

REGIONAL GUIDELINES FOR SOUTHERN PLANNING REGION

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MAIN CHARACTERISTICS OF THE COASTAL PLANNING REGION

Population: Approximately 6,700 (SIB, 2022)

Coastal communities and major population centers (highlighted): Barranco Village, Punta Ycacos Community, **Punta Gorda Town**, Punta Negra Village, **Cattle Landing Village**, **Monkey River Village** (SIB, 2022)

Cayes: #1 Inner Cross Caye, #2 Outer Cross Caye, #3 Caye, #4 Caye, #5 Caye, #6 Caye, #7 Caye, #8 Caye, #9 – 20, Abalone Caye, Bird Caye, Bobby Caye, East Snake Caye, Franks Caye, Frenchman Caye, Frenchman Lagoon Area, Head Caye, Hen and Chickens Caye, Hunting Caye, Inside Sheep Head Caye, Lime Caye, Long Caye, McBride Caye, Middle Snake Caye, Moho Caye, NE Sapodilla Caye, Nicholas Caye, North Spot, Outside Sheep Head Caye, Peter Caye, Ragged Caye, Range 1, Range 2, Range 3, Ranguana Caye, Reef Patch, Sand Bore, Seal Caye, Sickle Caye, Small Caye, South Snake Caye, Stewart Caye, Tom Owens Caye, Tom Owens Jr. Caye, West Snake Caye, Wild Cane Caye, Wilson Caye.

Area: Approximately 3204 km²

Aquatic: 2926 km² **Continental:** 270 km² **Cayes:** 8,133 km²

Ecosystems: Seagrass beds, Coral reefs, Mangroves

Major Sources of Income: Tourism and hospitality, Commercial Fishing, Sport Fishing and Agriculture, Aquaculture

Main topics: Tourism, Fishing, Marine Transportation, Marine Dredging and Mining, Land Use and Development, Disaster Risk Management

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1 INTRODUCTION TO THE REGIONAL GUIDELINES

The management of the Southern Region’s coastal zone should follow the recommendations and action lines proposed in the National Integrated Coastal Zone Management (ICZM) Plan and be linked to the goals and aspirations of the local community. The coastal zone is influenced by the Monkey River dynamics, so it also worth mentioning the importance of integrated watershed management approaches in this area.

This Regional Guideline has been developed to:

- Present updated information on Habitat Risk Assessment (HRA), a useful tool for assessing potential impacts and informing environmental conservation decision-making.
- Present updated information on the disaster risk profile to contribute to a more resilient development of the coastal zone.
- Summarize the key issues and challenges of the region, by identifying the strengths, weaknesses, opportunities and threats (SWOT analysis) and collecting feedback from the Coastal Advisory Committee (CAC).
- Formulate a set of recommendations to be developed in the region, in collaboration with local committees and stakeholders.
- Provide information on sectoral recommendations for development standards.

To this end, this document is structured in the following sections:

- Section 1. Southern Region: presents information on ecosystem services and HRA, disaster risk and SWOT analysis
- Section 2. ICZM recommendations: this section presents the key issues identified, combining literature review and stakeholder consultations, and informs the formulation of a set of recommendations and actions, supported by a four-year implementation, monitoring, and evaluation plan.
- Appendix: including (i) recommendations for community and caye development, as outlined in the *Interim National Integrated Coastal Zone Management Plan: 2020-2025*, align with the *National Guidelines for the Subdivision and Consolidation of Land* from the Lands Department; and (ii) recommendations from the *National Sustainable Tourism Master Plan*, updated in 2023.

The information presented in this document has been prepared using a combination of technical and participatory approaches. The technical process included the review of existing studies and previous ICZM Plans and the performance of the Habitat Risk Assessment model. The participatory approach was intended to organize two rounds of consultation in the Coastal Planning Region with local stakeholders. A first meeting was held on December 10, 2024, with representatives of the Toledo Institute for Development and Environment to identify key issues and challenges in the Coastal Planning Region (CPR). A second meeting with the CAC was held on March 25, 2025, to validate proposed key issues and recommendations and prioritize actions.



Figure 1. Meeting with local stakeholders (Punta Gorda, March 25, 2025).

2 THE SOUTHERN PLANNING REGION

2.1 ECOSYSTEM SERVICES AND HABITAT RISK ASSESSMENT

In the Southern Region, a large portion of coral reefs are at high risk (73%), mainly due to recreation, fishing, infrastructure development, and agricultural runoff (Figure 2, Table 1). Mangroves occupied a small area, with all the categories of risk: no risk (2%), low (36%), medium (59%) and high (3%). In this case, the main stressors are agricultural runoff and infrastructure development. Finally, seagrass beds are mostly at medium risk (86%). The main stressors for this habitat are agricultural runoff, fishing, recreation, marine transportation, and localized development infrastructures.

