

Ocean Spatial Plan
FY12 Task 95
Final Report, Grant Period October 1, 2012 to June 30, 2014
Grant# NA12NOS4190168
Compiled by Todd Janeski, VCU, Department of Life Sciences

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Executive Summary

The VCU Environmental Scientist/Analyst, as retained by the Virginia Department of Environmental Quality, Coastal Zone Management Program, served as the Ocean Planning Stakeholder Coordinator for the grant reporting period under the VACZM Section 309 Ocean Resources Strategy. During this period, the Stakeholder Coordinator worked with the Virginia CZM Program in the Commonwealth's Ocean Planning initiative. This effort included direct assistance to the VA CZM Manager for the purpose of facilitating the development and implementation of a Virginia Ocean Plan for the waters off Virginia's coast in concert with the Mid-Atlantic Regional Council on the Ocean (MARCO) as called for in the July 19, 2010 Final Recommendations of the Interagency Ocean Policy Task Force (IOPTF). The IOPTF's recommendations and the accompanying Presidential Executive Order can be viewed at http://www.whitehouse.gov/files/documents/OPTF_FinalRecs.pdf. Virginia's Ocean Plan will cover the area from mean low water along Virginia's Atlantic coast out to the 200 mile Exclusive Economic Zone.

In addition, Virginia began the development of a Virginia Marine Debris Reduction Plan, with discussion of key marine debris issues and initiated by the Marine Debris Summit. Ultimately, the Plan will be presented to the Virginia Coastal Policy Team for adoption and to MARCO for consideration. Decreasing marine debris is one of the goals within MARCO's set of "Water Quality" goals.

Ocean planning in the Commonwealth includes a partnership MARCO that includes representatives from the States of New York, New Jersey, Delaware, Maryland and Virginia. The broader MARCO effort is being supported through several contractors such as Monmouth University, University of Delaware, Rutgers University, Nature Conservancy, and NatureServe. Primarily, ocean planning brings together the sectors of Ports and Navigation, Military, Commercial Fisheries, Recreational Users, Alternative and Traditional Energy, Conservation, Tourism, and Local Government. These sectors have been brought together both in the Commonwealth as well as in the region to share information regarding ocean uses for the purpose of understanding the complexity of overlapping and abutting uses.

The comprehensive nature of this grant covered several key activities. The services provided by the VCU Environmental Scientist, (Ocean Planning Stakeholder Coordinator) included:

- Continue to conduct, host, coordinate and facilitate **meetings and discussions** with ocean users and industry representatives to obtain and share ocean use data relevant to the MARCO Portal
- Conduct one-on-one meetings with representatives of industry and ocean users to maintain long-term relationships and **develop opportunities to engage larger groups** of their organizations
- Continue the use of **Participatory GIS (PGIS)** with ocean users to obtain data relevant to

the development of the portal

- Consult with the **science and technical communities** to analyze the data developed
- **Coordinate with other groups developing ocean use data** to maximize outreach and minimize conflict and overlap
- Support the VA CZM Manager for MARCO and Ocean Planning activities

Project Management and Implementation

The VCU Ocean Stakeholder Outreach Coordinator and maintained an office on the VCU campus and directly supported the Virginia CZM Program Manager in many aspects of MARCO and the Ocean Planning activities in the Commonwealth. Significant focus was on the development of Virginia offshore marine stakeholders/users based upon the December, 2009 MARCO Stakeholder Workshop which was held in NYC and the initiation of the development of the Marine Debris Management Plan (MDMP). Details of the ocean planning efforts on the Commonwealth can be found at the following Web url:

<http://www.deq.state.va.us/Programs/CoastalZoneManagement/CZMIssuesInitiatives/OceanPlanning/VirginiaOceanPlanning.aspx>

The VCU Ocean Stakeholder Outreach Coordinator worked with the CZM Director and other partners such as the Accomack-Northampton Planning District Commission to further collect recreational data to validate the PGIS sessions conducted in 2012. These data included the collection of aerial photography during peak use days. The VA Marine Resources Commission was contracted to conduct nearshore flights permitting the photography to commence collecting use information. These spatially referenced data greatly enhance the understanding of use patterns and intensity of activities along Virginia's coast and will lead to improved decision making capabilities by managers in the future, especially as it relates to ocean activities and reducing marine-use conflicts. This process was directly coordinated with the ANPDC to have a comprehensive analysis of the coastline.

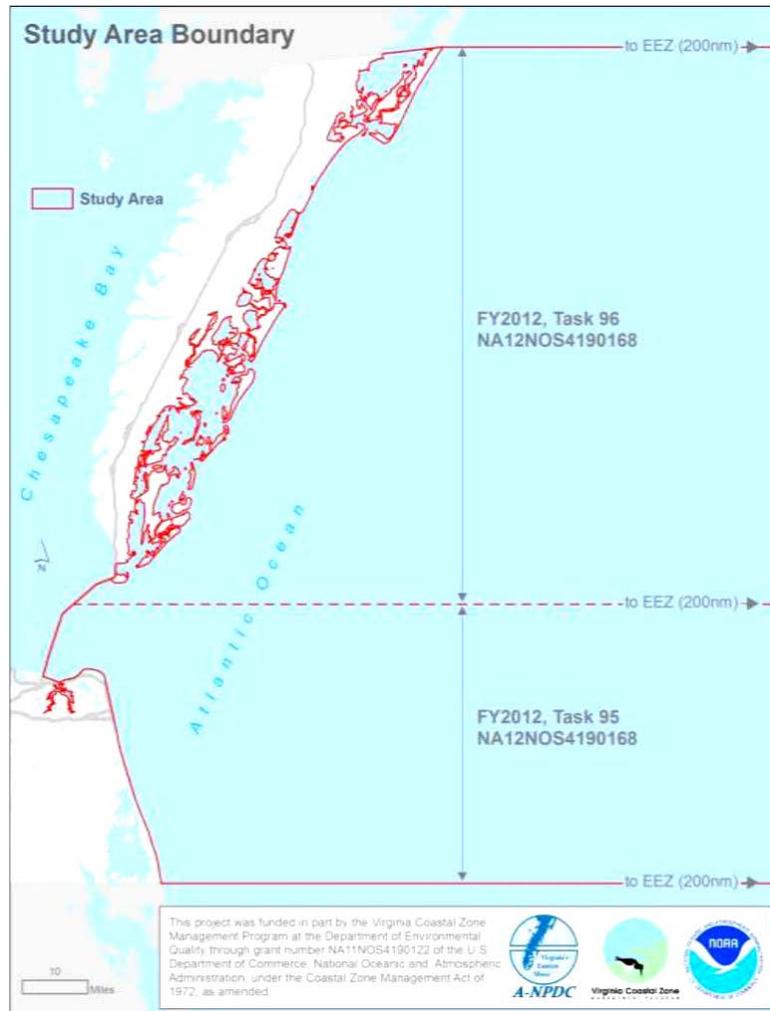


Illustration of Study Area for VA Recreational Use Analysis (ANPDC)

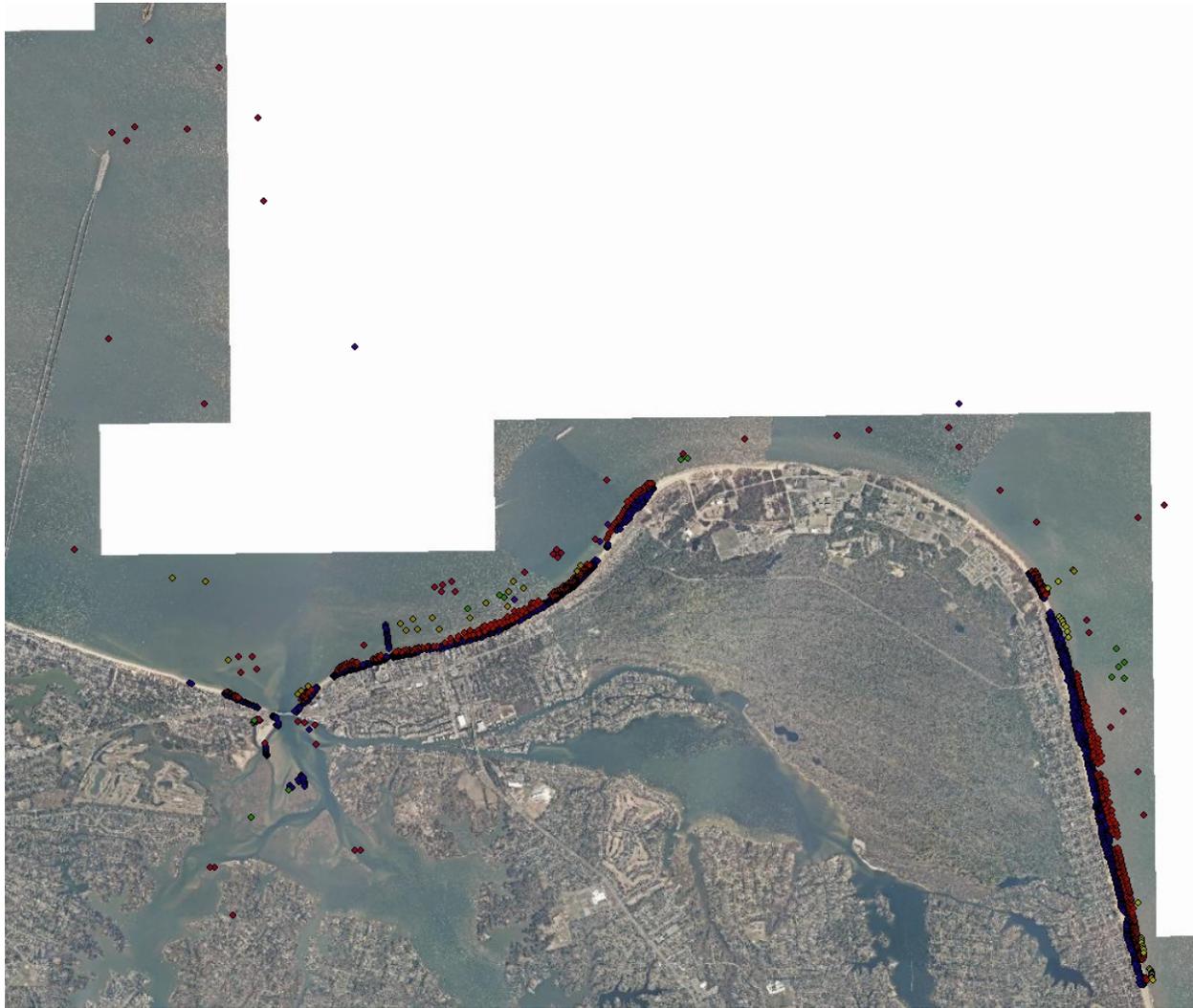
The process of aerial survey analysis is considered the Post-PGIS Workshop Map Validation (ANPDC). The VMRC collected georeferenced digital photography during the flights to easily capture real-time use data. The photos were processed to create density maps illustrating observed recreational use patterns.

