

U.S. Navy Marine Species Monitoring Program

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Please visit the US Navy Marine Species Monitoring Program web portal for additional information on this project –
www.navymarinespeciesmonitoring.us



Mid-Atlantic Humpback Whale Photo-ID Catalog (Year 2)

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Project Goals:

1. Inform the Navy of the site fidelity, residency and habitat use of humpback whales sighted in Navy training areas
2. Streamline exchange of information among researchers involved in humpback whale photo-ID in the mid-Atlantic and southeast U.S. and between established regional catalogs
 - Gulf of Maine Catalog (GOM)
 - North Atlantic Humpback Whale Catalog (NAHWC)



Task

- Develop a web-based catalog including images from the mid-Atlantic and southeast hosted by OBIS-SEAMAP
- Development timeline – 3 years (partial support with 25-40% VAQF match)
- Following development, become self supporting



Year One

1. Draft web interface/database design – **completed**
2. Develop standardized feature codes for categorizing and filtering matches – **completed**
3. Draft data access/use agreement – **completed**
4. Host a Stakeholder Workshop/Produce Summary Report – **completed**

Type	Description	Example
1	Black pigment is less than 20% of the fluke area.	
2	Black pigment is 20-40% of the fluke area.	
3	Black pigment is 40-60% of the fluke area.	
4	Type 4. Black pigment is 60-80% of the fluke area.	
5	Black pigment is greater than 80% of the fluke area.	

Year Two

- Finalize data-access & data sharing protocols – **completed**
- Draft MAHWC Submission Package & test - **completed**
- Integrate images & data into Photo-ID App – **70% complete**
 - VA (1989 – 2017) – **completed**
 - mid-Atlantic groups - **ongoing**
 - NJ/NY (WDC)
 - GA/FL
 - NC
- Conduct systematic matching of VA images (through 2018) - **completed**
- VA images compared to the NAHWC and GOM (1989 through 2016)-**completed**

Year Two

- Beta test Photo-ID App v2 on OBIS-SEAMAP – **completed**
- Bug fixing and testing v3 – **ongoing**
- Finalize standard MAHWC Submission Template - **completed**
 - Permitted research
 - Basic photo-ID
(mostly whale watch)



Photo-ID App Version 3 - Demo

OBIS SEAMAP Mid-Atlantic Humpback Whale Catalog

Site 1: HDR Site 2: Select a site to show fin images

Image size: Sort by: Filtering (0 options set) Clear options

Image size: Sort by: Filtering (0 options set) Clear options

Page 1 of 3 Displaying 1 - 50 of 150

Page 0 of 0 No data to display

Matching Maps & Sightings Dataset Info Site Info Help

Grouping: [v] Include matched animals

Original ID	MAHWC ID	Date
HDR (50)		
★ HDRVA001	MAHWC0082	2013-09-25
★ HDRVA003	MAHWC0067	2014-12-21
★ HDRVA004	MAHWC0145	2014-12-21
★ HDRVA006	MAHWC0026	2015-01-25
★ HDRVA006	MAHWC0026	2015-01-25
★ HDRVA006	MAHWC0026	2014-12-31
★ HDRVA006	MAHWC0026	2014-12-31
★ HDRVA006	MAHWC0026	2014-12-31
★ HDRVA007	MAHWC0095	2015-10-21
★ HDRVA007	MAHWC0095	2015-02-09

Zoom in Full extent Identify Region Color by: Animal Site X:-75.06 Y:36.99

Satellite Map

UNREGISTERED VERSION

1:14 AM 3/19/2018



□ Allowed for upgraded version for MAHWC, GOMDIS and MABDC

OBIS-SEAMAP - help/phOBIS-SEAMAP PhotoIDOBIS-SEAMAP PhotoID

seamap.env.duke.edu/photoid/mahwc

star

smallette (Log out)