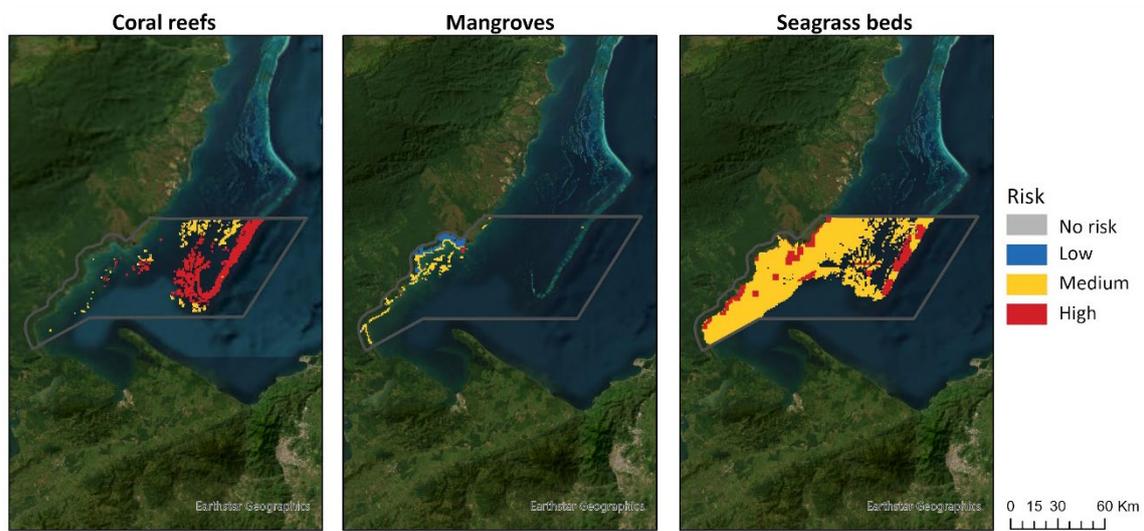


Figure 2. Coral Reef, mangroves and seagrass beds classified as high, medium and low risk for current human activity (2025) in Southern Region.

Table 1. Habitat Risk Assessment InVEST model outputs for Southern Region.

Habitat	No risk (km ²)	Low Risk (km ²)	Medium Risk (km ²)	High Risk (km ²)
Coral Reefs	0	0	114.75	308.75
Mangroves	3.25	55	89	4.5
Seagrass	0.25	0	1244.5	206.25

2.2 DISASTER RISK AND CLIMATE CHANGE ADAPTATION

Southern Planning Region faces multiple hazards and risks related to coastal dynamics and climate change. Most critical threats faced in the CPR are tropical cyclone winds, earthquakes, extreme heat and floods, with 100%, 100%, 61.7% and 32.5% of the population and capital exposed to each hazard respectively (Pacific Disaster Center, 2021). Most of those impacted populations and infrastructures are likely to be located in great proximity to coastal areas. Flood mapping related to tropical cyclones indicates that Southern Region experiences minimal

impacts, with Seven Hills Creek and Monkey River Village being the most affected areas. Flood heights of 2.3 and 2.6 m occur only during extreme 500-year return period events for current and pessimistic climate change scenarios (IPCC AR5 RCP8.5 by 2050, resulting in a sea level rise of 0.275 m) respectively. Little to no impact are suffered in higher populated areas from more frequent storms (Martínez et al., 2022).

Coastal erosion is another critical concern, but mangroves play a key role in mitigating its effects, by providing a natural shield for these areas. According to Martínez et al. (2022), Belize's mangroves significantly reduce erosion caused by tropical cyclones, maintaining shoreline retreat in Barranco below 0.12 m under both current and pessimistic scenarios. However, in sandy coastal areas like New Haven, shoreline erosion (without considering beach resilience, i.e., the ability of a beach to recover naturally from erosion caused by storms or climate change effects) is projected to reach up to 3.6 m for 100-year storms under current scenarios, but under a pessimistic scenario, the same retreats are already expected for 50-year storms.

The region's vulnerability is primarily driven by poor health status and lack of information access (e.g., limited internet, television and radio access). Additionally, transportation, communication and energy rank among the lowest sectors in terms of coping capacity. As a result of this combination, Southern Planning Region's resilience is very low compared to other CPRs, leading to extremely high multi-hazard risks, mainly composed by earthquakes, floods, extreme heat and tropical cyclone winds (Pacific Disaster Center, 2021).

