Khoironi, A., Anggoro, S., & Sudarno (2018). The Exisitense of Microplastic in Asian Green Mussels. IOP Conference Series: Earth and Environmental Science. Retrieved September 13, 2019 from https://iopscience.iop.org/article/10.1088/1755-1315/131/1/012050

Krishnakumar, Periyadan Kadinjappalli. (2017). Environmental impacts of marine pollution- effects, challenges and approaches. Retrieved September 17, 2019 from https://www.researchgate.net/publication/312383577\_Environmental\_impacts\_of\_marine\_pollution-\_effects\_challenges\_and\_approaches

Naidu, S. A. (2019). Preliminary study and first evidence of presence of microplastics and colorants in green mussel, Perna viridis (Linnaeus, 1758), from southeast coast of India. Marine pollution bulletin, 140. Retrieved September 17, 2019 from https://www.sciencedirect.com/science/article/abs/pii/S0025326X19300347

National Geographic Org. (2019). Marine Pollution. Retrieved September 17, 2019 from https://www.nationalgeographic.org/encyclopedia/marine-pollution/

National Oceanic and Atmospheric Administration. (n.d.). PMEL Carbon Program: What is Ocean Acidification?. U.S.A. Department of Commerce. Retrieved September 17, 2019 from https://www.pmel.noaa.gov/co2/story/What+is+Ocean+Acidification%3F

Naveen, B.P., and Sivapullaiah, P.V. (2020). Solid Waste Management: Current Scenario and Challenges in Bengaluru, Sustainable Sewage Sludge Management and Resource Efficiency, Başak Kiliç Taşeli, IntechOpen, DOI: 10.5772/intechopen.90837. Retrieved January 07, 2020 from https://www.intechopen.com/books/sustainable-sewage-sludge-management-and-resource-efficiency/solid-waste-management-current-scenario-and-challenges-in-bengaluru

Mangubhai, et al. (2018). World Seas: an Environmental Evaluation (Second Edition).Volume II: the Indian Ocean to the Pacific. Elsevier (Academic Press). Retrieved September 20, 2019 from https://www.sciencedirect.com/science/article/pii/B9780081008539000440? via%3Dihub

Marine Bio (2019). Ocean Polution. Retrieved September 17, 2019 from https://marinebio.org/ conservation/ocean-dumping/

Mills, G.E. (2011). Action Research: A Guide for the Teacher Researcher. Retrieved September 28, 2019 from https://books.google.com.ph/books/about/Action\_Research.html?id=-d1XAAAAYAAJ&redir\_esc=y

Momblan, Gail. (2019). Iloilo City to Monitor Coastal Cleanliness. Panay News Agency. Retrieved September 17, 2019 from https://www.pna.gov.ph/articles/1066076

Moroni, D., Pieri, G., and Tampucci, M. (2019). Environmental Decision Support Systems for Monitoring Small Scale Oil Spills: Existing Solutions, Best Practices and Current Challenges. Journal of Marine Science and Engineering. Retrieved September 20, 2019 from https://www.mdpi.com/2077-1312/7/1/19

Mosley, L. and Aalbersberg, W.G.L. (2003). The South Pacific Journal of Natural Science: Nutrient levels in sea and river water along the 'Coral Coast' of Viti Levu, Fij. The University of the South Pacific. Retrieved September 20, 2019 from https://www.publish.csiro.au/sp/SP03007

Mujahidawati et al. (2018). International Journal of Sciences: Basic and Applied Research. Strategy of Marine Environmental Management at Bintan Waters. IJSBAR. Retrieved September 20, 2019 from https://www.researchgate.net/publication/327173132\_Strategy \_of\_Marine\_Environmental\_Management\_at\_Bintan\_Waters

Ostiategui-Francia, P., Usategui-Martín A., & Liria-Loza A. (2017). Fate and Impact of Microplastics in Marine Ecosystems: From the Coastline to the Open Sea. Retrieved September 04, 2019 from https://www.sciencedirect.com/book/9780128122716/fate-and-impact-of-microplastics-in-marine-ecosystems

