

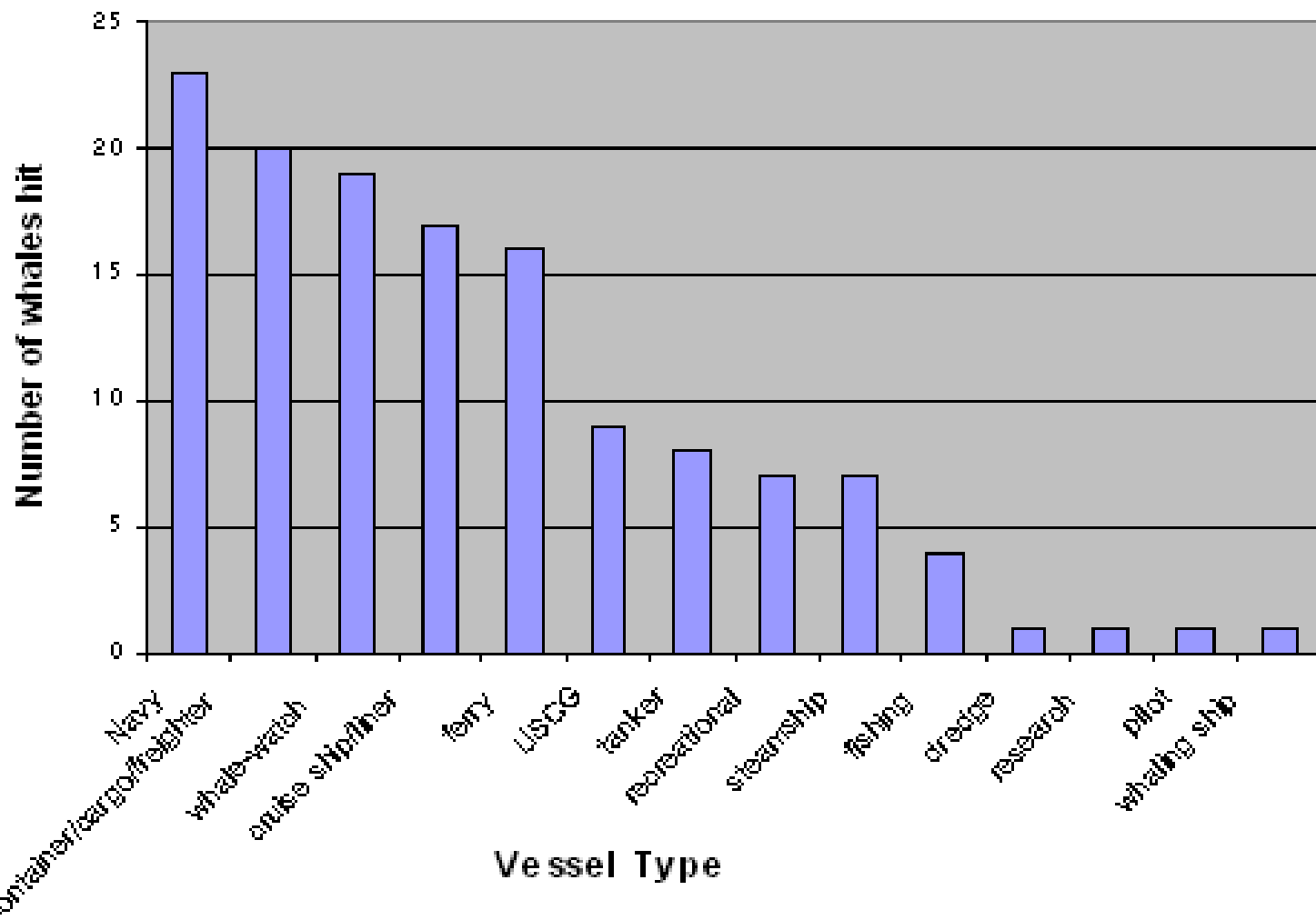
Whale Watch Vessel Strikes: High Risk or More Accurate Reporting?

