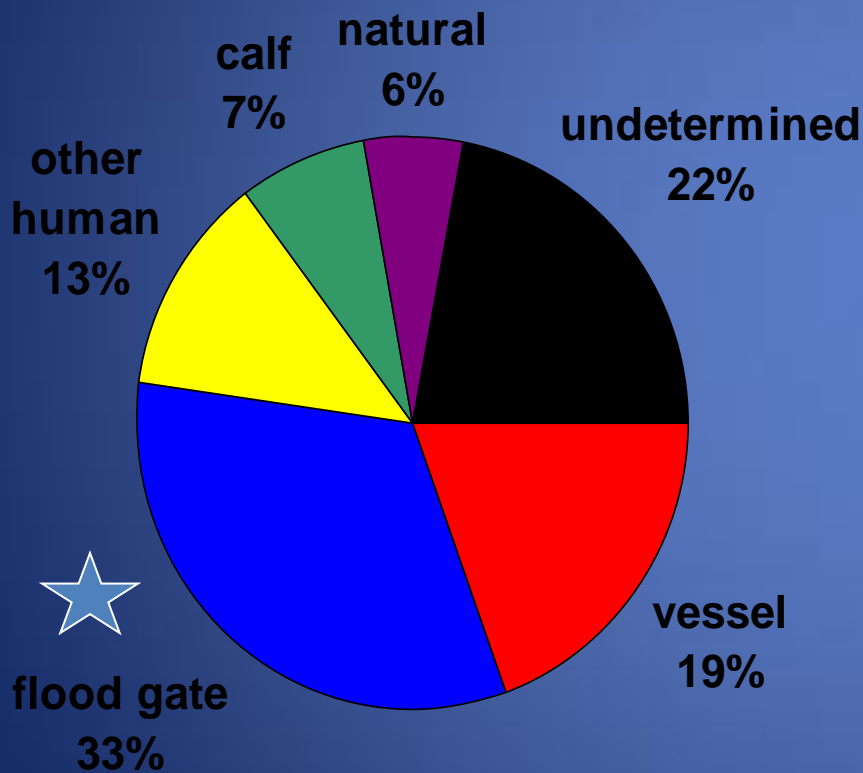


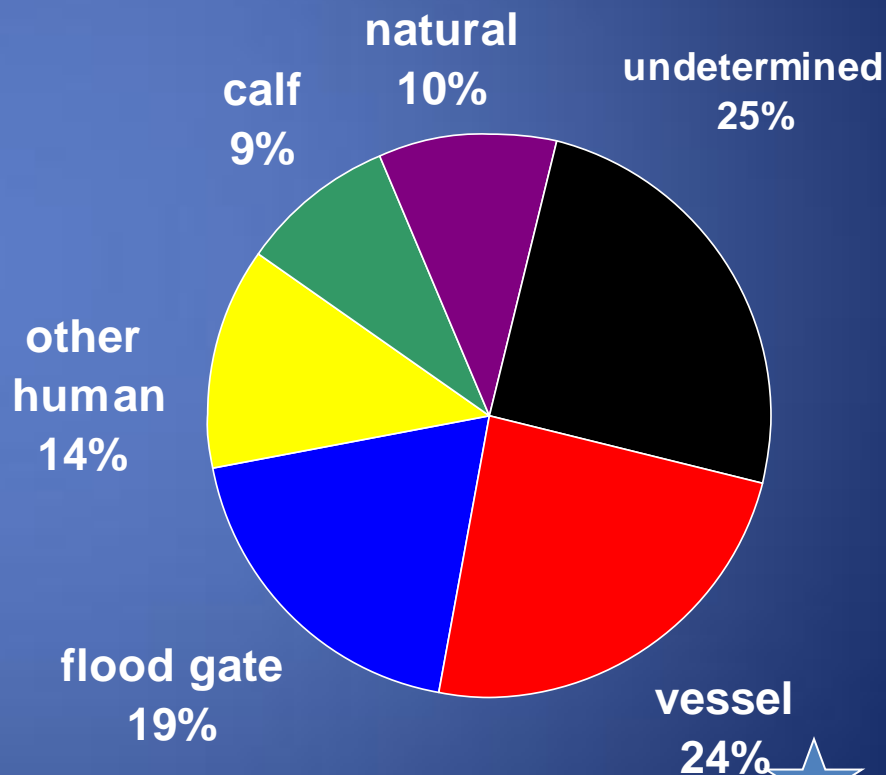
First shown Dec 2007; updated July 2009

