speseas.org
info@speseas.org
868-689-SEAS(7327)

16 June 2023

Ms. Jenell Partap
Corporate Secretary,
Environmental Management Authority
#8 Elizabeth Street
St. Clair, Port-of-Spain
Trinidad and Tobago
(submitted via email to CorpSec@ema.co.tt)

RE: FCL Financial Environmental Impact Assessment for the Establishment of a 500-room resort at Tyson Hall, Tobago (CEC 6143/2020)

Dear Ms Partap,

We are pleased to share with you our commentary on the Environmental Impact Assessment for the establishment of a 500-room resort at Tyson Hall, Tobago (CEC 6143/2020), which was made available for public viewing on the EMA's website on 15th May 2023.

SpeSeas is a non-profit, non-governmental organisation promoting positive change and sustainable use of our ocean resources using science, advocacy, and outreach. Our objectives are to:

- Undertake research on coastal and marine ecosystems that informs and guides management, aids in understanding the relevant human impacts, and directs the development of innovative solutions.
- Improve stakeholders' understanding of their relationships with coastal and marine ecosystems.
- Advocate for integrated management, effective governance, and stewardship of coastal and marine ecosystems and the resources they provide to all sectors of society.

Consent is granted for sharing the opinions expressed.

Sincerely,

Ryan Mannette
Director/Corporate Secretary,
SpeSeas
(868) 689-7327

https://speseas.org
info@speseas.org
(868)620-2896

SECTION A: GENERAL COMMENTS

The following represents an overview of our full assessment. A detailed description of our concerns is presented in Section B.

In our assessment we have found:

1. An attempt to portray the proposed development as an ecotourism resort built with the environment in mind, however although there is some attempt to mitigate impacts and "build with nature", the scope and scale of the proposed resort is not in line with an ecotourism product, and many impacts are not adequately mitigated.
2. Inaccurate and inadequate descriptions of the baseline environment, which limits the quantification of impacts.
3. An incomplete project description, which limits the impact assessment.
4. Project activities such as coastal protection structures which are mentioned almost in passing in the mitigation chapter but not described in the project description and which were not included in the CEC application. These are designated activities under the CEC Designated Activities Order and require full scrutiny.
5. A subjective impact assessment not supported by sufficient data.
6. The application of mitigation measures which have not been demonstrated to be effective or practical, and do not meet best international practice, including some which are not under the control of the project proponent and have not been committed to
7. An inadequate analysis of alternatives that does not address the full range of alternatives as required by the TOR.
8. An insufficient justification of the project that lacks evidence of the proposed benefits
9. Stakeholder engagement which failed to meet the TOR requirements and failed to adequately engage with members of the public and key stakeholders such as environmental NGOs.
10. Impacts to the environment, which are in contravention of the Environmentally Sensitive Species Rules (Refer to Part III (j) and (k) of the ESS Hawksbill Notice), and not aligned with national policies or international treaties which call for the protection of biodiversity, and are not adequately mitigated.

SpeSeas recognizes that negative environmental impacts are to be expected with any development project, and that the benefits and costs must be weighed. However, in our assessment, the development and operation of the proposed project will result in significant negative impacts to the immediate environment and associated sensitive marine areas that are not commensurate with the proposed benefits. The scale and scope of the proposed project is not compatible with the sensitive nature of the site including the unique terrestrial ecosystems, nesting habitat for hawksbill turtles, and the nearby seagrass beds and coral reefs. These ecosystems while they may be degraded, still provide critical ecosystem services and with effective conservation and management can be restored. Finally, the project is not in line with the Tobago Tourism Agency's strategy for development of tourism in Tobago.

https://speseas.org
info@speseas.org
(868)620-2896

In light of this, in our assessment, the development of the proposed hotel as described in this EIA is not acceptable and should not move forward.

We urge the EMA to:

- Apply the precautionary principle.
- Uphold Trinidad and Tobago's commitments to relevant international conventions concerning the protection of biodiversity.
- Uphold Trinidad and Tobago's National Environmental Policy, National Wetlands Policy, and the Environmentally Sensitive Species Rules and designation notices.
- Uphold its own mandate to conserve our natural resources.
- Give due consideration to the recommendation under the National Protected Areas System Plan to designate the area as a Sustainable Use Reserve due to its littoral forests, swamps, seagrass and importance to migratory birds.
- Provide another opportunity for public review and comments on the EIA in the future when the deficiencies have been addressed.

SECTION B – ITEMIZED COMMENTS

1. Legislative and Regulatory Considerations

General Comment:

This section is more a history lesson and a summary of policy regulations and limits. Absent is how exactly these policies are relevant to the project. The NEP (2018) speaks specifically to the following: "It is Government's policy that there will be no net loss of wetlands and their function on publicly owned wetlands and waters." However, there is no mention of this in the section. According to the RAMSAR convention on wetlands, mangrove swamps, coastal wetlands (including coastal lagoons), rocky shores, and coral reefs are all considered as wetland. The wetland may also incorporate coastal zones adjacent to the wetlands. The National Wetland Policy also defines wetlands based on the Convention on Wetlands definition which includes marine areas up to 6 metres depth at low tide.

Furthermore, the NBSAPs also have priorities to reduce habitat loss of all natural habitats, including forested areas and marine habitats.

In our opinion the hotel development is not aligned to these policies.

This section needs to be re-written to draw proper reference to the policies as they relate to the hotel development.

