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US Virgin Islands Coastal Zone
Management Program, Section 309
Assessment and Strategy
2018-2021

US Virgin Islands Department of Planning
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US Virgin Islands Coastal Management Program
Section 309 Assessment

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Introduction

Section 309 of the Coastal Zone Management Act (CZMA), as amended in 1990 and 1996, established a voluntary coastal zone enhancement grants program to encourage states and territories to improve their program efforts.

The CZMA identifies nine Program Enhancement Areas (PMAs) where effort should be focused: wetlands, coastal hazards, public access, marine debris, cumulative and secondary impacts, ocean resources, energy and government facility siting, aquaculture and Special Area Management Plans. In addition to these, threatened and endangered species and marine protected areas are considered priorities in all enhancement areas.

Under section 309, awards may be given to the Virgin Islands Department of Planning and Natural Resources (VIDPNR) to implement federally approved program changes that support objectives to one or more of the nine PMAs. To be eligible for funding, the VIDPNR must submit an appropriate 309 Assessment and Strategy Document covering a five year interval.

National guidance for the report was provided by the National Oceanographic and Atmospheric Administration (NOAA), Office of Ocean and Coastal Resources Management (OCRM). Additional guidance and assistance was provided through the USVI Management Liaison through NOAA Office of Coastal Management. The OCRM reviews and approves the Section 309 Assessments and Strategy documents

The VIDPNR office of Coastal Zone Management (CZM) has completed an assessment of its Program and identified problems and opportunities within each of the enhancement areas, and determined the effectiveness of the Program's existing efforts to address problems for each of the enhancement objectives. The high priority needs identified for the 2016-2020 period were Public Access, Coastal Hazards and Ocean Resources. Medium priority areas are Wetlands, Marine Debris and Energy and Government Siting. These enhancement areas certainly have the potential to become High Priority, but current conditions in the territory are either causing an uncertain future for certain projects or have limited VIDPNR's ability to act effectively at the present time. The enhancement areas of Cumulative and Secondary Impacts, Special Area Management Plans and Aquaculture are important, but deemed a Low Priority at this point in time. This designation was part of a thoughtful prioritization where problems, opportunities and allocation of finite financial resources were considered.

Summary of Recent 309 Efforts.

The last 309 Assessment and Strategy document for the US Virgin Islands was for the 2010-2015 period. Several shortcomings with the assessments and strategies in that document have been clearly identified. The 309 Assessment completed in 2009 did not closely follow the NOAA guidance for the process and sometimes spoke in broad terms that did not result in a focused analysis of programs. The document addressed a broad range of environmental concerns in the Virgin Islands and tended to use citations from local newspapers rather than VIDPNR publications and actions. The authors of the 2009 document discussed environmental protection efforts in general, rather than conduct a frank assessment of each of the nine specific program areas.

This effort is intended to remedy these shortcomings while also following the new guidelines put forth by OCRM. We are using a process where consultants work closely with VIDPNR staff to ensure the Department's recent accomplishments are properly documented and that future opportunities are accurately described. By closely following the new guidelines and Assessments from several other states, we know what a successful 309 assessment for the Virgin Islands should look like. This document assesses the VIDPNR's work in those nine areas. It also realistically prioritizes where future actions should be focused while considering the reality of limited funding.

That said, the 2009 assessment correctly identified Public Access as a High Priority for CZM. This was an increase from the 1996 ranking of Medium. Current research and stakeholder input during this 2017 process confirmed Public Access remains a High Priority in the Virgin Islands. It is also an area where proposed future action by the Department is likely to have success.

Since the last assessment, beach access signs were created by the VIDPNR and are still in the process of being installed at public beaches and sites with a major CZM permit. A shoreline guide and Virgin Islands Beaches publication was also created, emphasizing that beach access is guaranteed by Virgin Islands law. The branding of the project was completed in conjunction with the Virgin Islands Board of Tourism. The publications were published online, but the website is no longer functioning. The documents appear in Appendix 1.

Assessments

Phase 1

Public Access

Section 309 Enhancement Objective: Attain increased opportunities for public access, taking into account current and future public access needs, to coastal areas of recreational, historical, aesthetic, ecological, or cultural value. §309(a)(3)

PHASE I (HIGH-LEVEL) ASSESSMENT: *(Must be completed by all states.)*

Purpose: To quickly determine whether the enhancement area is a high priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. Use the table below to provide data on public access availability within the coastal zone.

The US Virgin Islands Open Shorelines Act, Title 12, Sections 401-403 mandates that all beaches are open to use by the public. When CZM Major Permit applications are submitted, the applicant must designate where this access point will be located. These "CZM Major" beaches and those owned by the territorial government are referred to below as "Enhanced Access Beaches"

Public Access Status and Trends
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Type of Access	Current number ¹⁷	Changes or Trends Since Last Assessment ¹⁸	Cite data source
Beach access sites (All beaches in the VI have public access, by law)	STX-52 STJ-41 STT-52	↑ Increase from 122 in previous assessment to 145 is partially an artifact of incomplete data collection in the previous assessment	VI Assessment, 2009, Shoreline Guide to the US Virgin Islands
Enhanced Access beaches (with signage or additional access via a CZM major permit)	13	↑ Installation of Beach Access signs is ongoing	VIDPNR Major CZM permits ,
Shoreline (other than beach) access sites	Not Currently Tracked	-	
Recreational boat (power or Non-motorized) access sites	STX-7 STJ-2 STT-2	Increase from 7 to 11 since the last assessment. However, only three of the 7 on St. Croix are actually available for recreational boaters. The other 4 are commercial/industrial	NOAA Environmental Sensitivity Index, VI Assessment, 2009
Number of designated scenic vistas or overlook points	Not currently tracked	↑ The total number increased by at least by one, with the addition of the Bypass Scenic Overlook on St. Croix.	The scenic overlook of the Christiansted bypass was added.
Number of fishing access points (i.e. piers, jetties)	More Than 2	NA	VI Assessment, 2009
Coastal trails/boardwalks	No. of Trails/Boardwalks	Not currently tracked	
	Miles of Trails/boardwalks		

USVI boat ramp data is posted in the Caribbean Regional Ocean Partnership site <http://caribbean-mp.org/en/> and comes from the Environmental Sensitivity Index (ESI) for the Virgin Islands in 2000. <http://response.restoration.noaa.gov/maps-and-spatial-data/download-esi-maps-and-gis-data.html#VirginIslands>

¹⁷ Be as specific as possible. For example, if you have data on many access sites but know it is not an exhaustive list, note "more than" before the number. If information is unknown, note that and use the narrative section below to provide a brief qualitative description based on the best information available.

¹⁸ If you know specific numbers, please provide. However, if specific numbers are unknown but you know that the general trend was increasing or decreasing or relatively stable or unchanged since the last assessment, note that with a ↑ (increased), ↓ (decreased), – (unchanged). If the trend is completely unknown, simply put "unkwn."

Public Access Status and Trends			
Type of Access	Current number ¹⁷	Changes or Trends Since Last Assessment ¹⁸ (↑, ↓, –, unkwn)	Cite data source

Number of acres parkland/open space	Total sites Unknown	Unknown	
	Sites per miles of shoreline		
Other (please specify)			

- Briefly characterize the demand for coastal public access and the process for periodically assessing demand. Include a statement on the projected population increase for your coastal counties.¹⁹ There are several additional sources of statewide information that may help inform this response, such as the Statewide Comprehensive Outdoor Recreation Plan,²⁰ the National Survey on Fishing, Hunting, and Wildlife Associated Recreation,²¹ and your state’s tourism office.

The beaches and coastline of the US Virgin Islands are in demand by residents and visitors on a year-round basis. Commercial development is already concentrated on coast lines and new developments are both proposed and ongoing. However, the population density on the coast is not expected to increase significantly in the near future. Public access to all beaches is protected by USVI law and is deeply ingrained in the culture. The beaches are also a major draw to the tourism industry and an important driver to the economy.

In 1999 the Shoreline Guide to the US Virgin Islands was published with funds from the Sport Fish Restoration Act and the US Fish and Wildlife Service. The publication remains a frequently used resource. Since that time, however, new SAMPs, the St. Croix East End marine Park have been created and new areas have been designated for fishing. The National Park has expanded its management area around Buck Island National Monument and fishing regulations have changed within its boundaries.

- If available, briefly list and summarize the results of any additional data or reports on the status or trends for coastal public access since the last assessment.

A Public Beach Access Guide was created by the VIDPNR CZM for distribution to the public. The document discusses the history and heritage behind all Virgin Islands beaches being public access and the legislation that guarantees this right for the people of the Virgin Islands. The publication was created in conjunction with the Virgin Islands Department of Tourism and effectively draws attention to many beaches suited to recreation and the VIDPNR’s role in ensuring this right for Virgin Islanders.

Management Characterization:

- Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) that could impact the future provision of public access to coastal areas of recreational, historical, aesthetic, ecological, or cultural value.

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
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Statutes, regulations, policies, or case law interpreting these	Y [Open Shoreline Act]	N	N
Operation/maintenance of existing facilities	Y [Public boat ramps, boat moorings,]	N	N
Acquisition/enhancement programs	N	N	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
- Describe the significance of the changes;
 - Specify if they were 309 or other CZM-driven changes; and
 - Characterize the outcomes or likely future outcomes of the changes.

NA

3. Indicate if your state or territory has a publically available public access guide. How current is the publication and how frequently it is updated?²²

Public Access Guide	Printed	Online	Mobile App
State or territory has? (Y or N)	Partial [details below]	N	N
Web address (if applicable)	N	N	N
Date of last update	1999	NA	NA
Frequency of update			

There are three publications that contain significant portions of what comprises a Public Access Guide; The Virgin Islands Shoreline Guide (1999), The Scenic Resources Guide (2004) The Beach Access Guide (2010). Each of these is a partial fulfillment of the requirements of a Public Access Guide, although none of them represents a single, comprehensive Public Access Guide.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High X
Medium _____
Low _____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Beaches are a significant cultural and economic resource to the US Virgin Islands and access to them is important to resident, visitor and several public agencies. The VIDPNR CZM and the Virgin Islands Department of Tourism partnered to create the previously mentioned brochure on beaches of the three main US Virgin Islands. However, tourism focuses on recreational beaches for visitors while VIDPNR CZM has the broader mandate of managing for residents and the greater coastal ecology.

There is a need for quantitative information coastal resources and public access to them in the US Virgin Islands. The Shoreline Guide to the US Virgin Islands was last printed in 1999. An updated version of this document should be created. This new document can enumerate all of the named beaches in the territory, identify those with beaches enhanced access, and provide locations for other stakeholder resources. Protected areas and boardwalks have changes significantly since the last Shoreline Guide. Boat ramps and designated fishing areas could also be updated and included in the guide. VIDPNR staff have personal knowledge of other public resources that should be quantified, geo-located and described, including scenic vistas, green spaces and others.

The Scenic Resources Map of the USVI (2004) can also be updated and georeferenced. Stakeholder response indicated a need for this type of information in an accessible, on-line format. The VIDPNR CZM is also planning to create a combination data set of parks and shoreline areas (under 309 Shoreline Access) in a single location. The goal is to have these locations identified in a single document and have the document available both in print and on the website.

RESOURCES AND TOOLS:

Below are a few national resources and tools that may be useful in conducting your assessment or developing public access strategies. States likely have other state-specific resources, tools, and data that would be useful as well.

CZMA Performance Measurement System Data

Annual CZMA performance measurement data for public access. Online database can be used to synthesize existing state or territory data reported during the assessment period.