2.3 SWOT ANALYSIS

The following section presents a SWOT analysis of the CPR identifying elements or processes that need to be improved or strengthened (Weaknesses), mitigated (Threats), maintained (Strengths), and leveraged (Opportunities), which in turn help define coastal management objectives and recommendations. This analysis results from a careful assessment, including an in-person consultation process with local stakeholders and the CACs in 2024 and 2025, a review of existing studies of the coastal area available, and the analysis of previous ICZM Plans, together with the review of sectoral policies and plans.

Strengths:

- Ecosystems like coral reefs, mangrove forests, and fishing grounds provide both economic and ecological benefits.
- Strong fishing tradition, serving as one of the main sources of income in the region with increasing interest in sportfishing opportunities.
- Local fishing traditions and community-based conservation efforts (e.g., TIDE [Toledo Institute for Development and Environment], SEA [Southern Environment Association]) provide a foundation for protecting the fishing sector and local livelihoods.
- Skilled organizations and experts in place, and existing studies on river and coastal dynamics.

Weaknesses:

- Coastal erosion and shoreline retreat.
- Strong reliance on fishing makes the region sensitive to environmental degradation.

- Unsustainable development along the coastline displaces other activities and strains ecosystems. Lack of proper infrastructure to capitalize on tourism revenue, poor oversight capacity and weak regulations undermine the sustainability of fisheries and natural habitats.
- Unregulated dredging (increasing demand) and sedimentation harm marine ecosystems, water quality, and biodiversity, threatening the livelihoods dependent on fisheries.
- Environmental protections for fisheries and coastal zones are not consistently enforced, leading to illegal activities, habitat loss, and ineffective waste management.
- Severe impacts from coastal flooding affect ranger bases and islands in sensitive areas.
- Tensions between local and foreign fishermen, competition over fishing licenses during the off-season and weak regulations for recreational and sport fishing exacerbate resource strain and undermine cooperation.
- Developers, contractors, and real estate agents often lack a clear understanding of environmental zoning laws, resulting in inappropriate development decisions.
- Lack of public access to beaches, primarily due to developments within the 66 ft Reserve.

Opportunities:

- The region could become a leading destination for sustainable tourism, balancing environmental conservation with job creation in the tourism sector and livelihood diversification.
- Leveraging traditionally established usage rights can provide a foundation for sustainable fishing policies, ensuring the preservation of fish stocks and securing a steady income for local communities.
- Fisheries and tourism could coexist harmoniously through activities like sport fishing tourism, benefiting both sectors without harming each other.
- Technological improvements could enhance coastal monitoring, ensuring the sustainable use of resources while protecting against illegal activities.
- The region could enhance its resilience to natural disasters through improved disaster preparedness, strengthened soft coastal defences, and the implementation of emergency response systems. These measures would ensure that tourism and fishing operations can quickly recover and continue sustainably, minimizing the long-term impacts on both sectors.
- Partnerships with NGOs, multilateral organizations, and neighbouring countries to resolve fisheries conflicts and environmental issues.
- The region could expand into new sectors like renewable energy or sustainable aquaculture, reducing its reliance on traditional industries.

Threats:

- Uncontrolled development, inadequate regulation, and unsustainable tourism practices, such as over-water structures and poor waste management, threaten marine ecosystems and biodiversity, crucial for both fishing and tourism industries.

- Rising sea levels, coral bleaching, stronger storms, and coastal erosion exacerbate vulnerabilities in both sectors, damaging infrastructure and natural resources, and increasing disaster risks.
- Tensions arise from competition over limited resources, such as fishing zones and land, between local and foreign investors, as well as between tourism and fisheries sectors.
- Insufficient law enforcement, particularly in Marine Protected Areas (MPAs), allows illegal fishing and resource overuse, undermining fish stocks and the long-term sustainability of both industries.
- Coastal erosion, reduced resilience to climate change and endangered habitats might increase due to infrastructure projects like sea walls, piers, and land reclamation without proper environmental assessments.
- High vulnerability to external shocks (e.g., economic crises, natural disasters) caused by over-reliance on fisheries and the increasing tourism industry.
- Potential impacts of the extended MPA on fishermen.

3 ICZM RECOMMENDATIONS

3.1 KEY ISSUES AND RECOMMENDATIONS

Table 2. Key issues and recommendations. ID refers to the Code of each Recommendation (R). S refers to the scale implementation of each recommendation: National (N), Local (L).

