Commercial Whale Watching Areas
Northeast and Mid-Atlantic United States
March 2021; Revised April 2022

Prepared for:
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1. INTRODUCTION

The Commercial Whale Watching Areas layer represents a synthesis of map data gathered through separate but similar outreach processes to industry representatives and stakeholders in the Northeast and Mid-Atlantic regions. The Northeast outreach process, described below, focused on whale watching activity in ocean areas from Maine through New York and yielded a map layer that was published on the Northeast Ocean Data Portal in 2015 and refined in 2020. The Mid-Atlantic Regional Council on the Ocean commenced a whale and dolphin watch mapping project in 2021 that aimed to build upon the Northeast Portal layer, ultimately providing users a full view of coverage extending from Maine south to Virginia. The Mid-Atlantic data and Northeast data were combined to create this comprehensive layer in 2022.

The Commercial Whale Watching Areas layer builds on depictions of activity areas mapped by participants in the Northeast Coastal and Marine Recreational Use Characterization Study, which was conducted by SeaPlan, the Surfrider Foundation, and Point 97 under the direction of the Northeast Regional Planning Body in 2015.

In February of 2020, the Northeast Regional Ocean Council invited around 40 individuals associated with whale watch operators in the region, many of which had participated in the initial mapping effort in 2015, to contribute to updating the Commercial Whale Watching

Areas layer. Webinars were held on February 28 and November 18, 2020, to discuss potential approaches and data to include in an updated layer, and to review draft/final data products.

The activity of commercial whale watching vessels and the commercial success of whale watching businesses depends heavily on highly variable environmental and economic conditions. Variations in weather, the presence and activities of marine mammals, fuel costs and other economic indicators can impact whale watch businesses on a year-to-year basis. These variations coupled with a relatively short operating season mean that whale watch companies in the Northeast employ a relatively unique business model, compared to other recreational industries in the Northeast.

Recent studies have documented the economic importance of whale watching, both globally and locally. For example, the International Fund for Animal Welfare found that in 2008, 13 million people participated in whale watching in 119 countries and territories, generating total expenditures of $2.1 billion (O'Connor et al. 2009). Closer to home, the Stellwagen Bank National Marine Sanctuary conducted a study in 2019 that found that whale watching is an important component of New England's Blue Economy, supporting nearly 1,500 jobs annually and generating $76 million in labor income and $182 million annually in sales to the sanctuary community (Schwarzmann and Shea 2020).

For the purpose of this study, a commercial whale watch operator is defined by a business whose primary activity includes regularly scheduled trips dedicated to finding and observing whales in their natural habitat. Commercial whale watching vessels are typically over 65 feet in length and hold at least 100 passengers. Some operators have higher capacities and may have over 300 passengers on a trip. This study's scope focused on commercial operators that specifically target whales and did not include smaller charter boat operators that may offer whale watching excursions as a complement in their suite of other services, nor did this study include other boat-based wildlife tourism platforms which target seals or other offshore wildlife. These large commercial whale watch operators are expected to have a spatial footprint and industry characteristics that are unique to that sector.

The Northeast Ocean Data Portal Working Group and collaborators have coordinated with members of the whale watching industry to help guide the development, execution, and review of draft and updated data products.

Data collection - 2015

Initial data collection took place at dedicated in-person workshops held in Bar Harbor, ME, Portsmouth, NH, Plymouth, MA and New York, NY. A total of 32 individuals, including vessel owners, operators, naturalists, and data managers attended as participants.

Workshop facilitators followed a procedure adapted from the Participatory Geographic Information Systems (PGIS) workshop methodology developed by NOAA, which employs eBeam participatory mapping technology. The eBeam tool consists of a wireless electronic stylus, a receiver, and computer software, and utilizes a projector to project a computer screen onto a flat surface (such as a whiteboard or wall) onto which a stylus is used by participants to draw areas of activity. With use of the eBeam tool, participants digitized polygons on the projected GIS-based map, which allowed the features to be automatically saved and then attributed with information the participants shared during the concurrent discussion.

The standardized workshop facilitation approach involved having participants digitally map the following types of use areas.