Geographic Scope: All coastal states and territories

Website: www8.nos.noaa.gov/PMD/Login.aspx?ReturnUrl=%2fPMD%2fdefault.aspx

Coastal Hazards

Section 309 Enhancement Objective: Prevent or significantly reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and anticipating and managing the effects of potential sea level rise and Great Lakes level change. §309(a)(2)

PHASE I (HIGH-LEVEL) ASSESSMENT:

Purpose: To quickly determine whether the enhancement area is a high priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. **Flooding:** We have made some adjustments to the table format in order to express the data for the US Virgin Islands based on availability. The recommended data from NOAA’s *State of the Coast* “Population in the Floodplain” viewer appears to estimate the majority of the population of the US Virgin Islands lives in the coastal flood plain. The US Virgin Islands does not use a county system. Therefore, we have removed the “county” field and added the population numbers from the US Census for the selected dates, by island (<http://www.census.gov/2010census/news/releases/operations/cb11-cn180.html>). The percentage of the total population in the flood plain is calculated, rather than by county. Regardless of the calculation method, the percentage of people in the floodplain is high and the amount of change in the 10 year period is small. “Coastal County Snapshots” are not available for the US Virgin Islands at this time.

Population in the Coastal Floodplain			
	2000	2010	Percent Change from 2000-2010
No. of people in coastal floodplain ⁸	87,000	85,000	-2.3%
US Census Bureau Population count for the US Virgin Islands	108,612	106,405	-2%
No. of people by island (county)	NA	NA	NA
St Croix	53,234	50,601	-4.9%
St. John	4,197	4,170	-0.6%
St Thomas	51,181	51,634	0.9%
Percentage of people in coastal floodplain	81.7%	78.3%	-3.4%

⁶ <http://stateofthecoast.noaa.gov/pop100yr/welcome.html>. Note FEMA is in the process of updating the floodplain data. This viewer reflects floodplains as of 2010. If you know the floodplain for your state has been revised since 2010, you can either use data for your new boundary, if available, or include a short narrative acknowledging the floodplain has changed and generally characterizing how it has changed.

⁷ www.csc.noaa.gov/digitalcoast/tools/snapshots

⁸ To obtain exact population numbers for the coastal floodplain, download the Excel data file on the State of the Coast “Population in the Floodplain” viewer: <http://stateofthecoast.noaa.gov/pop100yr/welcome.html>. Summary population data for each coastal state is available on the ftp site.

⁹ To obtain population numbers for coastal counties, see spreadsheet of coastal population and critical facilities data provided or download directly from <http://www.csc.noaa.gov/digitalcoast/data/stics>. Summary population data for each coastal state is available on the ftp site.

¹⁰ <http://stateofthecoast.noaa.gov/vulnerability/welcome.html> (see specifically “Erosion Rate” drop-down on map). The State of the Coast visually displays the data from USGS’s Coastal Vulnerability Index.

2. **Shoreline Erosion** (for all states other than Great Lakes and islands; for Great Lakes and islands, see Question 5): Using data from NOAA’s *State of the Coast* “Coastal Vulnerability Index,”¹⁰ indicate the vulnerability of the state’s shoreline to erosion. You may use other information or graphs or other visuals to help illustrate or replace the table entirely if better data is available.

Vulnerability to Shoreline Erosion		
Vulnerability Ranking	Miles of Shoreline Vulnerable ¹¹	Percent of Coastline ¹¹
Very low (>2.0m/yr accretion)	No Data	No Data

Low (1.0-2.0 m/yr) accretion)	No Data	No Data
Moderate (-1.0 to 1.0 m/yr) stable	No Data	No Data
High (-1.1 to -2.0 m/yr) erosion	No Data	No Data
Very high (<-2.0 m/yr) erosion	No Data	No Data

Although there is no known data source that describes shoreline vulnerability to erosion in the same terms as this table, there are some resources for the US Virgin Islands and Puerto Rico. Ryan Runyan et al described shoreline change on 20 small islands in Puerto Rico and the US Virgin Islands region <https://gsa.confex.com/gsa/2013AM/webprogram/Paper233301.html> . The authors concluded that shorelines of these small islands are dynamic, that there is a net loss of area due to erosion, but that the losses are relatively small and vary greatly across the study area.

3. **Sea Level Rise** (for all states other than Great Lakes and islands; for Great Lakes and islands, see Question 5):

Coastal Vulnerability to Historic Sea Level Rise		
Vulnerability Ranking	Miles of Shoreline Vulnerable ¹¹	Percent of Coastline
Very low	No Data	No Data
Low	No Data	No Data
Moderate	No Data	No Data
High	No Data	No Data
Very high	No Data	No Data

4. **Other Coastal Hazards:** The responses in the table below were derived primarily from the US Virgin Islands Territorial Hazard Mitigation Plan (USVITHMP), approved by the Federal Emergency Management Agency (FEMA) in 2011 and updated in 2014. Coastal storms and stormwater flooding are identified as the primary hazards facing all three main US Virgin Islands and Water Island. (http://www.vitema.gov/mitigation/documents/2014_mitigation_plan.pdf).

Type of Hazard	General Level of Risk ¹³ (H, M, L)
Flooding (riverine, stormwater)	H
Coastal storms (including storm surge) ¹⁴	H
Geological hazards (e.g., tsunamis, earthquakes)	M
Shoreline erosion ¹⁵	M

¹¹ To obtain exact shoreline miles and percent of coastline, mouse over the colored bar for each level of risk or download the Excel data file.

¹² <http://stateofthecoast.noaa.gov/vulnerability/welcome.html> (see "Vulnerability Index Rating" drop-down on map). The State of the Coast visually displays the data from USGS's Coastal Vulnerability Index.

¹³ Risk is defined as "the estimated impact that a hazard would have on people, services, facilities and structures in a community; the likelihood of a hazard event resulting in an adverse condition that causes injury or damage." *Understanding Your Risks: Identifying Hazards and Estimating*

Losses. FEMA 386-2. August 2001

¹⁴ In addition to any state- or territory-specific information that may help respond to this question, the U.S. Global Change Research Program

has an interactive website that provides key findings from the 2014 National Climate Assessment for each region of the country, including regions for the coasts and oceans, and various sectors. The report includes findings related to coastal storms and sea level rise that may be helpful in determining the general level of risk. See <http://nca2014.globalchange.gov/>.

Type of Hazard	General Level of Risk ¹³ (H, M, L)
Sea level rise ^{13,14,15}	M
Great Lake level change ¹⁴	NA
Land subsidence	L
Saltwater intrusion	L
Mangrove migration	H

For the North Atlantic region containing the US Virgin Islands, sea level rise is estimated to be 0.35 m through to 2040s, according to the model used by the Intergovernmental Panel on Climate Change. The actual sea level rise, of course, could be greater or less than this estimate. Sea level rise is of particular concern in the US Virgin Islands because of our close relation with the sea. The small islands have relatively long coastlines and both commercial and residential development is concentrated along the shore. The USVI territorial Hazard Mitigation Plan recognizes that the projected rise in sea level will exacerbate coastal flooding and "...will augment surge and wave heights to increase projected coastal flood depths and extents".

The USVITHMP identifies both riverine/stormwater and marine storm surge as serious hazard risks on all three major islands. The top five The Hazard Mitigation Actions recommended in the UVITHMP are flood mitigation actions, hydrologic studies, building retrofits for hurricane preparedness.

In addition to the above hazards, the US Virgin Islands must also consider the risks to valuable mangrove systems. Mangroves are highly productive natural systems key for spawning, nesting and nursing of many fish and wildlife species. Mangrove forests absorb storm surge and the force of ocean waves on the shore. These forests are comprised of a few species tolerating a narrow range of conditions. The NASA-USGS Landsat Program reported that over a 28 year study period that mangrove range has expanded northward dramatically (<https://www.nasa.gov/content/goddard/landsat-satellite-sees-florida-mangroves-migrate-north/#.VpZ5SvkrLIU>) due to area warming trends. NOAA is already educating middle and high school students about the phenomenon (<http://estuaries.noaa.gov/teachers/mangroves.aspx#>). Protection of these mangroves and other natural systems is already a stated goal of the VIDPNR ("*assure that activities in or adjacent to [complexes of marine resource systems ...including reefs, marine meadows, salt ponds, mangroves and other natural systems] are designed and carried out so as to minimize adverse effects on ... storm buffering capabilities,...*") [Title 12 VIRR, Chapter 21, §906 (b)(2)].

In the US Virgin Islands, mangrove distribution is not restricted by temperature and can grow anywhere along the shoreline where hydrologic conditions permit. With predicted sea level rise, the deeper water portions of today's mangrove habitat will most likely become inundated and we can expect mangrove forests of the US Virgin Islands to

migrate inland. This waterfront area in the US Virgin Islands is already densely developed with residential and commercial building. With limited upland area for mangroves to expand into, sea level rise will translate to mangrove habitat loss.

5. *If available, briefly list and summarize the results of any additional data or reports on the level of risk and vulnerability to coastal hazards within your state since the last assessment. The state’s multi-hazard mitigation plan or climate change risk assessment or plan may be a good resource to help respond to this question.*

NA

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if significant state- or territory- level changes (positive or negative) have occurred that could impact the CMP’s ability to prevent or significantly reduce coastal hazards risk since the last assessment.

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these that address:			
<i>elimination of development/redevelopment in high-hazard areas¹⁶</i>	N	N	N
<i>management of development/redevelopment in other hazard areas [VIDPNR CZM]</i>	Y	N	N
<i>climate change impacts, including sea level rise or Great Lake level change</i>	N	N	N
Hazards planning programs or initiatives that address			
<i>hazard mitigation [VITEMA]</i>	Y	N	Y
<i>climate change impacts, including sea level rise or Great Lake level change</i>	N	N	N
Hazards mapping or modeling programs or initiatives for:			
<i>sea level rise or Great Lake level change</i>	N	N	N
<i>other hazards [VITEMA & CariCoos created tsunami vulnerability maps for the territory]</i>	Y	N	Y

2. *Briefly state how “high-hazard areas” are defined in your coastal zone.*

The US Virgin Islands identifies Coastal High-Hazard areas using a combination of federal data and the local knowledge of the region by CZM professionals. The Federal Emergency Management Agency classifies areas into zones according to the level of flood hazard perceived. In the US Virgin Islands, Zone V, VE and V1-V30 are part of the Special Flood Hazard Area (SFHA). The spatially explicit form of this data is the Flood Insurance Risk Map (FIRM) and was updated for the US Virgin Islands in 2011.

In the US Virgin Islands there is a two tier system for Coastal Zone regulation. Tier 1 has a higher degree of regulation than tier 2. This differentiation of these two zones in small islands is considered undesirable and somewhat arbitrary. There is a desire in the community and among stakeholders to abolish this two tiered system.

3. *For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:*
 - a. Describe the significance of the changes;

¹⁵ See NOAA State of the Coastal Vulnerability to Sea Level Rise Tool (select "Erosion Rate" from drop-down box) <http://stateofthecoast.noaa.gov/vulnerability/welcome.html>. The State of the Coast visually displays the data from USGS's Coastal Vulnerability Index.

- b. Specify if they were 309 or other CZM-driven changes; and
- c. Characterize the outcomes or likely future outcomes of the changes.

Enhancement Area Prioritization:

1. *What level of priority is the enhancement area for the coastal management program?*

High	<u> X </u>
Medium	<u> </u>
Low	<u> </u>

2. *Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.*

Coastal hazard preparedness is essential for the protection of residents and their property, critical public infrastructure, the local tourism industry and the coastal natural resources of the US Virgin Islands. Our sea ports and harbors are the primary points of entry for imported food, fuel and many other imported commodities. They are also the arrival and departure point for the majority of visiting tourists.