TOPIC	KEY ISSUES	ID	RECOMMENDATIONS	S*
Tourism	Rapid increase in demand for tourism development	R1	Restrict land use for resort development to existing areas with limited scope for expansion avoiding high-impact tourism and ensuring ecological sustainability.	N/L
	Lack of infrastructure to capitalize on tourism revenue (e.g., absence of tour guides, Belize Tourism Board, or police presence in natural parks).	R2	Strengthen BTB's presence, improve licensing processes for tour operators, and establish ranger bases in key tourism areas.	L
	Lack of regulation and oversight for tourism activities, leading to unmanaged impacts on natural resources.	R3	Align tourism development with recommendations from the NSTMP for sustainable growth. Integrate carrying capacity into land-use planning and zoning regulations to prevent overuse of critical habitats.	N/L
Fishing	Habitat destruction affecting sportfishing and commercial fisheries.	R4	Strengthen enforcement to protect shoal habitats and critical spawning sites.	N/L
	Undefined rights and privileges of traditional fishermen.	R5	Establish clear regulations on traditional user rights and align licensing processes with sustainable fishing practices as defined by the Fisheries Department.	N/L
	Expansion of MPAs restrict access for commercial fishers and creating conflicts with foreign competitors (Guatemalan and Honduran fishers)	R6	Ensure participatory MPA planning, protect Belizean fishermen's traditional rights, and strengthen enforcement against illegal fishing by foreign vessels through collaboration between the Belize Fisheries Department, National Coast Guard, and community groups like TIDE and SEA.	N/L
	Lack of training and capacity building for fly fishing guides.	R7	Implement structured training programs and licensing reforms for fly fishing guides.	L
	Overfishing and lack of copying capacity studies and enforcement for sport and recreational fishing.	R8	Conduct carrying capacity studies. Establish science-based policies, minimum sizes and maximum catch quotas.	N/L
	Dissolution of fishing committees, weakening local fishery governance.	R9	Re-establish and strengthen fishing committees to enhance local participation in resource management.	L

	Lack of government investment in fishing communities, limiting economic diversification and sustainability.	R10	Develop alternative livelihood programs, promote sustainable aquaculture, and improve financial support mechanisms for fishers.	L
Marine Dredging & Mining	Increased demand for dredging and sand mining as tourism development intensifies, impacting ecosystems and coastal stability.	R11	Discourage dredging unless necessary for rehabilitation or essential infrastructure, with strict oversight from DOE.	N/L
	Improper watershed management contributing to coastal sediment disruption (e.g., Monkey River).	R12	Implement measures to restore natural sediment flow by addressing upstream sediment stops, dams, and sand mining. Elaborate and implement sustainable sediment management practices, monitoring their impact on coastal ecosystems.	L
	Loss of biodiversity due to sedimentation and turbidity from dredging activities.	R13	Mandate EIA before any dredging activity and enforce strict mitigation measures.	N/L
Land Use & Development	Poorly planned and designed coastal infrastructures, including seawalls, piers and groins (among others), accelerate coastal erosion	R14	Develop a coastal protection strategy including sound technical and scientific criteria for the design of coastal structures. Nature based solutions such as mangrove restoration shall be prioritized. Require EIAs and assessments of relevant agencies for all shoreline modification projects and promote soft coastal defense strategies such as mangrove restoration and living shorelines while limiting the use of hard structures.	N/L
	Over-water structures and development disrupting marine habitats	R15	Prohibit closed overwater structures, especially those with bathroom facilities, to prevent water pollution.	L
	Lack of awareness among developers and real estate agents regarding environmental regulations.	R16	Provide information and training on sustainable land development practices.	L
	Uncontrolled coastal development impacting ecosystems	R17	Enforce stricter permitting processes, requiring detailed EIA and sustainability criteria before approval to ensure ecosystem protection.	N
	Illegal dumping and inadequate waste disposal. Overwater structures cause pollution.	R18	Improve waste management system, including better collection and proper disposal.	N
	Indigenous rights, traditions, and native species.	R19	Consider including traditional knowledge and recognizing indigenous lifestyles in development decisions. Follow the	N