Regina Asmutis-Silvia¹ and Mason Weinrich²



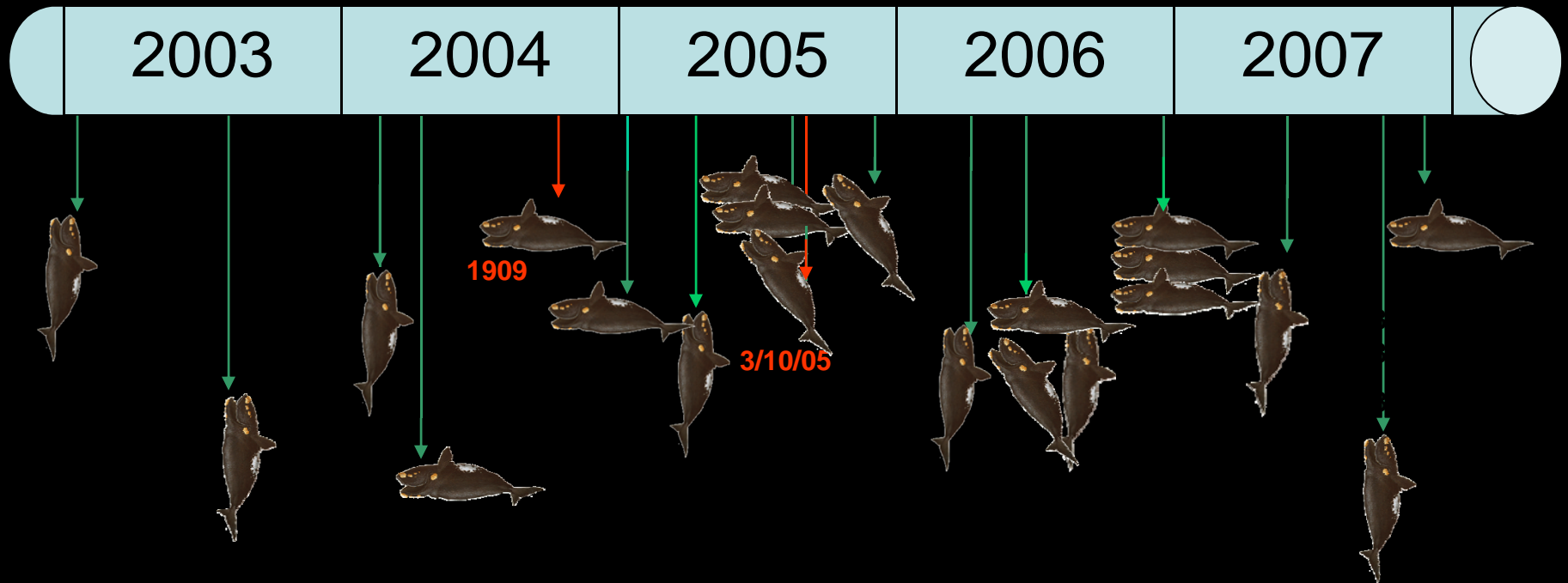
¹Whale and Dolphin Conservation Society, NA, 7 Nelson Street, Plymouth, MA 02360 www.wdcs-na.org

²Whale Center of New England, 24 Harbor Loop Gloucester MA 01931-0159, www.whalecenter.org