Page 57 - *1.1 National Environmental Policies*

The National Wetlands Policy is absent from the list of policies relevant to the hotel development.

https://speseas.org
info@speseas.org
(868)620-2896

Page 60 1.1.3 *National Protected Areas Policy, 2011 (NPAP)*

Under this policy, Kilgwyn wetland qualifies for consideration for declaration as a Special Conservation Reserve:

"The Government shall designate unmodified or slightly modified terrestrial, marine or freshwater areas or combinations of these as Special Conservation Reserves. These areas shall be reserved primarily to protect the long-term ecological integrity where natural forces and processes predominate."

The National Protected Areas Systems Plan is mentioned but no mention is made of the recommendation to protect Kilgwyn as a Sustainable Use Reserve, due to its littoral forests and swamp, seagrass, and importance to migratory birds.

Pg 89 - Section 1.2.11 Environmentally Sensitive Species (ESSs)

This section is not up to date with the designation of the two native monkey species as ESS and the species name used for the Red Howler Monkey is incorrect.

3. Project Description

General comment: The figures used throughout require a more detailed legend to appreciate what is shown.

3.1.1.1 Description of Hotel I and II

Fig 8 – 3.3 (pg 136) shows a 30 m building setback from the property boundary. It is good that they are taking the initiative to institute a setback however this setback should be measured not from the property line (which may indeed fall in the sea), but at least from the line of permanent vegetation at or above the high water mark. Furthermore, due consideration should be given to an even larger setback, considering the dynamic windward coast, the sensitivity of the beach due to the presence of sea turtle nesting, and considering the anticipated impacts of climate change and sea level rise which may result in significant erosion along this windward coast. We should learn from the example of islands such as Barbados, where much of the existing coastal construction was built with inadequate setbacks from the high water mark, and they now pay the price of beach loss and damage to property boundaries, and loss of safe nesting habitat for hawksbills (see Daniel and Horrocks 2022).

It also appears from Fig 11-3.6 (pg 153) that significant coastal vegetation will be removed and that there are some small round structures and a number of pools which do not adhere to this setback and this is a concern that should be addressed. Structures close to the beach have the potential to negatively impact natural coastal processes and require vegetation

https://speseas.org
info@speseas.org
(868)620-2896

clearance along the beach, and also have a high potential to negatively impact turtle nesting. Hawksbill turtles which are known to nest at this beach exhibit nesting behaviour where they seek out nesting sites at the extreme back of the beach under vegetation and benefit from the shade of the coastal vegetation. Removal of coastal vegetation degrades their nesting habitat – there will be less suitable area available for successful nesting. Removal of vegetation also can contribute to issues with artificial lighting at the hotel since the vegetation would provide a natural barrier to any artificial light and thus reduce the chances of turtles being misoriented and heading too far inland. Finally, hard structures along the beach will become barriers or obstacles to the turtles and can result in their injury. Sea turtles may also end up falling into pools if these are at or close to ground level (hawksbills are capable of climbing up steps). Furthermore such structures are at risk of impacts due to sea level rise, storms or extreme wave events and erosion. ALL structures should adhere to a strict setback from the coast and all efforts should be made to maintain as much coastal vegetation as possible along the length of the beach, and as wide as possible to maintain shade and help shield lights from the hotel impacting the beach. A few narrow paths under the trees should be sufficient to allow for access to the beach. These potential significant impacts need to be considered and the project activities re-considered to avoid and reduce these.

Ref: Daniel, C.D. and Horrocks, J.A. 2022. Threats to sea turtles from coastal engineering in Barbados. Barbados Sea Turtle Project, University of the West Indies, Cave Hill Campus, Barbados, 28 pp.

3.1.2 Site Development Strategy

Pg 137 Section indicates: "*It is the intention of this master plan to maintain the beach as is and avoid major beach work to take place to preserve and enhance the natural beauty of the beach*". However, this is not borne out by the various figures and other information presented which suggest the placement of structures on the beach and removal of significant vegetation from the beach. Furthermore in other sections of the report we see various mentions of beach and shoreline works (see other comments below). These discrepancies need immediate attention.

3.1.10 Landscaping

This section states: "*Existing vegetation at the southern edge of the property will be preserved as a natural barrier between the beach and the existing dune. Impact to this green barrier will be minimized to only allow access points into the pool decks*." However Fig 11 – 3.6 (pg 153) shows several large gaps where coastal vegetation will be removed, such that less than 50% of the coastal vegetation remains intact. This is unacceptable and can result in de-stabilization of the dune and many impacts to nesting turtles. There is no need for such wide gaps.

3.2.5 Equipment and Materials Main Hotel Buildings

Pg 160. This section lists equipment and materials including excavators, boulders and suction dredge pumps, needed to "*complete the proposed beach and shoreline works*", however it was previously stated in Section 3.1.13 (pg 149) that "There are no anticipated beach works as a part of this project". Furthermore, no beach works have been described

https://speseas.org
info@speseas.org
(868)620-2896

anywhere in Section 3. This needs to be addressed and clarification provided regarding the extent of any proposed beach works. Any beach works at this sensitive turtle nesting site are unacceptable.

4. Definition of the Study area

This section refers to *Avicennia nitida* on the site – we believe this should be *A. germinans*.

5. Description of the Environment

General comment: For the flora and fauna sampling more sample stations should have been used to adequately describe the community. The flora sample stations appear to be restricted to the mangrove and the northern edge of the site, with no sample stations in the footprint of the actual development. Given the importance of the coastal vegetation a detailed study should be completed of the vegetation along the backshore and the species in the footprint of the development.