Özkara, A., Akyıl, D., and Konuk, M. (2016). Pesticides, Environmental Pollution, and Health, Environmental Health Risk - Hazardous Factors to Living Species, Marcelo L. Larramendy and Sonia Soloneski, IntechOpen, DOI: 10.5772/63094. Retrieved September 04, 2019 from https://www.intechopen.com/books/environmental-health-risk-hazardous-factors-to-living-species/pesticides-environmental-pollution-and-health

Park, E.K., Wilson, D.J., Choi, H.J., and Ueno, S. (2013). Environmental Health and Toxicology. Hazardous Metal Pollution in the Republic of Fiji and the Need to Elicit Human Exposure. Retrieved September 20, 2019 from https://www.eaht.org/journal/view.php?doi=10.5620/ eht.2013.28.e2013017

Patel, Himanshu, and Vashi, R.T. (2015). Characterization and Treatment of Textile Wastewater. Retrieved September 17, 2019 from https://www.sciencedirect.com/science/article/pii/ B9780128023266000010?via%3Dihub#!

Philippine Coast Guard. (2020). MAREP (Maritime Environmental Protection). Republic of the Philippines. Retrieved from August 04, 2019 from https://www.coastguard.gov.ph/ index.php/ transparency/functions/marep

Philippine Coast Guard. (2020). MARSAF (Maritime Safety). Republic of the Philippines. Retrieved from August 04, 2019 from https://www.coastguard.gov.ph/index.php/ transparency/functions/marsaf

Polidoro, BA., Comeros-Raynal, MT., Cahill, T. & Clement, C. (2017). Land-based Sources of Marine Pollution: Pesticides, PAHs and Phthalates in Coastal Stream Water, and Heavy Metals in Coastal Stream Sediments in American Samoa. Marine Pollution Bulletin, 116(1-2). Retrieved September 17, 2019 from https://www.sciencedirect.com/science/article/abs/ pii/S0025326X16310621?via%3Dihub

Pollution Issues. (2019). Sedimentation: Pollution Issues. Retrieved September 17, 2019 from http://www.pollutionissues.com/Re-Sy/Sedimentation.html#:~:text=The%20environmental %20impacts%20of%20sedimentation,loss%20of%20wetlands%2C%20nutrient%20balance

PRIME - M4 Page 1 of 11. (1990), (34), 1–11. Retrieved September 17, 2019 from https://openjicareport.jica.go.jp/pdf/11948882\_17.pdf

PNA (2019). Mussel Catch in Samar Recovering After Cleanup. Philippine News Agency Tacloban Bureau. Retrieved September 19, 2019 from http://pnatacloban.blogspot.com /2009 /08/ mussel-catch-in-samar-recovering-after.html

PSA (nd). The Philippine Marine Fishery Resources. What Will Remain for the Children of the 21st Century?. Philippine Statistics Authority. Retrieved September 19, 2019 from https://psa.gov.ph/content/fishery-resources

Raña, Joan A. and Domingo, Jonacel E. and Opinion, April Grace R. (2017) Contamination of Coliform Bacteria in Water and Fishery Resources in Manila Bay Aquaculture Farms. The Philippine Journal of Fisheries, 24(2), pp. 98-126. Retrieved September 19, 2019 from https://doi.org/10.31398/tpjf/24.1.2016A0015

Republic Act 9275 (2004). The Philippine Clean Water Act of 2004. Retrieved September 17, 2019 from http://www.wepa-db.net/policies/law/philippines/pd9275.htm

Republic Act No. 7160. (1991). The Local Government Code of the Philippines Book I, Chapter 1, Section 1, or the "Local Government Code of 1991". Retrieved December 08, 2019 from https://www.officialgazette.gov.ph/downloads/1991/10oct/19911010-RA-7160-CCA.pdf