The flights were conducted from a fixed-wing Cessna 182, owned and operated by the VA Marine Resources Commission. The survey included an ANPDC employee to collect use data for both the Eastern Shore and the Virginia Beach area. Photos were acquired using a Canon Powershot S100 digital camera with georeferencing capabilities. Flights were conducted at consistent altitude and established flight path along the coastline and typically lasted two to four hours in duration. Flights for the Virginia Beach area included: August 23, September 1, 6, 9, and 22.

Following the survey, the digital photographs were downloaded and incorporated into a GIS database. All photos that included a georeferenced coordinate was entered into the GIS data base and overlaid on the satellite imagery for the VA Coastline. Photos were directly analyzed by recording the actual number of uses and users of such activities that included: Shore Use, Swimming, Motor boating, Sailing, Water sports, Paddling, Fishing from Shore, and Fishing from

a Boat. For chartered boating activities, the use was recorded based on a broader category since specific uses, such as Fishing from a Boat, was not determinable from the photos. Therefore, the Charter Fishing use was recorded as Motor boating.

As expected the data validated the highest use areas were focused at those locations with greatest access to the intended activity. For example, Shore Use was concentrated at or near the resort areas, whereas shore fishing was concentrated along those areas south of the resort areas. Watersports (surfing) was seen mostly on weekdays as opposed to weekends due to local regulations prohibiting the activity during peak beach use times.



Virginia Beach, North, All Weekend Activities



Virginia Beach, North, All Weekday Activities



Virginia Beach, South, All Weekday Activities



Virginia Beach, South, All Activities Weekday

During the reporting period, the VCU Stakeholder Coordinator participating in the weekly MARCO Board meetings, participated in the MARCO Water Quality Action Team, MARCO Ocean Planning Action Team (both the Portal and Stakeholder Engagement Subteams), coordinated with the Monmouth Project Team to develop the Recreational Boater Survey. The VCU Environmental Scientist/Analyst provided a focusing of the geographic distribution for the survey. The Stakeholder Coordinator assisted the state of Delaware in their PGIS efforts by providing meeting facilitation to collect recreational user information (Jan 21-25, 2013). This workshop was similar to the efforts conducted in Virginia to ensure the data is consistent and compatible between states. This successful workshop populated Delaware's ocean data with the same categories collected in Virginia and Maryland.

The Environmental Analyst/Stakeholder Coordinator worked with the Monmouth Project team to create and market a Recreational Boater Survey with Monmouth Team. The Analyst provided technical review, suggested modifications to improve usability and applicability of the survey. The development of the Stakeholder Action Team as part of the MARCO OPAT has not materialized beyond direct meetings with the Monmouth Project Team to determine the process to engage the

commercial fishing community, however, the development of a Stakeholder Liaison Committee has advanced the efforts of the Mid-Atlantic Regional Planning Body and will be reported on in the next grant. The Environmental Scientist continued to coordinate to develop an outreach strategy that combines the efforts of the Monmouth Team with that of the VA efforts to engage the commercial sector in a meaningful manner. The approach is to combine both the Portal discussions with that of Ocean Planning off the coast of VA, in general. This task continued to work toward the development of mapping products that would refine fisheries data for use in the portal to represent the activities of the Commercial Sector. Efforts to engage the commercial fishing sector began in earnest in the summer of 2014, however will be reported on in detail in the following grant cycle. Outreach included the direct coordination and communication with the seafood industry wholesalers, processors and vessel operators. A communication tracking database draft was created that will be further populated in upcoming grant cycles as more detailed engagement takes place. It can be found in the Appendix. It is being shared on the VCU Google Drive with partners at VACZM, TNC and ANPDC.

During the reporting period, the VCU Stakeholder Coordinator provides direct support to the VA CZM Director in the presentation of ocean use information for the VMRC Commission members and for the subcommittee Finfish Management Advisory Committee. The purpose of the meetings was to inform the Commission and gain guidance on the most appropriate and effective means to reach the commercial fishing industry to permit them to become involved in the ocean planning process. The meeting with the VMRC Finfish Management Advisory Committee will be reported on in the following grant period documenting the interpreted Vessel Trip Report (VTR) data as compiled and interpreted by the Rutgers University as part of the Communities at Sea Project. These interpreted data provide details on the commercial activities in the EEZ for up to 75% of the active use for the years of 2011-2013.

Marine Debris

The VCU Environmental Analyst provided direct assistance as a research team member with Angela Neilan, DEQ Community Involvement Specialist. Through this effort, the VCU Environmental Analyst assisted the Longwood University Clean Virginia Waterways Program Manager in development of the Marine Debris Reduction Plan.

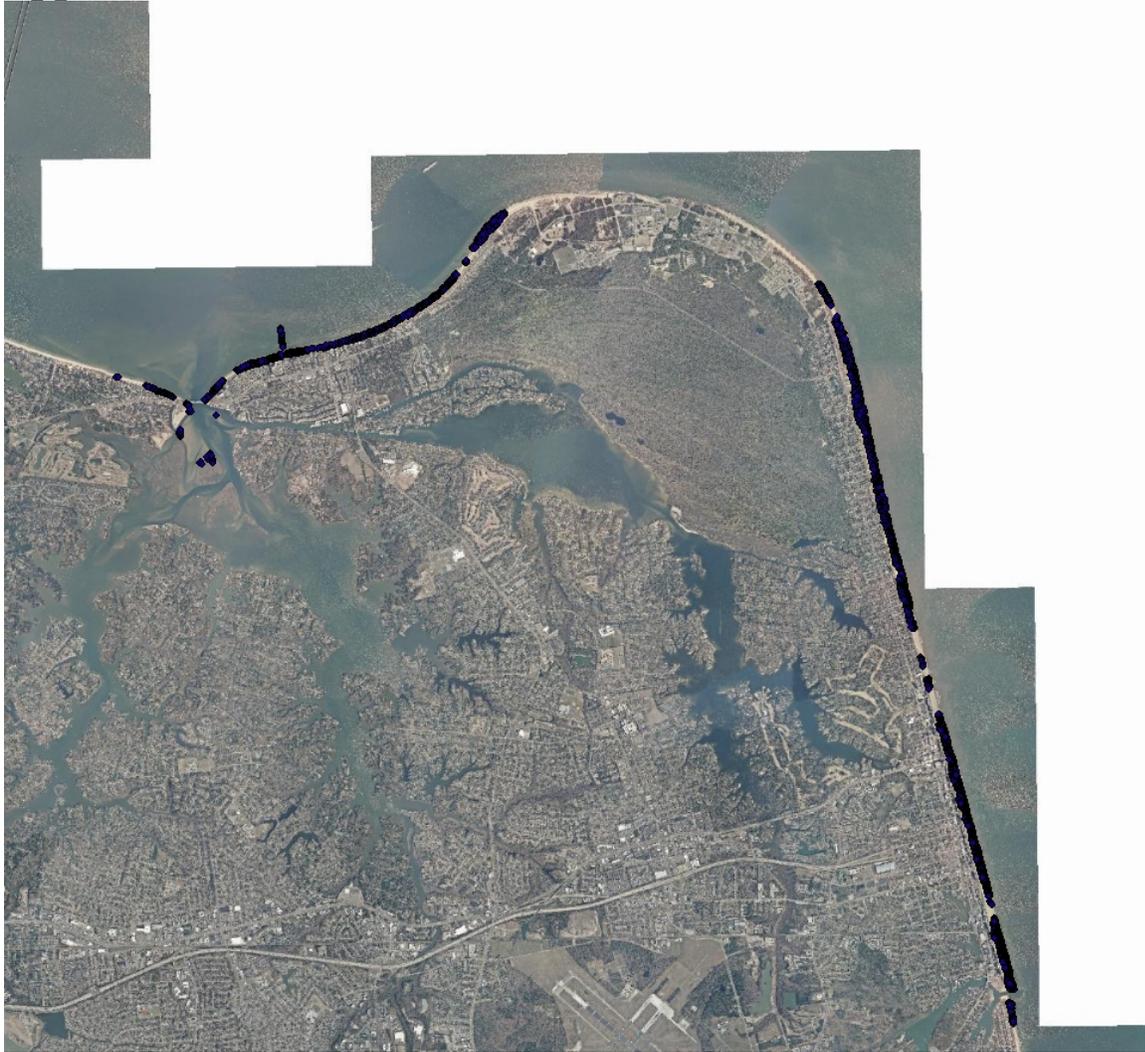
A planning committee comprised of staff and representatives from the Virginia Commonwealth University (VCU), Virginia Aquarium and Marine Science Center, Clean Virginia Waterways/ Longwood University, Virginia Sea Grant, Virginia Institute of Marine Science (VIMS), and the Department of Environmental Quality (VA DEQ) Office of Public Communication and Outreach and Office of Pollution Prevention Program and the Virginia Coastal Zone Management Program (VACZM) developed the agenda, secured speakers and facilitators, and undertook all logistics. The Virginia Marine Debris Summit was sponsored by the Virginia Coastal Zone Management Program, the Virginia Aquarium, and the Virginia Marine Products Board and the Virginia Seafood Council. Facilitation was provided by the Virginia Commonwealth University and the VA DEQ and note taking was conducted by the VA Department of Conservation and Recreation (VA DCR), VCU and DEQ. This effort included a partnership with the USEPA and NOAA Marine Debris Program. The Summit was conducted February, 26-27, 2013 at the Virginia Marine Science Center and Aquarium in VA Beach, VA. Approximately 65 attendees were present over the two days. Sponsorship was provided by the VA Marine Products Board and the