General Comment: There is no information about the proposed designation of the area as a Sustainable Use Reserve under the National Protected Areas and Systems Plan, or discussion of the value of the area in this respect as a unique representation of littoral woodland and basin mangrove in Tobago. This should be addressed.

5.1.11.2 Dry Seasonal Forest and Disturbed Agricultural/Shrub Vegetation

Pg 293 – The information provided about native bamboo is misleading. The report authors used an online source verbatim ("*At present, the Caribbean and West Indies are known to have 4 genera and 36 species of native woody bamboo*" - https://www.guaduabamboo.com/blog/bamboo-species-of-the-caribbean-and-west-indies) but failed to provide the full context that these native species are all small-sized bamboos, and the dense clumps present in the study area are likely the Asiatic species *Bambusa vulgaris*.

5.1.11.3 Rapid Assessment of Forest Habitats (2022)

Emergent Wetlands on Pg 298 States "*The main lagoon was once connected to the sea by an ephemeral canal which has now become cut off from the sea by sand deposits at the mouth*". However the presence of tarpon suggests that there must be some connection to the sea, at least intermittently to allow this species to persist. Given the importance of hydrology and flushing to the health of mangroves, and the potential for this development to interfere with the existing hydrology at the site, it is critical to ensure that more detailed studies are conducted to understand the hydrology of the area using measurements such as hydroperiod and salinity. This should be carefully monitored during and after any interventions in drainage etc that may impact the swamp.

https://speseas.org
info@speseas.org
(868)620-2896

5.1.11.7 Natural Mitigation

Pg 362 states: "*The Littoral Woodland will be maintained to preserve the protective cover it provides to the beach berms and to prevent beach loss due to coastal erosion. A few of the trees will be culled (in particular the toxic Manchineel (Hippomane mancinella)), to provide appropriate access to the beach. To compensate for the loss of these trees, native woodland species will be incorporated into the landscaping and ornamental garden layout for the property.*"

The area of littoral woodland is not just a narrow strip of vegetation immediately behind the beach but a larger area of forest that will be impacted by the hotel construction. As seen in the project description, most of the littoral woodland will be lost, including more than 50% of the vegetation along the length of the beach. Once again there is a lack of consistency in the description of the project activities and extent of impact. While Manchineel are toxic, they are an important component of the native littoral vegetation and there should be no reason to target this species for removal. As practiced elsewhere in Tobago, signage can be used to raise awareness about the trees and precautions that should be taken.

Sea turtles - Pg 308 (Seagrass Beds and Algal Mats), and pg 374 (Section 5.2.6 Ecotourism)

Some mention is made of the presence or potential presence of sea turtles in the study area however given the status of these species as ESSs this deserves more attention. Furthermore some inaccurate statements are made with respect to these species and their habitat use.

Sea turtle species expected to frequent the offshore habitat include Greens (*Chelonia mydas*) which feed on seagrass and algae, and Hawksbills (*Eretmochelys imbricata*) which feed on sponge. Indeed both species have been recorded on the nearby Flying Reef dive site (Cazabon-Mannette 2017) and the habitat suggests they would both also forage closer to shore. One anecdotal report is mentioned claiming a decrease in the incidence of sea turtles but little stake should be placed on comments from a single individual.

With respect to nesting, the report mentions the possibility of hawksbill and leatherback nesting at this beach however the conditions are not considered suitable for leatherbacks and we are unaware of any record of leatherback nesting at this beach. Leatherbacks require high energy nesting beaches with a deep approach and rarely would venture to cross a shallow reef to nest. Hawksbills however are known to nest on this beach, and it is possible that the beach may occasionally host other hard-shelled sea turtles.

On pg 374 it is stated: "The Kilgwyn Beach, however, has narrowed overtime due to the impact of erosion from the swells of the Atlantic Ocean, likely reducing the nesting success for sea turtles." This is pure speculation and is not supported by any data and is not consistent with an understanding of the nesting habits of hawksbills. Hawksbills are known to nest successfully on very narrow beaches since they prefer to nest under the backshore vegetation. This statement and the general information presented on sea turtles should be revised and updated.

Ref: Cazabon-Mannette, Michelle. 2017. Ecology and use of nearshore foraging sea turtle populations around Tobago, with an emphasis on Hawksbills. PhD Thesis. The University of the West Indies, St. Augustine.

https://speseas.org
info@speseas.org
(868)620-2896

6. Analysis of alternatives

This section is woefully inadequate and fails to meet the requirements as described in the Final TOR. Only three broad alternatives are identified, and they are not fully examined. No clear criteria were identified and no scoring was used to compare the alternatives. The final choice of preferred alternative is not supported by any clear reasons/explanation or justification as required under Section 6.4 and 3.1 of the TOR.

Section 6.4 of the TOR identifies the range of project and process alternatives that should be examined and these have not been addressed.

The Analysis of alternatives should be re-examined to align with the TOR requirements and should include analysis of alternatives such as:

- The siting of the hotel and various other structures
- The scale and scope of the development

Page 395 *Biological benefit of the no action alternative: Mangrove forest and associated fauna remain undisturbed.*

Should state: Mangrove forest, littoral forest, and neighbouring seagrass and reefs and their associated fauna remain undisturbed. Furthermore, ecological functions and ecosystem services would also be conserved.

Another benefit would also be abiding by the national policy and programmes on wetland conservation for Trinidad and Tobago (2002) with objectives to encourage the management of all privately owned wetlands to promote the protection of their functions. Supporting international conventions – Cartagena Convention, and the RAMSAR wetlands conservation convention.