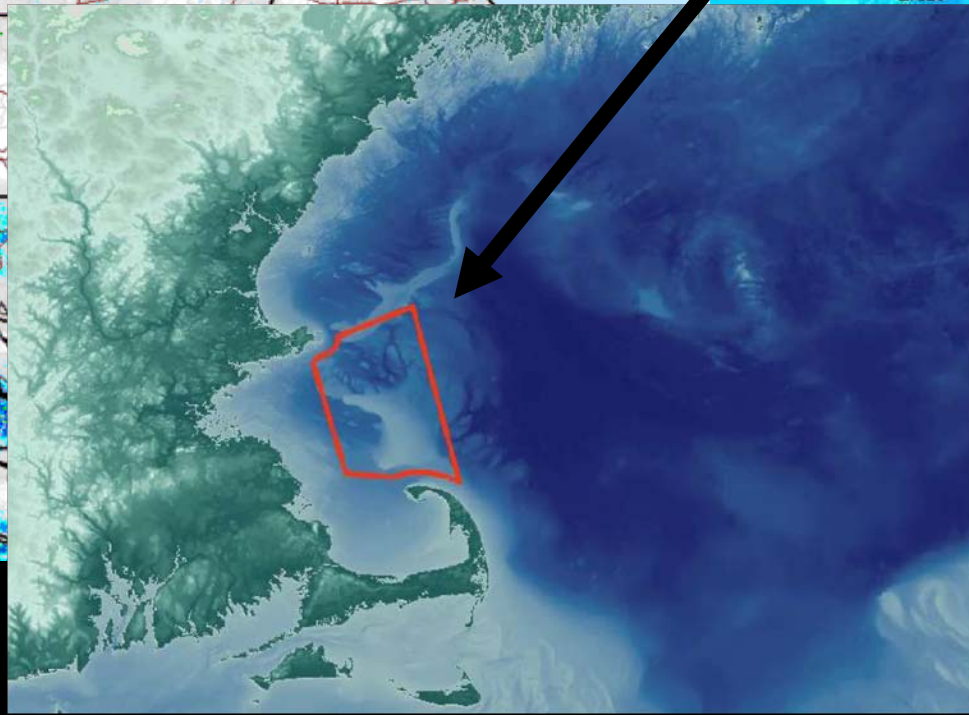
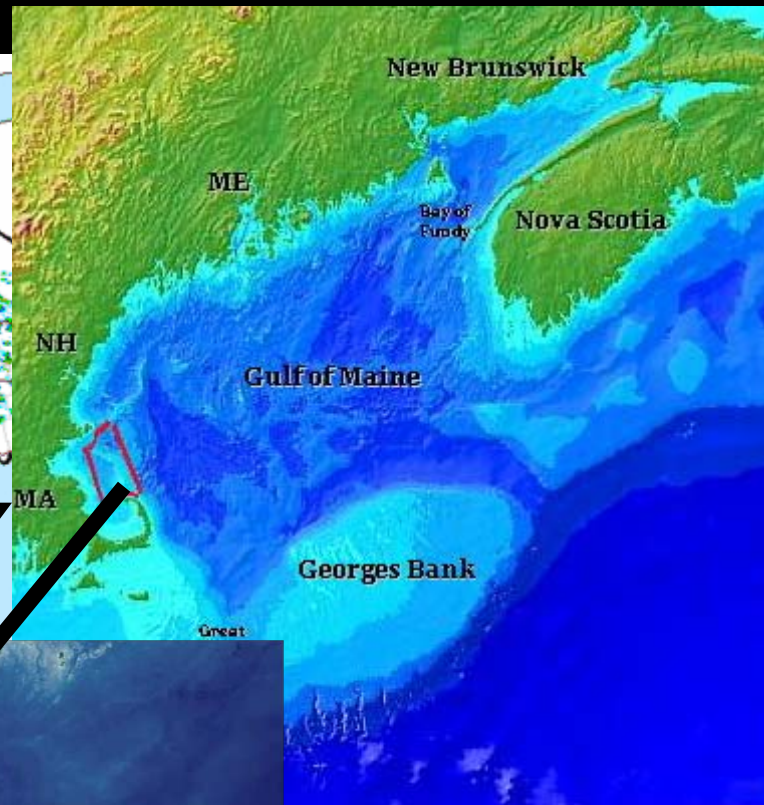
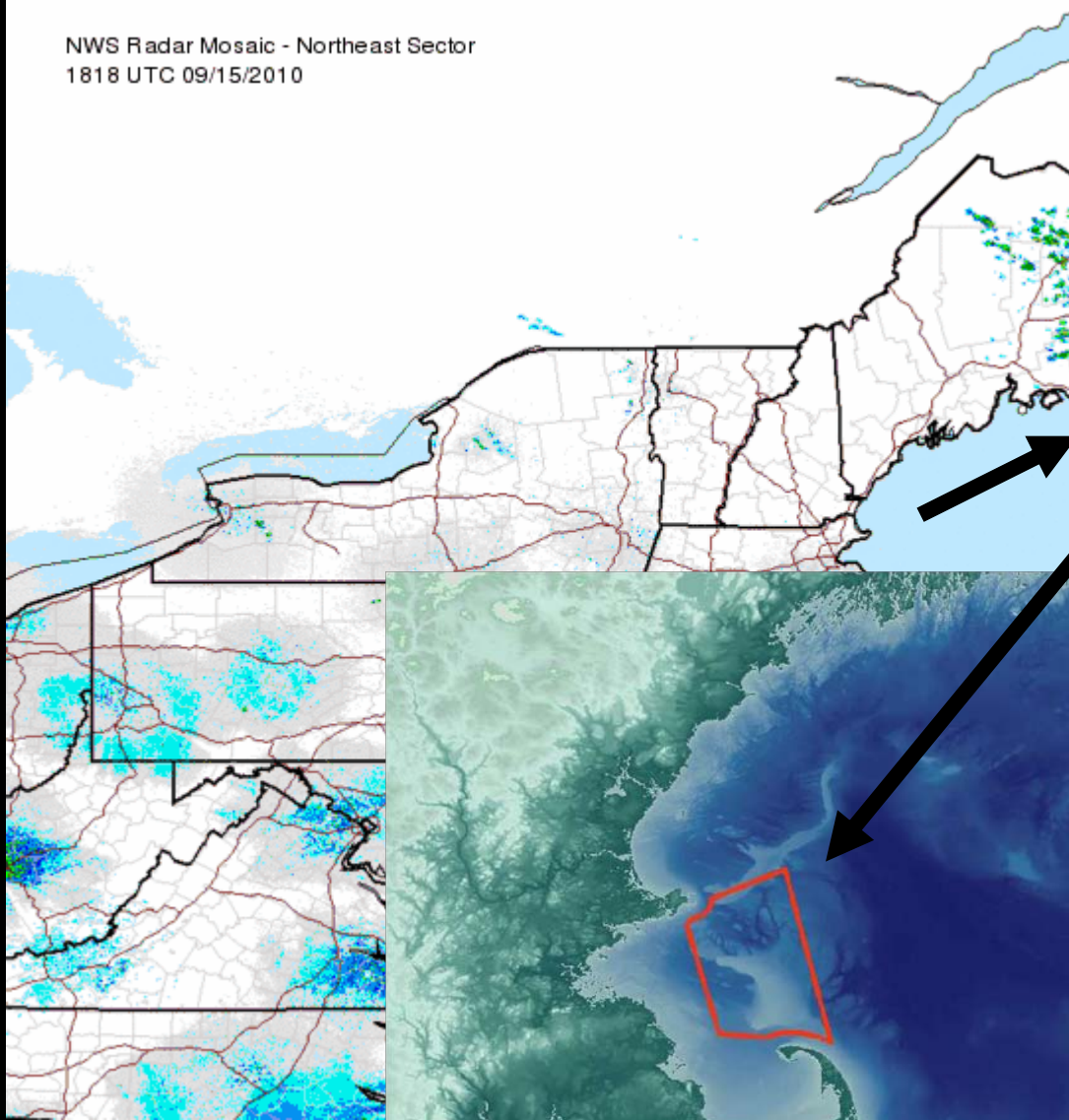


Jensen, A.S. and G.K. Silber. 2003. Large Whale Ship Strike Database. U.S. Department of Commerce, NOAA Technical Memorandum. NMFS-OPR- , 37 pp.