- General use areas: Includes the full footprint of whale watch activity in the last three to five years, regardless of frequency or intensity; does not include areas where the use may occur once or twice or where it might conceivably occur now or in the future.
- Dominant use area: Includes all areas routinely used by most users most of the time, within seasonal patterns for that use; must be within the general use area.
- Transit routes: Includes areas used for transit to and from general or dominant use areas.
- Supplemental use areas: Includes areas used for closely-related activities, historical uses, and infrequent specialty trips.

Participants were asked to map these areas in three steps, starting with general use areas, followed by dominant use areas and finishing with supplemental and transit areas. Participants were asked to focus on activities taking place over the past 3 – 5 years (20102014). While participants map, the process facilitator asks specific questions about industry characteristics (e.g. size of boats, length of season), about the mapped areas (e.g. whether the mapped area coincides with a specific depth range or bathymetric feature), and also listens for opportunities to ask follow-up questions and capture input from participant discussions. This information is later used to attribute the mapped polygons.

Additional commercial whale watching data were also collected during an on-site visit to the operator in Kennebunkport, Maine, as well as through meetings of the Rhode Island Ocean Special Area Management Plan (RI OSAMP) update process. As part of this process, the Rhode Island Coastal Resources Center and Rhode Island Sea Grant held in-person meetings with stakeholder experts who identified additional areas where whale watching takes place in Rhode Island waters and to confirm that the information contained in the original RI OSAMP document is still accurate.

Data collection – 2020

On a February 28, 2020 webinar, participants heard an overview of the 2015 data collection, data development process, and existing whale watching data on the Portal and reviewed draft updated maps of whale watching activity prepared by the Portal Working Group. The draft maps showed vessel transit counts (i.e., density maps) and individual vessel tracks for whale watching vessels from 2015-2017 derived from public vessel identification information and Automatic Identification System (AIS) database. Participants discussed the strengths and limitations of the new maps, including areas not reflected, and how to update the maps so that the whale watching industry activity is most accurately represented.

Following the February 2020 webinar, the Portal Working Group met with interested participants to share data and information, hear concerns, and obtain feedback. During this time, the Portal Working Group also met with a whale watching company in mid-coast Maine that did not participate in the 2015 participatory GIS exercise to map areas of transit, dominant use, and general use. Other participants shared GPS trackline data with the Portal Working Group at this time. These additional data were added to the draft data on the Portal and presented to the working group at the final November 2020 webinar. The discussions held during the November webinar are summarized below:

- The areas shown in the original Whale Watching Activity layer are still relevant for depicting general areas of use from 2015-2020.
- AIS vessel tracking data correspond well with the original Whale Watching Activity layer developed using participatory GIS
- AIS vessel tracking data have the potential to depict decadal or even annual variability in whale watch industry activities and should continue to be used to "ground truth" the current general map of Whale Watching Activity every ~3 years or so
- Limitations of the maps of AIS vessel tracking data for known whale watch vessels include:
    - Some whale watching vessels are <65ft and thus not represented in the data - individual GPS tracks would need to be obtained and integrated
    - Fewer vessels are represented in 2015 AIS data vs. 2019 AIS data indicating increase in AIS use over time rather than changes in activity
    - AIS data show other activities that these vessels may undertake such as fishing trips, lighthouse tours, and ferrying activities that are difficult to remove from the data in an objective way
    - Some participants expressed concern about showing precise locations/vessel tracks on public maps
- Updates to the existing Whale Watching Activity layer fill some gaps in activity in mid-coast Maine and continue to be representative of industry activity over the last 5 years

- Some of the NY operators will continue to contribute their trackline data directly to the NY Gateway; the Northeast Portal can then obtain those data from the Gateway.
- A companion layer that shows the point locations and contact information for the major operators depicted in the activity map would enable Portal users (e.g., project proponents/developers) to engage operators with questions or concerns about potential conflicts/interactions
- Metadata report should reference and include links to the Stellwagen Bank National Marine Sanctuary socioeconomic whale watching study

Data processing

These data were edited to eliminate self-intersecting loops and other topological errors using ArcGIS editing tools. Mapped areas were also edited to reflect the definitions of use areas, for example, expanding general use areas to include all dominant use areas.

Mid-Atlantic Region Mapping Steps, 2021-2022

In 2021, the Mid-Atlantic Regional Council on the Ocean (MARCO) Data Portal initiated its effort to map commercial whale watch areas in the 5-state MARCO region. The purpose was to generate a comprehensive map following the overall scope and content/categories published by the Northeast Ocean Data Portal. This work was completed in April 2022 following review and final approval.

