



**Comments on:
Draft Guidelines - Beach Sand Quarrying
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Done by:
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This document contains the professional opinion of the Jamaica Environment Trust (JET). In arriving at our opinion we made every reasonable attempt to ensure that our resource persons are informed and reliable and experts in the area in which their comment and analysis is sought. JET encourages readers to apply their own critical analysis to the information provided in this document and by others, particularly where JET's opinion differs from those others.

General Comments on the Guidelines

The Jamaica Environment Trust (JET) is of the firm view that the draft *Guidelines – Beach Sand Quarrying* are too general and, as a result, will not ensure proper environmental management during sand mining activities. To ensure there are no adverse environmental impacts associated with beach sand quarrying, the Guidelines require much more specificity than is stated at present.

Sources of sand are described as follows (p. 1):

“There are three specific types of coastal mining activities that fall under this guideline: 1) Quarrying of land-locked carbonate sand or other types of sand located behind old sand dunes/deposits; 2) quarrying of sand through dredging from the floor of the sea and sand banks; and 3) quarrying of sand from the Pleistocene dunes, which are located principally on the south coast of Jamaica.”

The Guidelines do not specify how managers should assess the **quantity** of sand that can be sustainably mined from these habitats, and the types of ecosystem services that should be assessed before a permit for sand mining is granted. What species of flora and fauna must be considered in the baseline studies? Are there space or time limits that should be imposed on mining projects to make it as likely as possible that the ecosystem can fully recover? The Guidelines as written do not offer sufficient information to address any of these questions.

JET is of the view that in order for the Guidelines to capture (1) the requisite detail, and (2) the nature of studies which should be required before a permit for sand mining is granted, the Guidelines should be written by a **team with expertise in coastal geomorphology, oceanography, and/or ecology**.

The Guidelines as written do not require an Environmental Impact Assessment (EIA) to be done before a permit for sand mining is granted. It provides (p.2) that an “Environmental Impact Assessment **and/or** other relevant technical studies be conducted.” We do not support the position that an EIA can be substituted with a ‘technical study’. If beach sand quarrying is being contemplated, then a high standard of environmental study must be done to evaluate all impacts; an EIA must be mandatory.

JET is also concerned to read under point 3 on (p.2) that the Guidelines are “flexible”. If that is the stated position of the Guidelines, they will not be adhered to, whether by regulators or proponents.

Specific Comments from the Text

The concept of retired sand is not one seen in the coastal or sand mining literature. The Guidelines describe it as follows (p.1):

“Retired sand is defined as sand that is no longer available in the nearshore sediment budget and whose removal from dunes, near-shore banks or bars or lower sea-bed stands either recent or relict, dating from the Pleistocene, will not negatively impact the width of the coastal beach.”

We request the opportunity to examine the literature used to arrive at this concept of “retired sand”. We question the existence of this concept and the existence of such “retired sand” which it appears would be located at least near dunes and near-shore banks, but no longer serving a specific ecological or geomorphological function. If nothing else, it seems the bar for declaring

sand “retired” should be very high and the methods for assessing it as such should be extremely rigorous. We do not find the basis upon which sand is deemed to be retired or the criteria for declaring same in the Guidelines.

We agree with the following statement, but it seems to contradict the notion that there are isolated sand deposits that can be mined, which the Guidelines clearly suggest is the case (p. 3):

b. *“During the preliminary assessments, beaches, sand dunes and offshore sand banks should be considered as **one system**, since they are **inter-dependent habitats**⁵. They **should not be viewed in isolation** from other components of the coastal system.*

⁵ *Cambers, G. (1998). Manual for Sand Dune Management in the Wider Caribbean (p. 6). United Nations Environment Programme.”*

The fact that sand sources are connected reduces the likelihood that they are “retired” and available to be mined. There must be a detailed assessment of the other ecosystem services that these sand deposits are performing before a permit for sand mining is granted. Dunes certainly play a critical role in shoreline stability and are important in filtering water and preventing saltwater intrusion, particularly in the face of rising sea levels associated with Climate Change. Land-locked sand may play a similar key role in maintaining groundwater supplies.