Incidents involving right whales are most often investigated



NWS Radar Mosaic - Northeast Sector
1818 UTC 09/15/2010



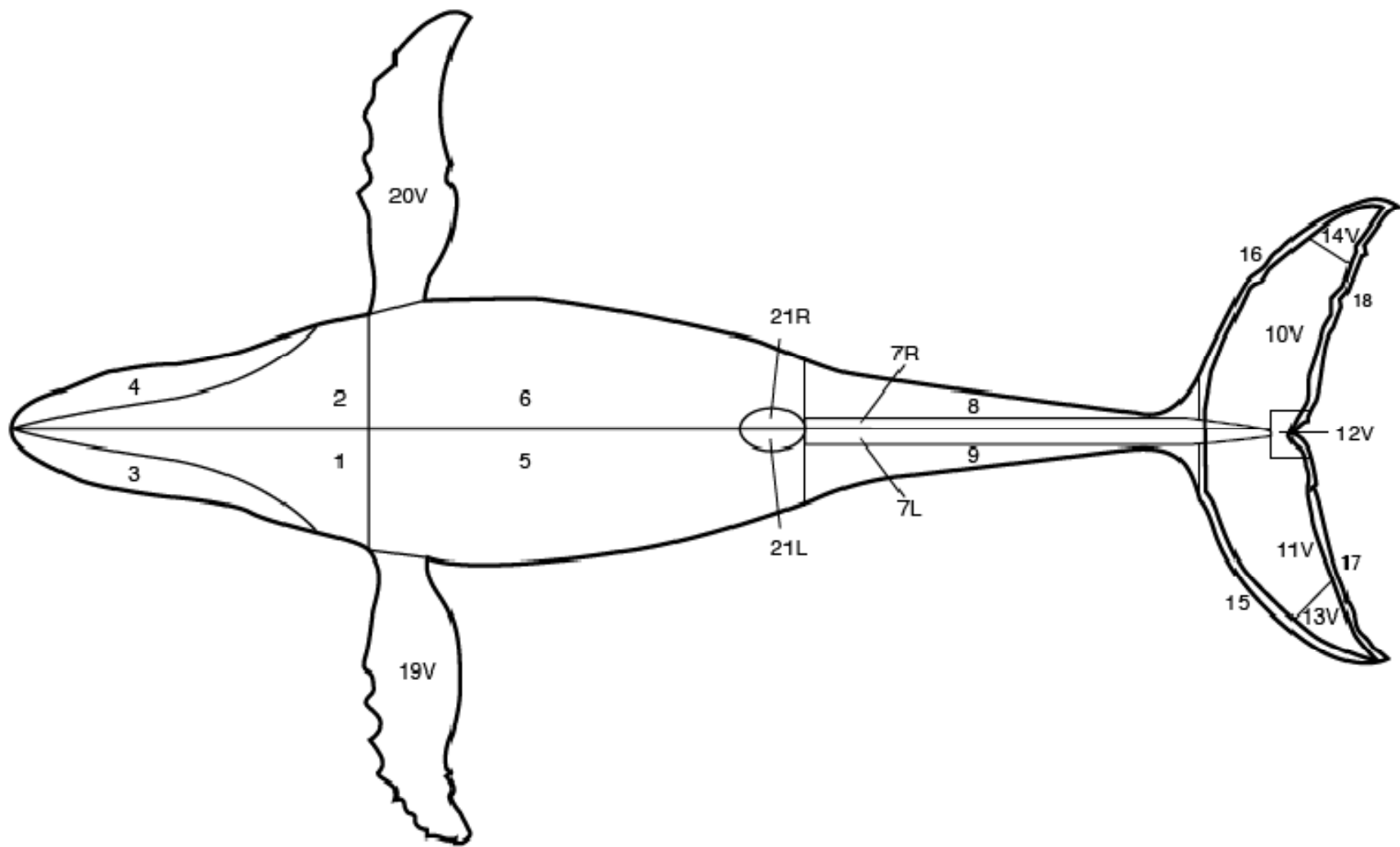














Table 1. Vessel Strikes from the Greater Sanctuary Area

Date	Sp	Location	Mortality	Vessel Type	Comments
7-01-2002	Bf	MA	U	WW	
10-04-2001	Mn	SBNMS	I	WW	Report
8-25-2001	Mn	SBNMS	I	Rec	Report (Asmutis)
6-01-2001	U	MA	U	Navy	OLE Report
7-23-2000	Bf	MA	U	ND	OLE Report
7-29-2000	Mn	MA	?	Sport Fish	Report (Carlson) Corinthian
5-14-2000	Mn	SBNMS	U	ND	
4-20-1999	Eg	CCB	Y	ND	Floater(Staccatto)
6-23-1999	Ba	BH	Y	ND	Necropsy
9-12-1998	Ba	CCB	Y	WW	Report
8-0(1)2-1998	Mn	SBNMS	U(likely)	WW	Report(Zenith)
1998	Bf	SBNMS	Y??	WW	Report
6-7-1998	Mn	Wildcat	U	Merchant	
5-24-1998	Ba	SBNMS	I	ND	
8-10-1997	U	SBNMS	U	ND	
7-20-1997	Mn	CCB	U	USCG	Report
5-12-1997	Bf	BH	Y	ND	Floater
7-15-1996	Ba	RP	No InJ	FERRY?	
3-25-1996	Eg	Welfleet	Y	ND	Necropsy
3-09-1996	Eg	MA	Y	ND	Necropsy
11-17-1994	Bt	BH	Y	Container	On Bow
7-19-1994	Mn	SBNMS	U	ND	
8-11-1993	Mn	SBNMS	I	Rec. ww	Fracture (report)
8-1993	Bf	BH	Y	ND	Floater
6-21-1991	Mn	SBNMS	I	WW	<i>Rocker</i>
6-08-1990	Mn	SBNMS	U	ND	
6-1-1990	Mn	SBNMS	I	Private Fish	Filament
5-13-1988	Ba	Duxbury	Y	ND	Stranded-prop sc
01-15-1988	Bf	Marshfield	Y	ND	Poss. Ship Str
08-18-1987	Bf	BH	Y	ND	Folded in half
08-07-1986	Eg	MA Bay	Y	ND	Severed spine
8-22-1985	Mn	SBNMS	I	WW	Report (Weinrich)
7-13-1985	Bf	SBNMS	U	ND	
1984	Bf	SBNMS	Y	WW	Report (Wiley)
8-1984	Bf	SBNMS	U	WW	Report
1983	Mn	SBNMS	I	WW	Alphorn (Wiley)
4-15-1976	Eg	MA	Y	ND	Necropsy