			National Lands Use Policy in terms of addressing matters pertaining to traditional and indigenous rights, access to land and beach.	
	Land privatization and lack awareness about civil rights to the 66 ft. Reserve.	R20	Enhance stakeholder awareness regarding the 66 ft. reserve.	N/L
DRM	Rising sea levels, increased storm intensity, and coral bleaching threatening ecosystem resilience and human lives	R21	Develop and implement climate adaptation strategies, such as nature-based coastal protection, coral reef restoration projects, and managed retreat policies to reduce long-term environmental risks. Restrict new constructions in flood-prone areas.	N
	Coastal flooding and damage to ranger bases and islands in protected areas.	R22	Improve infrastructure resilience and implement adaptation strategies for ranger bases and island settlements.	N/L
	Unplanned coastal development, including pier construction and mangrove removal, is accelerating beach erosion and sedimentation, increasing vulnerability to climate change impacts.	R23	Conduct an assessment of the cumulative impacts of coastal structures (e.g., piers, seawalls) to guide future development and inform regulatory updates.	N
		R24	Establish a national beach erosion monitoring program to systematically track shoreline changes and inform climate adaptation and disaster risk planning.	N
S: Scale: National (N) and local (L)				

3.2 IMPLEMENTATION, MONITORING AND EVALUATION PLAN

The implementation plan aims to establish priority recommendations to address the key issues of the CPR, as well as to define the actions needed to implement them. To this end, three recommendations have been prioritized, considering their relevance to local stakeholders, their feasibility of implementation during the four years of the ICZM plan, their potential to be applicable to other CPRs and their urgency in terms that have not been addressed during previous ICZM cycles. The selection of recommendations focuses on those at the CPR level, as national recommendations are addressed in the National ICZM Plan.

Following this approach, the prioritized recommendations for this CPR are:

- R5. Establish clear regulations on traditional user rights and align licensing processes with sustainable fishing practices as defined by the Fisheries Department.
- R6. Ensure participatory MPA planning, protect Belizean fishermen's traditional rights, and strengthen enforcement against illegal fishing by foreign vessels through collaboration between the Belize Fisheries Department, National Coast Guard, and community groups like TIDE and SEA.
- R8. Conduct carrying capacity studies. Establish science-based policies, minimum sizes and maximum catch quotas.
- R9. Re-establish and strengthen fishing committees to enhance local participation in resource management.
- R10. Develop alternative livelihood programs, promote sustainable aquaculture, and improve financial support mechanisms for fishers.
- R12. Implement measures to restore natural sediment flow by addressing upstream sediment stops, dams, and sand mining. Elaborate and implement sustainable sediment management practices, monitoring their impact on coastal ecosystems.
- R19. Develop and implement climate adaptation strategies, such as nature-based coastal protection, coral reef restoration projects, and managed retreat policies to reduce long-term environmental risks.

The table below outlines the most relevant actions to be carried out for each priority recommendation. This implementation plan covers a four-year implementation period, specifying the stakeholders involved, progress indicators to track each action, and the baseline for comparison. To ensure effective implementation, a biannual report at the CPR level is required.

Table 3. Implementation plan for the prioritized recommendations.

ID	ACTION	STAKEHOLDERS INVOLVED	IMPLEMENTATION PERIOD				PROGRESS INDICATOR
			Y1	Y2	Y3	Y4	
R5. Establish clear regulations on traditional user rights and align licensing processes with sustainable fishing practices as defined by the Fisheries Department.							
5.1	Hold meetings to define lines of action	CZMAI, Fisheries Department, TIDE, SEA, fishermen association					Number of meetings and agreements reached
5.2	Define clear regulations and formalize them by agreements or MoU	CZMAI, Fisheries Department, TIDE, SEA, fishermen association					Clear regulations in place
R6: Ensure participatory MPA planning, protect Belizean fishermen's traditional rights, and strengthen enforcement against illegal fishing by foreign vessels through collaboration between the Belize Fisheries Department, National Coast Guard, and community groups like TIDE and SEA.							
6.1	Create fisher folk task forces with local stakeholders.	Fisheries Department, CZMAI, TIDE, SEA, fisher associations, Village Councils					Number of task forces created and actively meeting
6.2	Provide special licenses for traditional fishermen to access specific areas.	Fisher folks, Fisheries Department, local fisher associations					Number of special licenses issued; number of disputes reported
6.3	Hold regular fisher forums (local and national).	Local fishers, tour guides, Healthy Reefs Initiative, TIDE, SEA, BTIA, Fisheries Department					Frequency of forums; participation rate
6.4	Strengthen collaboration with enforcement agencies (between Fisheries Department, Coast Guard and community groups).	Fisheries Department, Coast Guard, TIDE, SEA, local communities, CZMAI					Number of joint patrols or operations; reported infractions
6.5	Enhance capacity building to train fishermen and community groups on sustainable fishing practices.	TIDE, SEA, CZMAI, Fisheries Department					Number of training sessions and trained individuals
6.6	Form Advisory Committees for Special Management Areas established to cover loopholes between Marine Protected Areas.	CZMAI, Fisheries Department, TIDE, SEA					Number of meetings of the Advisory Committees; expanded area of Special Management Areas
6.7	Develop collaboration agreements with neighboring countries to address cross-border fishing issues.	Fisheries Department, Guatemalan and Honduran counterparts, Ministry of Foreign Affairs, OSPESCA					Number of MoUs signed; joint enforcement actions