Page 396 *The advantages of the No-Action Alternative include: Human/Social*

Should include continued access for existing socio-economic activities related tourism (bird watching etc.

Page 396 *The disadvantages of the No-Action Alternative include:*

Biological: No provision of improved drainage; persistent flooding continues and terrestrial erosion

The mangrove system is not necessarily in need of "improved drainage" rather the existing drainage installed to reduce flooding in the surrounding areas (airport runway, agricultural lands) is likely to have contributed to the degraded system. Wetlands should be allowed to dynamically respond to changes in the environment, especially during seasonal change where natural flushing into the surrounding marine environment would have occurred on its own. Therefore, the installation of any additional hardened structure is not necessarily an advantage to the wetland.

https://speseas.org
info@speseas.org
(868)620-2896

Another disadvantage of the No-Action alternative is described as:

Biological: No connectivity to the marine environment; nutrient poor recharge of marine environment will persist.

This conclusion needs to be revised as it makes no sense. Whether the mangrove is connected or not, there is still run-off to the marine environment from onshore, and nutrients are not a limiting factor to a healthy marine environment. On the contrary, high nutrient input can be a problem. Coral reefs and seagrass do not thrive in nutrient rich environments, because the nutrients result in algal blooms. In fact, Flying Reef is currently negatively impacted by macroalgae overgrowth as a result of too much nutrients. Furthermore, there is no evidence that there is no connectivity, especially considering the presence of tarpon reported in the mangrove which suggests there must be some level of connectivity, at least intermittently.

Page 398 *The advantages to this Alternative include:*

Biological - Improved nutrient output to nearshore environment

It is not clear what is meant by "improved nutrient output". In light of the disadvantage for the no action alternative which was identified as "nutrient poor recharge", it appears that the authors are implying nutrient rich discharge is a positive outcome of the hotel. Please explain and justify this assertion, considering the negative impacts that can result from high nutrient loads.

Increased nutrient output associated with a hotel development is largely because of a combination of (1) poorly maintained treatment facilities, (2) the natural increase of direct run off from hard surfaces of grey water, fertilizers for landscaping and cleaning chemicals.

In our opinion this supposed disadvantage of the no action alternative and corresponding advantage of the hotel are not accurate and should not be considered as part of the analysis of alternatives.

Page 398 *The disadvantages to this alternative include: Physical*

Should include permanent alteration to the hydrology of the area resulting in potential degradation or loss of adjacent terrestrial and marine ecosystems

7. Stakeholder Engagement

Timing of the consultations

The CEC application was submitted in 2020, and the Draft TOR was dated 7th December 2021. A combined meeting to review the draft TOR and for the first consultation on the EIA was held on 7th September 2022. The second consultation on the EIA was only a few months later on 5th December 2022. The timeline raises concerns.

The TOR states (Section 7.3) that "a first round of engagement exercises must be held prior to initiation of studies for the project". It should be noted that baseline studies were initiated in the dry season of 2022 (March - May) – prior to finalisation of the TOR and prior to the first round of engagement exercises.

https://speseas.org
info@speseas.org
(868)620-2896

Advertising

Section 7.5 of the TOR states "each engagement exercise must be prominently advertised to the public and in the local areas".

Section 7.9.2 of the TOR specifies the advertising requirements for public meetings which includes "social media, local media and at least one national daily newspaper", and the use of flyers "placed at popular stops within the communities".

However we note that the first public consultation was not advertised by any of these mechanisms as required by the TOR (Table 60 – 7.2, pg 405 and Table 61 – 7.3, pg 411), and is described as a focus group consultation in the letter presented on pg 407. And while a newspaper ad was placed for the second consultation, no flyers or other forms of media were used aside from radio announcements.

Public Perception Survey

A public perception survey was conducted and the results presented. However it is not clear how this survey was distributed and whether or not it is likely to represent the full spectrum of views of members of the public or whether it may be biased towards that part of the public who are in greater support of the project. Please indicate how the survey was distributed/advertised. If on social media, what platforms were used? Were the posts boosted? What was the target audience? No questions were asked to identify specific concerns about the development. Was any information on the project proposal or baseline environment provided to respondents prior to asking them their concerns?

Greenwashing

Page 412 "*Dr Ramsook addressed Mr Elliot's concerns and mentioned that the plans are not to remove the wetlands but to do development around it; Build with Nature (BwN). The plan is to make this resort into an eco-tourism resort. He advised that the TOR addresses eight (8) items in the EIA and surpasses the requirements of the EIA*."

Eco-tourism is at odds with an all-inclusive 500 room resort. Nature is at the centre of ecotourism, not on the periphery. The comments from Dr Ramsook suggest greenwashing.

Refs:

Kumar, Ramesh, and Rakesh Kumar. "Green marketing: Reality or green washing." Asian Journal of Multidisciplinary Studies 1.5 (2013): 47-53.

Gałecka-Drozda, Anna, et al. "Potential nature-based solutions and greenwashing to generate green spaces: Developers' claims versus reality in new housing offers." Urban Forestry & Urban Greening 65 (2021): 127345.