Rist, S. E., Assidqi, K., Zamani, N. P., Appel, D., Perschke, M., Huhn, M., & Lenz, M. (2016). Suspended micro-sized PVC particles impair the performance and decrease survival in the Asian green mussel Perna viridis. Marine pollution bulletin, 111(1-2). Retrieved December 08, 2019 from https://www.sciencedirect.com/science/article/abs/pii/S0025326X16305380

Robin, D., Corbin, C., Rodriguez, DJ., Diez, SM, Morton, J., Patil, PG., Maes, T., and Vanzella, A. (2019). Marine Pollution in the Caribbean: Not a Minute to Waste (English). Washington, D.C.: World Bank Group. Retrieved September 17, 2019 from http://documents.worldbank.org/curated/en/482391554225185720/Marine-Pollution-in-the-Caribbean-Not-a-Minute-to-Waste

Robbins, S. P. (2000). Essentials of Organizational Behavior (6th ed.). Upper Saddle River, NJ: Prentice-Hall. Retrieved September 25, 2019 from https://trove.nla.gov.au/work/9418806/ version/117723924

Robbins, S. P. (2006). Essentials of Organizational Behavior (6th ed.). Upper Saddle River, NJ: Prentice-Hall. Retrieved September 25, 2019 from https://trove.nla.gov.au/work/9418806/version/12125167%2042708393

Rochman, CM., Tahir, A., Williams, SL., Baxa, DV., Lam, R., Miller, JT., Tee, FC., Werorilangi, S., & Teh, SJ. (2015). Anthropogenic Debris in Seafood: Plastic Debris and Fibers from Textiles in Fish and Bivalves Sold for Human Consumption. Scientific Reports, 5, 1434. Retrieved September 18, 2019 from https://pubmed.ncbi.nlm.nih.gov/26399762/

Saadoun, Ismail M. K. (2015). Impact of Oil Spills on Marine Life, Emerging Pollutants in the Environment - Current and Further Implications, Marcelo L. Larramendy and Sonia Soloneski, IntechOpen, DOI: 10.5772/60455. Retrieved September 04, 2019 from https://www.intechopen.com/books/emerging-pollutants-in-the-environment-current-and-further-implications/impact-of-oil-spills-on-marine-life

Saaty, T.L. (1994). How to Make a Decision: The Analytic Hierarchy Process. Researchgate. Retrieved September 25, 2019 from https://www.researchgate.net/publication/307800676\_ How\_to\_Make\_a\_Decision\_The\_Analytic\_Hierarchy\_Process

Sandbrook, C. et al. (2013). Social Research and Biodiversity Conservation. . Wiley: Society for Conservation Biology. Retrieved September 20, 2019 from https://conbio.onlinelibrary.wiley.com/doi/abs/10.1111/cobi.12141

Sea Change. (2016). Marine Pollution and Human Health. Retrieved from https://www.worldoceannetwork.org/wp-content/uploads/2016/09/3.-Pollution.pdf

Sea Change. (2018). Marine Pollution and Human Health. SeaChange Consortium. Retrieved September 17, 2019 from https://zenodo.org/record/1284141#.X2UwjBAzbIU

Setala, O., Lehtiniemi, M., Coppock, R., Cole, M. (2018). Microplastic Contamination in Aquatic Environemnts. An Emerging Matter of Environmental Urgency. Elsevier BV. Retrieved September 17, 2019 from https://www.researchgate.net/publication/325376143\_ Microplastics\_in\_Marine\_Food\_Webs

Schernewski, G., Fischer, E., Huttula, T., & Jost, G. (2016). Simulation tools to support bathing water quality management : Escherichia coli bacteria in a Baltic lagoon Linked references are available on JSTOR for this article : Simulation tools to support bathing water quality management: Escherichia coli bacteria in a Baltic lagoon, 16(4), 473–488. Retrieved September 25, 2019 from https://link.springer.com/article/10.1007%2Fs11852-012-0202-7

Smith, M., Love, DC., Rochman, CM., Neff, RA. (2018). Microplastics in Seafood and the Implications for Human Health. Current Environmental Health Reports, 5(3). Retrieved September 25, 2019 from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6132564/