VA Seafood Council. The Agenda included presentation on Fishing Gear (Recreational and Commercial), Items of Special Concern (Balloons and Cigarette Butts), Plastics (Food and Beverage, Plastic Bags), Innovative Programs, Solutions and Actions. The second day of the Summit included work-sessions to solicit input to inform the development of a Debris Management Plan covering categories: Fishing Gear, Single Use Plastics, and Items of Special Concern. Notes were collected from the two days that will form the basis of the Marine Debris Management Plan including identification of the problem, priority areas, suggested actions, responsible party and timeframe.

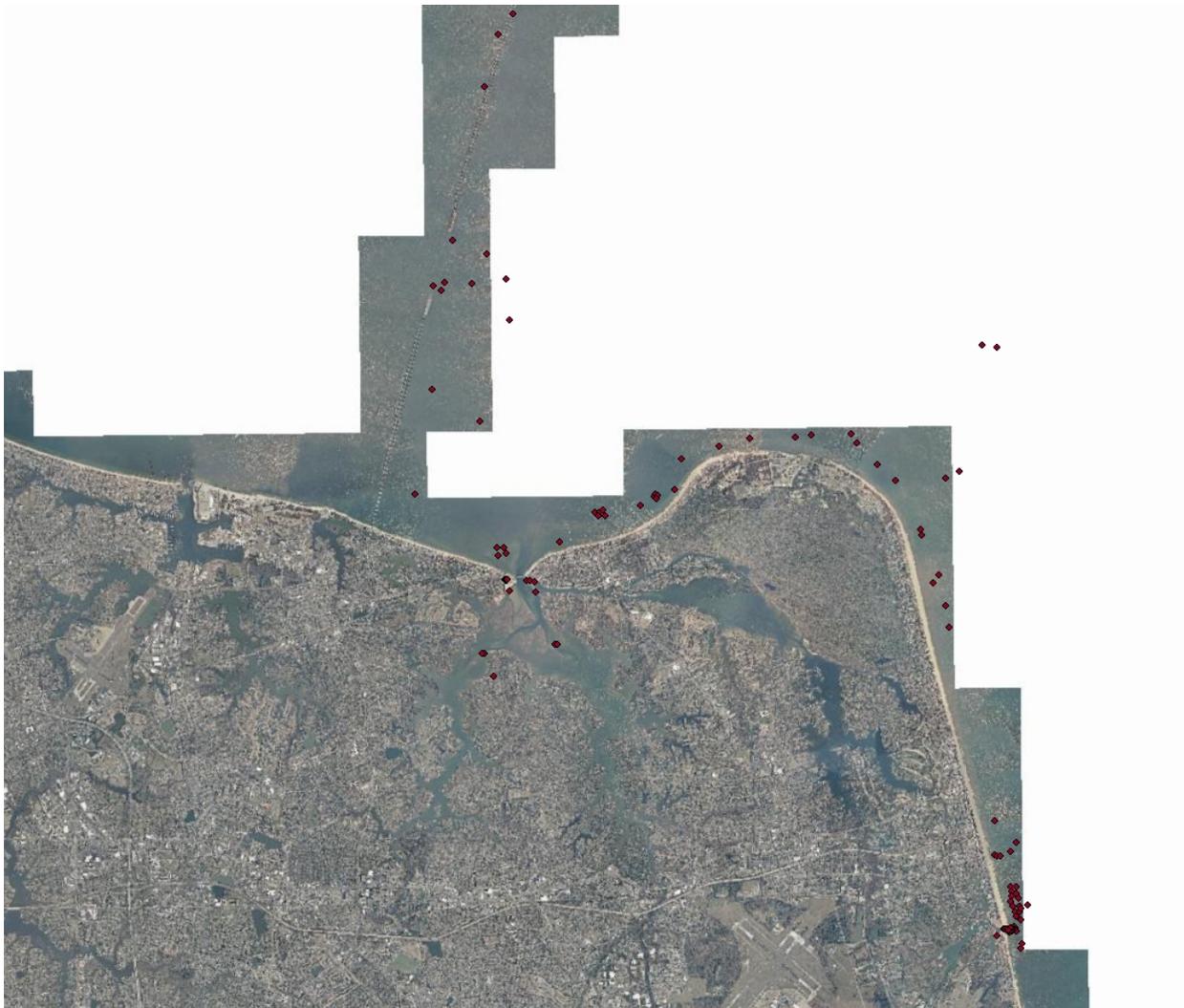
The VCU Environmental Scientist coordinated with the USEPA Trash Free Waters Initiative to determine whether this effort would enhance the efforts in the Virginia to move forward with a plan. The USEPA coordinated a meeting with the states of VA, MD, DE and PA and Washington DC to determine if a regional effort could be explored to address litter in the environment. This meeting was held at the NOAA offices in Annapolis, MD on Aug 26, 2013.

During the reporting period, considerable time was spent developing, collecting and analyzing social science-based data to inform the development of the VA Marine Debris Reduction Plan. This research included the development and implementation of a Web-based survey and direct interviews with the “informed” litter and debris community in VA. The analysis of the Web – based survey consisted of considerable data analysis due to the high number of open-ended questions. Regular meetings between the DEQ Outreach Specialist, the Clean Virginia Waterways Program Manager and the VCU Environmental Analyst were held to ensure continued progress on the draft Plan. The social science approach included the development of a Web-based survey tool and direct interviews with those in the field that are involved, to some degree, in debris-related issues. The web-based was designed to obtain a broad understanding of the knowledge base for those in the field and to inform the detailed conversations and plan development. The web-survey included multiple-choice, ranked/rated and open ended questions. The direct interviews were conducted to provide a more detailed understanding of beliefs and perceptions associated with the marine debris topic. Both the Survey and the direct interview questions can be found in the Appendix of this report. An Advisory Committee was convened on February 7, and July 22, 2014 to discuss the outcome of the survey and guide the focusing of the results of the Survey to inform the Reduction Plan.