The process entailed the following steps:

- 1. The MARCO AIS Whale Watch Working Group assessed the Northeast Ocean Data Portal commercial whale watch area map and determined which area categorizations can be applied in the Mid-Atlantic region for this particular mapping effort.
- 2. A list was compiled of commercial whale watch operators and their respective vessels in the 5-state MARCO area: New York*, New Jersey, Delaware, Maryland, and Virginia.
    - The list was developed using a combination of internet web searches and interactions and feedback with select whale watch operators post-compilation.
    - The MMSI of each operator vessel was obtained through a variety of searches or provided by the vessel operator.
    - *Note: New York, one of the 5 states in the MARCO area, was mapped by the previous Northeast Ocean Data Portal mapping effort. However, the vicinity of New York Harbor and its approaches was also included in the MARCO area due to the New York City ‘homeport’ area overlap with northern New Jersey coast operator activity areas.

3. Automatic Identification System (AIS) track data were downloaded from Marine Cadastre for the years 2015-2020 (time period as decided upon by the MARCO AIS Whale Watch Working Group).
    - These files were obtained at https://marinecadastre.gov/data/ ;searched for "AIS Vessel Tracks" and the results were for the years queried.
    - The files were in Lat/Lon projection and stored in ESRI file GDB format.
- 4. Using the vessel MMSIs and AIS track data, the following was processed:
    - Each individual vessel track summary was extracted from each year, if available in the data. A summary of these vessels and which data were available by year was created.
    - The AIS tracks for each vessel and each year were merged into a single GIS vector layer. The combined layer was projected into Web Mercator.
- 5. The combined vessel track file was then used to create a kernel density map representing areas of least to most vessel activity (for all vessels in one composite map).
- 6. An ArcGIS Online web map was created using individual vessel tracks from 2019 and 2020 and the combined kernel density layer
    - This online web map was used by the Working Group to assess the compiled data, vessels, and their respective tracks, as well as to get feedback from vessel operators for content and any gaps in data.
- 7. Whale Watch Areas were then delineated to individual polygons using the AIS track densities as a backdrop map. This was performed by digitizing/sketching in GIS (Esri Arc 10.8.x) to geodatabase format. Areas were categorized as 'Dominant' or 'General' based on the AIS track density values.
    - The New York City homeport area, already mapped in the Northeast Ocean Data Portal effort, was revised to incorporate New Jersey vessel 'Dominant' and 'General' activities. Revisions were made to the southern half of the NYC area, retaining the northern 'Dominant' area as-is.
- 8. Draft maps were reviewed by the Working Group, areas updated as needed based on feedback, and attributed to match the Northeast Ocean Data Portal data.
    - The final draft was presented to the vessel operators and feedback provided.
    - 'Transit' areas were added based on Working Group feedback. This applied to the Delaware Bay/southern NJ coast and Virginia offshore areas.
    - The data were further attributed to match additional information in the Northeast Ocean Data Portal data.
- 9. The Mid-Atlantic whale watch final draft polygons were merged into the Northeast Ocean Data Portal data to generate one seamless NE-Mid-Atlantic representation.

PURPOSE

This dataset fills a specific need identified by the Northeast Regional Ocean Council and the Mid-Atlantic Regional Council on the Ocean to develop a better understanding of how and where humans use the ocean, inform regional ocean planning, and minimize ocean use conflicts. In addition, this dataset can also be used by the commercial whale watch industry to show the importance and location of whale watching in the region and to inform business planning.

2. SOURCES AND AUTHORITIES

Northeast Ocean Data Portal Mapping Effort

- Bloeser, J., Chen, C., Gates, M., Lipsky, A., & Longley-Wood, K. 2015. Characterization of Coastal and Marine Recreational Activity in the U.S. Northeast. Point 97, SeaPlan, & Surfrider
- Guidebook to Participatory Mapping of Ocean Uses, NOAA, 2014
- Rhode Island Ocean Special Area Management Plan (Ocean SAMP) Vol I, Rhode Island Coastal Resources Management Council, 2010
- NOAA Medium Resolution Shoreline Dataset

Whale watching entities that were invited to participate in data development and review webinars (2020) are included in the table below. The locations of these entities are also shown with the whale watching activity layer on the Portal.