Coastal areas in the Virgin Islands are subject to a wide range of hazards, which require unique strategies to mitigate them. Sea level rise, hurricane storm surges and flash floods from heavy rains are examples of flooding hazards that increasingly threaten our coasts. Stakeholders raised the issue of mangrove protection as important for both avian and marine wildlife. Protecting mangrove forest systems also provides the additional benefit of increased coastal resilience and reduced risk of coastal flooding. Ecology, economics and the well-being of the people of the Virgin Islands are inextricably linked by coastal resources and the hazards they face

Citations

RUNYAN, Ryann M.¹, JACKSON Jr., Chester W.², BUSH, David M.¹, PERISON-PARRISH, Elizabeth M.³, SIEMER, Kyle W.⁴, LLERANDI-ROMÁN, Pablo A.⁵ and NEAL, William J, 2013. An Assessment of shoreline changes for small associated islands of Puerto Rico and the United States Virgin Islands. *Geological Society of America Abstracts with Programs*. Vol. 45, No. 7, p.593

Ocean Resources

Section 309 Enhancement Objective: Planning for the use of ocean [and Great Lakes] resources.
§309(a)(7)

PHASE I (HIGH-LEVEL) ASSESSMENT: *(Must be completed by all states and territories.)*

Purpose: To quickly determine whether the enhancement area is a high priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. Understanding the ocean and Great Lakes economy can help improve management of the resources it depends on. Using Economics: National Ocean Watch (ENOW),³¹ indicate the status of the ocean and Great Lakes economy as of 2010, as well as the change since 2005, in the tables below. Include graphs and figures, as appropriate, to help illustrate the information. Note ENOW data are not available for the territories. The territories can provide alternative data, if available, or a general narrative, to capture the value of their ocean economy.

The US Virgin Islands is not yet included in the publically available National Ocean Watch (ENOW) data; therefore NOAA's Office of Coastal Management developed an independent summary of BLS Quarterly Census of Employment and Wages (QCEW) data for ocean-dependent sectors in the USVI and Puerto Rico using ENOW classifications. A review of the QCEW data by Clements et al. (2016) suggests that ENOW-defined activity accounts for only a small portion of the overall economies of the USVI. In the report, the authors provide examples within each sector, particularly living resources and tourism, illustrating how ocean-dependent economies are undervalued using ENOW methodology. Because of this, NOAA OCM is in the process of developing a more comprehensive methodology for capturing ocean-dependent economic activity in the USVI and Puerto Rico. The two tables below illustrate employment and wage estimates for the USVI based on ENOW sector compared to estimates based on the QCEW methods (Clement et al., 2016).

Exhibit ES-1. Establishments, employment, and total average annual wages by ENOW sector, USVI and Puerto Rico

ENOW sector	Establishments	Employment	Total wages (\$)
USVI			
Living resources	1	ND ^a	ND
Marine construction	2	ND	ND
Marine transportation	22	214	\$11,030,080
Offshore mineral resources	5	ND	ND
Ship and boat building	1	ND	ND
Tourism and recreation	373	6,524	\$161,751,217
Total	404	6,738	\$172,781,297

Exhibit ES-4. Comparison of employment data by ENOW sector, USVI and Puerto Rico

ENOW sector	Traditional ENOW	Traditional ENOW w/additional estimates and QCEW data for sectors entirely dependent on the ocean	Traditional ENOW w/additional estimates and QCEW data for sectors entirely or partially dependent on the ocean
USVI			
Living resources	ND ^a	225	361
Marine construction	ND		63
Marine transportation	214	417	417
Offshore mineral resources	ND		
Ship and boat building	ND	140	140
Tourism and recreation	6,524	8,382	9,757
Total	6,738	9,164	10,738

Exhibit 4.11. Summary of findings from in-person meetings and additional data sources

ENOW ocean-dependent sector	Establishments (and employment) by ENOW industry	Findings from interviews and local data sources	Additional sectors/activity not included in ENOW
Living resources	1 seafood market on St. Thomas	<ul style="list-style-type: none"> 200 to 250 active local fishermen, plus helpers and fish cleaners \$4.26 million in gross revenues for fishermen 8+ seafood markets, 3 of which are government-run, the rest of which are informal operations 1 aquaculture operation (UVI) 	<ul style="list-style-type: none"> Marine-based conservation organizations Government-run marine-based programs (BLS reports 9 estimated with 97 employees) UVI marine sciences program
Marine construction	2 privately owned establishments on St. Thomas, marine-related construction	<ul style="list-style-type: none"> ENOW data seem reasonable Research discovered 3 marine-construction-related companies, 2 on St. Thomas and 1 on St. Croix These companies perform a variety of marine-related activities VIPA and other government agencies contract out marine construction activities 	<ul style="list-style-type: none"> Company on St. Croix registered under NAICS codes not included in ENOW Similar companies that provide ocean-related construction activities may be registered under: engineering services, other surveying and mapping services, environmental consulting services, all other support services, or other
Marine transportation	10 deep sea freight (173 employees) 5 marine passenger transportation services 7 marine transportation services	<ul style="list-style-type: none"> ENOW data seem to underrepresent this sector VIPA alone has 80 employees in the marine division VIPA collected \$22.4 million in wharfage and user fees in 2014 Many cargo/freight companies, most of which have operations on the USVI if headquartered elsewhere At least two water taxi companies 	<ul style="list-style-type: none"> Many marine cargo/freight companies registered under freight transportation arrangement (BLS reports 15 establishments) WICO registered under freight transportation arrangement, with 77 employees 4 companies with 46 employees registered under inland water transportation, likely ocean-based water taxis
Offshore mineral resources		<ul style="list-style-type: none"> Extraction of offshore resources is prohibited in USVI Very little economic activity in this sector 1 or 2 companies that offer beach renourishment (sand is imported) Oil and gas operations in ENOW dataset (St. Croix) likely not ocean-dependent 	
Ship and boat building	1 boat building establishment on St. Croix	<ul style="list-style-type: none"> 15 to 20 boat repair and maintenance shops, 2 of which employ 50+ individuals, most have 2 to 4 employees 4 boat/ship building companies, 1 employs approximately 40 people Repair and maintenance shops Recreational boaters and charter yachts often employ local residents (informally) for boat washing and some other related services 	Boat maintenance and repair shops may be registered under alternative NAICS codes related to their specific service (e.g., woodworking) or a broader industry; some also may be registered under boat dealers (captured in ENOW tourism and recreation sector)
Tourism and recreation	39 (196 employees) amusement and recreation services 13 (60 employees) boat dealers 240 (2,463 employees) eating and drinking places 44 (3,510 employees) hotels and lodging places 7 (112 employees) marinas 2 (ND ^a) RV park and campgrounds 19 (85) scenic water tours 9 (98) zoos and aquaria	<ul style="list-style-type: none"> Tourists include 570,000 overnight visitors, and 2.1 million cruise ship passengers/air excursionists from other islands (2013) Tourist and cruise ship passenger expenditures equal \$851 million and \$381 million (2013) Many self-employed individuals and small businesses in this sector USVI HTA has 263 members, including 63 hotels, as well as airlines, restaurants, car rental agencies, retail shops, and more 150+ charter yacht boats 168 vendors operating in the National Park 12+ recreational charter fishing operations BER reports 8,339 employees for selected tourism sectors 	Tourism sector is much larger than defined in ENOW; it also includes retail shops, taxis, car rental agencies, air transportation, tour operators, temporary staffing agencies, real estate/vacation rentals, bars, and likely portions of other sectors

a. For industries below a certain size, BLS does not disclose employment and wage data for privacy purposes. These occurrences are noted using "ND" for non-disclosed.

There are other recent studies that provide a good indication as to the value of ocean economy in the Virgin Islands.

An effort to determine and describe the total value of coral reefs to the VI economy was completed in 2011. [*The Economic Value of the Coral Reef Ecosystems of the United States Virgin Islands*](#). (Van Beukering, et al, 2011) includes substantive data that helps innumerate key components of the ocean based economy in the USVI. In general, that report concluded that the coral reef ecosystem of the USVI is worth a conservative \$202 million per year. Of this \$1.4 million was attributed to commercial fishing, \$1.9 million to recreational fishing, \$35 million to cruise passengers, \$65 million to airline arrivals. The authors stress the conservative nature of the estimate. It is important to reiterate that this study only looked at the coral reef ecosystem components of the ocean economy, which is a subset of the overall ocean based economy.

A separate report prepared for the Florida-Caribbean Cruise Line Association in 2012 entitled [*Economic Contribution of Cruise Tourism to the Destination Economies- A Survey-based Analysis of the Impacts of Passenger, Crew and Cruise Line Spending*](#) (Business Research & Economic Advisors, 2012), indicates that for the 2011/2012 cruise year, the USVI received \$340 million in revenues from cruise passenger arrivals. These revenues generated just under \$140 million in wage income for an estimated 6,349 jobs. The USVI is consistently one of the top cruise destinations in the world and during the 2011/2012 cruise year, 2.1 million visitors arrived by cruise ship, the second highest in the region for that year.

With a GDP of about \$1.6 billion in the 2011-2012 timeframe, per capita, the coral reef ecosystem-based value \$202 million is 13% of GDP and the cruise ship revenues is 22% of GDP. Both of these figures signify a high proportion of GDP from ocean related income for the island jurisdiction, but do not capture the full ocean economy in the VI. It is important to note that overlap and omissions from both analyses are likely, and the full value of the ocean economy in the USVI has not yet been calculated.

The islands are heavily dependent on ocean freight, though no specific economic figures are available. It is important to note that the 2012 closure of the Hovensa oil refinery on St. Croix substantially reduced the amount of commercial shipping traffic arriving in the USVI. Over 1,000 ships a year, or roughly one-third of commercial shipping traffic to the USVI, was reduced as a result of the closure. Substantial negative economic impacts were realized with a net decline in GDP from \$424 million in 2011 to \$310 million in 2013, mostly due to the refinery closure according to the VI Bureau of Economic Research Analysis.

Overall the ocean related economy in the VI declined from the previous report issued on September 30, 2009. This is likely due to both the lingering effects of the global recession and the closure of the Hovensa oil refinery, based on data available from the VI Bureau of Economic Research.

³¹ <https://coast.noaa.gov/digitalcoast/tools/enow.html>. If you select any coastal county for your state, you receive a table comparing county data to state coastal county, regional, and national information. Use the state column for your responses.

2. In the table below, characterize how the threats to and use conflicts over ocean and Great Lakes resources in the state's or territory's coastal zone have changed since the last assessment.

Significant Changes to Ocean and Great Lakes Resources and Uses	
Resource/Use	Change in the Threat to the Resource or Use Conflict Since Last Assessment (↑, ↓, -, unkwn)
Resource	
<i>Benthic habitat (including coral reefs)</i>	↑
<i>Living marine resources (fish, shellfish, marine mammals, birds, etc.)</i>	↑
<i>Sand/gravel</i>	-
<i>Cultural/historic</i>	↑
<i>Other (please specify)</i>	
Use	
<i>Transportation/navigation</i>	↓
<i>Offshore development³²</i>	-
<i>Energy production</i>	-
<i>Fishing (commercial and recreational)</i>	-
<i>Recreation/tourism</i>	-
⊠ <i>Sand/gravel extraction</i>	-
<i>Dredge disposal</i>	-
<i>Aquaculture</i>	-
<i>Other (please specify)</i>	

3. For the ocean and Great Lakes resources and uses in Table 2 (above) that had an increase in threat to the resource or increased use conflict in the state's or territory's coastal zone since the last assessment, characterize the major contributors to that increase.

Major Contributors to an Increase in Threat or Use Conflict to Ocean and Great Lakes Resources												
Resource	Major Reasons Contributing to Increased Resource Threat or Use Conflict											
	Land-based development	Offshore development	Polluted runoff	Invasive species	Fishing (Comm & Rec)	Aquaculture	Recreation	Marine Transportation	Dredging	Sand/Mineral Extraction	Ocean Acidification	Climate Change
<i>Benthic habitat (including coral reefs)</i>	X		X	X								X
<i>Living marine resources</i>	X		X	X								X
<i>Cultural/historic</i>	X			X								X
[Resource or Use from Table 2]												

³² Offshore development includes underwater cables and pipelines, although any infrastructure specifically associated with the energy industry

should be captured under the “energy production” category.

4. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of ocean and Great Lakes resources or threats to those resources since the last assessment to augment the national data sets.

Marine invasive species and the multiple, growing and compounding hazards posed by climate change create an increasing threat to the USVI marine environment.

Marine Invasive Species

The invasive seagrass *Halophila stipulacea*, is quickly spreading throughout the territory’s waters. Originating in the western Indian Ocean, it is believed to have been introduced to the Caribbean and Mediterranean Seas in the ballast water of ships and spread by fragmentation enhanced by anchoring and other bottom disturbances. Native seagrasses are threatened as they compete for resources and space. The invasive plant’s fast growth rate and its ability to regenerate from a tiny fragment enables it to rapidly establish new colonies in bare sand and out-compete native seagrasses which may impact the organisms that rely on native seagrasses for food and shelter according to a statement from the [University of the Virgin Islands](#).

The invasive indo-pacific lionfish (*Pterois volitans*, *Pterois miles*) is an ongoing threat to the USVI fisheries. While community awareness and several active initiatives to catch, eat or otherwise kill lionfish have helped make localized improvements, the overall threat remains high because of their voracious appetite for reef fish, their high reproduction rates, their high environmental adaptability and their lack of natural predators according to statements and data from the [Caribbean Invasive Lionfish Response Program](#).

Climate Change

The coastal and marine communities of the USVI are highly susceptible to the effects of climate change including increasing hazardous coastal conditions and loss of life-sustaining marine, coastal and island resources. Climate change is adding stresses to the coastal environment by generally altering temperature and precipitation patterns, increasing the likelihood of extreme precipitation events, and accelerating rates of sea level rise (Schill, et al, 2014).

While the full effects of climate change will play out over the coming decades, two likely climate related phenomena are already highly visible in the USVI. The seasonal coastal erosion and loss of beaches is accelerating at numerous locations in the USVI. Thinning beaches and coastal erosion of terrestrial soils and vegetation cause loss of land and pollute adjacent sea. The seasonal influx of sargassum seaweed has, in some locations, become overwhelming for coastal businesses as large, pervasive blooms or patches of sargassum wash ashore and smother coastlines of Caribbean islands. Both phenomena substantially reduce the recreational and commercial use of affected shorelines and have heavy, localized impacts on livelihoods.

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if any significant state- or territory- level changes (positive or negative) in the management of ocean and Great Lakes resources have occurred since the last assessment?

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	Y	N
Regional comprehensive ocean/Great Lakes management plans	Y	Y	Y
State comprehensive ocean/Great Lakes management plans	N	Y	N
Single-sector management plans	N	N	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
 - a. Describe the significance of the changes;
 - b. Specify if they were 309 or other CZM-driven changes; and
 - c. Characterize the outcomes or likely future outcomes of the changes.

In May 2012, the Governors of the USVI and Puerto Rico signed a Memorandum of Understanding to establish a formal mechanism to collaborate and share ocean related data through the [Caribbean Regional Ocean Partnership](#) (CROP). The Partnership created a strong mechanism for planning, engagement and sharing of data across inter-jurisdictional territorial seas and with US Federal agencies in the US Caribbean’s Exclusive Economic Zone (CROP Data Portal, 2016).

3. Indicate if your state or territory has a comprehensive ocean or Great Lakes management plan.

Comprehensive Ocean/Great Lakes	State Plan	Regional Plan
Completed plan (Y/N) (If yes, specify year completed)	N	N
Under development (Y/N)	N	N
Web address (if available)	N	N
Area covered by plan	USVI?	N

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High X
Medium
Low

Ocean resources provide a large percentage of the Virgin Islands Economy. Cruise ships and coral reef tourism the backbone of the tourist economy that sustains the Virgin Islands. Sport fishing, and boat charters are also significant. Boat building, repair and maintenance are other industries that employ many Virgin Islands and depend on successfully managed ocean resources.

The fishing industry and seafood sales also generate millions of dollars per year in the Virgin Islands. These resources are regulated by the VIDPNR and other agencies to ensure healthy fish and shellfish populations continue to provide harvests for future generations. Yet climate change and invasive species and other threats place uncertain pressure on ocean resources so important to the economy. Management strategies for the challenges facing ocean resources are evolving to respond to the dynamic threats. The importance of ocean resources to the economy and the various pressures exerted against it are the reason for the High Priority ranking.

References:

Caribbean Invasive Lionfish Response Program (CORE) Statement and Data. Retrieved from:

<http://www.corevi.org/invasive-lionfish.html>

Caribbean Regional Ocean Partnership Data Portal Statement. Retrieved from: <http://caribbean-mp.org/en/about/>

Clements, J., V. Feliciano, and C. Colgan. The Ocean Economies of the US Virgin Islands and Puerto Rico. 2016.

Prepared for NOAA Office of Coastal Management.

<https://coast.noaa.gov/data/digitalcoast/pdf/econ-usvi-pr.pdf>

Economic Contribution of Cruise Tourism to the Destination Economies- A Survey-based Analysis of the Impacts of Passenger, Crew and Cruise Line Spending, 2012, Business Research & Economic Advisors,

Schill, S., Brown, J., Justiniano, A., Hoffman, A. (2014) *US Virgin Islands Climate Change Ecosystem-Based Adaptation Promoting Resilient Coastal and Marine Communities GUIDANCE DOCUMENT*. The Nature Conservancy, Christiansted, VI.

Exton, PA.

US Virgin Islands Annual Economic Indicators, 1990-2014 Data. US Virgin Islands Bureau of Economic Research, Charlotte Amalie, VI. Retrieved from: <http://www.usviber.org/publications.htm>

UVI Researchers Seek Help to Stop Invading Sea Grasses in VI, December 4, 2014. University of the Virgin Islands. Retrieved from: http://www.uvi.edu/news/articles/2014/12_263_seagrass.aspx

Van Beukering, P.J.H., L. Brander, B. van Zanten, E. Verbrugge and K. Lems (2011) *The Economic Value of the Coral Reef Ecosystems of the United States Virgin Islands*. Report number R-11/06. Institute for Environmental Studies (IVM), Amsterdam.

Wetlands

Section 309 Enhancement Objective: Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands. §309(a)(1)

Note: For the purposes of the Wetlands Assessment, wetlands are “those areas that are inundated or saturated at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” [33 CFR

328.3(b)]. See also pg. 17 of the CZMA Performance Measurement Guidance³ for a more in-depth discussion of what should be considered a wetland.

PHASE I (HIGH-LEVEL) ASSESSMENT:

Purpose: To quickly determine whether the enhancement area is a high priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

- 1. Using provided reports from NOAA’s Land Cover Atlas⁴ or high-resolution C-CAP data⁵ (Pacific and Caribbean Islands only), please indicate the extent, status, and trends of wetlands in the state’s coastal counties. You can provide additional or alternative information or use graphs or other visuals to help illustrate or replace the table entirely if better data are available. Note that the data available for the islands may be for a different time frame than the time periods reflected below. In that case, please specify the time period the data represents. Also note that Puerto Rico and the Commonwealth of the Northern Mariana Islands (CNMI) currently only have data for one time point so will not be able to report trend data. Instead, Puerto Rico and CNMI should just report current land use cover for all wetlands and each wetlands type.*

Coastal Wetlands Status and Trends		
Current state of wetlands in 2011 (acres)	2007	2012
	1,603.1	1630.7
Percent net change in total wetlands (% gained or lost)*	from 2002-2007 + .8%	from 2007-2012 + 1.7%
Percent net change in freshwater (palustrine wetlands) (% gained or lost)*	from 1996-2011 -1.4%	from 2007-2012 -0.1%
Percent net change in saltwater (estuarine) wetlands (% gained or lost)*	from 1996-2011 +2.9%	from 2007-2012 +3.2%

The overall trend for both change analyses is that there is little or no change. This lack of change appears to reflect our observations in the field. The US Virgin Islands has seen a significant economic downturn since 2002 and there has been minimal land development

during that time. The majority of the development has been small scale residential, rather than larger commercial developments. Land-cover change analysis for St. Croix (excluding St. Thomas and St. John) indicates a trend of decreasing cultivated areas that either revert to forest or are developed into small scale residential development http://geographicconsulting.com/wp-content/uploads/2011/05/Daley_2009_STX_Land_cover_change.pdf.

The VIDPNR-Coastal Zone management office manages the territory in a two-tiered system. The strongest regulation applies to the coastal, Tier 1 zone. The vast majority of wetlands also occur in this area. It is highly likely that the policies and practices of the CZM have contributed to the preservation of the wetlands in the US Virgin Islands.

How Wetlands Are Changing*		
Land Cover Type	Area of Wetlands Transformed to Another Type of Land Cover between 2002-2007 (acres)	Area of Wetlands Transformed to Another Type of Land Cover between 2007-2012 (acres)
Development	1.9	3.4
Agriculture	0.6	0
Barren Land	1.6	0.3
Water	4.9	1.4

** Note: Islands likely have data for another time period and may only have one time interval to report. If so, only report the change in wetlands for the time period for which high-resolution C-CAP data are available. Puerto Rico and CNMI do not report.*

2. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of coastal wetlands since the last assessment to augment the national data sets.

There are Land-cover Classification layers for the US Virgin Islands created by several federal agencies that are useful for one specific date. The US Forest Service, International Institute of Tropical Forestry (IITF) http://www.fs.fed.us/global/iitf/pubs/ja_iitf_2008_kennaway001x.pdf, US Fish and Wildlife Service (USFWS) <http://catalog.data.gov/dataset/national-wetlands-inventory-wetlands7b713>, and the National Resource Conservation Service (NRCS) <http://www.nrcs.usda.gov/wps/portal/nrcs/surveylist/soils/survey/state/?stateId=VI> have all created landcover classification data for the USVI. However, this data was not created for the purpose of change analysis. Therefore, it is rare to find two data sets, using the same methodologies and classification systems that can be compared to show change. As is often the case for the US Virgin Islands and other outlying US territories, the data is not always easily available online. The links, above, are to the best source available.

Management Characterization:

1. Indicate if there have been any significant changes at the state or territory level (positive or negative) that could impact the future protection, restoration, enhancement, or creation of coastal wetlands since the last assessment.

Management Category	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	N
Wetlands programs (e.g., regulatory, mitigation, restoration, acquisition)	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
 - a. Describe the significance of the changes;
 - b. Specify if they were 309 or other CZM-driven changes; and
 - c. Characterize the outcomes or likely future outcomes of the changes.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High _____
Medium X
Low _____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

While wetlands are an integral part of the Virgin Islands ecosystems, the data indicates there were no significant changes in area over the last 10 years. The economic/development forecast for growth in the US Virgin Islands is sluggish and is not likely aggressive enough to warrant new management measures.

Wetlands have not been heavily affected in the last 10 years according to the general datasets from NOAA. This trend is confirmed by local expert knowledge and the ongoing low levels of new development associated with a persistent economic downturn in the territory.

Kennaway, T.A., Helmer, E.H., Lefsky, M.A., Brandeis, T.B., and Sherrill, K.R. 2008. Mapping land cover and estimating forest structure using satellite imagery and coarse resolution LIDAR in the Virgin Islands, *Journal of Applied Remote Sensing*. V. 2.

Cumulative and Secondary Impacts

Section 309 Enhancement Objective: Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development, including the collective effect on various individual uses or activities on coastal resources, such as coastal wetlands and fishery resources. §309(a)(5)

PHASE I (HIGH-LEVEL) ASSESSMENT: *(Must be completed by all states.)*

Purpose: To quickly determine whether the enhancement area is a high priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. Using National Ocean Economics Program Data on population and housing,²⁴ please indicate the change in population and housing units in the state’s coastal counties between 2012 and 2007. You may wish to add additional trend comparisons to look at longer time horizons as well (data available back to 1970), but at a minimum, please show change over the most recent five year period (2012-2007) to approximate current assessment period.