# Causes of Manatee Death in Miami-Dade



1974-1995

150 total in 22 years

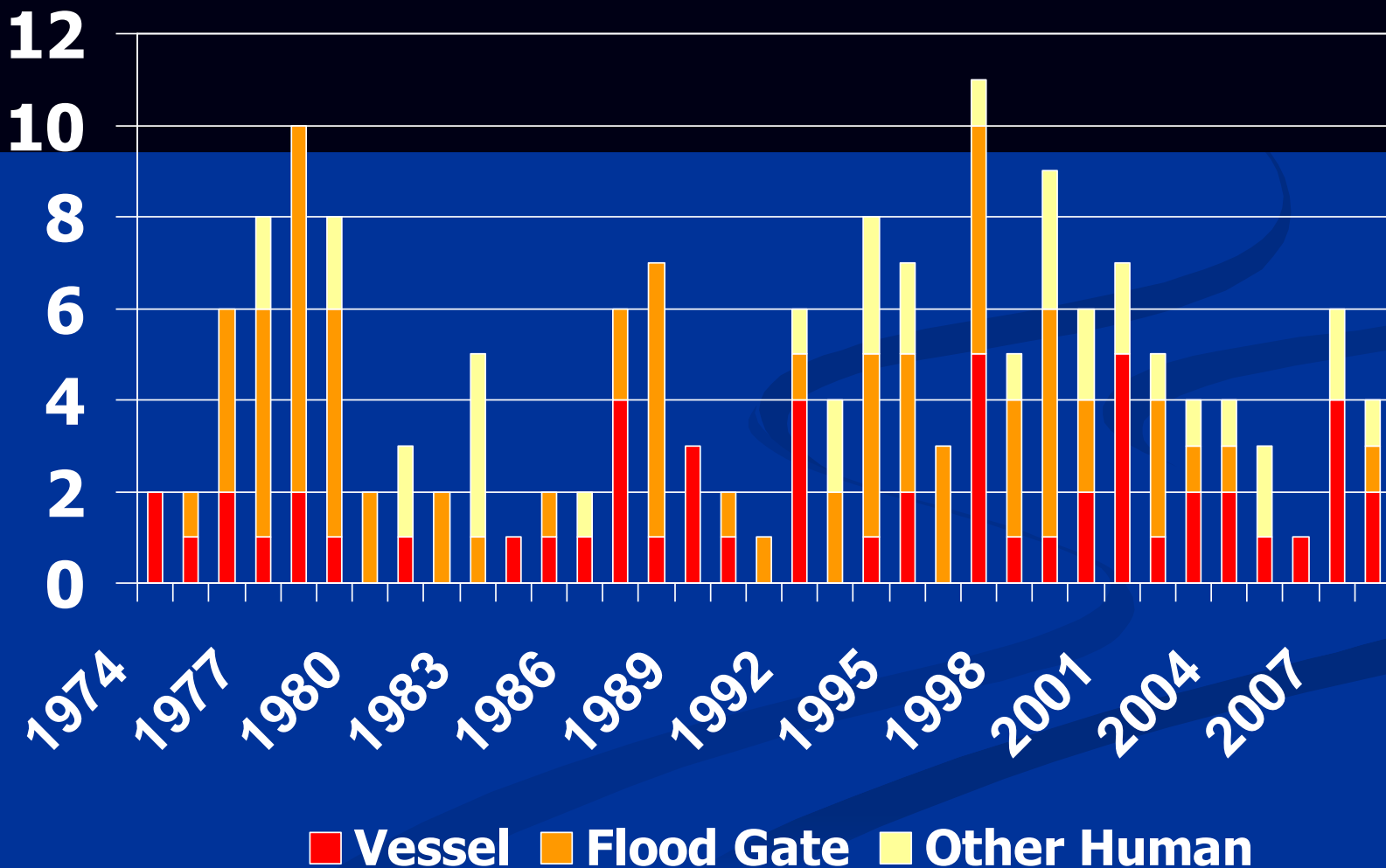


1996-July 2009