OBIS SEAMAP

Mid-Atlantic Humpback Whale Catalog

Site 1HDR

Site to Site

Matches

Site 2Select a site to show fin images

Image sizeSort by

Filtering (0 options set)Clear options



20130103.0801_1 1/520130103.0801_1 2/520130103.0801_1 3/520130103.0801_1 4/5



Page 1 of 3Displaying 1 - 50 of 150

Image sizeSort by

Filtering (0 options set)Clear options

Page 0 of 0No data to display

MatchingMaps & Sightings

Dataset InfoSite InfoHelp

Grouping

☒ Include matched animals

Original ID	MAHWC ID	Date
HDR (50)		
★ HDRVA001	MAHWC0082	2013-09-25
★ HDRVA003	MAHWC0067	2014-12-21
★ HDRVA004	MAHWC0145	2014-12-21
★ HDRVA006	MAHWC0026	2015-01-25
★ HDRVA006	MAHWC0026	2015-01-25
★ HDRVA006	MAHWC0026	2014-12-31
★ HDRVA006	MAHWC0026	2014-12-31
★ HDRVA006	MAHWC0026	2014-12-31
★ HDRVA006	MAHWC0026	2014-12-31
★ HDRVA007	MAHWC0095	2015-10-21
★ HDRVA007	MAHWC0095	2015-02-09

Zoom inFull extentIdentifyRegion

Color byAnimalSite

X:-75.06 Y:36.99

SatelliteMap



UNREGISTERED VERSION

Gateway Screen Recorder

1:14 AM3/19/2018

Match Update (catalog ~ 350 individuals)