Estimates were derived using best available data from the [U.S. Census Bureau 1990-2010](#) due to unavailability of data from the NOEP Data.

Trends in Coastal Population and Housing Units				
Year	Population		Housing	
	Total (# of people)	% Change (compared to 1990)	Total (# of housing units)	% Change (compared to 1990)
2000	108,612	+ 6.7% (101,809)	40648	+ 3.5% (39,290)
2010	106,402	4.5%	55901	42.3%

2. Using provided reports from NOAA’s Land Cover Atlas²⁵ or high-resolution C-CAP data²⁶ (Pacific and Caribbean Islands only), please indicate the status and trends for various land uses in the state’s coastal counties between 2006 and 2011. You may use other information and include graphs and figures, as appropriate, to help illustrate the information. Note that the data available for the islands may be for a different time frame than the time periods reflected below. In that case, please specify the time period the data represents. Also note that Puerto Rico and the Commonwealth of the Northern Mariana Islands (CNMI) currently only have data for one time point so will not be able to report trend data. Instead, Puerto Rico and CNMI should just report current land use cover for developed areas and impervious surfaces.

²⁴ www.oceaneconomics.org/. Enter “Population and Housing” section. From drop-down boxes, select your state, and “all counties.” Select the year (2012) and the year to compare it to (2007). Then select “coastal zone counties.” Finally, be sure to check the “include density” box under the “Other Options” section.

²⁵ www.csc.noaa.gov/ccapatlas/. Summary data on land use trends for each coastal state is available on the ftp site.

²⁶ www.csc.noaa.gov/digitalcoast/data/ccaphighres. Summary data on land use trends for each coastal state is available on the ftp site.

Data were derived using the existing data sources listed as [26](#). General trends show a slight shift in developed open lands, a loss of open lands and a gain in agriculture. Causal factors may

include the dramatic economic decline from the 2008 recession and the closing of the largest employer in 2011. It could be inferred that more land was being developed for building or other facilities and was then abandoned before it was fully developed.

Distribution of Land Cover Types in Coastal Counties		
Land Cover Type	Land Area Coverage in 2012 (Acres)	Gain/Loss Since 2007 (Acres)
Developed, High Intensity	0	0
Developed, Low Intensity	0	0
Developed, Open Space	8520	8225.4 (4%)
Grassland	1997	2079.1(-4%)
Scrub/Shrub	24545	24416.1 (1%)
Barren Land	1932	2143.9 (-10%)
Open Water	10095	10116.7 (0%)
Agriculture	358	339.9 (5%)
Forested	32888	33631.3 (-2%)
Woody Wetland	1564	1537.1 (2%)
Emergent Wetland	67	66 (2%)

3. Using provided reports from NOAA’s Land Cover Atlas²⁷ or high-resolution C-CAP data²⁸ (Pacific and Caribbean Islands only), please indicate the status and trends for developed areas in the state’s coastal counties between 2006 and 2011 in the two tables below. You may use other information and include graphs and figures, as appropriate, to help illustrate the information. Note that the data available for the islands may be for a different time frame than the time periods reflected below. In that case, please specify the time period the data represents. Also note that Puerto Rico and CNMI currently only have data for one time point so will not be able to report trend data. Unless Puerto Rico and CNMI have similar trend data to report on changes in land use type, they should just report current land use cover for developed areas and impervious surfaces.

Data for CCAP were available for the U.S. Virgin Islands for all of the islands excluding the minor islands for the years of 2007 and 2012.

Development Status and Trends for Coastal Counties

	2007	2012	Percent Net Change
Percent land area developed	19.7%	20.3%	+ .6%
Percent impervious surface area	11.1	11.4%	+ .3%

** Note: Islands likely have data for another time period and may only have one time interval to report. If so, only report the change in development and impervious surface area for the time period for which high-resolution C-CAP data are available. Puerto Rico and CNMI do not need to report trend data.*

The table below was created by using “Impervious Surface and Developed Open Space” to represent “Development”. Changes between the dates were minor. Development trends indicate there was development of some scrub lands in preparation for development or agriculture. CCAP data for the 2007 and 2012 were used to derive the results.

How Land Use Is Changing in Coastal Counties	
Land Cover Type	Areas Lost to Development Between 2007-2012 (Acres)
Barren Land	85.8
Emergent Wetland	.04 (all wetland types combined)
Woody Wetland	1.2
Open Water	.2
Agriculture	2.8
Scrub/Shrub	493.3 (scrub to bare=13.8%, scrub to cultivated=13.7%, scrub to developed=49.3%, scrub to impervious=23.3%)
Grassland	20
Forested	236.31121

** Note: Islands likely have data for another time period and may only have one time interval to report. If so, only report the change in land use for the time period for which high-resolution C-CAP data are available. Puerto Rico and CNMI do not report.*

²⁷ www.csc.noaa.gov/ccapatlas/. Summary data on land use trends for each coastal state is available on the ftp site.

²⁸ www.csc.noaa.gov/digitalcoast/data/ccaphighres. Summary data on land use trends for each coastal state is available on the ftp site.

4. Using data from NOAA’s State of the Coast “Shoreline Type” viewer,²⁹ indicate the percent of shoreline that falls into each shoreline type.³⁰ You may provide other information or use graphs or other visuals to help illustrate.

Data were not available on the State of the Coast viewer but a general view was available through the restoration program of shoreline types.

<http://response.restoration.noaa.gov/maps-and-spatial-data/download-esi-maps-and-gis-data.html#VirginIslands>

Shoreline Types	
Surveyed Shoreline Type	Percent of Shoreline
Armored	8%
Beaches	39%
Flats	NA
Rocky	34%
Vegetated	16.3%

5. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the cumulative and secondary impacts of coastal growth and development, such as water quality and habitat fragmentation, since the last assessment to augment the national data sets.

The University of the Virgin Islands (UVI) Center for Marine and Environmental Studies and the Virgin Islands Marine Advisory Service collaborated to create a document entitled Waves of Change: A resource for Environmental Issues in the USVI

(ftp://ftp.nodc.noaa.gov/pub/data.nodc/coris/library/NOAA/other/waves_change_envir_resource_usvi.pdf.) The document addresses both specific and general threats to the water and marine resources in the US Virgin Islands and suggests pathways toward improving conditions.

Other Publications in the Virgin Islands address either specific areas or specific proposed developments. The Friends of Virgin Islands National Park and other community groups have expressed specific concerns over a proposed marina in Coral Bay of St. John (<http://www.nationalparkstraveler.com/2014/11/virgin-islands-national-park-friends-group-concerned-about-marina-proposed-coral-bay25940>). Another site specific study was published on the chemical contaminants present in samples taken from the St. Thomas East End Reserve (STEER), located on the southeastern end of the island (<http://link.springer.com/article/10.1007%2Fs10661-014-3738-1>). Results from this project will help resource managers with information required to effectively manage coral reef systems and to measure efficacy of restoration activities.

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if there have been any significant state-level changes (positive or negative) in the development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development, including the collective effect on various individual uses or activities on coastal resources, such as coastal wetlands and fishery resources, since the last assessment.

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	N	N	N
Guidance documents	N	N	N
Management plans (including SAMPs)	N	N	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:

- Describe the significance of the changes;
- Specify if they were 309 or other CZM-driven changes; and
- Characterize the outcomes or likely future outcomes of the changes

²⁹ <http://stateofthecoast.noaa.gov/shoreline/welcome.html>

³⁰ Note: Data are from NOAA's Environmental Sensitivity Index (ESI) Maps. Data from each state was collected in different years and some data may be over ten years old now. However, it can still provide a useful reference point absent more recent statewide data. Feel free to use more recent state data, if available, in place of ESI map data. Use a footnote to convey data's age and source (if other than ESI maps).

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High _____
 Med X
 Low _____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

The data available indicates that the overall changes to coastal landcover types are relatively minor. There is also no distinct trend in changes pointing toward a specific land use or policy that is causing negative impacts.

In the US Virgin Islands there is the chronic problem on unpaved and unimproved roads that are perceived to be an important part of not point source pollution, erosion and coastal sedimentation. Landcover and deforestation has been somewhat stable for the past 10+ years in the US Virgin Islands and is not believed to be as significant contributor to cumulative and secondary impacts in the Coastal Zone of the US Virgin Islands. The impact of unpaved/unimproved roads has not yet been studied, territory wide. A logical first step would be to map and characterize the existing roads by size, condition, soil type, and slope. Post-rainfall field measurements of erosion correlated to these variables would allow CZM to properly prioritize their actions. A pilot project that completes this work with a few high priority

watersheds, Special Area Management areas (SAMP) or other areas of particular concern could serve as an example and test effectiveness of proposed methods.

RESOURCES AND TOOLS:

Below are a few national resources and tools that may be useful in conducting your assessment or developing strategies for cumulative and secondary impacts of development. States likely have other state-specific resources, tools, and data that would be useful as well.

EPA National Coastal Condition Report IV

The report describes and rates the ecological and environmental conditions in U.S. coastal waters. Information is summarized on a national and regional basis. The latest report, released in 2012, reports on data collected from 2003 to 2006.

Geographic Scope: National and regional

Website: <http://water.epa.gov/type/oceb/assessmonitor/nccr/index.cfm>

NOAA C-CAP Coastal Land Atlas

Online data viewer provides user-friendly access to regional land cover and land cover change information developed through NOAA's Coastal Change Analysis Program (C-CAP). The tool summarizes land use change trends. Users can investigate how land cover changed between 1996, 2001, 2006, and

2011. Although data are provided by county, NOAA staff members are able to help states easily aggregate county data into statewide summary.

Geographic Scope: Contiguous United States and Hawaii

Website: www.csc.noaa.gov/digitalcoast/tools/lca

NOAA High-Resolution C-CAP Data

Nationally standardized database of land cover information (developed using remotely sensed imagery) for the coastal regions of the U.S. C-CAP products provide inventories of coastal intertidal areas, wetlands, and adjacent uplands. High-resolution C-CAP products focus on bringing NOAA's national mapping framework to the local level by providing data relevant for addressing site-specific management decisions. Although the data require desktop GIS and some GIS technical skills, NOAA staff members are able to help states analyze data to support wetlands assessment.

Geographic Scope: Targeted watershed and other hotspots in the Caribbean, Pacific Islands region, and Monterey Bay, California

Website: www.csc.noaa.gov/digitalcoast/data/ccaphighres

NOAA Environmental Sensitivity Index Maps

Environmental Sensitivity Index (ESI) maps are designed to provide a concise summary of coastal resources at risk in case of an oil spill or other disaster. They characterize the type of shoreline (armored, vegetated, beach, etc.) and may be useful for resource characterization and assessment. ESI maps are periodically updated on a state-by-state basis, and are generally available in multiple formats (pdf maps, GIS layers, etc.)

Geographic Scope: All coastal states and territories

Website: <http://response.restoration.noaa.gov/maps-and-spatial-data/environmental-sensitivity-index-esi-maps.html>

NOAA Impervious Surface Analysis Tool

The Impervious Surface Analysis Tool (ISAT), a custom suite of easy-to-use scripts for ArcGIS, is used to calculate the percentage of impervious surface area within user-selected geographic areas, such as watersheds, municipalities, and subdivisions. ISAT uses imperviousness values to categorize areas as having good, fair, or poor water quality. A correlation between an increase in impervious surfaces and a decrease in water quality has been well established, and ISAT users may find the information derived from ISAT helpful in predicting how different management scenarios might impact local water quality. The tool calculates the percent impervious area and total impervious surface area of each selected polygon, categorizes polygons to represent conditions of good, fair, and poor water quality based on calculated imperviousness, and incorporates land cover change scenarios to examine how changes influence impervious surfaces. Although it requires desktop GIS and some GIS technical skills, NOAA staff members are able to help states analyze data to support wetlands assessment.

Geographic Scope: Appropriate geographic scope should be based upon the resolution and complexity of the data. The tool is built on ESRI's ArcGIS, so it will only run as fast as allowed within that software.