Black- from Jensen and Silber (2003)

Red- reported at VSWG meeting by Weinrich/Wiley

52% vessel type is unknown (n=38)

25% vessel was engaged in whale watching (n=28)

75% vessel was not engaged in whale watching

Of cases where whale watching was implicated, there were no cases where the focal animal was struck

Redefine how we look at strike risk

- **USCG Navigation Rules**

- **RULE 3
GENERAL DEFINITIONS**

- For the purpose of these Rules *and this Chapter* [Inld], except where the context otherwise requires:
- (a) The word "vessel" includes every description of watercraft, including non-displacement craft, WIG craft [Intl], and seaplanes, used or capable of being used as a means of transportation on water.
- (b) The term "power-driven vessel" means any vessel propelled by machinery.
- (c) The term "sailing vessel" means any vessel under sail provided that propelling machinery, if fitted, is not being used.
- (d) The term "vessel engaged in fishing" means any vessel fishing with nets, lines, trawls, or other fishing apparatus which restrict maneuverability, but does not include a vessel fishing with trolling lines or other fishing apparatus which do not restrict maneuverability.







2010 Training For Commercial Whale Watch Companies



Whale Watch Vessel Strikes II:

Assessing risk and managing to avoid collision

Mason Weinrich

The Whale Center of New England

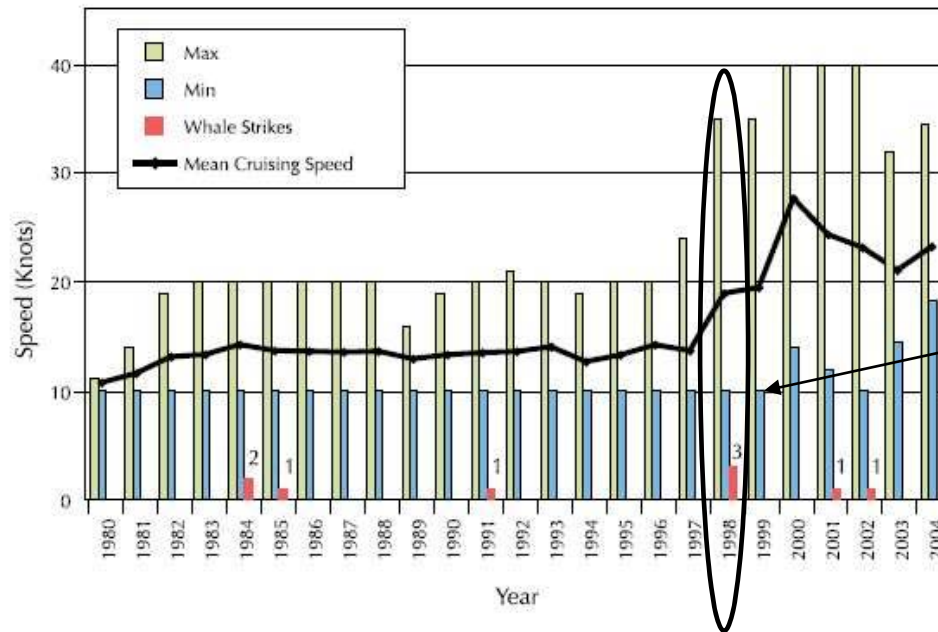
Gloucester MA USA

www.whalecenter.org

The issue – Increasing speeds?

FIGURE 67. HISTORICAL TRENDS (1980–2004) IN THE CRUISING SPEED (ANNUAL MINIMUM, MAXIMUM AND MEAN) OF COMMERCIAL WHALE WATCH VESSELS OPERATING WITHIN AND AROUND THE STELLWAGEN BANK SANCTUARY.