Targeted Stakeholders

Appendix G Table 1 lists the stakeholders who received invitations to the first consultation. There are no civil society organisations associated with matters of the environment such as Environment Tobago or Council of Presidents of the Environment included and this is a major oversight. How did the applicant identify interested stakeholders?

https://speseas.org
info@speseas.org
(868)620-2896

8. Identification and Assessment of Potential Impacts

General comment:

There is no consistent mention of the level of impacts during the operational phase of the hotel related to day-to-day activities and maintenance activities (every 5- 10 years?), along with seasonal considerations or with environmental conditions (such as the impact of dust and the forecasting of Sahara Dust levels).

Furthermore, the descriptions of the impacts were overly generalised with no reference to literature, minimal reference to specific geographic location for activities within the site or temporal criteria (e.g. seasonal changes, length of time for specific activities to assess the extent of impacts etc.). The activities described are vague, and sometime mentioned in an adhoc manner, such as the shipping of materials by sea or the potential installation of moorings, breakwaters, groynes or other structures in the bay.

Page 436, General comment: Many of the ratings are not backed by references to justify their ratings for VR sensitivities.

Page 437 VR - Global climate; VR sensitivity - Moderate

We would argue that the VR sensitivity for Global climate will be high for small island and coastal areas that have been deemed (globally) as the most vulnerable to climate change owing to the exposure to extreme storm events, sea-level rise, and several other climate driven ocean disasters (coral loss and loss of coastal protection). This coupled with sensitivity of the ecosystem and the existing chronic stressors would create a high sensitivity.

Page 437 – Category: Land

Should include permeable substrate/ surfaces which is critical for the natural exchange between the wetland and surrounding marine environment. Why? The increase in hardened structure will increase the volume and speed of surface run off and concentrating effects of run off pollutants (oils/ waste etc). Coastal development, including the removal of coastal habitats – back beach habitats, dunes, wetland, and terrestrial vegetation - is associated with the increase in run off of sediments that smothering of nearshore habitats (seagrasses and coral reefs) but also chemical and nutrient pollutants.

Page 437 - Surface Water (Freshwater Environment) | High | Potential contribution to degradation of the adjacent waterways and marine water quality from solid waste and wastewater generation.

Need to include particulates/ sediments that also alter the hydrology of the water course.

Page 438 *Bird communities | Moderate | Modification of 13.28 Ha of niche habitats (i.e. scrub mangrove, herbaceous wetland, ponds, and littoral woodland).*

We would suggest that this sensitivity would be high, as birds, especially nocturnal, migratory, and marine birds navigate to and from the sea. Many bird species suffer from

https://speseas.org
info@speseas.org
(868)620-2896

increased collisions with buildings close to nesting/ roosting habitats, in addition to the artificial lights.

Page 438 *Ecology and biodiversity | Local and regional communities in the Southwest Tobago area | High | Provides community and services for Tobagonians. Quality of life for local and regional communities.*

It appears that the item "local and regional communities in the Southwest Tobago" should instead be listed under the category of "Human Environment".

While biodiversity value are mentioned under Ecology and Biodiversity, there is no mention of the critical ecosystems services which would be lost including coastal stabilisation and a nursery for marine fauna.

Page 440 *Shipping movements, (as materials and equipment will be initially transported by sea).*

The shipping movements mentioned have not been detailed. We assume such shipping will not be directly to Kilgwyn Bay as shipping materials into this bay is not feasible at all. Kilgwyn Bay is shallow with an extensive pavement reef with lots of submerged coral mounds that extend close to or breach the surface. This combined with a fairly exposed wave and wind environment just offshore makes navigation in this bay is only done by small craft vessels and only attempted by experienced fishers. Furthermore, will directly impact the seagrass beds present in front of the site.

Page 442 - *Dust Generation*

Need to mention how the dust generation will impact during the operational (maintenance) phase of the project and considers the season variations and environmental events, such as Sahara Dust. Will there be maintenance construction every 5 – 10 years?

Page 444 - *8.4.3.2 Visual*

The potential impacts of artificial lights on wildlife and particular nesting and hatching sea turtles are described and some mitigation measures are proposed. Overall, this section seems to be quite generic and not focussed to the species inhabiting the site. For example, what are the small mammals being referred to in the area? Yet, there is no mention on the potential impacts to the invertebrate beach life. For example, amphipods are known to forage and feed less on beaches with artificial lights.

Also, the impacts of the light during the operational phase are being underestimated, especially with respect to sea turtles which are very sensitive, and birds that return to mangrove habitats to roost for the night. Tall buildings and lights will not only obstruct but blind birds resulting in more collisions.

In our opinion the mitigation proposed is inadequate and we wish to see more strict measures to meet international best practice, especially for hawksbill nesting, including the following:

https://speseas.org
info@speseas.org
(868)620-2896

- Rather than use of "amber or red" lights which is ambiguous, only long wavelength light (560 nm or greater) should be used. However this is not the only action that must be taken. Long-wavelength lighting is still visible to sea turtles and if too bright, can result in negative impacts. Therefore the following additional measures are required to minimise light on the beach as far as possible.
- In addition to the use of directional lighting, lights should be of the lowest wattage/lumens possible to achieve the necessary light levels, and mounted as low as possible to achieve the desired purpose.
- In addition to the above, light should be minimised by installing the minimum number of fixtures required and light only the intended areas such as stairs or egress/ingress walkways required for public safety
- "Security" lighting should not be used.
- Coastal vegetation should be left intact as far as possible, leaving only small narrow openings for beach access. Coastal vegetation will help to shield the beach from lights.
- Strict measures should be taken to reduce light escaping from hotel rooms – ALL glass on seaside buildings be tinted.
- Lighting fixtures and lamps/bulbs should meet international Wildlife Lighting Certification Program standards which can be found at https://myfwc.com
- Full guidelines can be found from FWC Sea Turtle Lighting Guidelines (2018) available online at https://myfwc.com

The National Sea Turtle Task Force should have a role in approval and monitoring of mitigation measures used. NGOs with the requisite experience and expertise like SOS Tobago should also be consulted for advice on design and to monitor the effectiveness of the mitigation measures.