Website: www.csc.noaa.gov/digitalcoast/tools/isat

NOAA OpenNSPECT Data

OpenNSPECT is the open-source version of the Nonpoint Source Pollution and Erosion Comparison Tool to investigate potential water quality impacts from development, other land uses, and climate change. OpenNSPECT was designed to be broadly applicable. When applied to coastal and noncoastal areas alike, the tool simulates erosion, pollution, and their accumulation from overland flow. The tool provides estimates and maps of surface water runoff volumes, pollutant loads, pollutant concentrations, and total sediment loads, helps users identify areas that might benefit from changes to proposed development strategies, and provides a means to analyze "what if" land use change scenarios. Although it requires desktop GIS and some GIS technical skills, NOAA staff members are available to provide technical assistance.

Geographic Scope: Appropriate geographic scope should be based upon the resolution and complexity of the data. The tool is a plugin for open source MapWindow GIS.

Website: www.csc.noaa.gov/digitalcoast/tools/opennspect

CZMA Performance Measurement System Data

Annual CZMA performance measurement data for coastal community development. Online database can be used to synthesize existing state and territory data reported during the assessment period.

Geographic Scope: All coastal states and territories

Website: www8.nos.noaa.gov/PMD/Login.aspx?ReturnUrl=%2fPMD%2fdefault.aspx

NOAA State of the Coast

The State of the Coast website fosters an increased awareness of the crucial importance of healthy coastal ecosystems to a robust U.S. economy, a safe population, and a sustainable quality of life for coastal residents. The site offers quick facts and more detailed statistics through interactive indicator visualizations. Visualizations focused on coastal population, overall coastal health, shoreline type, and nutrient pollution, and others may help inform the cumulative and secondary impacts assessment.

Geographic Scope: Generally all coastal states and territories but a few viewers may have more limited coverage.

Website: <http://stateofthecoast.noaa.gov/>

Marine Debris

Section 309 Enhancement Objective: Reducing marine debris entering the nation’s coastal and ocean environment by managing uses and activities that contribute to the entry of such debris. §309(a)(4)

PHASE I (HIGH-LEVEL) ASSESSMENT: *(Must be completed by all states.)*

Purpose: To quickly determine whether the enhancement area is a high priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. In the table below, characterize the existing status and trends of marine debris in the state’s coastal zone based on the best available data.

Source of Marine Debris	Existing Status and Trends of Marine Debris in Coastal Zone		
	Significance of Source (H, M, L, unkwn)	Type of Impact ²³ (aesthetic, resource damage, user conflicts, other)	Change Since Last Assessment (↑, ↓, -, unkwn)
<i>Land-based</i>			
Beach/shore litter	H	Aesthetic, resource damage	↑
Dumping	M	Aesthetic, resource damage	unkwn
Storm drains and runoff	M	Aesthetic, resource damage	-
Fishing (e.g., fishing line, gear)	L	Resource damage	unkwn
Other (please specify)			
<i>Ocean or Great Lake-based</i>			
Fishing (e.g., derelict fishing gear)	L	Resource damage	unkwn
Derelict vessels	M	Aesthetic, resource damage	-
Vessels groundings (see link below)	M	Resource damage	-
Vessel-based (e.g., cruise ship, cargo ship, general vessel)	L	Aesthetic, resource damage	-
Hurricane/Storm	L	Aesthetic, resource damage	↓
Tsunami	L	Aesthetic, resource damage	-
Other (please specify)			

2. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends or potential impacts from marine debris in the coastal zone since the last assessment.

A variety of data sets are available that identify specific marine debris related incidents. Vessel groundings and sediment discharge data may be accessed and viewed through the Caribbean Regional Ocean Partnership’s Data Portal (CROP Portal). Additional information on land-based

sediment discharge data is available in the slightly older, but relevant *Land-based Sources of Threat to Coral Reefs in the US Virgin Islands*, prepared by the World Resources Institute and NOAA in 2005 (WRI).

Numerous, long-running and ongoing coastal cleanups and debris characterization efforts occur throughout the USVI. The University of the Virgin Islands (UVI), VI Marine Advisory Service in collaboration with the Ocean Conservancy’s *International Coastal Clean Up* held as part of the *USVI Coast week* activities, provides the longest running dataset available from 1988-2008 and then partially picks up again in 2014-2015 (Ocean Conservancy). While these data collection efforts rely heavily on guided citizen-science, the annual effort varies in linear extent and participation (VI Marine Advisory Service). Perhaps the best indicator of change is provided by the two local project coordinators. Overall perspectives provided by UVI’s Virgin Islands Marine Advisory Service Coordinators indicate that, on a whole, waste and trash along the shorelines is getting worse in St. Thomas and St. John, while slowly improving in St. Croix (H. Forbes, Jr. and M. Taylor, VIMAS Coordinators, personal communications, October 11 and 12, 2016).

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) for how marine debris is managed in the coastal zone.

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Marine debris statutes, regulations, policies, or case law interpreting these	Y	N	Y
Marine debris removal programs	Y	?	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
 - a. Describe the significance of the changes;
 - b. Specify if they were 309 or other CZM-driven changes; and
 - c. Characterize the outcomes and likely future outcomes of the changes.

Significant management change has occurred with the signing of Bill No. 31-0379 to restrict the use of plastic shopping bags in the territory. The *Plastic Bag Ban* was signed into law by Governor Kenneth Mapp on October 7, 2016. This law will restrict the use of plastic shopping bags in the territory beginning January 1, 2017 and requires businesses and organizations to utilize reusable bags or recyclable paper bags with the goal of eliminating plastic bags at point of sale check outs.

While not an exclusive result of 309 or CZM-driven change, the law is specifically intended “to reduce litter and protect marine life.” (Governor Mapp).

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High	_____
Medium	<u> X </u>
Low	_____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Marine debris is a Medium priority issue for the territory. It is persistent, despite regular cleanup efforts and many types of debris may have negative long-lasting affects to living resources. The new Plastic Bag Ban and additional local waste management draft legislation should have a positive impact in reducing certain types of trash and debris affecting VI coastal resources. However, the growing issue of derelict vessels and the costly removal and/or proper disposal of them is an issue that needs to be effectively planned.

References:

Caribbean Regional Ocean Partnership, Data Portal, Vessel Groundings Map and Data. Retrieved from:
<http://planner.caribbean-mp.org/visualize/#x=-64.77&y=17.73&z=12&logo=true&dls%5B%5D=true&dls%5B%5D=0.8&dls%5B%5D=485&basemap=ESRI+Ocean&themes%5Bids%5D%5B%5D=30&tab=data>

Caribbean Regional Ocean Partnership, Data Portal, Sediment Discharge Map and Data. Retrieved from:
<http://planner.caribbean-mp.org/visualize/#x=-64.77&y=17.73&z=12&logo=true&dls%5B%5D=true&dls%5B%5D=0.5&dls%5B%5D=370&basemap=ESRI+Ocean&themes%5Bids%5D%5B%5D=30&tab=data>

World Resources Institute and NOAA. *Land-based Sources of Threat to Coral Reefs in the U.S. Virgin Islands*. Washington, DC. 2005. Retrieved from:
http://www.wri.org/sites/default/files/pdf/usvi_atlas_web.pdf

Ocean Conservancy. *30th Anniversary International Coastal Clean Up*. 2016. Retrieved from:
<http://www.oceanconservancy.org/our-work/marine-debris/2016-data-release/2016-data-release-1.pdf>

Virgin Islands Marine Advisory Service. University of the Virgin Islands. Retrieved from:
<http://www.uvi.edu/community/virgin-islands-marine-advisory-service/st-thomas/coast-weeks.aspx>

Mapp, Kenneth E., Governor, US Virgin Islands. 2016. Retrieved from:

<http://governormapp.com/news/2016/10/landmark-plastic-bag-legislation-now-law-gov-mapp-urges-senators-support-recycling-bottle-bills/>

Special Area Management Planning

Section 309 Enhancement Objective: Preparing and implementing special area management plans for important coastal areas. §309(a)(6)

The Coastal Zone Management Act defines a Special Area Management Plan (SAMP) as “a comprehensive plan providing for natural resource protection and reasonable coastal-dependent economic growth containing a detailed and comprehensive statement of policies; standards and criteria to guide public and private uses of lands and waters; and mechanisms for timely implementation in specific geographic areas within the coastal zone. In addition, SAMPs provide for increased specificity in protecting natural resources, reasonable coastal-dependent economic growth, improved protection of life and property in hazardous areas, including those areas likely to be affected by land subsidence, sea level rise, or fluctuating water levels of the Great Lakes, and improved predictability in governmental decision making.”

PHASE I (HIGH-LEVEL) ASSESSMENT: *(Must be completed by all states and territories.)*

Purpose: To quickly determine whether the enhancement area is a high priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. In the table below, identify geographic areas in the coastal zone subject to use conflicts that may be able to be addressed through a special area management plan (SAMP). This can include areas that are already covered by a SAMP but where new issues or conflicts have emerged that are not addressed through the current SAMP.

Geographic Area	Opportunities for New or Updated Special Area Management Plans
	Major conflicts/issues
Offshore Cays	Development activity on privately-owned offshore cays. There are over 50 small cays and islands in the USVI that provide prime habitat for seabirds, lizards, turtles and corals. All 33 territorially owned offshore cays are designated wildlife sanctuaries and a few are protected by the National Park Service and U.S. Fish and Wildlife Service. The remaining are privately-owned and are often subject to intense development pressure as well as illegal construction activity.
Coastal wetlands and streams (guts)	Salt ponds threatened by sedimentation, trash and debris, loss of mangrove fringe, and reduced water quality from land-based sources of pollution. Ghuts impacted from channelization, culvert restrictions, loss of riparian buffer, and encroachment from adjacent development.

Great Pond, St. Croix	The largest remaining salt pond in the VI, this pond is situated in the watershed to the STX East End Marine Park and contains mangrove forests that provide fish nursery and sea bird habitat. Due to sedimentation, however, the value of the habitat has declined in recent years.. Protection and restoration efforts for Great Pond have been proposed, but so have hotel/casino development projects. Given the state of the St. Croix economy after closing of HOVENSA, economic desperation could increase support for large developments in the Great Pond area.
Coral Bay, St. John	Marina, hotel, and housing projects proposed for Coral Bay have met with extensive community pushback from environmental advocates. Numerous planning initiatives have been conducted through Coral Bay Community council to date, but they lack the backing of a territorial-driven, regulatory planning process.

2. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of SAMPs since the last assessment.

No SAMPs have been completed for the Virgin Islands. However, a number of other planning initiatives have been completed that address many of the environmental and economic issues of a SAMP process, including:

- 18 designated Areas of Particular Concern (APCs), with management reports developed for many in the late 1990's.
 - St. Thomas: St. Thomas Harbor & Waterfront, Botany Bay, Magens Bay & Watershed, Mandahl Bay, Vessup Bay-East End, Mangrove Lagoon-Benner Bay
 - **St. John:** Enighed Pond-Cruz Bay, Chocolate Hole-Great Cruz Bay, Coral Bay
 - St. Croix: Christiansted Waterfront, Southgate Pond-Chenay Bay, St. Croix Coral Reef System, East End, Great Pond & Great Pond Bay, Southshore Industrial Area, Sandy Point, Frederiksted Waterfront, Salt River Bay & Watershed
- Watershed plans completed in Coral Bay (2016 update), Fish Bay (2008), St. Croix East End (2013), and the St. Thomas East End (2011)
- Pending watershed management planning activities in Smith Bay, Magen's Bay, and Salt River.
- St. Croix East End Marine Park Management Plan (update to be completed 2016).
- St. Thomas East End Reserves (STEER) Management Plan (2011).
- The Buck Island Reef NM General Management Plan/Environmental Impact Statement (2014).
- USVI Wildlife Action Plan (2005, to be updated in 2016)
- VI Conservation Planning and Spatial Analysis to Prioritize Sites for Conservation (Final Report 2009)

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) that could help prepare and implement SAMPs in the coastal zone.

