



REPUBLIC OF THE PHILIPPINES  
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES  
**ENVIRONMENTAL MANAGEMENT BUREAU**

DATE: March 15, 2020  
Longitude: 14.779431  
Latitude: 121.027178

## DISSOLVE OXYGEN (DO) HAZZARDS ASSESMENT

MUNICIPALITY	STATUS	BOD CONDITION
MARILAO	Very Poor	High
MEYCAUYAN	Very Poor	Very High
OBANDO	Poor	Low

All physio-chemical and hazard assessments are based on the available maps interpolation, geospatial analysis and the coordinates of the user's selected location.

- Areas with **low DO condition** are likely to experience aqua life disturbance like fish killing and health concern issue.
- Areas with **moderate or high DO condition** are likely to experience food security issue as well as health concerns
- Areas with **very high DO condition** are likely to experience Areas with very high
- DO is affected by the same factors that affect dissolved oxygen (see above). Aeration of stream water by rapids and waterfalls, for example will accelerate the decomposition of organic and inorganic material. Therefore, DO levels at a sampling site with slower, deeper waters might be higher for a given volume of organic and inorganic material than the levels for a similar site in highly aerated waters.
- Assessing the scale of fisheries effects relative to other impacts can be difficult, because of confounding and interacting combinations with other anthropogenic effects (e.g. pollution, habitat degradation, climate change) and natural variability of environmental factors
- While fishing activities are generally fairly well described and their impact on resources have been studied and documented for decades, land-based sources pollution and their impact on the marine ecosystem and on fisheries are very poorly documented. As a consequence, fisheries impacts tend to be the ones more "visible" to the public. Because the fisheries sector is economically and socially weaker than the agricultural or industrial sector, there is a risk that governments and NGOs target it primarily when looking for short-term solutions to the growing environmental problem, raising the issue of intersectoral equity.



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### **RECOMMENDATION**

- Through land drainage, sewage, river outflow, wind and rainfall, such economic activities as agriculture, manufacturing or chemical industries, incineration of toxic wastes, human settlements, etc., release excess nutrients (e.g. nitrates, phosphorus) as well as contaminants (e.g. polychlorinated biphenyls (PCBs), mercury, dioxin), radioactive wastes, oil, antifouling paints (tributyl tin), human pathogens (e.g. cholera, salmonella), plastic and other debris. Coastal activities, including human settlements and tourism, often result in conversion and destruction of habitats of high relevance to fisheries such as estuaries or coastal wetlands used by fishery resources as reproduction, nursery or feeding areas, reducing fisheries productivity and resilience. Irrigation and production of hydroenergy reduce freshwater inflows into the oceans, resulting in modification or suppression of seasonal floods (as in the Nile), reducing or eliminating key environmental signals and reducing influx of nutrients. It takes some experimentation to determine the appropriate dilution factor for a particular sampling site. The final result is the difference in dissolved oxygen between the first measurement and the second

### **EXPLANATION**

- DO, measures the amount of oxygen consumed by microorganisms in decomposing organic matter in stream water. DO also measures the chemical oxidation of inorganic matter (i.e., the extraction of oxygen from water via chemical reaction). A test is used to measure the amount of oxygen consumed by these organisms during a specified period of time (usually 5 days at 20 C).
- This is especially true for rivers and streams with a lot of organic pollution. Since it is not known when the zero point was reached, it is not possible to tell what the BOD level is. In this case it is necessary to dilute the original sample by a factor that results in a final dissolved oxygen level of at least 2 mg/L.