Appendices—Weekend Activities, North



Shore Use



Motor boating



Paddling



Sailing

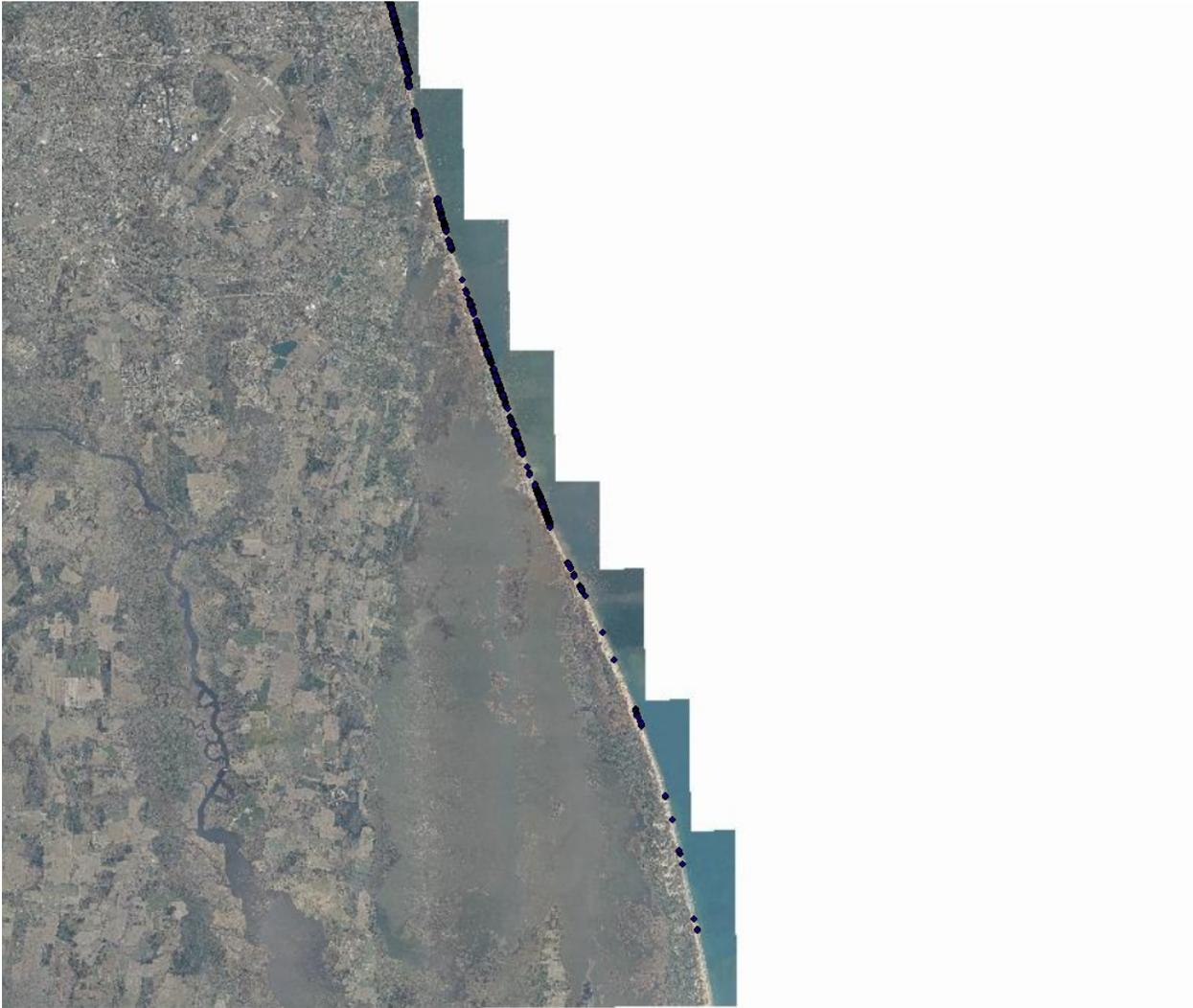


Swimming

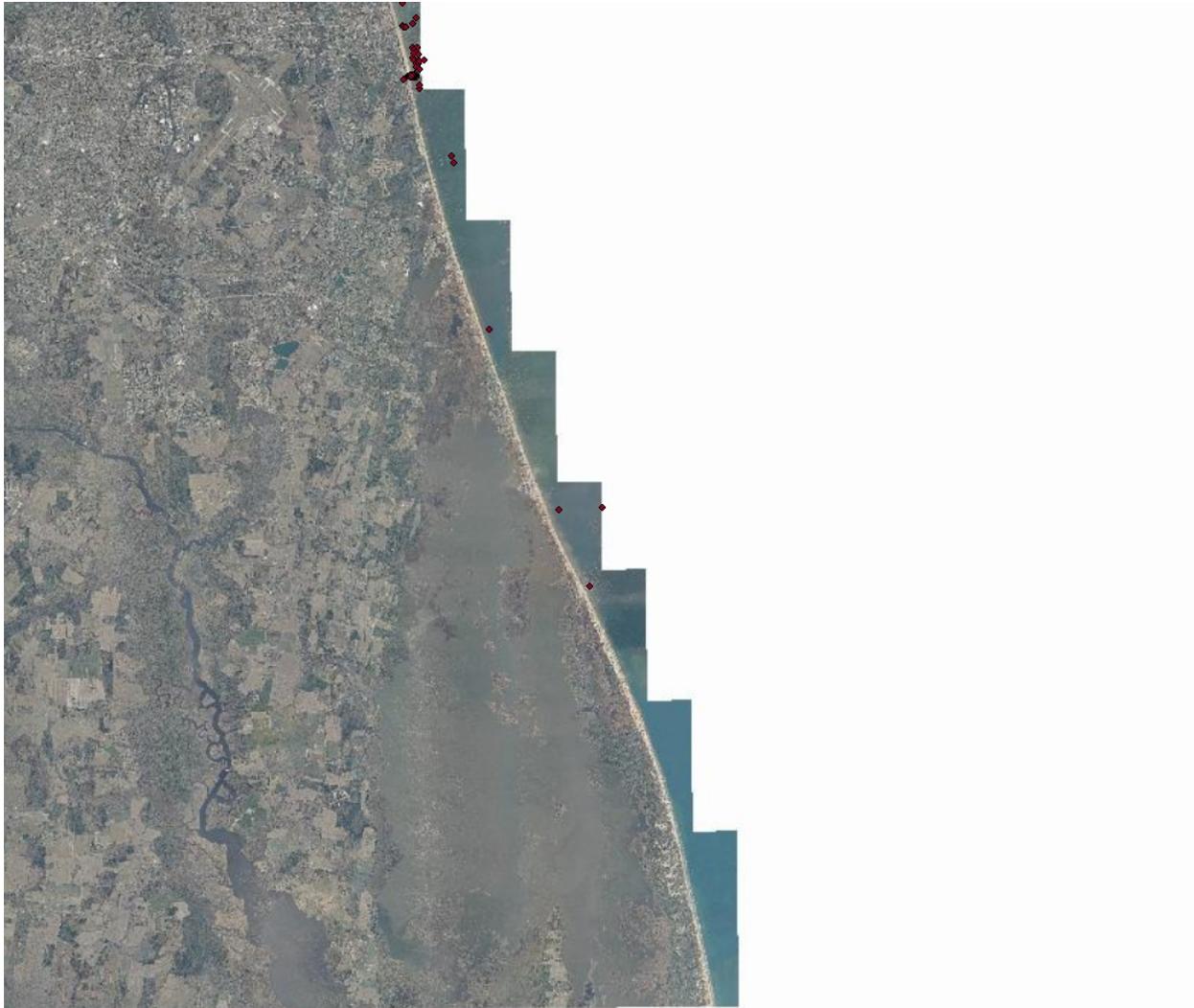


Water sports

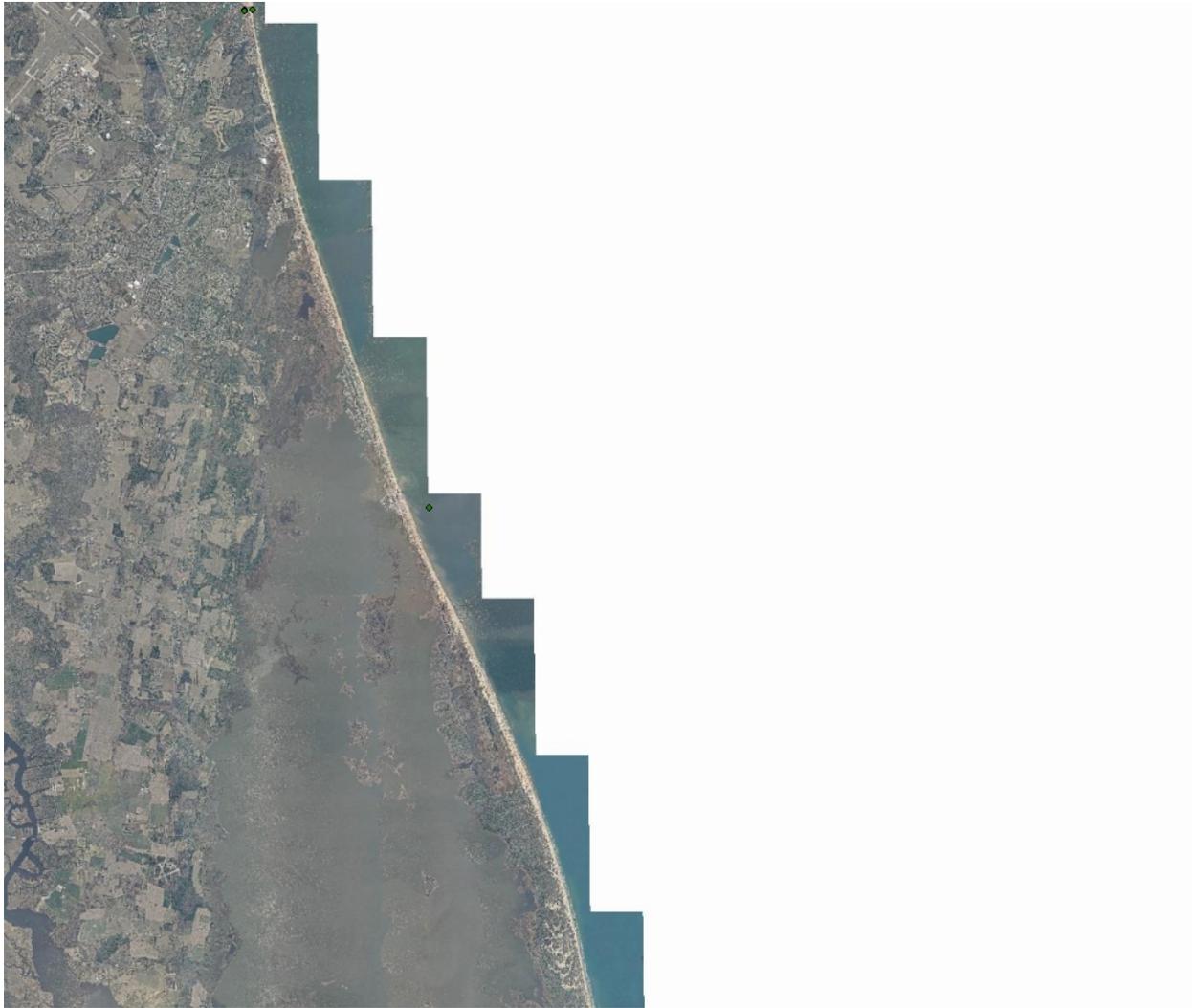
Appendix—Weekend, South



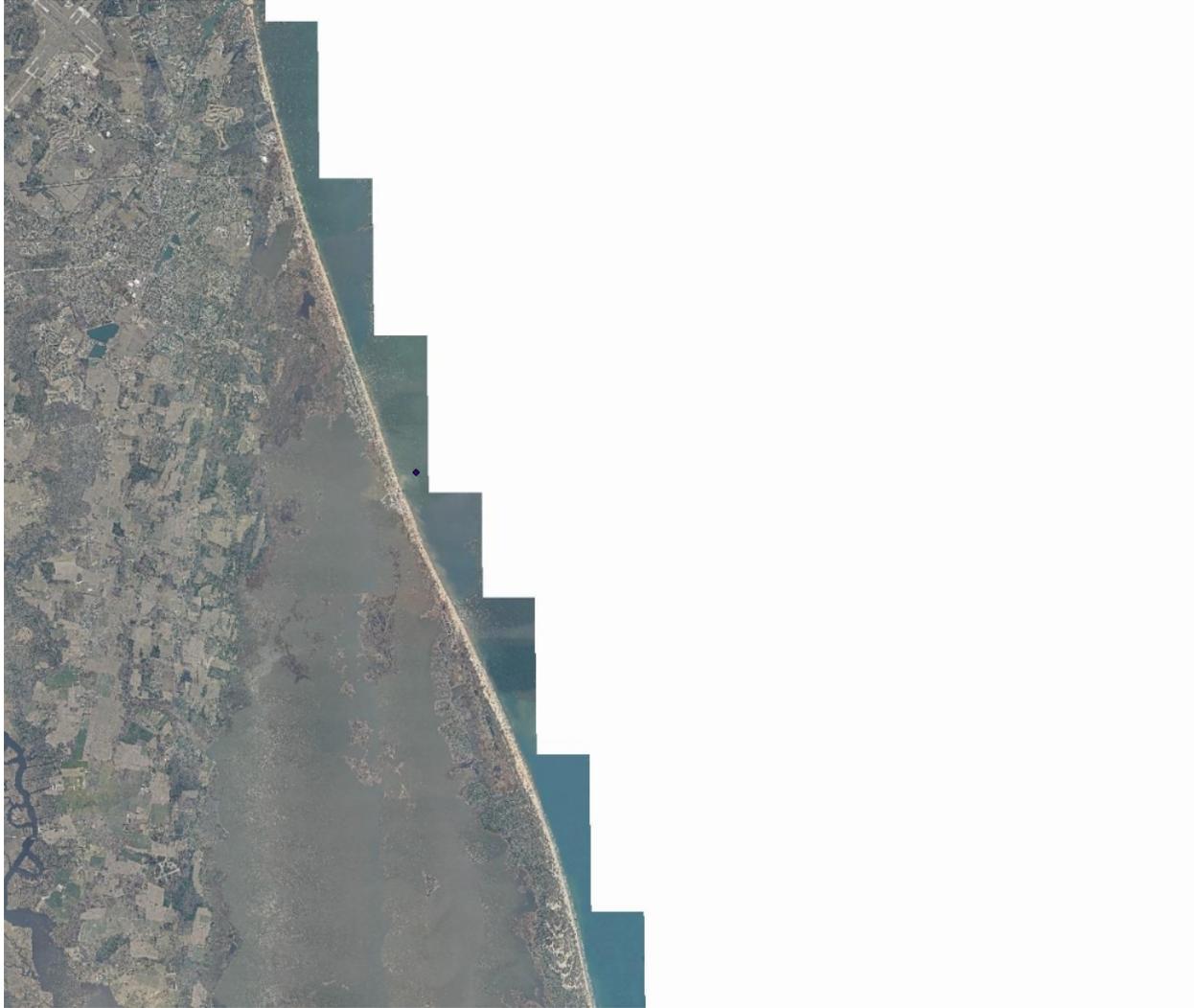
Shore Use



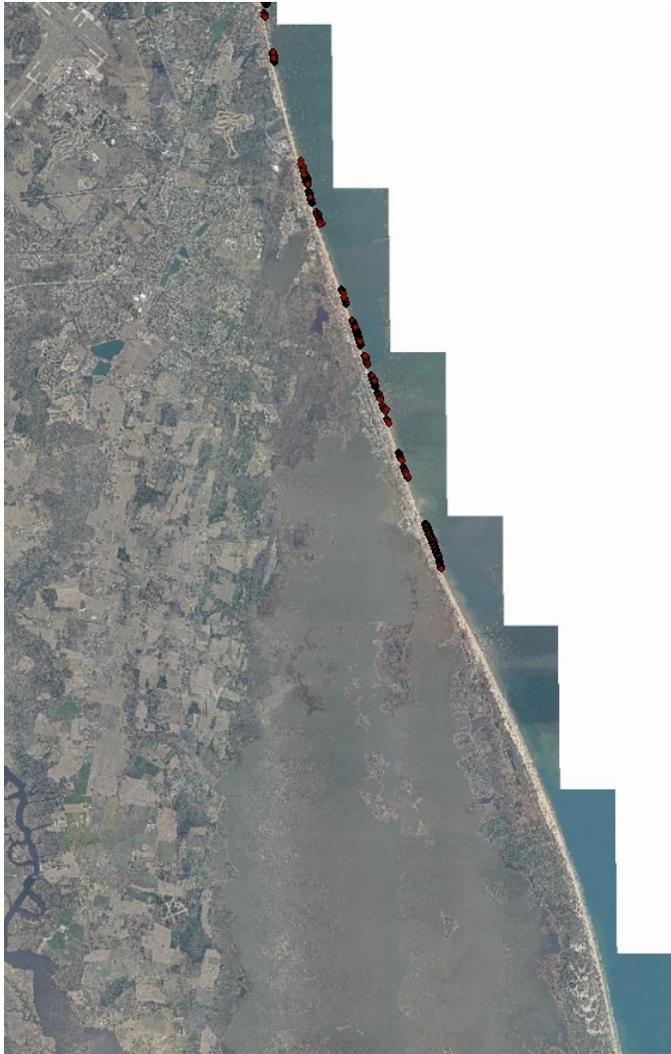
Motorboating



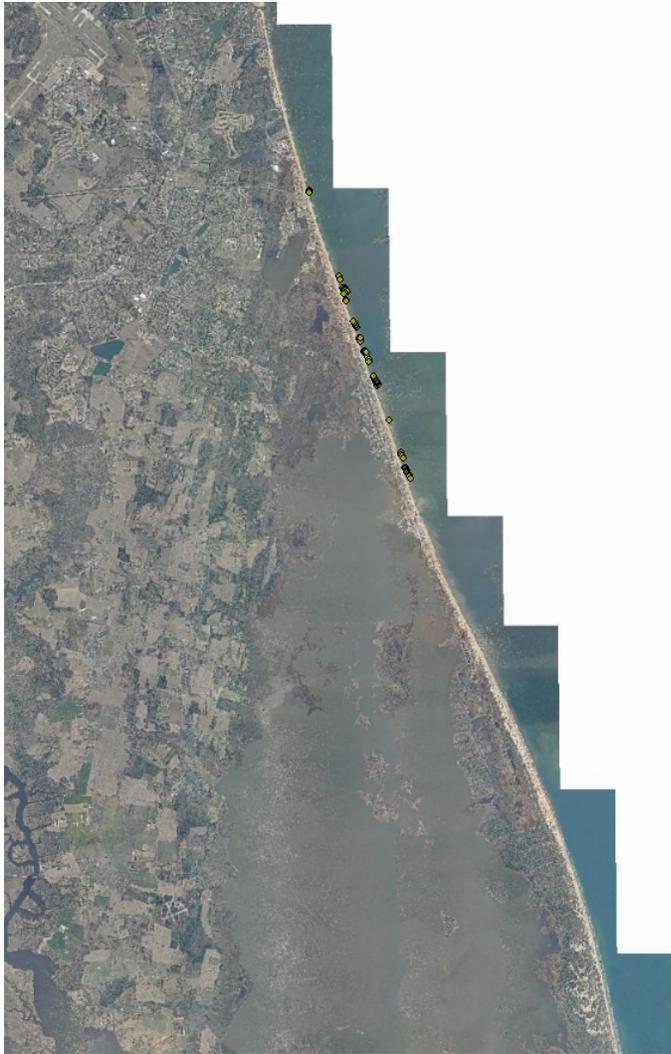
Paddling



Sailing

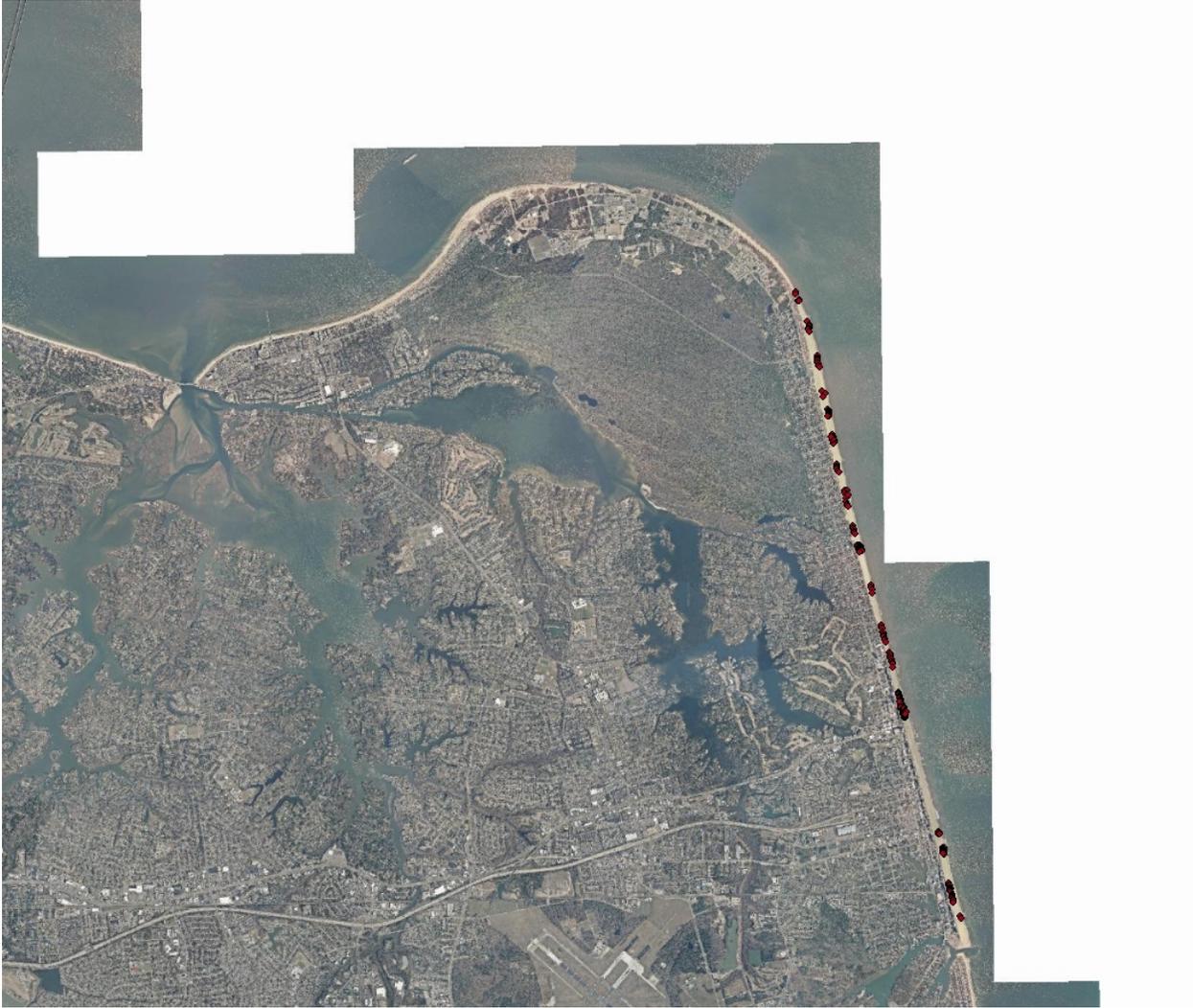


Swimming



Watersports

Appendix—Weekday, North



Shore Use



Motorboating



Paddling



Swimming

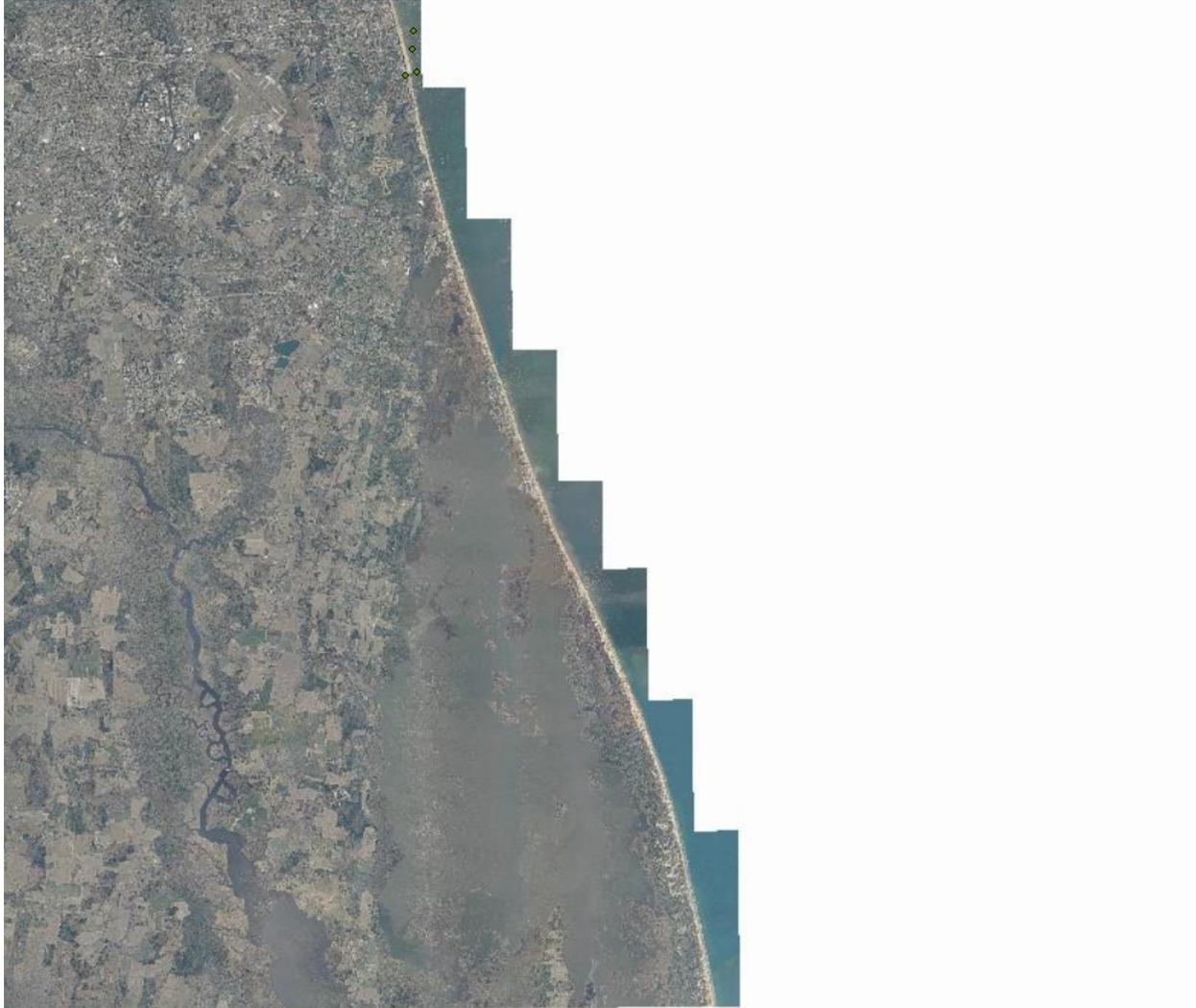


Watersports

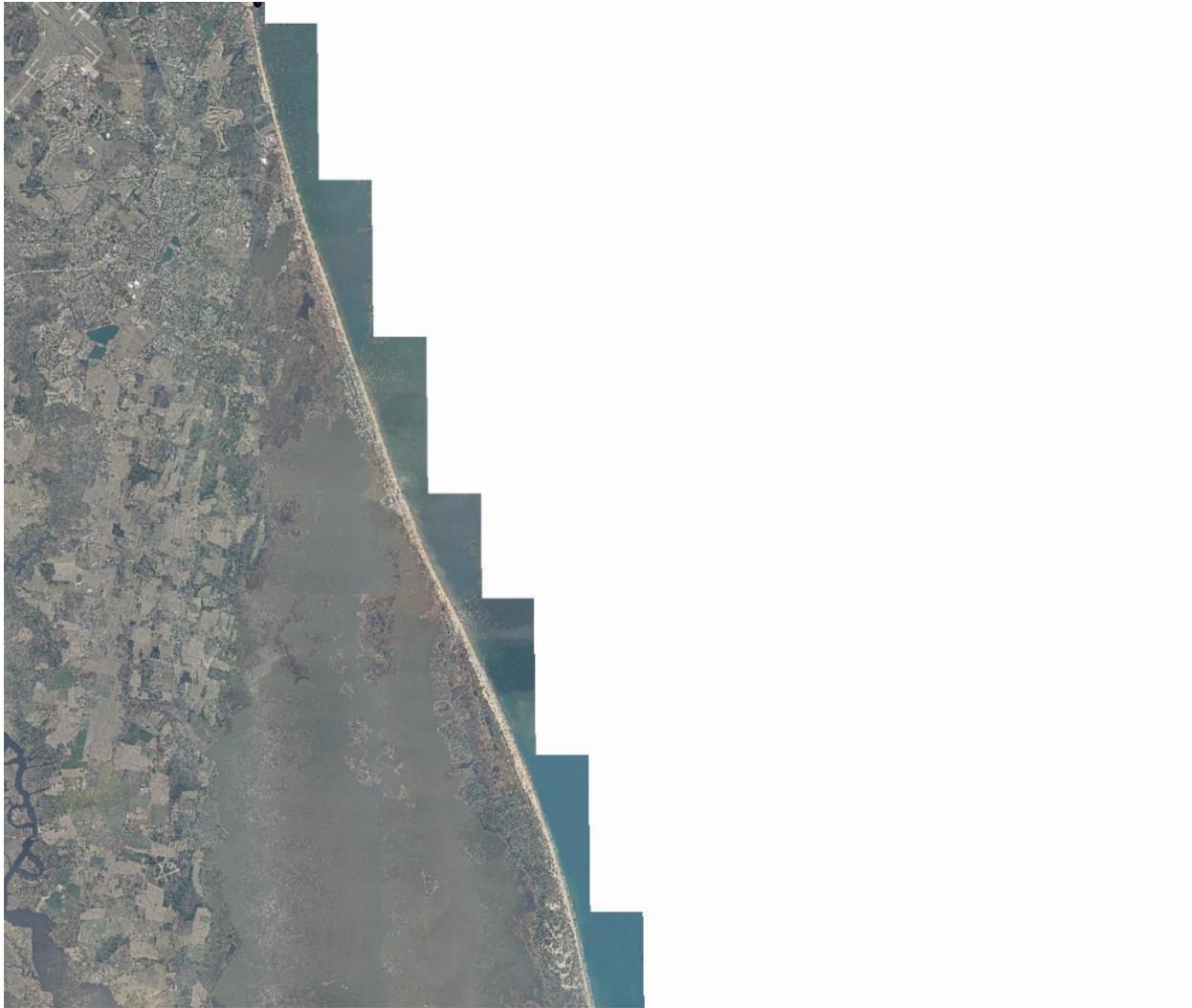
Appendix—Weekday, South



Shore Use



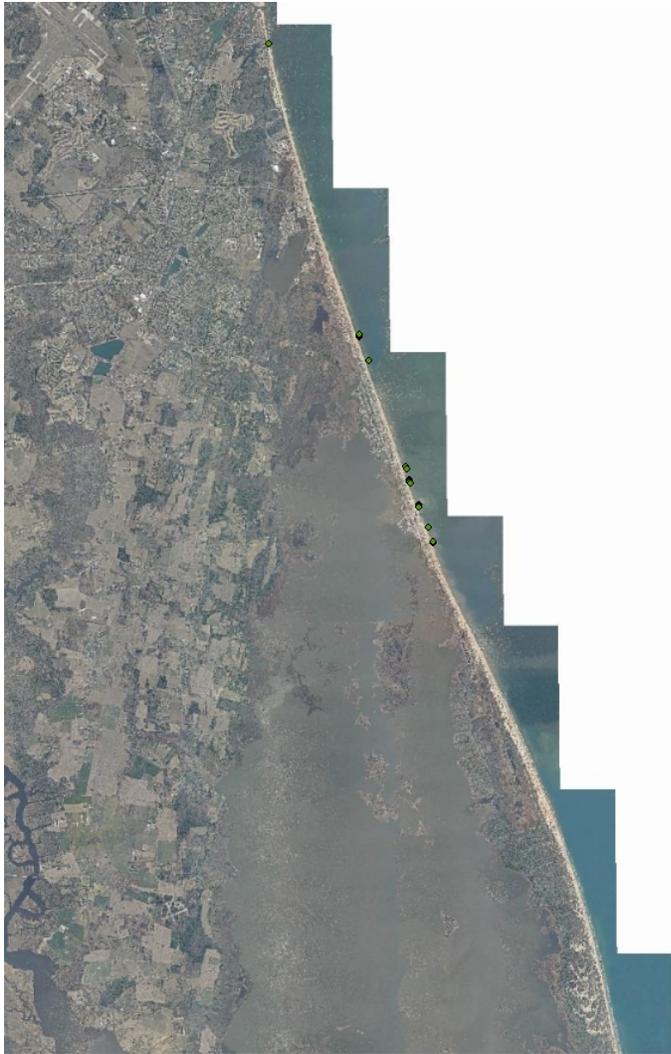
Motorboat



Paddling



Swimming



Watersports

Appendix—Communication Tracking Database

Ocean Use Mapping								
Last	First	Representing	Port	Gear type	Maps Y/N	Avail Time	Preferred Location	Response from Fishers
Abbott	William	Hampton Rds WA	Norfolk					VM and EM, no response
Amory	Meade	LD Amory Seafood	Hampton	Wholesaler, dredge	Y	Varies	Hampton	Attended FMAC mtg
Bowden	Ernie	ES WA	ES Chincoteague					VM and EM, no response
Casey	Jim	Casey Sf--Red Crab	NNews	Processor				Met w him, interested in followup
Crisher	Bobby	Spiny Dogfish, Conch	VB Rudee	Potter, Gillnet	Y	AFTER HRS	VB	Attended FMAC mtg, wants followup
Dawson	Jim	Sea Bass	Chincoteague	Potter	Y	AFTER HRS	ES	Interested in followup
Deihl	Monty	Omega Protien	Reedville	Seine	Y	Varies	Reedville	Interested in followup
Estridge	Tommy	conch	Chincoteague	Potter	Y	AFTER HRS	ES	Interested in followup
Feller	Skip	Charter-longline	VB Rudee	Longline	Y	AFTER HRS	VB	Attended FMAC mtg, wants followup
Georgiades	John	Georges Seafood	Norfolk	Wholesaler	Y	AFTER HRS	VB	Interested in followup
Grey	David	American Scallop	Norfolk	Processor				VM and EM, no response
Hancock	CD	Coastal VA WA	Hampton					VM and EM, no response
Hodges	Mark	Sea Bass	VB Rudee	Potter	Y	AFTER HRS	VB	Interested in followup
Husky	Kim	Seafood Council	Nnews		Y	AFTER HRS	Nnews, VB	Attended FMAC mtg, wants followup, will assist
MacDonald	Scott	Spots Fish Co	VB Lynnhaven	Wholesaler	Y	AFTER HRS	VB	Will coordinate field mtg
Mullis	Ed	B&C Sf--Scallop	Nnews	Processor	Y	AFTER HRS	Nnews	Met w him, interested in followup
Nixon	Pete	Lower CB WA	Norfolk					VM and EM, no response
Robbins	Rick	CB Packing	NNews	Wholesaler	Y	Varies	Nnews, VB	Attended FMAC mtg, wants followup