SunStar Iloilo. (2019). Coastal cleanup collects 18 tons of trash. SunStar Publishing Inc. Retrieved September 17, 2019 from https://www.sunstar.com.ph/article/1799885/ ILOILO/Local-News/Coastal-cleanup-collects-18-tons-of-trash

Taberna, H.S.Jr., Nilos, M.G.G., Pahila, I.G., and Arban, J.P.B. (2015). Distribution and geochemical behaviour of heavy metals (Cr, Cu, Ni and Pb) in Iloilo river estuarine sediments. Retrieved September 25, 2019 from https://www.cabdirect.org/cabdirect/ abstract/20153165013

Tarigan, et al. (2019). Sea Dump; Multi-Function Waste Supply Tool Design to Reduce Belawan Sea Pollution. International Journal of Sciences: Basic and Applied Research (IJSBAR). Retrieved September 25, 2019 from https://www.gssrr.org/index.php/JournalOfBAsicAnd Applied/article/view/10155

Tayona, Glenda. (2018). Panay News: How dirty is the Iloilo River? Panay News Philippines. Retrieved September 17, 2019 from https://www.panaynews.net/how-dirty-is-the-iloilo-river/#:~:text=Based%20on%20the%20latest%20laboratory,per%20100%20milliliter%20(mL).

Mercene-Mutia, M.T. (2015). Assessment of local government’s implementation of open access policy in Taal Lake, Philippines : Effects on lake conservation and management. Retrieved September 20, 2019 from https://repository.seafdec.org.ph/bitstream/handle/10862/830/cem plrfa\_p123-132.pdf?sequence=1&isAllowed=y

Thirupathaiah, M., Samatha, C., & Sammaiah, C. (2012). Analysis of water quality using physico-chemical parameters in lower manair reservoir of Karimnagar district, Andhra Pradesh, 3(1), 172–180. Retrieved September 20, 2019 from http://www.ipublishing.co. in/ijesarticles/twelve/articles/volthree/EIJES31017.pdf

Threadgill, Katie. (2019). Plastic Waste in the Marine Environment in Northern Ireland. Northern Ireland Assembly. Retrieved September 20, 2019 from http://www.niassembly. gov.uk/globalassets/documents/raise/publications/2017-2022/2019/environment/0219.pdf

The Aquarium of the Pacific, Marine Conservation Research Institute (2010). Pollution in the Ocean: Everything Flows Downhill. Retrieved August 04, 2019 from https://www.aquariumofpacific.org/images/mcri\_uploads/Pollution-Ocean.pdf

Toonen, R. et al. (2013). Marine Pollution Bulletin: One size does not fit all: the emerging frontier in large-scale marine conservation. Semantic Scholar. Retrieved September 17, 2019 from https://www.sciencedirect.com/science/article/abs/pii/S0025326X13006607?via%3 Dihub

Watts, Simon and Stenner, Paul. (2012). Doing Q Methodological Research: Theory, Method and Interpretation. . Retrieved September 28, 2019 from http://methods.sagepub.com/book/doing-q-methodological-research

Webler, T., Danielson, S., Tuler, S. (2009). Using Q Method to Reveal Social Perspectives in Environmental Research. Social and Environmental Research Institute. Retrieved September 28, 2019 from https://www.researchgate.net/publication/273697977\_Using\_Q\_Method\_to\_ Reveal\_Social\_Perspectives\_in\_Environmental\_Research

Wilhem, T. et al. (2014). Large Marine Protected Areas – Advantages and Challenges of Going Big. Wiley Online Library. Retrieved September 17, 2019 from https://onlinelibrary.wiley. com/doi/full/10.1002/aqc.2499

Worldfishcenter Org. (2019) Bureau of Fisheries and Aquatic Resources, Philippines. Retrieved August 04, 2019 from https://www.worldfishcenter.org/bureau-fisheries-and-aquatic-resources-philippines

Wowk, K. M. (2013). Managing Ocean Environments in a Changing Climate. Retrieved September 17, 2019 from https://www.sciencedirect.com/science/article/pii/B97801240 76686000124