R8. Conduct carrying capacity studies. Establish science-based policies, minimum sizes and maximum catch quotas							
8.1	Organize coordination meetings with Fisheries Department and related stakeholders to define a roadmap.	CZMAI, Fisheries Department, SFTGW, sport fishing communities					Roadmap agreed
8.2	Conduct the necessary scientific studies and determine carrying capacities.	CZMAI, Fisheries Department, University of Belize					Study finalized including quantitative results
8.3	Disseminate and make publicity of the results						Leaflets and user-friendly dissemination materials disseminated.
R9. Re-establish and strengthen fishing committees to enhance local participation in resource management							
9.1	Conduct preliminary meeting with the Fisheries Department to prepare a preliminary proposal	CZMAI, Fisheries Department					Preliminary proposal agreed
9.2	Organize meetings with target stakeholders to define membership and ToR	CZMAI, Fisheries Department, fishermen associations					Number of meetings and attendees
9.3	Establish the committees	CZMAI, Fisheries Department, fishermen associations					ToR signed
R10. Develop alternative livelihood programs, promote sustainable aquaculture, and improve financial support mechanisms for fishers							
10.1	Organize meetings with fisheries committees to analyse their needs and desired alternatives	CZMAI, Fisheries Department, fishermen associations, BTB, others					Number of meetings and attendees
10.2	Analyse sectoral policies that may inform alternative livelihood program	CZMAI, Fisheries Department, others					Preliminary analysis conducted
10.3	Develop a alternative livelihood program	CZMAI, Fisheries Department, others					Program developed and disseminated
R12: Implement measures to restore natural sediment flow by addressing upstream sediment stops, dams, and sand mining. Elaborate and implement sustainable sediment management practices, monitoring their impact on coastal ecosystems.							
12.1	Monitor and regulate mining and dredging activities.	Mining Unit, DOE, TIDE, CZMAI					Number of inspections conducted; enforcement actions taken
12.2	Define carrying capacity of watersheds for sediment flows and mining.	Hydrology Department, DOE, Forest Department, TIDE, academic partners (e.g., UB-ERI), Monkey River Watershed Association					Published watershed capacity assessments

12.3	Enforce riparian zone protections (66 ft. buffer) and reforestation along waterways.	Forest Department, NGOs (Ya'axché, TIDE)					Area of riparian zones reforested or protected
12.4	Study impact of existing dams on sediment flow.	Hydrology Department, DOE, TIDE, academic partners (e.g., UB-ERI), Monkey River Watershed Association					Completion of dam impact studies
12.5	Monitor and enforce water extraction for irrigation.	Ministry of Agriculture, Hydrology Department					Number of permits reviewed and enforced; number of inspections conducted
12.6	Implement the existing roadmap for the Monkey River watershed.	Monkey River Watershed Association, TIDE, Hydrology Department, Mining Unit, Ministry of Agriculture					Percentage of roadmap actions implemented
12.7	Improve Hydrology Department's capacity to monitor river flows.	Hydrology Department, Ministry of Sustainable Development, International Donors (e.g., IDB, WB)					Number of monitoring stations installed; staff trained
R19: Develop and implement climate adaptation strategies, such as nature-based coastal protection, coral reef restoration projects, and managed retreat policies to reduce long-term environmental risks. Enhance research initiatives and awareness campaigns led by NEMO, regarding adaptation and evacuation, as defined by the National Climate Change Policy, Strategy and Master Plan (NCCPSMP).							
19.1	Conduct comprehensive sea level rise research.	CZMAI, National Climate Change Office, academic partners (e.g., UB-ERI), CCCCC					Publication of national sea level rise scenarios
19.2	Analyze historical satellite imagery of coastline to develop erosion maps.	CZMAI, Ministry of Sustainable Development, academic partners (e.g., UB-ERI)					Kilometres of coast examined, mapped and published
19.3	Ensure community involvement by sharing the scientific research and including them for proposing solutions.	CZMAI, local councils, NGOs (e.g., SEA, TIDE)					Number of consultations held; community-led proposals
19.4	Implement nature-based solutions, such as seagrass beds, littoral forests and mangroves restoration with prior studies of the most appropriate species.	Forest Department, CZMAI, NGOs (e.g., TIDE, SEA, WWF, TNC, Belize Audubon Society)					Area restored with nature-based methods; species survival rate
19.5	Foster data collection to properly monitor and understand coastal dynamics.	CZMAI, academic partners (e.g., UB-ERI), TIDE, SEA					Number of monitoring stations and published datasets
19.6	Develop local early action plans and community relocation plans.	NEMO, Ministry of Infrastructure, Local Governments					Number of local plans developed and rehearsed