Smith	Ken	VA WA	Heathsville					VM and EM, no response
Walker	Chris	Gillnetter	ES	Gillnet				VM and EM, no response
Wells	Billy	Wells Scallop	ES	Dredge, processor				VM and EM, no response

Appendix--Marine Debris

Virginia Marine Debris Survey Ready for SurveyMonkey: Oct 25, 2013

Virginia Marine Debris Survey – BETA TEST

Thank you for taking the time to complete this survey by the Virginia Coastal Zone Management Program and their partners. We are seeking your opinions and knowledge on **marine debris*** to inform the development of reduction goals and strategies to address this issue in the Commonwealth. Your feedback is important to us as we move forward.

This survey is 16 questions and should take approximately 15 minutes to complete.

If you have any questions regarding this survey or the development of the Virginia Marine Debris Reduction Plan, please contact Katie Register (registerkm@longwood.edu).

** **Marine debris** is any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment. It can come from land, such as litter that washes into storm drains and rivers, and from sea, such as lost fishing gear and boat waste and may include plastics such as bags, food and beverage containers, fishing line and nets.*

Which of these best describes your affiliation with marine debris:

Local government
State government
Federal government
Nonprofit organization
Academia/educational institute
Community/civic group
Industry or business
Other

What state do you live in?

What county do you live in?

1. What are the top three things that bother you the most about marine debris?
 - 1: _____
 - 2: _____
 - 3: _____
2. In your opinion, on a scale of 1-5, with 1 being low and 5 being high, how important is marine debris relative to the following terms?
 - a. Human safety (broken glass, propeller entanglement, medical waste)
 - b. Navigation hazards
 - c. Habitat impacts

- d. Protected areas
 - e. Aesthetics
 - f. Endangered species
 - g. Financial cost to communities to prevent or pick up litter
 - h. Loss of tourism income
 - i. Loss of economically important species due to lost or abandoned (derelict) fishing gear
 - j. Animal entanglement
 - k. Animal ingestion
 - l. Debris as a method of transporting invasive species
 - m. Storm or flooding-related impacts
 - n. Impacts on food chain from plastics and associated toxins
 - o. Other (Comment box)
3. What is your role in preventing and reducing marine debris?