125 in 13.5 years

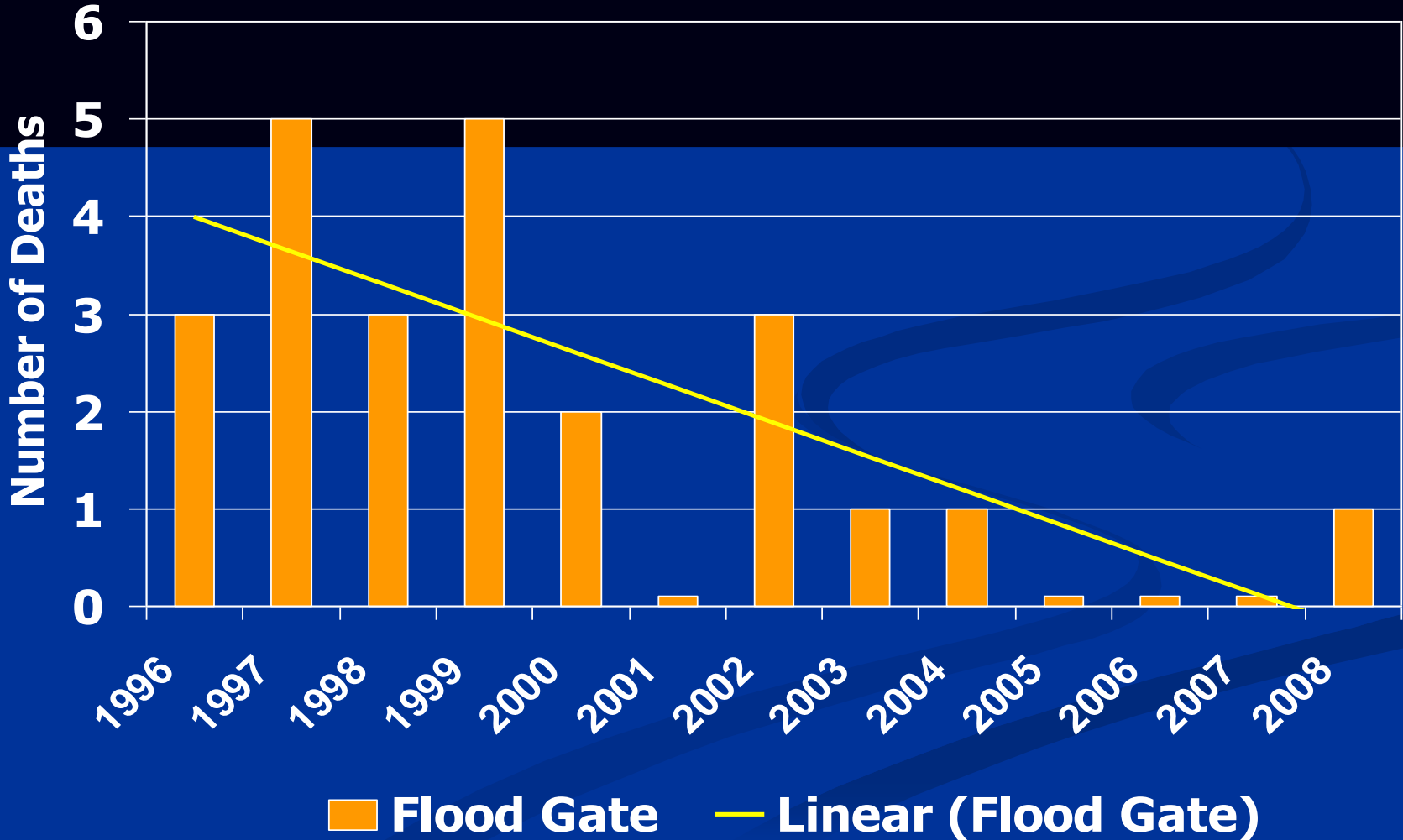
First shown Dec 2007; Updated July 2009

# Miami-Dade County