19.7	Increase public awareness about climate change impacts.	CZMAI, National Climate Change Office, NEMO, Ministry of Education					Number of campaigns and outreach events; audience reached
19.8	Restrict new construction in vulnerable, flood-prone coastal areas.	Lands Department, DOE, Local Governments, Ministry of Infrastructure					Number of permits denied or modified based on vulnerability maps

4 APPENDIX

The sectoral recommendations for development standards in terrestrial zones and cayes, as outlined in the *Interim National Integrated Coastal Zone Management Plan: 2020-2025*, align with the *National Guidelines for the Subdivision and Consolidation of Land* from the Lands Department. The following sections present these recommendations in detail.

4.1 RECOMMENDATIONS FOR COMMUNITY AND CAYE DEVELOPMENT

Table 4. Recommended tourism development for major population centers in the Southern Planning Region

COMMUNITY	RECOMMENDED TOURISM DEVELOPMENT
Barranco Village	Culture based tourism
Punta Yacos Community	Low density tourism
Punta Gorda Town	Culture based tourism
Punta Negra Village	Low density tourism
Cattle Landing Village	Low density tourism
Monkey River Village	Low density nature-based tourism

Table 5. Recommended land use for cayes in the Southern Planning Region

COMMUNITY	RECOMMENDED DEVELOPMENT DENSITY	RECOMMENDED DEVELOPMENT STANDARDS
Small Caye	Not suitable for development	Conservation I
Sickel Caye	Not suitable for development	Conservation I
Stuart Caye	Not suitable for development	Conservation I
#1 Inner Cross Caye	Not suitable for development	Conservation I
#2 Outer Cross Caye	Not suitable for development	Conservation I
#3 Caye	Not suitable for development	Conservation I
Moho Caye	Suitable for development	Residential I
Bird Caye	Not suitable for development	Conservation I
#4 Caye	Not suitable for development	Conservation I
#5 Caye	Not suitable for development	Conservation I
Bobby Caye	Not suitable for development	Conservation I
Frenchman Lagoon Area	Not suitable for development	Conservation I
Long Caye	Least suitable for development	Residential I
Frenchman Caye	Fully developed	Conservation II
Peter Caye	Not suitable for development	Conservation I
Outside Sheppard Caye	Not suitable for development	Conservation I
Inside Sheppard Caye	Not suitable for development	Conservation I

Wild Cane Caye	Fully developed	Conservation I
#6 Caye	Not suitable for development	Conservation I
Man of War Caye	Not suitable for development	Conservation I
#7 Caye	Not suitable for development	Conservation I
# 8 Caye	Not suitable for development	Conservation I
Abalone Caye	Minimal further development	Conservation I
Head Caye	Least suitable for development	Conservation II
McBride Caye	Least suitable for development	Conservation II
Wilson Caye	Least suitable for development	Conservation II
East Snake Caye	Minimal further development	Conservation II
Middle Snake Caye	Not suitable for development	Conservation I
West Snake Caye	Least suitable for development	Conservation II
South Snake Caye	Not suitable for development	Conservation II
#9 – 29	Not suitable for development	Conservation I
Hen and Chicken	Not suitable for development	Conservation I
Range 1	Not suitable for development	Conservation I
Range 2	Not suitable for development	Conservation I
Range 3	Not suitable for development	Conservation I
Seal Caye	Minimal further development	Commercial I
Ragged Caye	Not suitable for development	Conservation I
Reef Patch	Not suitable for development	Conservation I
Sand Bore	Not suitable for development	Conservation I
Lime Caye	Suitable for development	Residential I
Hunting Caye	Fully developed	Residential I
Nicholas Caye	Fully developed	Commercial I
Franks Caye	Minimal further development	Commercial I
NE Sapodilla Caye	Suitable for development	Conservation II
Tom Owens Caye	Suitable for development	Conservation II
Tom Owens Jr. Caye	Limited development	Conservation I
North Spot	Suitable for development	Conservation I
Ranguana Caye	Minimal further development	Commercial I

4.3 NSTMP RECOMMENDATIONS

The *National Sustainable Tourism Master Plan*, updated in 2023, provides an overarching tourism policy and strategic planning instrument. It spans a 20-year period (2010-2030) and highlights 8 contemporary themes regarding tourism. The following themes and actions are established for the Southern Planning Region:

Urban Settlement & Management

- 1.7 Ensure the (real and perceived) safety and security of all visitors (at day and night) in tourism towns is prioritised.
- 1.9 Protect the important peri-urban fringe from development encroachment where agricultural and/or environmental conditions occur.