Matches	<i>n</i>
VA-NAHWC	104
VA-GOM	74
VA-NY	16
VA-NJ	16
VA-GA/FL	2

19/38 uniquely identified
whales from aerial surveys
matched to MAHWC

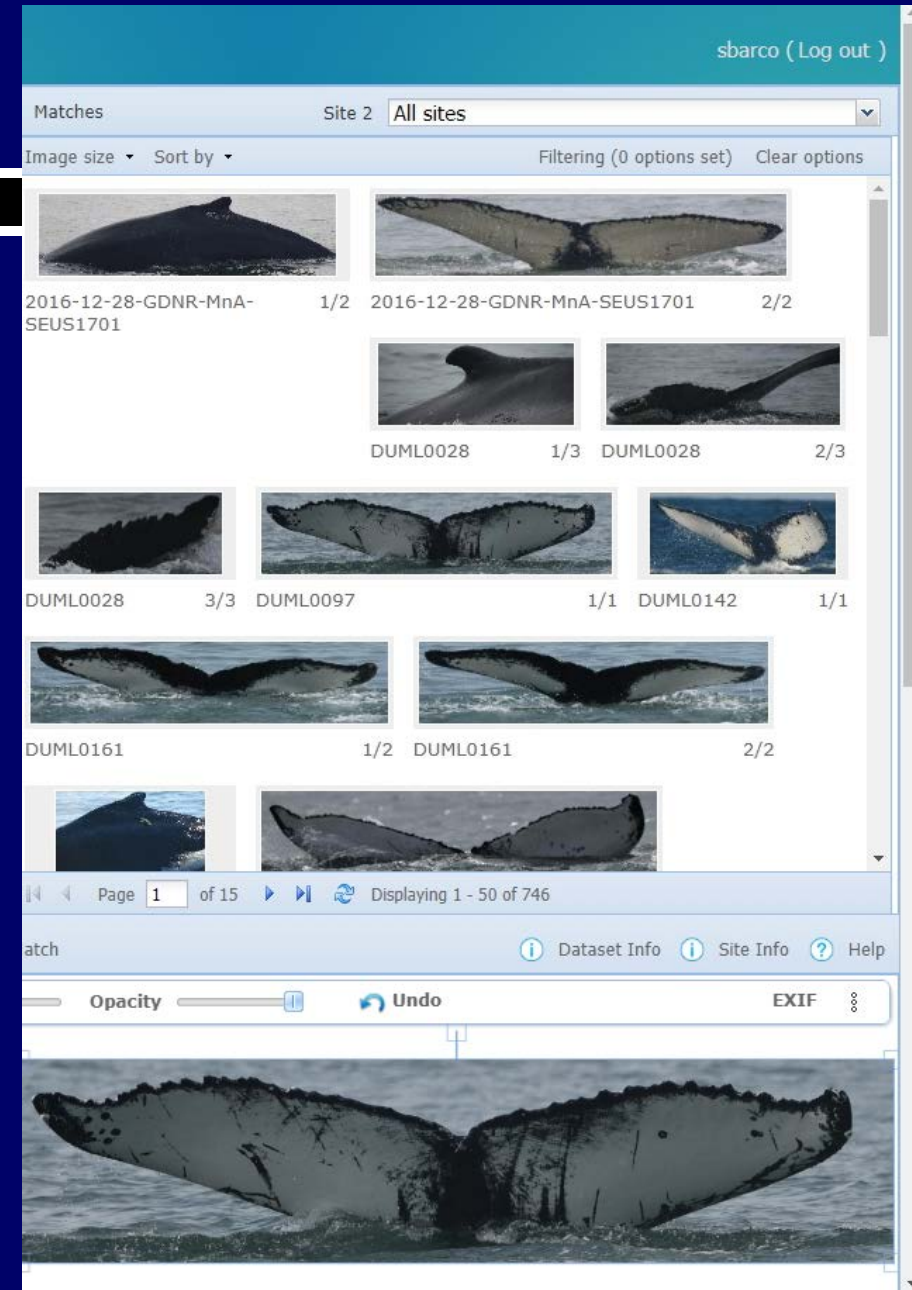
Match Update

- 18 known aged whales: 1- 11 yrs
- Resightings of known age whales
 - MAHWC0160: age 2 and 7
 - MAHWC0028: age 5 and 9
 - MAHWC0073: age 6 and 8
 - 1 stranding (outlier) = 21 yrs old (Corona)
- 2 females had a prior calving history when seen off VA
- 22 known females & 18 males (some analyses pending)

The screenshot shows the OBIS SEAMAP Mid-Atlantic Humpback Whale Catalog interface. The header includes the OBIS SEAMAP logo, the title "Mid-Atlantic Humpback Whale Catalog", and a user login "sbarco (Log out)". Below the header, there are two main sections for Site 1 and Site 2. Site 1 is set to "VA-VAQ" and Site 2 is set to "All sites". Both sections have a "Site to Site" button and a "Matches" button. Each section displays a grid of whale images with filters for "Image size" and "Sort by". The Site 1 section shows 3 images and a pagination bar indicating "Page 1 of 8" and "Displaying 1 - 50 of 388". The Site 2 section shows 2 images and a pagination bar indicating "Page 1 of 15" and "Displaying 1 - 50 of 746".

Year Three

- Add catalog enhancements (as funding allows) - 10%
- Integrate sighting data and images - ongoing
- Distribute MAHWC Submission Packages - 85%
- Solicit images from NE and SE stranding networks -10%
- Develop curator protocols and hold curator training for future sustainability of catalog – 40%



Continuing work

- Evaluate options for computer assisted matching - 30%
- Determine feasibility of including images from aerial & UAS – 50%
- Develop list of additional upgrades that are not covered under current grant – 10%
- Develop manuscript describing collaborative matching efforts – not started
- Identify future funding options for catalog maintenance & upgrades - ongoing



Future enhancements

- Actively collect stranded whale images (currently requested)
- Include effort data (where available)
- Upgrade user-interface with enhanced queries for contributors
- Develop workflow for updating feature codes online
- Integrate automated matching on OBIS-SEAMAP
- Respond to suggestions as contributors use the site & provide feedback

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- VAQ Staff, interns/fellows, volunteers, captains & crew (2019 Humpback Whale Batten Fellow: Parker Kellam)
- Allied Whale staff (especially Lyndsey Jones, Peter Stevick, Tom Fernald, Judy Allen, Rosemary Seaton), students and volunteers
- Center for Coastal Studies (Jooke Robbins) staff and interns. Gulf of Maine matches were possible thanks to the efforts, images, and data from CCS, 7 Seas Whale Watch, Bar Harbor Whale Watch, Blue Ocean Society, Boston Harbor Cruises, Brier Island Whale and Seabird Cruises, Cape Ann Whale Watch, Dolphin Fleet, Whale Center of New England, Whale and Dolphin Conservation, and others.
- Per Palsbøll and Martine Bérubé for genetic matching
- Whale and Dolphin Conservation (WDC; Regina Asmutis-Silvia & Monica Pepe); Cape May New Jersey Whale Watch & Research Cruises
- Virginia Beach Whale Watch: Alexis Rabon (VAQ Atlantic Explorer), Kristin Rayfield (Rudee Flipper), captains, crew and dedicated volunteers
- UNCW (Bill McLellan and Ann Pabst)
- NY: Gotham Whale Wildlife Conservation Society (WCS), Danielle Jones, and Arthur H. Kopelman with Coastal Research and Education Society of Long Island
- FL: Katie Jackson & Clay George