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ	Significant Changes Since Last Assessment (Y or N)
SAMP policies, or case law interpreting these	N	N	N
SAMP plans	N	N	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
 - a. Describe the significance of the changes;
 - b. Specify if they were 309 or other CZM-driven changes; and
 - c. Characterize the outcomes or likely future outcomes of the changes.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High _____
Medium _____
Low X

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

This enhancement area was initially given a low priority because the potential SAMP areas listed above are either being addressed (or could be addressed) through other strategies or have longstanding issues and groups working on them. In addition, given challenges with adopting comprehensive land use plans in the VI, utilizing the SAMP process as a mechanism to affect area-wide planning may not be feasible at this time.

References:

Davis, Braxton. 2004. "Regional Planning in the U.S. Coastal Zone: A Comparative Analysis of 15 Special Area Plans." *Ocean and Coastal Management*. Volume 47, Pages 79 to 94. *Geographic Scope*: National

Website: www.sciencedirect.com/science/article/pii/S0964569104000225

Imperial, Mark. 1999. "Analyzing Institutional Arrangements for Ecosystem-Based Management: Lessons from the Rhode Island Salt Ponds SAM Plan." *Coastal Management*. Volume 27. Pages 31 to 56. *Geographic Scope*: Rhode Island, but lessons broadly applicable

Website:

[www.ingentaconnect.com/content/tandf/ucmg/1999/00000027/00000001/art00002?
crawler=true](http://www.ingentaconnect.com/content/tandf/ucmg/1999/00000027/00000001/art00002?crawler=true)

Lane Council of Governments. 1992. "Hints on Preparing a Comprehensive Wetland Management Plan." Lane Council of Governments, Lane, Oregon. *Geographic Scope:* National

Website: www.rice.edu/wetlands/Reports/R12_1.html

Energy and Government Facility Siting

Section 309 Enhancement Objective: Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities and energy-related activities and Government activities which may be of greater than local significance. §309(a)(8)33

PHASE I (HIGH-LEVEL) ASSESSMENT: *(Must be completed by all states and territories.)*

Purpose: To quickly determine whether the enhancement area is a high priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. In the table below, characterize the status and trends of different types of energy facilities and activities in the state's or territory's coastal zone based on best available data. If available, identify the approximate number of facilities by type. The MarineCadastre.gov may be helpful in locating many types of energy facilities in the coastal zone.

Status and Trends in Energy Facilities and Activities in the Coastal Zone				
Type of Energy Facility/Activity	Exists in CZ		Proposed in CZ	
	(# or Y/N)	Change Since Last Assessment (↑, ↓, -, unkwn)	(# or Y/N)	Change Since Last Assessment (↑, ↓, -, unkwn)
<i>Energy Transport</i>				
Pipelines ³⁴	N	-	N	-
Electrical grid (transmission cables)	N	-	N	-
Ports	Y	↑	Y	↑
Liquid natural gas (LNG) (Existing facilities have been partially converted to LPG and deliveries will begin this year) ³⁵	2	↑	y	↑
Other				
<i>Energy Facilities</i>				
Oil and gas	Y	↓	N	-
Coal	N	-	N	-
Nuclear ³⁶	N	-	N	-
Solar	3	↑	4	↑
Wind	N	-	N	-
Wave ³⁷	N	-	N	-
Tidal ³⁶	N	-	N	-
Biogas	N	-	1	↑

Status and Trends in Energy Facilities and Activities in the Coastal Zone		
	Exists in CZ	Proposed in CZ

Type of Energy Facility/Activity	(# or Y/N)	Change Since Last Assessment (↑, ↓, -, unkwn)	(# or Y/N)	Change Since Last Assessment (↑, ↓, -, unkwn)
Current (ocean, lake, river) <small>36</small>	N	-	N	-
Hydropower	N	-	N	-
Ocean thermal energy conversion	N	-	N	-
Solar	Y	↑	Y	↑
Biomass	N	-	Y	↑
Other (Landfill Gas)	Y	↑	N	-
Other (Waste to Energy)	N	-	N	-

The USVI has no fossil energy resources and imports petroleum products to meet its energy needs.

There are two separate electric grids in the USVI, St Thomas and St. Croix. Underwater transmission cables exist between St Thomas and St John and another between St Thomas and Water Island. The feasibility of using cables to connect each system with Puerto Rico's larger system is currently being explored.

There have been two primary, significant changes in power generation in the US Virgin Islands since the last 309 assessment in 2009. The first is the planned conversion from oil to Liquefied Natural Gas (LNG). The Virgin Islands Water and Power Authority (WAPA) has already made the necessary conversions to power generation turbines and has installed the LNG storage tanks in St. Croix. Very Large tanker ships will anchor in deep water off of St. Thomas and deliveries will be made to WAPA facilities via smaller transport ships. The conversion from fuel oil to LPG is expected to greatly reduce WAPAs carbon emission, pollution and fuel purchase costs. The environmental impact of the ships delivering LNG are still being assessed, but are perceived to be relatively minor.

The second major change is WAPA has built and proposed several renewable energy projects. WAPA has constructed three solar facilities since the last 309 assessment in 2009. There is a 450-kilowatt array at King Airport on St. Thomas, a 4-megawatt facilities at Estate Donoe on St. Thomas and a 6-megawatt facility in Estate Spanish Town, St. Croix 2014. Two additional IPP solar PV facilities, each 3 megawatts, are planned for St. Croix., The University of the Virgin Islands has contracted for a 3.3-megawatt solar PV system for its two campuses.

There are several other, smaller renewable energy projects proposed for the US Virgin Islands that are in earlier stages of the development process. Tibbar Energy has proposed a Giant Cane Grass biogas facility on St. Croix; WAPA has agreed to purchase up to 7-megawatts, although negotiations for facility construction and operation are ongoing.

Two sites have been identified to have good to adequate wind potential, Bovoni landfill on St. Thomas and the south shore of St. Croix near Hovensa, however facilities are not proposed for either location.

Not included in the table above were two waste-to-energy projects that were proposed at the Bovoni landfill and Anguilla landfills, but were subsequently rejected due to cost and lack of community support. Studies estimate that combustion of landfill waste could provide up to 8 megawatts of generating capacity while reducing waste volumes.

2. If available, briefly list and summarize the results of any additional state- or territory-specific information, data, or reports on the status and trends for energy facilities and activities of greater than local significance in the coastal zone since the last assessment.

Hovensa oil refinery ceased operations in 2012. This refinery once provided all the fuel oil to WAPA for energy generation.

In 2016, the USVI's electric utility WAPA is completing a \$150 million project to enable use of propane as well as fuel oils in its generators. As the U.S. pilot project for the international Energy Development in Island Nations (EDIN) program, the U.S. Virgin Islands pledged to cut petroleum use 60% between 2008 and 2025, using efficiency and renewable energy. By the end of 2013, the USVI had cut petroleum imports 20%. The utility is also adding renewable resources, primarily solar. The U.S. Virgin Islands allows net metering of small distributed resources, and 15 megawatts of distributed solar capacity now provide 13% of the midday peak demand.

The Virgin Islands Energy Office has identified Virgin Island Energy Opportunities (VIEOs) that include increasing renewable energy targets (Virgin Islands Energy Office, <http://energy.vi.gov/about-vieo/the-vieos/>). The goals include reaching a target of a minimum of 20% of all energy from renewable resources by 2015 and 25% by 2030. The U.S. Virgin Islands does not offer financial incentives for energy efficiency (<http://database.aceee.org/territory/us-virgin-islands>). Given the emphasis of conversion to renewable energy, the siting of renewable energy will have impacts on land use in the coastal zone.

Siting and permitting policies and requirements are unclear for the installation of renewable energy facilities (US Virgin Islands Energy Road Map Analysis, NREL 2011). The 2009 IECC has been adopted as the mandatory code for residential and commercial new construction. This code was drafted by the [Virgin Islands Energy Office](http://energy.vi.gov/about-vieo/the-vieos/) and does not include siting standards (<http://bcap-energy.org/code-status/state/us-territories/>). The Virgin Islands Water and Power Authority's 2012 Energy Production Action Plan http://www.viwapa.vi/Libraries/PDFs/Energy_Production_Action_Plan.sflb.ashx discusses the permitting and siting issues associated with several energy generation options for the US Virgin Islands.

3. Briefly characterize the existing status and trends for federal government facilities and activities of greater than local significance³⁸ in the state's coastal zone since the last assessment.

According to GSA, there are fifteen government owned or leased buildings in the USVI, however they are largely government offices or judicial buildings. The federal court buildings on St Croix and St. Thomas each have solar systems that sustain or facilitate their own electric needs. There are currently no existing or proposed federal facilities of greater than local significance in the USVI.

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if significant state- or territory- level changes (positive or negative) that could facilitate or impede energy and government facility siting and activities have occurred since the last assessment.

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	N	N
State comprehensive siting plans or procedures	N	N	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:

- a. Describe the significance of the changes;
- b. Specify if they were 309 or other CZM-driven changes; and
- c. Characterize the outcomes or likely future outcomes of the changes.

³⁸ The CMP should make its own assessment of what Government facilities may be considered “greater than local significance” in its coastal zone, but these facilities could include military installations or a significant federal government complex. An individual federal building may not rise to a level worthy of discussion here beyond a very cursory (if any at all) mention).

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High _____
Medium X
Low _____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Energy facility siting will continue to be a priority in the USVI, given the USVI government's goals of reducing fossil fuel use 60% by 2025 and increasing the percent of renewable energy to 25% by 2030. This could be an area of interest for CZM if shoreline or off-shore projects are proposed, waste-to energy facilities are pursued at landfills, submarine cables between Puerto Rico and USVI are installed, or if more land area in the USVI becomes subject to CZM oversight. This is not the case at this point in time. The Hovensa facilities are currently being restructured

as a storage facility, rather than a refinery, thus having a further reduced impact on the environment and on the economy in general.

RESOURCES AND TOOLS:

Below are a few national resources and tools that may be useful in conducting your assessment or developing energy and federal government facilities strategies. States likely have other state-specific resources, tools, and data that would be useful as well.

BOEM Environmental Studies Program

The Bureau of Ocean and Energy Management's (BOEM) Environmental Studies Program develops, conducts, and oversees world-class scientific research specifically to inform policy decisions regarding development of Outer Continental Shelf energy and mineral resources. Research covers physical oceanography, atmospheric sciences, biology, protected species, social sciences and economics, submerged cultural resources, and environmental fates and effects.

Geographic Scope: Specific to each study

Website: www.boem.gov/Studies/

U.S. Energy Information Administration

The U.S. Energy Information Administration collects, analyzes, and disseminates independent and impartial energy information to promote sound policy making, efficient markets, and public understanding of energy and its interaction with the economy and the environment. The site includes a wealth of information on energy demand, use, and production (nationally, by region, and by energy sector).

Geographic Scope: National and regional

Website: www.eia.gov

FERC Projects

The Federal Energy and Regulatory Commission (FERC) has authority over electricity, natural gas (including LNG), and hydropower and hydrokinetic projects. The site has information on current and pending projects as well as market demands.

Geographic scope: National

Website: www.ferc.gov/for-citizens/projectsearch/SearchProjects.aspx

GSA Lists of Federally Owned and Leased Facilities

The Government Services Agency (GSA) maintains a national list of all federally owned and leased facilities in each state.

Geographic scope: National

Website: www.iolp.gsa.gov/iolp/NationalMap.asp

MarineCadastre.gov Viewer

This data viewer provides the baseline information needed for ocean planning efforts, particularly those that involve finding the best location for renewable energy projects. Users choose an ocean geography and quickly see the applicable jurisdictional boundaries, restricted areas, laws, critical habitat locations, and other important features. With the national viewer, potential conflicts can be identified and avoided early in the planning process, and users can visually analyze and explore geospatial data for marine spatial planning activities and find direct access to authoritative marine cadastral data from federal and state sources.