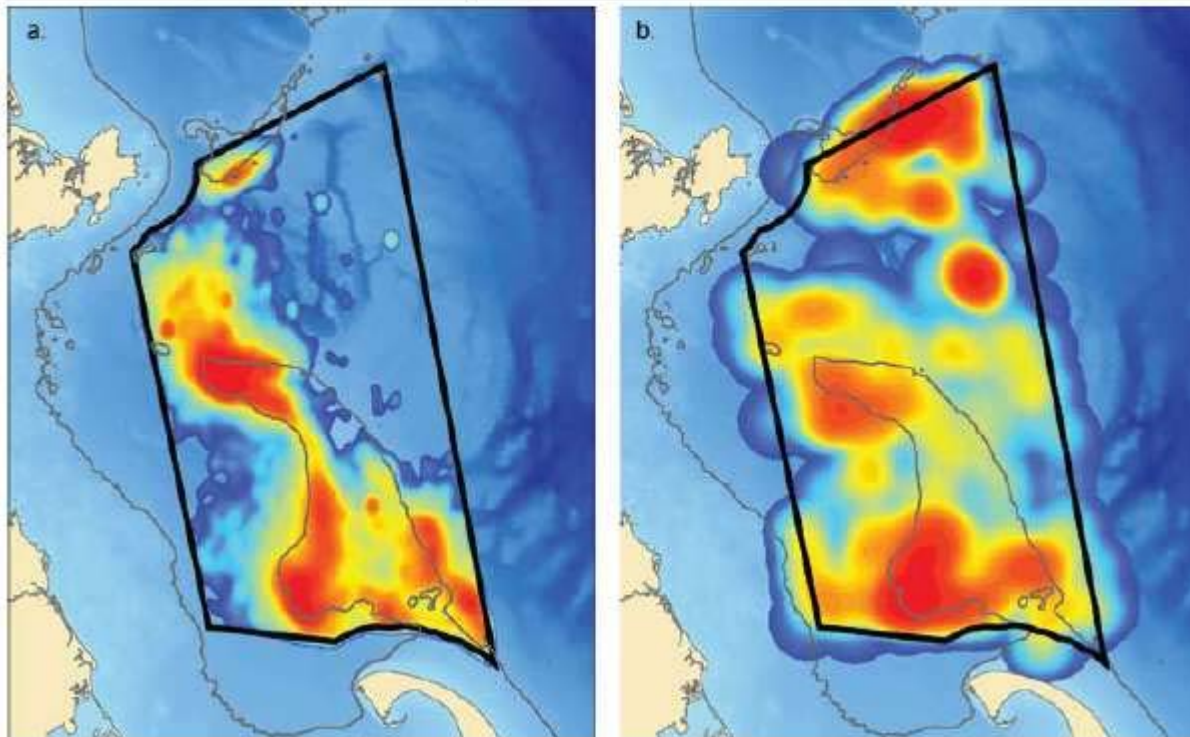
Reported strikes of whales due to collision with the whale watch boats are also indicated in the year that they occurred. Data for 1980-2002 were gathered by naturalists on whale watch cruises and provided by the Whale Center of New England; data for 2003-2004 were gathered by data loggers integrated with GPS receivers during the sanctuary study of industry compliance with NOAA whale watch guidelines (Wiley *et al.*, in press).



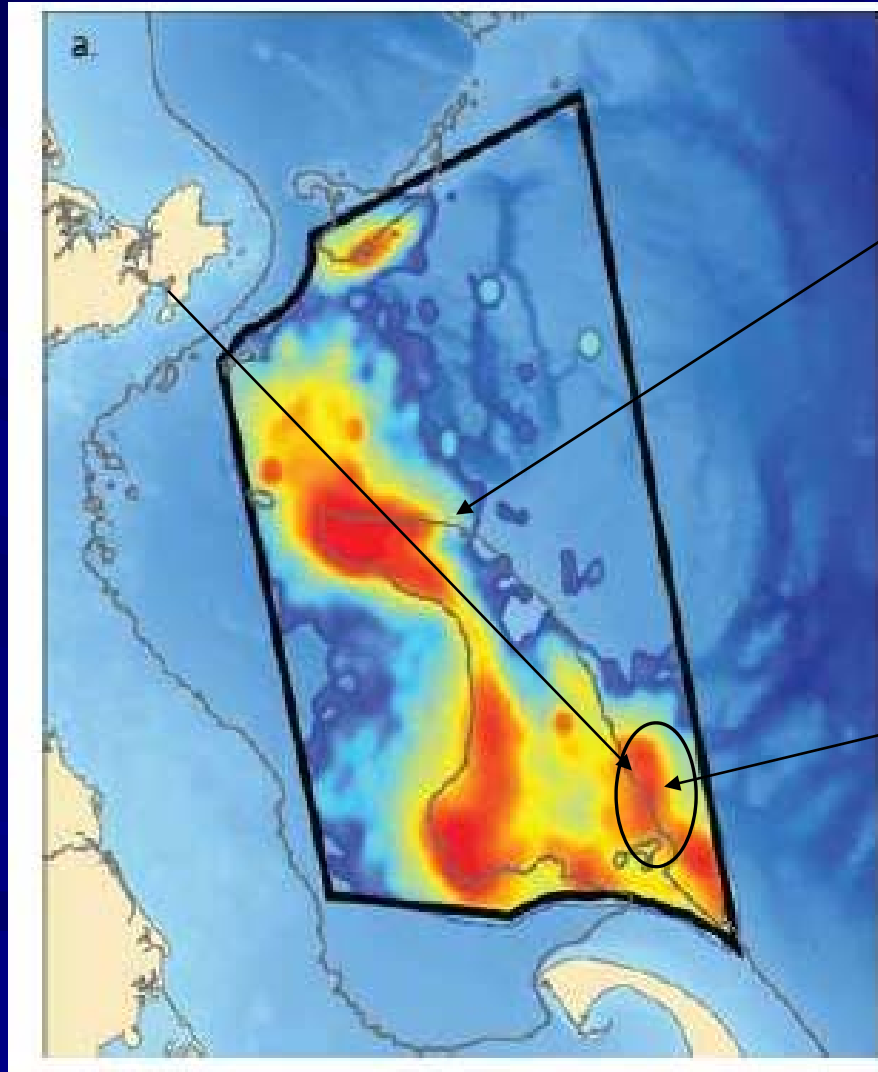
Managing speeds – Speed Limits?