(Select all that apply.)
- a. I organize clean-up efforts
 - b. I organize educational efforts (e.g., outreach efforts on litter prevention, distribute fishing line recycling bins)
 - c. I address the impacts (e.g., rescue entangled animals)
 - d. I work in solid waste management to regulate or manage the sources of marine debris
 - e. I work in stormwater management to regulate or manage the sources of marine debris
 - f. I do research on marine debris
 - g. I develop products to prevent or reduce wastes
 - h. I develop policies to prevent or reduce wastes
 - i. I am a volunteer who participates or would like to participate in an event to reduce or clean up debris
 - j. None of the above
 - k. Other (please describe): (Comment box)
4. In your opinion, on a scale of 1-5, 1 being low and 5 being high, where does the management of litter or marine debris fall in your prioritization?
5. In your opinion, on a scale of 1-5, 1 being low and 5 being high, how much does each item below contribute to marine debris in Virginia?
- a. Release of balloons
 - b. Cigarette butts and smoking-related litter
 - c. Crab pots, nets or buoys from lost or abandoned (derelict) commercial fishing gear
 - d. Monofilament fishing line and other lost or abandoned (derelict) recreational fishing gear
 - e. Lost or abandoned (derelict) vessels
 - f. Glass, metal, and rubber waste
 - g. Micro-plastics (fragmentation of large macro-plastic and microbead plastics produced for household and personal hygiene products i.e., detergents, soaps, scrubs, lotions, cosmetics, toothpaste)
 - h. Plastic single-use bags
 - i. Beverage containers, straws, and food-related packaging
 - j. Waste from cargo, cruise, or other ocean-going commercial ships
 - k. Waste from land-based industrial/manufacturing facilities
 - l. Maintenance of trash receptacles, dumpsters
 - m. Litter from uncovered trucks
 - n. Other (please list specific local concerns)
(Comment box)

6. Which of the above sources do you think are the most important to reduce? Please select your top three (3). (VIRGINIA: we would like people to be able to put check marks next to no more than 3 items)
- Release of balloons
 - Cigarette butts and smoking-related litter
 - Crab pots, nets or buoys from lost or abandoned (derelict) commercial fishing gear
 - Monofilament fishing line and other lost or abandoned (derelict) recreational fishing gear
 - Lost or abandoned (derelict) vessels
 - Glass, metal, and rubber waste