Page 446 - *8.4.4 Water*

This section is unclear on the level of impacts during each phase – preconstruction/ construction and operational. Only mentions high to moderate in the construction phase (in the operational section). Considering the permanent and extensive alterations of site, which is primarily a wetland, the activities should be considered to have high impact across all the phases. The hydrology of mangrove systems is extremely complicated and something that cannot easily be artificially replicated. Is there any information or modelling on the suitable placement of retention ponds, drains, the infilling, and the use of bioswales to maintain or improve the existing hydrological conditions of the mangroves? The reference of the use of the bioswales and introduced vegetation have been applied to city setting, this is a setting that is shared with a natural wetland (a natural bioswale) and a sensitive habitat.

https://speseas.org
info@speseas.org
(868)620-2896

Page 449 8.4.4.2 Marine Water Quality

The wetland system will be used as a natural filtration system which will be maintained to support the treatment of stormwater runoff and the filtering of sediment particulates and spill chemicals which may become entrained in surface runoff during the operation phase of the hotel.

Previous studies (IMA 2007) already identified much of the water present in the mangrove to be highly contaminated with sewage and chemical pollution from upstream contamination sources (airport and surrounding agricultural lands) that have resulted in a highly stressed and impacts system with significant nearshore pollution of the seagrass and coral habitats, especially in the wet season. The sediment outflow, especially during the rainy season smothers the seagrass and result in acute die off events. The EIA does not mention the impact of baseline conditions and the existing lack of management and how additional loads from the planned activities (construction/ operation/ maintenance) will exacerbate existing health of the mangroves.

Page 451 8.4.4.3 Bacterial Contamination

Ensuring that any domestic wastewater generated from the site is treated by the adjacent WWTP or on-site treatment with ultra-violet (UV) disinfection is crucial for reducing the human health and safety impacts.

Most wastewater treatments are mandated to consider water pollution associated with human health, rather than the health of the marine and lagoon flora and fauna, especially microfauna. Furthermore, wastewater treatment has long been an issue for many hotel establishments in Tobago. For example, mangrove die back in Petit Trou is likely associated with run off / chemical contamination. Self-regulation should not be allowed for these circumstances.

Page 452 *8.4.5.1 Bird Communities*

A total of 75 species of birds were counted in assessment conducted in 2007 (IMA).

Page 453 *The modification of 13.28 Ha of vegetation at the project site is not likely to result in the loss of local occurrences of the associated bird species. It is anticipated that the Friendship Wetland system and the offset Kilgwyn Mangrove stand (maintained by property owners) will support the relocation of obligatory wetland populations.*

What is this based on? Need some scientific references or justifications. Many other statements are not referenced and can therefore be unjustified opinions.

Page 454 *It is not likely that the loss of wetland habitat will have a significant impact on the fish and invertebrate fauna of Southwest Tobago. None of the freshwater fish or invertebrates collected were considered rare, endangered, or restricted in their range*

The justification here is solely based on the known biological range, but it does not consider or mention the potential environment impacts such as creating anoxic conditions due to limited circulation or the cumulative impacts of sedimentation of run off (even if described as temporary) that may result in die off of invertebrates and fish populations. Also, tarpons are a vulnerable species (IUCN).

https://speseas.org
info@speseas.org
(868)620-2896

Page 454 *The fish population present in Kilgwyn can migrate to the lagoon on the eastern extremes of the wetland system or remain within the proposed offset mangrove ear-marked for landscaping and habitat preservation.*

This is a big assumption; scenarios of slow but chronic disturbances can in fact result in suffocation and entrapment fish simply because they are too slow to respond or unaware of disturbances occurring beyond their periphery Furthermore, the lagoon has much lower connectivity with the coastal environment. The limited connectivity with ocean limits easy escape and relocation.

Page 455 *The significance associated with loss of fish and invertebrate diversity are considered to be low or minor in this context.*

We disagree with this statement. Mangrove fauna – vertebrate and invertebrates alike are responsible for maintain healthy sediment and water condition through recycling of nutrients, detrital formation, filtration etc. They are critical components of the mangrove foodweb, thereby maintaining a healthy mangrove habitat.

Ref: Nagelkerken, I. S. J. M., et al. "The habitat function of mangroves for terrestrial and marine fauna: a review." Aquatic botany 89.2 (2008): 155-185.

Page 455 Section 8.4.5.3 Other Faunal Communities

This section mentions the presence of Armadillo observed on site but this was not reported in Section 5. On the other hand Agouti were mentioned in Section 5 and not here in Section 8.

Page 457 *Given the context of the site and the sensitivity of the terrestrial habitats present (i.e. based on the services they provide in terms of coastal protection, flood reduction, biofiltration, habitat and resources for wildlife) it is expected that the overall impact of the project to terrestrial biodiversity (flora) will be moderate.*

Disagree. According to Thelen and Faizool (1980), Kilgwyn is home to the last remaining littoral forest on the island and because of this it was proposed as a scientific reserve in the 1980s. Therefore, the loss of this unique forest will have high impact.