Human Related Manatee Mortality



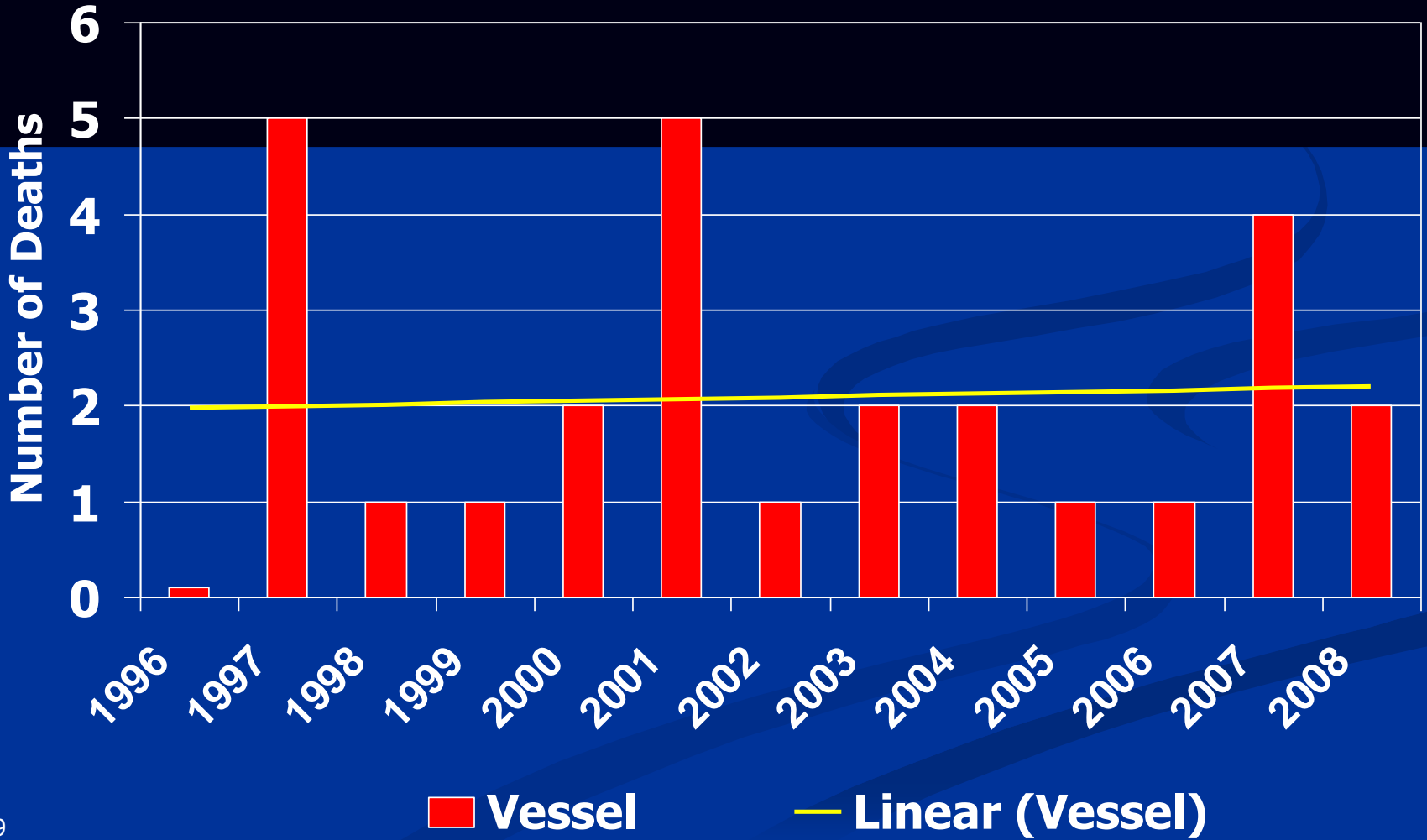
First shown Dec 2007, May 2008; updated July 2009