Organization	State	Location	URL
Al Gauron Deep Sea Fishing and Whale Watching	NH	1 Ocean Blvd, Hampton, NH 03842	https://algauron.com/
American Princess Cruises	NY	2498 Emmons Ave, Brooklyn, NY 11235	https://americanprincesscruises.com/
Bar Harbor Whale Watch Co	ME	1 West St, Bar Harbor, ME 04609	https://www.barharborwhales.com/
Boston Harbor Cruises	MA	1 Long Wharf, Boston, MA 02110	https://www.bostonharborcruises.com/
Cap'n Fish's Whale Watch and Charters	ME	42 Commercial St, Boothbay Harbor, ME 04538	https://www.boothbayboattrips.com/
Cape Ann Whale Watch	MA	415 Main St, Gloucester, MA 01930	https://www.seethewhales.com/
Captain John Boats	MA	10 Town Wharf #3848, Plymouth, MA 02360	https://www.captjohn.com/
Captain Lou Fleet	NY	31 Woodcleft Ave, Freeport, NY 11520	https://www.captloufleet.com/
Captain's Fishing Parties and Cruises	MA	10 82nd St, Newburyport, MA 01950	https://www.captainsfishing.com/
Dolphin Fleet Whale Watch	MA	307 Commercial St #1, Provincetown, MA 02657	https://whalewatch.com/
Eastport Windjammers	ME	104 Water Street Eastport ME 04631	http://www.eastportwindjammers.com/

Organization	State	Location	URL
First Chance Whale Watch	ME	4 Western Ave, Kennebunk, ME 04043	https://firstchancewhalewatch.com/
Frances Fleet	RI	33 State St, Narragansett, RI 02882	http://www.francesfleet.com/
Fundy Breeze Charters	ME	109 Water St, Eastport, ME 04631	http://www.fundybreeze.com/
Granite State Whale Watch	NH	1870 Ocean Blvd, Rye, NH 03870	http://www.granitestatewhalewatch.com/
Hyannis Whale Watching Cruises	MA	269 Millway, Barnstable, MA 02630	https://whales.net/
Isles of Shoals Steamship Company	NH	315 Market Street, Portsmouth, NH. 03801	https://islesofshoals.com/
New England EcoAdventures	ME	8 Western Ave, Kennebunk, ME 04043	https://newenglandecoadventures.com/
Newburyport Whale Watch	MA	54 Merrimac St, Newburyport, MA 01950	https://www.newburyportwhalewatch.com/
Odyssey Whale Watch	ME	170 Commercial St, Portland, ME 04101	https://www.odysseywhalewatch.com/
Red Tail Offshore Fishing Charters	MA	Basin Rd, Menemsha, MA 02552	http://www.redtailfishing.com/
Sea Salt Charters	MA	19 Ryder St E, Provincetown, MA 02657	https://www.seasaltcharters.com/
Shearwater Excursions Inc	MA	Slip 1011 Straight Wharf, Nantucket, MA 02584	https://shearwaterexcursions.com/
Viking Fleet	NY	462 W Lake Dr, Montauk, NY 11954	https://vikingfleet.com/

Note: additional entities, including research institutions, conservation organizations, Stellwagen Bank National Marine Sanctuary staff, and other groups affiliated with whale watching entities were also invited to participate.

MARCO Ocean Data Portal Mapping Effort: Vessel List

A commercial whale watch vessel list was compiled for the AIS track density data development process and are included as operating areas in the final map.

Vessel	State	Location	URL
American Princess Cruises (vessel 1)	NY	2498 Emmons Ave, Brooklyn, NY 11235	https://americanprincesscruises.com/
American Princess Cruises (vessel 2)			
Seastreak	NJ	326 Shore Drive, Highlands, NJ 07732	https://seastreak.com/
Royal Miss Belmar	NJ	905 NJ-35, Belmar, NJ 07719	https://jerseyshorewhalewatchingtour.com/
Ocean Explorer	NJ	900 River Road Belmar, NJ 07719	https://www.oceanexplorerbelmar.com/