3.1 Marine and Beach sand resources states:

“A technical study will be necessary to identify the deposits of sand within the coastal zone and marine territory around the island. The study should estimate the available reserves and the economic feasibility of mining/ quarrying operations. Where interested parties identify these deposits for exploitation, they would be required to undertake the necessary studies to the satisfaction of the NRCA.”

This is very broad and does not mention who is to carry out this study. It cannot be left to “interested parties”, who will inevitably only be prepared to conduct studies regarding the specific deposits of their interest, which would breach the previous position of the Guidelines that sand resources are interconnected.

JET believes that a comprehensive study of Jamaica’s sand deposits should be carried out by the University of the West Indies as a matter of urgency.

3.1.1 Location/Siting: Development plans should be added

3.1.2 Ecological Assessments states:

“Ecological assessments must be conducted at both the source and recipient sites to determine the feasibility of the activity and also to determine the natural resources if any that would be impacted by the activity.” This is unclear and as worded, a simple list of any natural resources impacted would suffice. It is also not clear whether both an EIA and an ecological assessment is needed – surely a comprehensive EIA would include an ecological assessment?

There is a statement that the public interest must be “strongly considered.” More is needed – the public interest must be **protected**.

The Guidelines mention the importance of protecting water resources (p. 4):

- c. *“No natural water course and/or water resources should be obstructed due to mining operations⁶.”*

⁶ Singh, S., Sridharan, D., Lal, D., & Singh, D. (2016). *Sustainable Sand Mining Management Guidelines* (pp. 73-78). New Delhi: Ministry of Environment, Forest and Climate Change.”

The focus appears to be on obstruction. However, a deeper understanding of the relationship between water resources and sand sources should be reflected in the Guidelines. No mining activity that impairs the ability of sand deposits to protect freshwater resources should be permitted. The studies conducted to assess groundwater flow and coastal aquifers must be conducted well in advance of any authorization for mining.

We do not believe the following outcome is possible (p. 4):

- e. *“Sand dunes: Alteration on any coastal sand dune and or Pleistocene sand dunes shall be such that it does not:*

- *Impair the natural functions of the dune (Flood and erosion protections, sand replenishment, habitat, aesthetics)*
- *Destroy vegetation growing on the dune*
- *Significantly alter the contour of the dune⁸*

⁸ *Guidelines for the Permitting of Activities Which Encroach into Coastal Primary Sand Dunes/Beaches. (1980) (pp. 11-13). Newport News, Virginia.*

If sand dunes are a site of interest for quarrying, the implications of this activity must be assessed before a permit is approved, as sand dunes provide an important natural coastal flood defense.”

JET cannot envision a situation where an assessment of quarrying a sand dune could conclude that doing so would not affect the functions of the dune, and/or affect the contours of the dune. In this regard, **dune sand mining should never be permitted** as there is no coastal dune in existence that is not serving an important coastal ecosystem function.

There is no specific guideline or discussion for the inland sand sources. They are mentioned in the Guidelines but not developed further in the text.

JET is concerned about the exclusion of fishing implications in the Guidelines. Fishing, both traditional and commercial, is a key activity that may be affected by sand bank mining through the destruction of benthic fauna causing erosion, destruction of mangroves, nursery grounds, and reproduction grounds essential for fish breeding. A particular risk to fisheries and fish nurseries is presented by the extraction of sand from underwater banks.

3.1.3 Permit conditions includes the following statement:

“Restoration of flora affected by mining should be done immediately.” What does this actually mean? That the moment a beach vine or cactus is damaged or removed, it should be planted somewhere else immediately? Or that restoration is to begin as soon as mining is completed?

Jamaica Environment Trust
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