FIGURE 58. COMPARISON OF THE SPATIAL DISTRIBUTION OF BALEEN WHALES WITHIN THE STELLWAGEN BANK SANCTUARY FROM WHALE WATCH AND STANDARDIZED SURVEY DATA.

Whale watch data (a.) are non-standardized observations made during April through October from 1979-2004 ($n = \sim 255,000$). Survey data (b.) are based on standardized surveys from July 2001–June 2002 and include animals not identified to species (352 sightings of 413 animals). Survey data are adapted from Wiley *et al.*, 2003. Whale watch data were collected by the Provincetown Center for Coastal Studies and the Whale Center of New England. The two illustrations are Kriged density plots of information from both data sets using a 5,000 m search radius analyzed by ESRI ARCGIS.



But...



Owners
argument –
why
constrain
speeds
where there
are no
whales?

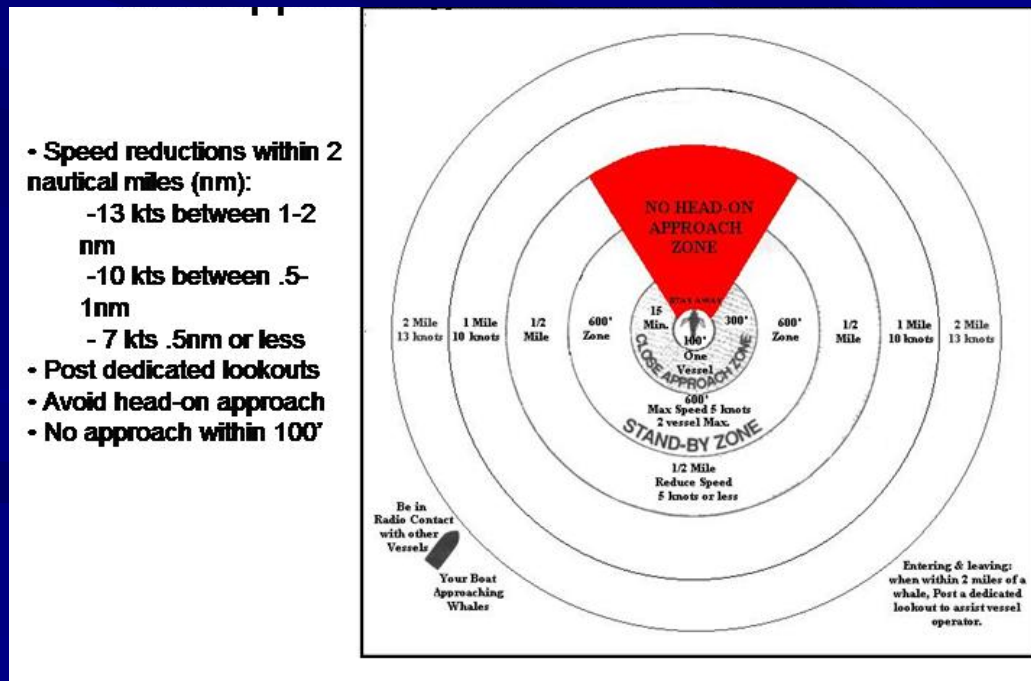
2010
Whale
Location

The data – 2005 WW Strike Review

- 32 strikes with good associated data
 - 14 while whale watching
 - 14 in transit
 - 3 when transitioning
- In only 36% of cases was the whale being “watched” struck
- In 78% of cases a whale was known to be within 2 km of the whale that was struck
 - 100% of cases with serious injury or fatality

Managing Speeds – Using sightings

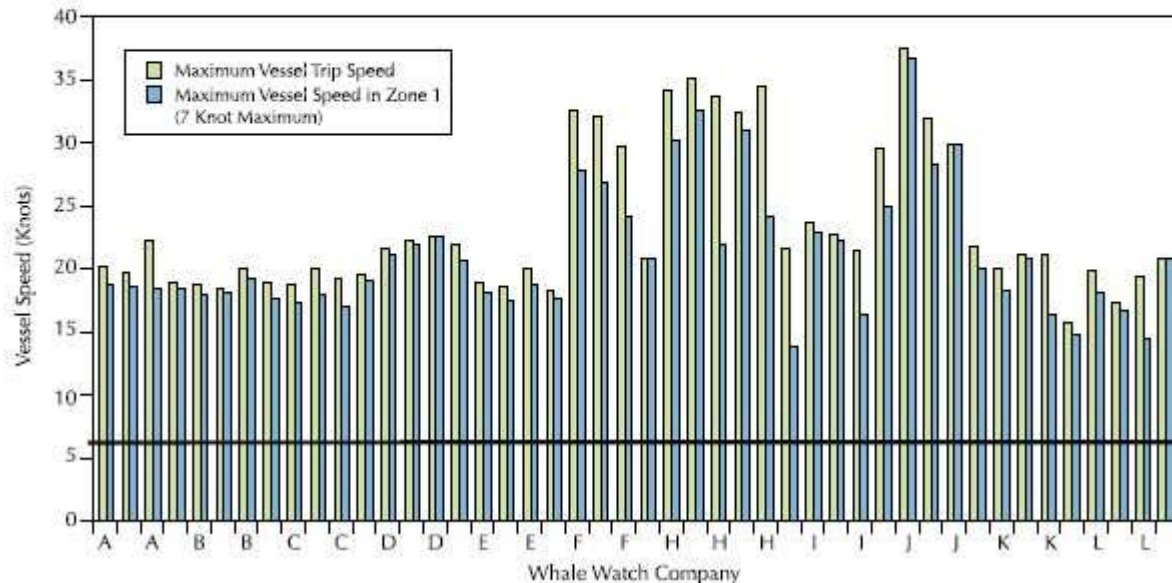
- Use whales to define “hot spots”
- Manage according to sightings of any known whale