# Miami-Dade County Flood Gate Manatee Mortality

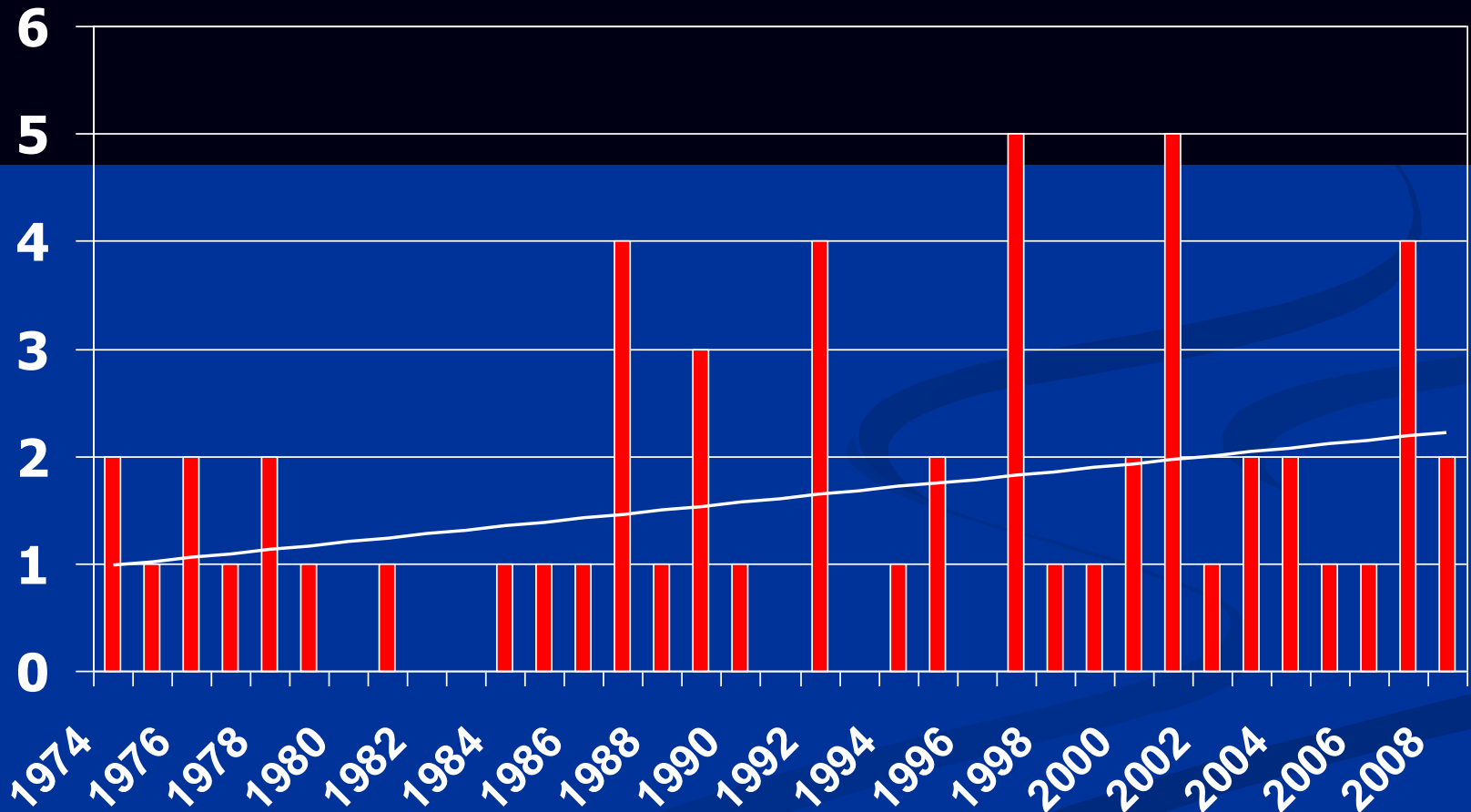


First shown Dec 2007, May 2008;  
updated July 2009