 - Micro-plastics (fragmentation of large macro-plastic and microbead plastics produced for household and personal hygiene products i.e., detergents, soaps, scrubs, lotions, cosmetics, toothpaste)
 - Plastic single-use bags
 - Beverage containers, straws, and food-related packaging
 - Waste from cargo, cruise, or other ocean-going commercial ships
 - Waste from land-based industrial/manufacturing facilities
 - Maintenance of trash receptacles, dumpsters
 - Litter from uncovered trucks
7. In your opinion, on a scale of 1-5, 1 being low and 5 being high, how important should the following be for the state of Virginia to reduce through new technologies, policies/laws, education, etc.
- Release of balloons
 - Cigarette butts and smoking-related litter
 - Crab pots, nets or buoys from lost or abandoned (derelict) commercial fishing gear
 - Monofilament fishing line and other lost or abandoned (derelict) recreational fishing gear
 - Lost or abandoned (derelict) vessels
 - Glass, metal, and rubber waste
 - Micro-plastics (fragmentation of large macro-plastic and microbead plastics produced for household and personal hygiene products i.e., detergents, soaps, scrubs, lotions, cosmetics, toothpaste)
 - Plastic single-use bags
 - Beverage containers, straws, and food-related packaging
 - Waste from cargo, cruise, or other ocean-going commercial ships
 - Waste from land-based industrial/manufacturing facilities
 - Maintenance of trash receptacles, dumpsters
 - Litter from uncovered trucks
 - Other (please list specific local concerns)
(Comment box)
8. Of the above list, which are the top three (3) MOST ACHEIVABLE things that Virginia could focus on in the next few years to reduce marine debris?
- Release of balloons
 - Cigarette butts and smoking-related litter
 - Crab pots, nets or buoys from lost or abandoned (derelict) commercial fishing gear
 - Monofilament fishing line and other lost or abandoned (derelict) recreational fishing gear
 - Lost or abandoned (derelict) vessels
 - Glass, metal, and rubber waste
 - Micro-plastics (fragmentation of large macro-plastic and microbead plastics produced for household and personal hygiene products i.e., detergents, soaps, scrubs, lotions, cosmetics, toothpaste)
 - Plastic single-use bags
 - Beverage containers, straws, and food-related packaging
 - Waste from cargo, cruise, or other ocean-going commercial ships
 - Waste from land-based industrial/manufacturing facilities