Vessel	State	Location	URL
Too Finominal	NJ	905 NJ-35, Belmar, NJ 07719	https://finominalcharters.com/
Atlantic Star	NJ	6200 Park Boulevard, Wildwood Crest, NJ, 08260	https://www.starlightfleetnj.com/
Cape May Whale Watcher	NJ	1218 Wilson Drive Cape May NJ 08204	https://jerseyshorewhalewatchingtour.com/
Atlantis			
American Star	NJ	1231 Route 109, Cape May, NJ	http://www.capemaywhalewatch.com/
Thelma Dale IV	DE	107 Anglers Rd, Lewes, DE 19958	https://fishlewes.com/
Rudee Whaler	VA	200 Winston Salem Ave, Virginia Beach, VA 23451	https://www.rudeetours.com/
Rudee Flipper			
Atlantic Explorer	VA	717 General Booth Blvd., Virginia Beach, VA 23451	https://www.virginiaaquarium.com/
Southern Belle	VA	524 Winston Salem Ave, Virginia Beach, VA 23451	https://www.vbfishingcharters.com/

Note: additional entities, including research institutions, staff from The Marine Education, Research and Rehabilitation Institute (Delaware), staff from Whale and Dolphin Conservation, Inc./The Whale SENSE Program, watch operators with vessels that are not tracked by AIS, and other groups affiliated with whale watching entities also provided input on the Mid-Atlantic watch areas.

3. DATABASE DESIGN AND CONTENT

Native storage format: ArcGIS File Geodatabase – simple feature class

Feature Types:

General use area

Includes the full footprint of whale watch activity in the last three to five years, regardless of frequency or intensity; does not include areas where the use may occur once or twice or where it might conceivably occur now or in the future.

Dominant use area:

Includes all areas routinely used by most users most of the time, within seasonal patterns for that use; must be within the general use area.

Transit routes:

Includes areas used for transit to and from general or dominant use areas.

Supplemental use areas:

Includes areas used for closely-related activities and infrequent specialty trips.

RI OSAMP areas:

Includes whale watch areas documented in the original RI OSAMP, or additional areas identified in RI OSAMP update process workshops. These are symbolized differently in the data to reflect the fact that the RI OSAMP process did not employ the same categorization methods for whale watch areas as the Northeast Coastal and Recreational Use Characterization Study.

Note: the Supplemental use areas and RI OSAMP areas categories are not in the Mid-Atlantic whale watch mapping effort (NY to VA).

Data Dictionary:

Line	Name	Definition	Type	Size
1	OBJECTID	Uniquely identifies a feature	OBJECTID	*
2	Shape	Geometric representation of the feature	geometry	*
3	homeport	Identifies the port(s) from which the mapped whale watch activity originates	text	50
4	useType	Identifies whether the area is a general, dominant, transit, supplemental, or RI OSAMP use area	text	50
5	areaName	Identifies, if specified, name of general area based on underwater feature or other landmark		50
6	season	Identifies, if specified, the season(s) where use activity is likely to take place	text	50
7	species	Identifies, if specified, the species that are likely to be seen in this area	text	254
8	year	Identifies, if specified, the year(s) where activity took place	text	50
9	notes	Provides additional details or descriptors about the use area	text	254
10	Shape_Length	Length of polygon in spherical coordinates	double	*
11	Shape_Area	Area of polygons in spherical coordinates	double	*

Feature Class Name: CommercialWhaleWatchingAreas

Total Number of Unique Features: 143

Dataset Status: Complete

4. SPATIAL REPRESENTATION

Geometry Type: vector polygon
Reference System: GCS North American 1983
Horizontal Datum: North American Datum 1983
Ellipsoid: Geodetic Reference System 1980

XY Resolution: XY Scale is 1000000000.0000001
Tolerance: 0.000000008983152841195211 7

Geographic extent: -76.12 to -66.56, 35.89 to 45.05

IS0 19115 Topic Category: environment, oceans, biota, economy, transportation, society

Place Names: Northeast:

Atlantic Ocean, Bigelow Bight, Block Island Sound, Cape Cod Bay, Eastport Harbor, Frenchman Bay, Grand Banks, Grand Manan, Great South Channel, Gulf of Maine, Jeffreys Ledge, Massachusetts Bay, New Found Ground, Northwest Atlantic, Outer Falls, Rhode Island Sound, Schoodic Ridges, Stellwagen Bank, Tillies Bank, West Cod Ledge, Wildcat Knoll, Wolves Bank

Place Names: Mid-Atlantic:

Absecon Inlet, Atlantic City, Atlantic Ocean, Bay Shore Channel, Brandywine Shoal, Brigantine Shoal, Brown Shoal, Cape May Channel, Chesapeake Bay, Cholera Bank, Crow Shoal, Delaware Bay, Eph Shoal, Five Fathom Bank, Harbor Of Refuge, Hen and Chickens Shoal, McCrie Shoal, Miah Maull Shoal, Mid-Atlantic, Middle Shoal, New York City, Norfolk Canyon, North Shoal, Outer Continental Shelf, Overfalls Shoal, Prissy Wicks Shoal, Round Shoal, Shewsbury Rocks, Somer Shoal, The Rockaways, The Shears, Virginia Beach, Washington Canyon

Recommended Cartographic Properties:

(Using ArcGIS ArcMap nomenclature)

40% transparency; colors expressed as HSV

General Use Area: Solid fill, no outline; 284-100-90
Dominant Use Area: Solid fill, no outline; 60-55-100
Transit Route: Outline, no fill; 0-0-41
Supplemental Use Area: Solid fill, no outline; 0-0-70
RI OSAMP Area: 10% Crosshatch

Scale range for optimal visualization:100,000 to 4,500,000

5. DATA PROCESSING

5.1. Processing environment: Northeast: ArcGIS 10.2, Windows 7 Ultimate SP5, Intel Xeon CPU

	Process Steps Description
1	Polygons were drawn in an editing session or imported from outside sources into ArcMap
2	Areas that overlapped with land were eliminated using NOAA Medium Resolution Shoreline dataset and the ERASE tool
3	Where applicable, general use areas were expanded so that all dominant use areas fell within general use areas using an editing session. In some cases, edits were made to eliminate drawing errors from the mapping tool, or based on recommendations from stakeholders during the workshops or in the data vetting period.
4	Attribute information was filled in using notes from workshops in an editing session

Processing environment: Mid-Atlantic: ArcGIS 10.8, Windows 10

	Process Steps Description
1	Polygons were drawn in an editing session to represent Dominant or General areas utilizing AIS track density data. Attribute information was also added.
2	Areas in the New York City homeport area were added and edited to existing mapped areas from the Northeast mapping effort.
3	Edits were made based on recommendations from operators during the draft review process.
4	Transit areas were added and attributed.
5	Mid-Atlantic area polygons were merged with the Northeast polygons to create one seamless map.
6	Mid-Atlantic attributes were further edited to match the Northeast attribution.

6. QUALITY PROCESS

Attribute Accuracy: Attribute information for the whale watch activity areas were provided by workshop participants who were asked to confirm conditions over the past decade (2010 -

2020). However, workshop participants stressed that whale watch sightings are highly variable, both within seasons and from year to year. In addition, whale watch tourism was noted to be a relatively new and rapidly growing industry in the northern New Jersey Shore/New York City areas, with multiple new tour operations launched within the decade. As such, the mapped polygons should be considered to reflect a snapshot in time and should not be interpreted to definitively depict historical areas and past trends, or to predict future conditions.

Logical Consistency: Polygons are topologically consistent. Self-intersections were removed. Areas may overlap where they represent data derived from multiple sources.

Completeness: This database provides a comprehensive overview of whale watching in the region. While the workshops did not attract a representative from every whale watch operator in the region, there was substantial geographic overlap among whale watch operators (e.g., multiple operators hail from same home ports) and industry knowledge of where other operators are likely to travel.

The dataset only reflects areas mapped by large, commercial whale watch operators who have dedicated whale watching trips, and thus excludes potential activity areas for smaller charter vessels, as well as operators targeting seals, birds, or other offshore wildlife viewing opportunities.

Positional Accuracy: The positional accuracy of the points is dependent on the individual mapping areas during the workshops. Workshop participants were able to use reference layers on the map, such as shipping channel locations, bathymetric contours, and other information to guide their mapping. Clipping this layer with a regional ocean shapefile derived from the NOAA medium resolution shoreline dataset excluded areas drawn over land, or in freshwater.

Timeliness: This dataset represents data collected in 2020 and reflects activity from 2010 – 2020.

Use restrictions: Data are provided as is. NROC, Point 97, the Surfrider Foundation, and SeaPlan are not liable for any interpretations, assumptions, or conclusions based on these data. This data set must be cited on all electronic and hard copy products. This data set is not intended for navigation purposes.

Distribution Liability: All parties receiving these data must be informed of these restrictions.