# Miami-Dade County Vessel Related Manatee Mortality



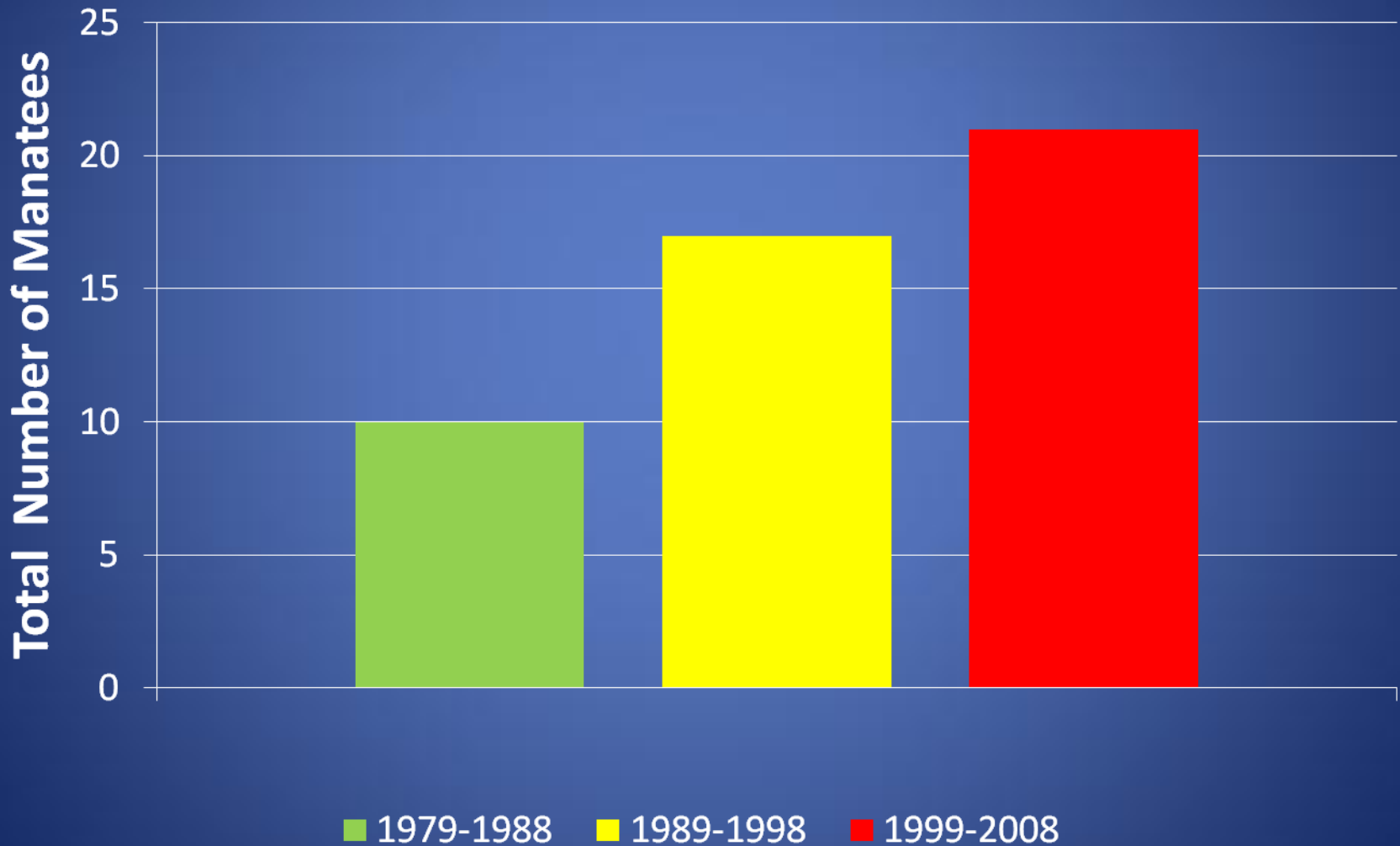
# Miami-Dade County Human Related Manatee Mortality



■ Vessel

— Linear (Vessel)