- l. Maintenance of trash receptacles, dumpsters
 - m. Litter from uncovered trucks
9. Are you working with municipal stormwater management or an MS4 (Municipal Separate Storm Sewer Systems)?
 Yes (*auto jump to follow-up question if response is positive*)
 No
 You answered, "Yes". Please tell us how you are addressing (floatable) litter in your plan. What tools or resources would improve your efforts? If you have documents or attachments you would like to share, please email them to registerkm@longwood.edu.
10. How might Virginia improve efforts to eliminate the sources of marine debris? Please provide three (3) suggestions.
 Comment box

Splash Page to introduce the topic of land-based sources

Land-based sources of marine debris include food- and beverage-related items, bags, smoking-related items, construction materials, balloons, tires, fireworks and other solid waste items.

11. In your opinion, on a scale of 1-5, 1 being low and 5 high, when thinking about **land-based sources** of marine debris, which of the following strategies or management actions do you think will be most effective to minimize debris?
- a. Education and outreach on litter prevention and marine debris impacts
 - b. Improved solid waste management
 - c. A tax on plastic bags or deposits on bottles
 - d. Well-maintained trash receptacles
 - e. Best practices for improving stormwater management
 - f. Reduce discharge of solid waste into waterways
 - g. Legislation and policies to support solid waste minimization and management
 - h. Enforcement of regulations and permits regarding litter, dumping, solid waste management, stormwater, and surface runoff
 - i. Regular cleanup efforts on coastal lands, in watersheds, and in waterways
 - j. Advanced planning for the removal of marine debris after natural disasters such as hurricanes or flooding events.
 - e. Infrastructure improvements (such as trash receptacles, waste transfer stations, public recycling centers, etc.)
 - k. Other _____

Splash page to introduce ocean-based (or water-based) sources

Ocean-based sources of marine debris include solid waste; lost cargo; derelict fishing gear (abandoned, lost, or otherwise discarded nets, crab pots, traps, fishing line, etc.); and abandoned vessels.

12. In your opinion, on a scale of 1-5, with 1 being low and 5 being high, when thinking about **ocean-based (or water-based) sources** of marine debris, which of the following strategies or management actions do you think will be most effective to minimize debris?
- a. Education and outreach on marine debris impacts, prevention, and management for the fishing and boating communities
 - b. Minimize incidents of ocean dumping by promoting proper waste storage at sea, and proper disposal at port reception facilities and marinas
 - c. Minimize abandonment of vessels
 - d. Minimize accidental loss of cargo, solid waste, and gear at sea by implementing fishing industry best management practices (BMP)

- e. Reduce loss of fishing gear and/or its impacts through fishing gear modifications or alternative technologies
- f. Legislation and policies to prevent and manage marine debris from at-sea sources
- g. Enforce compliance with requirements that marinas, boatyards, and docks have well-maintained trash receptacles or other infrastructure
- h. Increase the capacity at docks, ports and marinas to accept (and recycle) waste
- i. Other _____

Splash page introducing **legacy marine debris (include historic accumulation)**

Legacy marine debris is solid waste that has accumulated over time on shorelines, in coastal waters and the ocean. It can include all of the land-based and ocean-based marine debris items listed earlier.

13. In your opinion, on a scale of 1-5, with 1 being low and 5 being high, when thinking about “**legacy**” marine debris, which of the following strategies or management actions do you think will be most effective to minimize this type of debris?

- a. Education and outreach on marine debris impacts and removal
- b. Removal of accumulated marine debris using the latest technologies and methods
- c. Offer incentives for removal of derelict fishing gear, derelict vessels, and accumulations of marine debris
- d. Other _____

14. In your opinion, what are the most effective rules, laws, regulations or educational efforts that address the sources of marine debris?

Please list three (3) below:

15. Are there gaps in knowledge about marine debris that you think should be explored? If so, please list.

16. Please share here any other ideas, thoughts, emerging issues, or concerns you have about marine debris.

Thank you again for your time to complete our survey! Your input is very important to us as we move forward in developing a Virginia Marine Debris Reduction Plan that identifies achievable solutions.

If you would like more information, would like to stay informed as this process advances or would like to assist in our efforts, please contact Katie Register (registerkm@longwood.edu) or visit these web sites:

Virginia Coastal Zone Management: Virginia Marine Debris

<http://www.deq.virginia.gov/Programs/CoastalZoneManagement/CZMIssuesInitiatives/VirginiaMarineDebris.aspx>

Clean Virginia Waterways: Marine Debris Plan

<http://www.longwood.edu/cleanva/marinedebrisplan.html>

National Oceanic and Atmospheric Administration: NOAA Marine Debris Program

<http://marinedebris.noaa.gov/>

US Environmental Protection Agency: Trash Free Waters

<http://water.epa.gov/type/oceb/marinedebris/>

“Close” link jumps to the VACZM Page on Marine Debris

Appendix

VMDRP Interviews

Person Interviewed: _____

Interviewer: _____

Date: _____

Thank you for agreeing to be interviewed today about the Virginia Marine Debris Reduction Plan. As you know, we are interested in gathering input from stakeholders like you, and we are asking that you share your thoughts about the recent Survey that we conducted.

Questions	Responses	Notes
Please give me 3 examples of your involvement in marine debris, litter prevention, recycling, waste management or related issues.		
On a scale of 1 to 5, how concerned are you about marine debris?	1 2 3 4 5	
Before we look at the survey highlights, I like to ask you: what is on your mind regarding marine debris? (A&T— is this what you had in mind for this question?)		
And what do you think should be done about this?		
What has been successful in Virginia in your opinion in reducing or managing marine debris?		
What is going well?		
What is not going well?		
What do you think ought to be different?		

We sent a survey about marine debris in Virginia to more than 650 people, and we got responses from 151 people. I'd like to have you comment on some of the highlights from the survey.

First, one of the Survey questions asked about PRIORITIES -- "How important should the following be for the State of Virginia to reduce."	(A&T: Should we write this question as "On a scale of 1 to 5, do you agree with this list of priority items?" or leave this	
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<p>As I read the list, please think about if you agree with the list...or if there are things on the list that surprise you...</p> <p>The top priorities from the survey were:</p> <ol style="list-style-type: none"> 1. Plastic single-use bags 2. Beverage and food related litter 3. Cigarette butts & smoking related litter 4. Microplastics 5. Commercial fishing gear 6. Recreational fishing gear <p>Do you agree with this list of priority items?</p>	<p>an open answer?</p>	
<p>Was something on this list that surprised you? If so, what was it?</p>		
<p>Is something not on the list that you expected would be there? If so, what was it?</p>		
<p>Another Survey question asked about ACHIEVABILITY -- “Which are the most achievable things that VIRGINIA could focus on in the next few years to reduce marine debris?”</p> <p>As I read the list, please think about if you agree with the list...or if there are things on the list that surprise you...</p> <p>The “most achievable” things from the survey were:</p> <ol style="list-style-type: none"> 1. To Be Added 2. To Be Added 3. To Be Added 4. To Be Added 5. To Be Added 6. <p>Do you agree with this list of “achievable” items?</p>	<p>(A&T: Should we write this question as “On a scale of 1 to 5, do you agree with this list ...?” or leave this an open answer?</p>	
<p>Should we add another question re: achievability?</p>		
<p>In order to structure the plan, we would like your help in determining a time frame.</p> <p>What are the top two things you think can really be achieved in Virginia in the near term (within the</p>		

next two years)?		
What are the top two things you think can really be achieved in Virginia in the Mid term (up to 5 years)?		
What are the top two things you think can really be achieved in Virginia in the Long term (5 to 10 years)?		
<p>We'd also like your opinions about some possible recommendations for Virginia's Marine Debris Reduction Plan.</p> <p>On a scale of 1 to 5 (1 being "not important" and 5 being "very important") how would you rate this possible recommendations? (A&T—this is just a quick list – not complete!)</p> <ul style="list-style-type: none"> • Virginia should have a permanent marine debris program in the state. • Virginia should focus on land-based sources of plastic. • Virginia needs to increase anti-litter enforcement. • Virginia needs to increase education and outreach. 	<p>A&T: The three of us did not discuss this -- do we want to ask about possible recommendations/actions? I think we should except I am concerned about time. Maybe we should look hard at any questions we could cut or combine.</p>	
Who in should be leading marine debris reduction in Virginia?		
Who in should be participating marine debris reduction in Virginia?		
What do you think is the proper role for Virginia in reducing marine debris? In other words, What should the state government do?		
Now, the "Magic Wand" question. If you had no constraints, what would you do to reduce marine debris?		

Is there anything else you would like to share?		
Is it all right with you if we publish your name, title and place of employment in the acknowledgement portion of the final the Virginia Marine Debris Reduction Plan?	Yes No Please get back to me	

Thank you so much for your time! I appreciate your input.

 What do we want to learn from interviewees?
 They will provide one more layer of data higher level of clarification.
 We want them to react to the survey results, offer insights,
 We want their input on spending resources

Appendix

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