Geographic Scope: National

Website: www.csc.noaa.gov/digitalcoast/tools/mmc

NOAA Economics: National Ocean Watch Data (ENOW)

The effective management of coastal resources requires an understanding of the ocean and Great Lakes economy. This tool allows users to interact with ENOW data, which describe six economic sectors that depend on the oceans and Great Lakes: living resources; marine construction; marine transportation; offshore mineral resources; ship and boat building; and tourism and recreation. Users can discover which sectors are the largest in various parts of the county, which sectors are growing and declining, and which account for the most jobs, wages, and gross domestic product. They can view up to four counties, states, or regions to compare trends or the makeup of their ocean and Great Lakes economies. The ENOW Explorer's interface is designed to allow users who are familiar with economic data to interact with and view data and trends. The tool provides the highest level of interaction with ENOW data short of downloading the full data set.

Geographic Scope: National and regional

Website: <http://www.csc.noaa.gov/digitalcoast/data/enow>

Aquaculture

Section 309 Enhancement Objective: Adoption of procedures and policies to evaluate and facilitate the siting of public and private aquaculture facilities in the coastal zone, which will enable states to formulate, administer, and implement strategic plans for marine aquaculture. §309(a)(9)

PHASE I (HIGH-LEVEL) ASSESSMENT:

Purpose: To quickly determine whether the enhancement area is a high priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. *In the table below, characterize the existing status and trends of aquaculture facilities in the state's coastal zone based on the best available data. Your state Sea Grant Program may have information to help with this assessment.*³⁹

Type of Facility/Activity	Status and Trends of Aquaculture Facilities and Activities		
	# of Facilities ⁴⁰	Approximate Economic Value	Change Since Last Assessment ↑, ↓, -, unknown)
Commercial-Private	1	10,000~	↑
University	3	650,000~	↑
Public	0	-	-

2. *If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends or potential impacts from aquaculture activities in the coastal zone since the last assessment.*

Additional data from the USVI Agriculture Census corroborates these findings, although data for the USVI is often incomplete. Data from Agriculture Census for the USVI for 2007

http://www.agcensus.usda.gov/Publications/2007/Full_Report/Outlying_Areas/usvi.pdf and 2002 http://www.agcensus.usda.gov/Publications/2002/Outlying_Areas/usvi.pdf list a single aquaculture farm in the USVI producing tilapia in tanks. The Department of Agriculture states that, “Due to budgetary issues, the 2012 Census of Agriculture was not conducted for Guam, the U.S. Virgin Islands, American Samoa or the Commonwealth of Northern Mariana Islands.”

According to a personal interview with Aquaculture Research Specialist at the University of the Virgin Islands, Don Bailey, there are now four tilapia farms in the US Virgin Islands. They are located at the University of the Virgin Islands (St. Croix) the Golden Grove Prison (St. Croix) and the Eudora Ken school (St. Thomas), and a new, private tilapia farm in St. Croix. The first three are grouped into the “university” category, above, because they were built, in part, with funds, equipment, material and technical expertise provided by the University of the Virgin Islands

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if there have been any state- or territory-level changes (positive or negative) that could facilitate or impede the siting of public or private aquaculture facilities in the coastal zone.

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Aquaculture comprehensive siting plans or procedures	N	N	N

³⁹ While focused on statewide aquaculture data rather than just within the coastal zone, the *Census of Aquaculture* (www.agcensus.usda.gov/Publications/2002/Aquaculture/) may help in developing your aquaculture assessment. The 2002 report, updated in 2005, provides a variety of state-specific aquaculture data for 2005 and 1998 to understand current status and recent trends. The next census is scheduled to come out late 2014 and will provide 2013 data.

⁴⁰ Be as specific as possible. For example, if you have specific information of the number of each type of facility or activity, note that. If you only have approximate figures, note “more than” or “approximately” before the number. If information is unknown, note that and use the narrative section below to provide a brief qualitative description based on the best information available.

Other aquaculture statutes, regulations, policies, or case law interpreting these	N	N	N
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Aquaculture is also addressed in three other places of the Virgin Islands code;

- 1) 3 V.I.C. § 291, (2014), TITLE THREE Executive, Chapter 17, 2)
- 7 V.I.C. § 2, (2014), TITLE SEVEN Agriculture, Chapter 1 and 3)
- 17 V.I.C. § 41f, (2014), TITLE SEVENTEEN Education, Chapter 5. Public Schools. However, these entries in the code do not relate to developing or regulating the aquaculture industry except as it applies to education in the public schools.

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:

a. Describe the significance of the changes;

The addition of three new tilapia farms in the US Virgin Islands is a minor change economically and environmentally.

b. Specify if they were 309 or other CZM-driven changes; and

No

c. Characterize the outcomes or likely future outcomes of the changes.

NA

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High	<u> </u>
Medium	<u> </u>
Low	<u> X </u>

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

There are no shellfish or catfish aquaculture systems in the US Virgin Islands. Therefore the VIDPNR CZM does not have any specific management strategies for them. Tilapia farms are the most popular form of aquaculture in the US Virgin Islands. These systems operate using above-ground tanks that are not connected with natural water systems such as streams or ponds.

References:

IPCC AR5, 2014. IPCC Fifth Assessment Report of the Intergovernmental Panel on Climate Change

NASA <https://www.nasa.gov/content/goddard/landsat-satellite-sees-florida-mangroves-migrate-north/#.VpZ5SvkrLIU>

NOAA <http://estuaries.noaa.gov/teachers/mangroves.aspx#>

United States Census, 2010. Population Counts for the US Virgin Islands. <https://www.census.gov/2010census/news/releases/operations/cb11-cn180.html>

Virgin Islands Territorial Emergency Management Agency, 2011. United States Virgin Islands Territorial Hazard Mitigation Plan. http://www.vitema.gov/mitigation/documents/2014_mitigation_plan.pdf

RESOURCES AND TOOLS:

Below are a few national resources and tools that may be useful in conducting your assessment or developing aquaculture strategies. States likely have other state-specific resources, tools, and data that would be useful as well.

NOAA Office of Aquaculture

The Office of Aquaculture fosters sustainable aquaculture that will create employment and business opportunities in coastal communities; provide safe, sustainable seafood; and complement NOAA's comprehensive strategy for maintaining healthy and productive marine populations, species, and ecosystems and vibrant coastal communities.

Geographic Coverage: National and regional

Website: www.nmfs.noaa.gov/aquaculture/index.htm

USDA Census of Aquaculture

The U.S. Department of Agriculture publishes the Census of Aquaculture. The census provides a variety of state-specific aquaculture data for 2005 and 1998 to understand current status and recent trends. The next census is scheduled to come out late 2014 and will provide 2013 data.

Geographic Coverage: National

Website: www.agcensus.usda.gov/Publications/2002/Aquaculture/

Stakeholder Input

In November, 2016, stakeholders were identified to provide comments to this document. An email list we created with individuals from key agencies and a draft version of the assessments was sent to them. The stakeholder group was invited to comment on specific portions of the text or to provide general comments, or both. The agencies included

- University of the Virgin Islands
- USDA, Natural Resources Conservation Service
- St. Croix Environmental Association
- US Fish and Wildlife Service
- USVI Department of Agriculture
- National Parks Service
- Other divisions within the VI Department of Planning and Natural Resources
- Individuals from several areas of the private sector, including environmental consultants and retired government officials.

The following are some examples of the input provided by stakeholders.

Michael Morgan, Agroforestry Research Specialist, University of the Virgin Islands -11/21/2016
"Thank you for providing me with (more) background information of stuff I didn't know. My suggestion to DPNR is that they should concentrate more and more with VIMA on the trash issue... education, and trash removal from illegal dump sites. I know they make a big deal about not accepting tires at dump sites or that one has to pay for the disposal of large household appliances like fridges and dryers at dump sites. However, I think it is better to have the tires and fridges in a convenient location where we can find them and remove them, other than having the stuff thrown into the woods. Either the disposal fees are added onto the sale price in question or disposal is quietly and federally subsidized. No one wants to go down to VIMA and pay them money to get rid of a drier or washing machine that doesn't work."

Dr. Renata Platenberg, Professor of Wildlife, University of the Virgin Islands – March and April, 2017

..." and was also wondering if I could cite it. but it all looks good to me, looks like everything is pretty well supported. I actually appreciate getting this right now because I need some of this info for the Wildlife Action Plan we are developing." ...

[summarized phone call] My primary comments for the CZM are on the need for a land and water use plan and also for a single tier system in the CZM. I strongly support the elimination of the current 2-Tier system in favor of a single Tier system for CZM permitting

Julie Wright, Program Manager and Outreach Coordinator, USDA-NRCS Caribbean Area. March, 2017

“...CZM needs to get their website running properly...it seems to get messed up with the change of administration. There are very few publications online, STX East End Marine Park appears to be done and there is very little outreach and notification going on.

The two tiered system for zoning does not make sense on islands like these and there should be a single tier system.

Shoreline access – many property owners from the US Are clueless about open shorelines act and still try to block access to keep people off of what they refer to as “their beach”. It would be a good idea for CZM to partner with a local realtor association to provide shoreline access information to prospective buyers”

...and to the realtors themselves, who are often from the US and do not know local law.

Appendix 1. Virgin Islands Beaches Publication

YOUR RIGHT TO ENJOY VIRGIN ISLANDS BEACHES

Virgin Islands Coastal Zone Management Act

Section 903 (b) (6)

“[p] reserve what has been a tradition and protect what has become a right of the public by insuring that the public, individually and collectively, has and shall continue to have the right to use and enjoy the shorelines and to maximize public access to and along the shorelines...”

This map illustrates the majority of public access in the territory. Most of the public access points are accessible by land but there are a few that were not traditionally used thus did not receive enough public attention to establish “Public Rights” to the shoreline. This is vital for DPNR to build credible arguments to require private property owners to partition an easement to the shoreline. Its important to understand that the public domain is define as “the area along the coastlines of the Virgin Islands from the seaward line of low tide, running inland a distance of fifty (50) feet, or to the extreme seaward boundary of natural vegetation whichever is the shortest distance” (Title 12 VIC 402(b)).

**Coastal Zone Management
Public Beach Access**

In 1978 Virgin Islands passed an important new law, the Coastal Zone Management Act, to protect and preserve the coastal areas of the Territory and to preserve the tradition of the public access to the Territory’s shorelines.

Today, the goals that were set still stand as one of the best ways we have of passing that Virgin Islands heritage-beach access on to future generations.


Access to cultural, historical and natural areas along the coast is essential to public understanding and enjoyment of coastal and marine resources. Of course, the public should use the territory’s beaches in ways that would not degrade or damage these valuable resources.

The CZM Program, through its permitting process, does not allow commercial building on the Territory’s shorelines without first securing an easement for public access to the shorelines. Beaches cannot be fenced off. The public has the right to be on the beach, enjoy them and use them for recreational purposes.

If you have been denied your right to be on a beach in the US Virgin Islands, please contact the Division of Coastal Zone Management and report the incident.

PUBLIC ACCESS MAP U.S. VIRGIN ISLANDS

MANAGING OUR
COASTAL
RESOURCES FOR
THE FUTURE



For further information write or call:

**DEPARTMENT OF PLANNING AND NATURAL RESOURCES
DIVISION OF COASTAL ZONE MANAGEMENT**

8100 Lindberg Bay, Ste. #61
Cyril E. King Airport Terminal Building,
2nd floor
St. Thomas, USVI 00802
Tel: (340) 774-3320
Fax: (340) 714-9524

Or

45 Mars Hill
St. Croix, US Virgin Islands 00840
Tel: (340) 773-1082
Fax: (340) 773-3343

<http://coastal-zone-management.dpnr.gov.vi>