Thelen, K.D.; Faizool, S. 1980. Plan for a system of national parks and other protected areas in Trinidad and Tobago. Technical Document, Forestry Division, Ministry of Agriculture, Lands and Fisheries.

Page 457 *should be noted that no impacts were deemed to have a synergistic property and as such this criterion has been removed. Nonetheless, the value of zero for synergistic effects was used when calculating the average of the supplementary criteria.*

It is highly likely that there would be synergistic impacts. For example the effects of water quality impacts along with hydrology re-arrangement can exacerbate one another. Also, what about the synergistic impacts with seasonal change or acute disturbance events? The

https://speseas.org
info@speseas.org
(868)620-2896

rainy season will result in much more flooding and flushing into the nearby marine environments and will increase run off and erosion of cleared areas.

Page 463 - *Burdening of the water supply in the area in the event of drought conditions.*

Water shortages and rationing occurs every dry season in the southwest Tobago, which is not even considered drought conditions. Therefore even without drought conditions the addition of a hotel in the area will further burden the existing water supply. This can have significant widespread social impacts on residents and businesses including existing hotels.

Page 467 – *Dredging impact*

This is the first time that dredging is mentioned as an activity with impact to the site. This will have high impact on the mangrove habitat through sudden and severe change to the mangrove habitat resulting in habitat removal - direct loss of mangrove forest – soil compactions and alterations in the hydrology of the system that may result in die back of mangrove in adjacent areas.

Page 470

Mangrove mitigation: Use of Solar power generation for an overall net positive reduction in CO2 emissions should be considered.

Not sure how this is relevant to mitigating mangrove loss especially considering that mangrove store and sequester significant amounts of carbon in their sediment and biomass.

Page 472 *Coral and sessile fauna species loss. Recommended mitigation: Coral Relocation and Fish Havens*

Coral relocation is not a realistic solution and reveals little knowledge of the coral ecology. Coral relocation is labour intensive, expensive and has poor success rates, as coral adapt to their surrounding environment as they grow.

Coral reef development at this site is 100s of years old and it is the reef structure (built up over that time) that is most critical in support of marine life. This structure is extensive in Kilgwyn Bay from the pavement reef that lines the shoreline, to the fringing reef about one kilometre offshore, and in between these two extremes are numerous coral reef mounds. The cumulative threat of activities from the construction of the hotel alone (let alone simultaneous construction in the Bay) puts the reef at significant risk of being smothered by sedimentation along with nutrient pollution. The area, already impacted by nutrient pollution, is still valuable habitat for marine life and home to diverse community of corals, several of which are IUCN red list of critically endangered. Significant coral loss may result in reef erosion over time, and put the bay at risk of coastal erosion, especially with sea-level rise.

Furthermore, the operational phase will have long-term impacts on the reefs, as coastal development drives long-term reef degradation because of increased run off from impermeable surfaces, sedimentation, and pollution from human activities. These activities will further impair an already stressed reef system.

https://speseas.org
info@speseas.org
(868)620-2896

More information: Keyes, Aislyn, et al. “Effects of Mangrove Deforestation on Near-Shore Coral Reefs.” Bios, vol. 90, no. 1, 2019, pp. 8–13. JSTOR, https://www.jstor.org/stable/26849509. Accessed 14 June 2023.

The same can be said about the seagrasses in the area. They grow in the environments best suited to their survival that is dependent on the water quality and ocean hydrodynamics. Therefore, relocation is not feasible. Seagrasses in the area have been smothered in the past by activities such as the runway extension and disturbances of sargassum, and have recovered over time - albeit very slowly.

Page 473 *Mechanical abrasion from moorings and anchors from any future beach and marine works.*

If these activities are expected to be associated with the proposed project and its operation then this should be captured within this EIA. The current project description does not mention any plans for the installation of marine structures or other works. This should be addressed specifically.

Page 475

In the table alongside cumulative impacts to sea turtles, mention is made of beach works including "breakwaters, groynes, nourishment etc”. Such beach works were not indicated in the CEC application or the Project Description at Section 3. In fact it was stated that no beach works are proposed. This must be addressed. No beach works of this sort should be entertained at a turtle nesting beach as the impacts will be major as documented elsewhere in places such as Barbados.

The nesting period is described as May to October. Typically the nesting season for hawksbills in Tobago is described as April to November, and it should be noted that while this is the peak season, nesting has been documented to occur regularly outside of these months.

Mitigation described includes: “For high intensity lighting applications such as providing security and similar applications shielded low-pressure sodium vapour lamps and fixtures shall be used”. This is not suitable lighting for a turtle nesting beach. Please see other comments regarding recommendations for turtle friendly lighting.

Page 481

Various modifications to drainage/hydrology of the mangroves are proposed. A detailed study should be conducted first by persons with appropriate expertise to advise on any interventions such as this. Measurements should include hydroperiod and soil salinity.

Page 483

Mitigation for cumulative impacts to turtles includes: “Development of a Sea Turtle Monitoring programme which would include tagging and hatchling release”. This is not mitigation for impacts. While monitoring is important and efforts to monitor nesting and hatching are valuable, it serves no purpose to mitigate impact other than perhaps to have a team present to respond directly to incidences where sea turtles are impacted by lighting

https://speseas.org
info@speseas.org
(868)620-2896

etc. Hatchling releases are not a recommended tool and must be done sparingly. Any turtle conservation program must be developed with the relevant authorities and NGOs with the required expertise. Who will fund such efforts? The CBOs currently engaged in patrols and monitoring of turtle nesting are underfunded and stretched. This project should not put them under additional strain and expect them to be responsible for addressing the impacts of the development.