Coastal Conditions & Resilience

- 2.2 Identify and showcase locations for mangrove forest restoration for ecological and coastal fringe resilience.
- 2.3 Better understand the influence of climate change and sea level variation in coastal and lagoon settings (forecast mapping).
- 2.4 Support revegetation and enhancement of the coastal and lagoon edges through contiguous linear land planning.
- 2.5 Ensure development is well setback from the coastline/lagoon edge to avoid visual intrusion and potential harm from encroachment.
- 2.6 Encourage uninterrupted public accessibility to beachfronts and the coastal/lagoon fringe for improved tourism amenity and activation.

Marine, Reef and Caye Condition

- 3.3 Policing of illegal fishing and related behaviours that compromise reef & biosphere conditions.

National Parks and Protected Areas (Terrestrial Areas)

- 4.3 Strengthen and unify national park and protected area management and tourism services (i.e., VIS/branding).
- 4.4 Develop hierarchy of national park and protected area status – as Protected/Passive/Active.
- 4.5 Highlight opportunities for Adventure Tourism (for multiple day guided visits to mountain peaks, ridges and passes).
- 4.6 Avoid erosion of national park and protected areas environmental or ecological values through incursion by development.

Cultural Attractions and Archaeological Sites

- 5.6 Grow visitor awareness/education of other living cultures across regions with opportunities to share traditional practices.

Trunk Infrastructure and Connectivity -Accessibility

- 6.6** Develop funding models (such as tourism development contributions) to improve investment and maintenance of infrastructure.
- 6.9** Expand the capability and service of National Information & Technology (Internet) to support wider tourism market and aid communications, emergency management, and climate threats.

Regional Linkages and Frontier Interfaces

- 7.1** Enhance regional tourism connections to cayes and interior through improved public/private transit– unlocking potential market growth.
- 7.2** Work with neighbouring countries to develop international tourism links and fluid cross-border road, sea, and air connections.
- 7.3** Consider growing international connections in the southern region to enable improved links to Guatemala and Honduras (air and sea).
- 7.5** Develop new products based on regional road/trail ‘circuits’ which connect destinations for visitors to stay longer/spend more.

Tourism Governance Management and Marketing

- 8.1** Adopt the Spatial Tourism Framework as a national network of hubs, nodes, and corridors to aid decision-making on planning and investment.
- 8.2** Identify opportunities for Special Economic or Tourism Zones to be applied to key locations for tourism investment and management.
- 8.4** Avoid the privatization of cayes, islands, and beachfronts, and compulsorily acquire or buy back vulnerable land where possible.
- 8.6** Promote the use of clean energy and sustainable land and management for tourism development and services.
- 8.14** Restore tourism standards program to benchmark with other regions (i.e. ASEAN) and promote information technologies.

5 BIBLIOGRAPHY

- Belize Tourism Board. (2024). *National Sustainable Tourism Master Plan for Belize 2022-2030*. Belize Tourism Board.
- Coastal Zone Management Authority and Institute (2016). *Belize Integrated Coastal Zone Management Plan*.
- Coastal Zone Management Authority and Institute (2023). *Interim National Integrated Coastal Zone Management Plan: 2020-2025*
- Intergovernmental Panel on Climate Change (IPCC) (2014). *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp.
- Lands and Surveys Department, Ministry of Natural Resources and the Environment (2010). *National Guidelines for Subdivision and Consolidation of Land in Belize*.
- Martínez, J., Medina, R., Aguirre-Ayerbe, I., Pellón, E., Ramírez, M., Menéndez, P., Casal, C., Cánovas, V., Delgado, D., Jiménez, J., & Suarez, G. (2022). *Coastal Disaster Risk Profile and Adaptation Recommendations Considering Climate Change Scenarios for Belize*. <https://doi.org/10.18235/0004181>.
- Pacific Disaster Center (2021). *National Disaster Preparedness Baseline Assessment: Belize. District Risk Profiles*
- Statistical Institute of Belize (2022). *Population and Housing Census 2022*. <https://sib.org.bz/census/2022-census/>