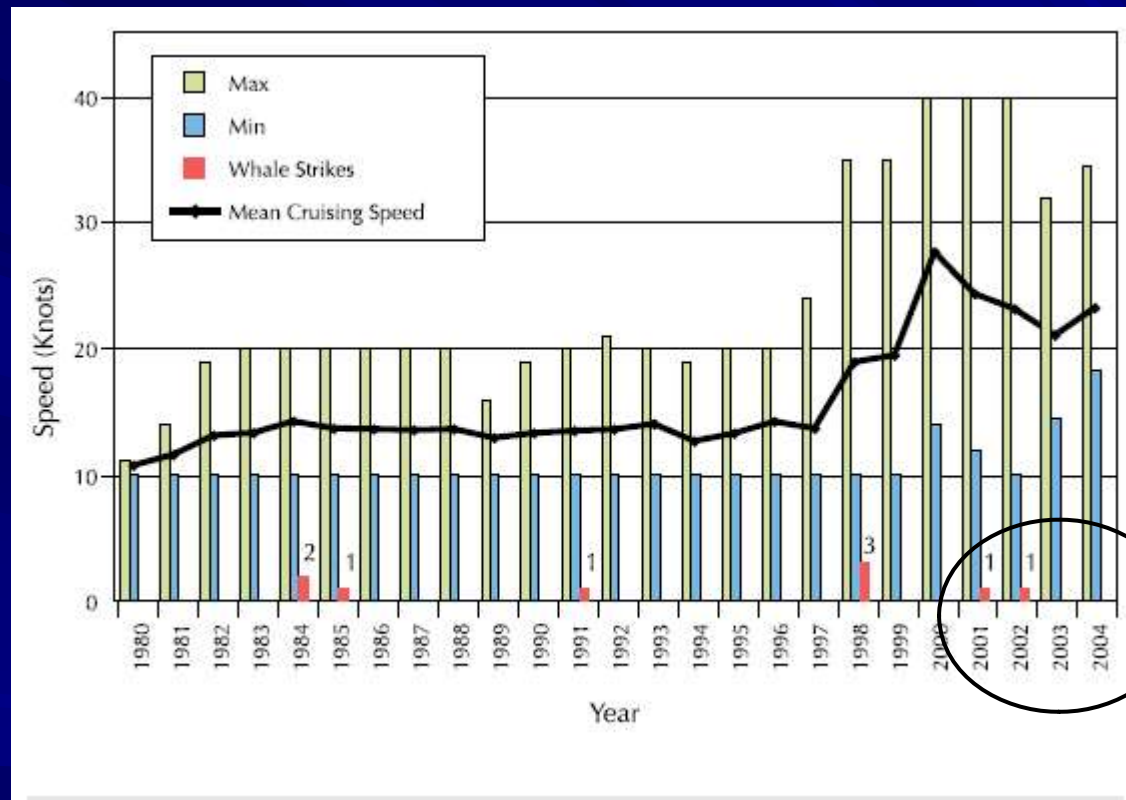
Guideline compliance

FIGURE 63. COMPARISON OF A VESSEL'S MAXIMUM RECORDED TRIP SPEED AND ITS MAXIMUM RECORDED ZONE 1 SPEED FOR 46 COMMERCIAL WHALE WATCHING TRIPS REPRESENTING 12 COMPANIES OPERATING IN AND AROUND THE STELLWAGEN SANCTUARY IN 2003 AND 2004.

In general, all vessels attained speeds well above the 7 knots (horizontal black line in figure) specified by the guidelines for zone 1 and reached near maximum trip speeds in zone 1. This indicates that operators were not following speed guidelines meant to safeguard whales. Speed data were derived from GPS devices and collected by unannounced and inconspicuous observers. Speed zones around whales were identified by those observers using military grade binoculars with a digital compass and laser rangefinder to position whales. ESRI ARCGIS was used to create speed zones around the whales for purposes of calculation.



Guideline effectiveness



None known from 2005-2010 as well

Even though compliance appears poor, the management goal appears to have largely been met.

Summary – Risk from WW boats

- Two phases of risk
- In Transit – at speed
 - Higher risk of serious injury
 - No different than other boats in the vicinity of whales
- While whale watching
 - Generally slower speeds (especially if complying w guidelines)
 - Some risk of collision w focal whale
 - Lower risk of serious injury due to slower speeds

Uses of WW strike data

- Can get good details on effort
 - Vessel hours
 - Vessel speeds
- Data easier to gather on whale densities or behaviors
 - How does density of whales relate to risk of strike?
- Can look at frequency of near misses and/or whale responses
 - Aids in future management strategies?
- More likely to get full reporting on circumstances around collision
- Standardization and repository for such data from this workshop?