Page 482 - *Flushing channel helps to draw out any pollutant and reduce the concentration with the Kilgwyn Bay Mangrove system*

It will redirect the pollutant to the coastal seagrass and reef habitats. Therefore, mitigation still is needed.

Page 482 *Reef community - Hard structures (groynes, breakwaters, jetty) will provide of ecological volume and substrate for colonization and recruitment*

Hard structures were not described in the CEC application or the project description of the EIA. Coastal protection structures are CEC Designated Activities and if they are to be included as part of the project or if they are anticipated for future development then they must be included in the CEC application and examined in great detail. Such structures should not be allowed on or adjacent to a turtle nesting beach.

Artificial structures do not help coral communities, instead they hamper the health of the reef that they are being put on top of, and the adjacent reef communities with the resultant changes in wave and current dynamics etc. Furthermore, artificial structures are more likely to be colonized by bio-fouling organisms that compete with the native habitat for space. Therefore, this mitigation needs to be re-assessed.

Installation of hard coastal protection structures bring their own significant negative impacts (which have not been addressed in the EIA). This is just further adding to the negative impacts, and not effectively mitigating the impacts to the reef community.

Page 486 *Tourism - Improvement of the tourism product of the country*

Are there references to support this statement? Previous market research done to establish a brand for Tobago tourism highlighted that the draw of Tobago is because of its natural and untouched beauty. This was the basis of the Tobago GoBeyond approach that proposes ecotourism and community tourism. A large hotel located in sensitive wetlands are at direct odds with these findings.

"The island is not as developed as competitors, so we interpret that as unspoilt… it's a bit of a secret, so we know it is undiscovered… we have a very pristine environment, so we interpret that as being untouched." - CEO of the Tobago Tourism Agency, Mr. Louis Lewis

https://www.visittobago.gov.tt/news/tobago-launches-new-go-market-strategy-and-destination-imagery-0

Page 494 Marine water quality

Mitigation is not sufficient for water quality as it does not consider the chemical pollution nor does it differentiate the difference between the construction and operational phase.

https://speseas.org
info@speseas.org
(868)620-2896

9. Mitigation Strategy and Environmental Management Plan

Page 499 - *9.1. Sediment and Erosion/Turbidity Management Plan*

Unclear on the point (or sediment load) at which additional mitigation is required. It is also hard to assess this when all the relevant information is separated in the previous chapter.

Page 501 - T*he construction drainage plan will be developed to control the discharge of oil/lubricants, sediment and debris into the mangrove areas. Such plans will consist of:*

- *Site grading*
- *Sediment retention basins and other measures for minimizing the transport of sediment*

Please explain how sediment basins work for the discharge of oil/ lubricants, as they float on the surface.

Page 502 - *9.3. Coastal Zone Management Plan (CZMP). The proposed development activities will have minimal to no effect on the coastal zone*

Previous statements on shipping of materials to site by sea and the potential installation of moorings/ buoys/ seem to conflict with this statement. Furthermore, there will be significant indirect impacts to the coast zone and the nearshore marine environment, considering the adjacent construction and changes to the hydrology of the mangroves.

Page 503 - *9.4 Water Quality Management Plan (WQMP)*

Again, seasonal variations should be considered here. It is likely that some of these metrics would be exceeded in the rainy season. Will the developers work to reduce upstream nutrient pollution inputs entering the property and the mangroves first to create a USEPA approved starting baseline, especially as it considers itself to be an eco-resort.

Page 505 - *9.5.1 Coral and Nearshore Fauna Monitoring using Photo-transects: Two (2) monitoring sites will be selected within the Kilgwyn Bay Reef: One being in shallow water (4 – 6feet) and the other in deep water (10 – 15 feet)… The start point of each line will be marked using a GPS and a permanent stake where possible.*

The site at 4 – 6 feet is not a coral reef, rather a pavement habitat (flat, solid carbonate rock) that is dominated by macroalgae and patches of seagrass, so a different method of assessment may be used. For example, point- intercept transect. Minor comment but do not put permanent stake at the shallow site (4 – 6 feet) as this is a hazard.

Site at 10 – 15 feet will be a mixed habitat with patches of coral.

Both depths are okay for nearshore fauna composition but does not consider mobile fauna. For coral specific health, an additional survey along the forereef slope (ideally continuous coral reef habitat) at 8 – 12 m would complement the other two sites.

https://speseas.org
info@speseas.org
(868)620-2896

APPENDIX C

Pages 649 to 655 – Map legends are illegible.

Page 658 - C3 - *Project Gantt Chart Phasing*

The following activities will be conducted in the wet season: site clearing, road construction, earthwork, structural excavation. Certainly, the EIA should recognise that such activities done in the rainy season will have much more severe runoff impacts to the surrounding marine environment in contrast to the dry season. Seasonal impacts are not mentioned in the EIA.

APPENDIX G – Stakeholder Engagement

General Comment: There is no grouping of the type of stakeholders to ensure information is being captured from the suitable audiences for relevant questions. Also, a characterisation of the stakeholders is needed to identify the risk groups associated with this project.

Page 1108 *Q4 Do you believe that a hotel development in Kilgwyn Bay Area can foster socioeconomic development and improve the Tobago Tourism Product?*

This question is leading, and not appropriate for general stakeholders. Rather a question for persons in the business and planning sector. Belief of members of the general public is different to whether the hotel development will actually foster socio-economic development that will be based on the business plans, market research etc.