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6 November 2012

Mr. Danier Lightbourne
Physical Planning Board
c/o Physical Planning Department
Providenciales
Turks & Caicos Islands

RE: PR11342 "Maintenance Dredging of the Leeward Navigation Channel and Marina"

Dear Mr. Lightbourne:

The Turks & Caicos Islands Government was very forward thinking in the mid-1970's when it established the National Marine Parks system to protect a large proportion of the coral reefs around the TCI. The result has been that the TCI remains one of the top-rated dive, snorkel and beach destinations in the Caribbean and Tropical Atlantic Region. Without healthy barrier reefs, beautiful Grace Bay would not exist, the conch and fishing industry would collapse and tourists would be less inclined to visit.

Dredging in the Leeward Going Through area in the mid-2000's caused major silting and sedimentation on the reefs of Grace Bay. This produced substantial adverse effects on the reefs and we are finally now seeing a recovery of those reefs as evidenced by the return of healthy, albeit small, growths of staghorn coral (*Acropora cervicornis*), which is an early indicator species of the health of a coral reef.

According to the World Resources Institute report, "Reefs at Risk in the Caribbean," many coral reefs around the Caribbean and tropical Atlantic are at high risk of sedimentation due to coastal development and run-off, which poses a major threat to the health of these coral reefs. In this report, the reefs around

Provo are listed as being at moderate risk due primarily to coastal development, so there should be an effort to minimize any extra sedimentation pressure on them.

The area proposed for dredging in the Leeward Approach Channel is in close proximity to frequently used snorkel reefs and dive sites and these will likely be unusable during the three to four months of dredging (and for years after due to siltation and sedimentation given past experience) putting more pressure on the health of other snorkel and dive reef areas.

The problems caused by dredging are manifold:

- Siltation and sedimentation smothers corals and kills them. Dead coral is not an attractive recruitment area for reef fish, who depend on it for food and protection. If dredging occurs during breeding season for fishes, mollusks and other marine species, silt and sediment can bury and smother eggs reducing the populations of fish, conch and other marine species. If dredging occurs during coral spawning season, the coral spawn could be adversely, affected as would the health of the reefs. This impact is clearly prohibited in the National Marine Parks under Section 3(c) of the National Parks Regulations, which prohibits "the destruction of, or damage or injury to, any animal or plant." In addition, it is contrary to intent of the UK's Foreign Commonwealth Office's new Overseas Territories Environment and Climate Fund.
- Siltation and sedimentation can also kill off seagrass beds, which are the home for many juvenile fishes and provide a source of food for green sea turtles, which are prevalent around the TCI.
- Silt and sediment accumulations can alter the abundance and composition of the benthic species decreasing biodiversity and potentially adversely impacting commercial fisheries. (Fortes, M, The Effects of Siltation on Tropical Coastal Ecosystems, in Oceanographic Processes of Coral Reefs; Ewa-Oboho, IO. West Africa Journal of Applied Ecology, Vol. 9, Jan-Jun 2006; Rogers, CS Responses of coral reefs and reef organisms to sedimentation, Marine Ecology Progress Series, Vol 62, pp185-202, 1990).
- Dredging can cause a large nutrient release event as dead organic matter buried in the sediments are disturbed creating the potential for major algae blooms, which decreases water clarity and oxygen levels adversely affecting other marine inhabitants such as fish, coral, sea grass.
- A large nutrient release can also result in a noxious odor from the dredged materials, which would affect the quality of life of those living nearby in the Leeward area and potentially around many resorts on Grace Bay given the prevailing Easterly winds.
- Siltation and sedimentation reduce visibility for scuba divers and snorkelers who are major contributors to the revenue generated for the island.

- Dredging could also result in the potential release of toxic materials trapped in the dredged sediment. Given that this has been a highly trafficked area for many decades, it is unknown the extent of contamination that could exist in the sediments that would be dredged.
- Dredging in the National Marine Parks is proscribed and the proposed dredging is to occur within the boundaries of the Princess Alexandra National Marine Park. The National Parks Regulations Section 3(d) is the relevant regulation and violations carry a fine of $50,000 or a year in jail or both.
- Major dredging, as proposed, can change water flow characteristics, which can result in erosion and destruction of nearby islets and mangrove stands. Mangroves are important nursery areas for many commercially attractive species such as snapper, grouper and others.
- Dredging in this area will likely need to done on an ongoing basis since the area historically has been an area where sand from normal tidal flow and storms has accumulated, making the effects of dredging a chronic problem for Grace Bay.
- Since, apparently, no environmental impact assessment has been conducted, the impact of the dredging on habitat and/or breeding grounds for some marine species is clearly unknown.

We strongly urge the Physical Planning Board to complete the following before a decision is made about approving this dredging proposal:

- Conduct an assessment of the environmental impact, which is required by National Parks and Protected Areas Ordinance Section 4(4). This assessment should include the following components:
    - Evaluation of marine life present in the proposed dredging area.
    - Assessment of current turbidity and sedimentation occurring near the proposed dredging area (to serve as a baseline, should the dredging be approved), including Grace Bay at several distances from the proposed dredging site, as well as south of Leeward Going Through at several sites.
    - Evaluation of nearby reef health using standard assessment tools.
    - Evaluation of species diversity and abundance on nearby reef systems using standard assessment tools.
    - Evaluation of the contaminant levels in the bottom material that is proposed to be dredged to a depth consistent with the proposed dredging depth.
    - Assessment of the potential effect on the nearby mangrove stands, such as along the shore of Mangrove Cay.
    - Assessment of the turtle population residing in the area near the proposed dredging site.
- Conduct an assessment of the current flow rates and directions in the proposed dredging area to better understand the likely flow of silt and sediment.

- Conduct an assessment of the potential financial benefit of large yachts docking in Leeward vs. the potential environmental cost to watersport operators and hoteliers in the Grace Bay area.

The Turks & Caicos Reef Fund is strongly opposed to the dredging proposal,as it will create a chronic siltation and sedimentation problem adversely affecting the health of the reefs off Grace Bay. This will ultimately adversely affect the attractiveness of Grace Bay and Provo as a tourist destination and threaten the economic health of the TCI since Provo and Grace Bay are the biggest sites where tourists congregate. If, however, the Physical Planning Board does approve this proposed dredging, the following conditions should be attached to the approval:

- Follow industry best practices for low silt and sediment generation from dredging, including such things as:
  - Low sedimentation dredging techniques.
  - Silt curtains.
  - Gunderbooms.
  - Mechanical dredge operational controls (e.g., increase cycle time, type of dredge used, etc).
  - Time of year restrictions to minimize the impact on marine species breeding effects (many marine fish and mollusk species breed in the spring and coral spawns in the late summer, generally in August)
- Require DEMA to identify and designate an independent organization qualified to continuously monitor the effects of silt and sediment generation on the areas surrounding the proposed dredging area (with limits established that will trigger a stoppage of dredging if the limits are exceeded). Water turbidity, sedimentation and other measures should be monitored at various distances from the proposed dredging site, especially in ecologically sensitive areas.
- Require a performance bond on all contractors performing the work to insure the work is done in a proper manner, and completed in accordance with all regulations and approval conditions. This is necessary to ensure the islands do not have another Ritz Carlton, Dellis Cay or Toscana as a sad reminder of projects gone awry.

Thank you for your consideration.

Best Regards,

Don Stark
Chairman

David Stone
Deputy Chairman

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Turks & Caicos Islands Tourist Board

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