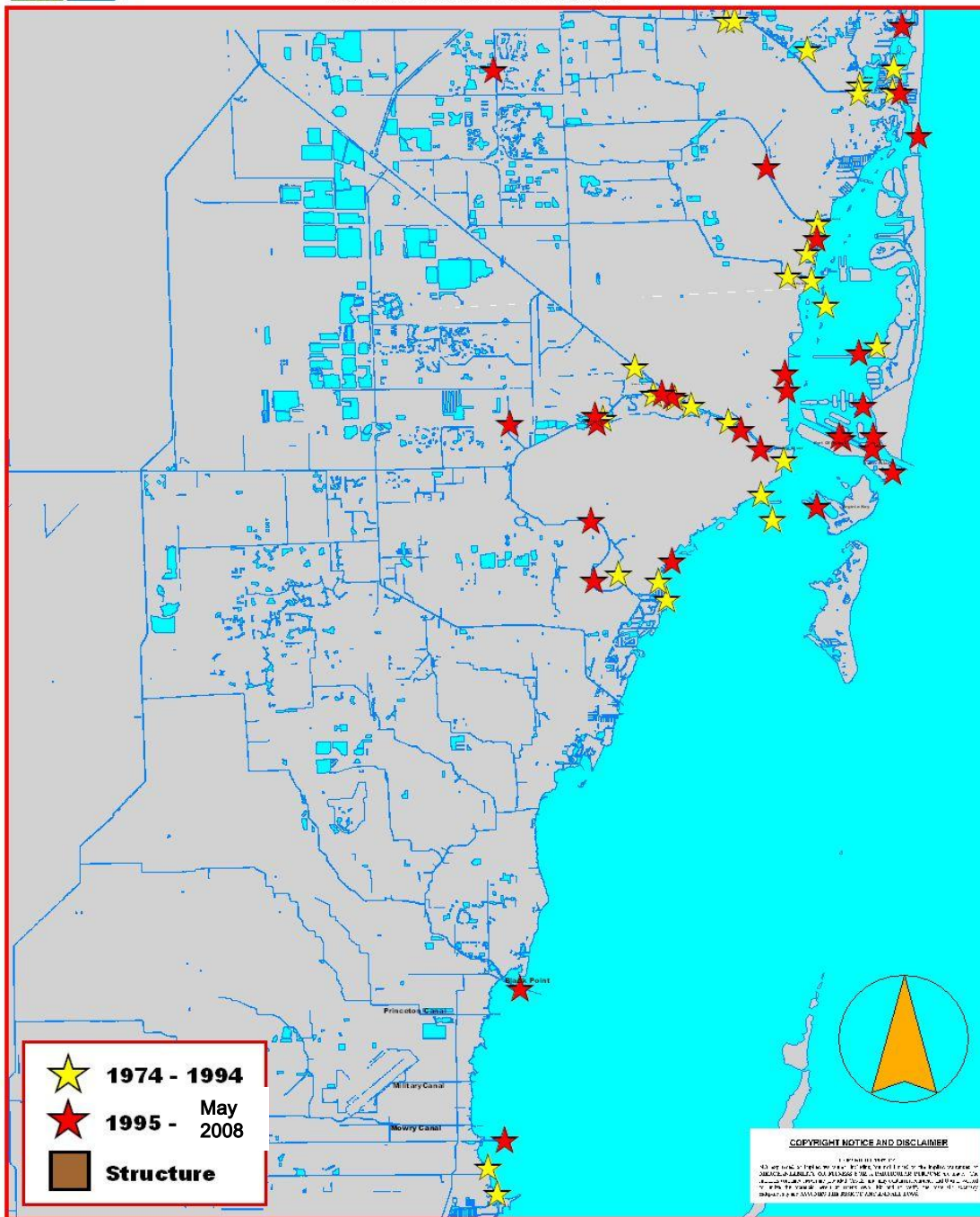
# Manatees Killed by Vessels in Miami-Dade in 10-year Intervals



# Miami-Dade County Manatee Mortalities

Human Related: Watercraft

First shown  
May 2008



# Miami River and Tamiami Canal Carcasses

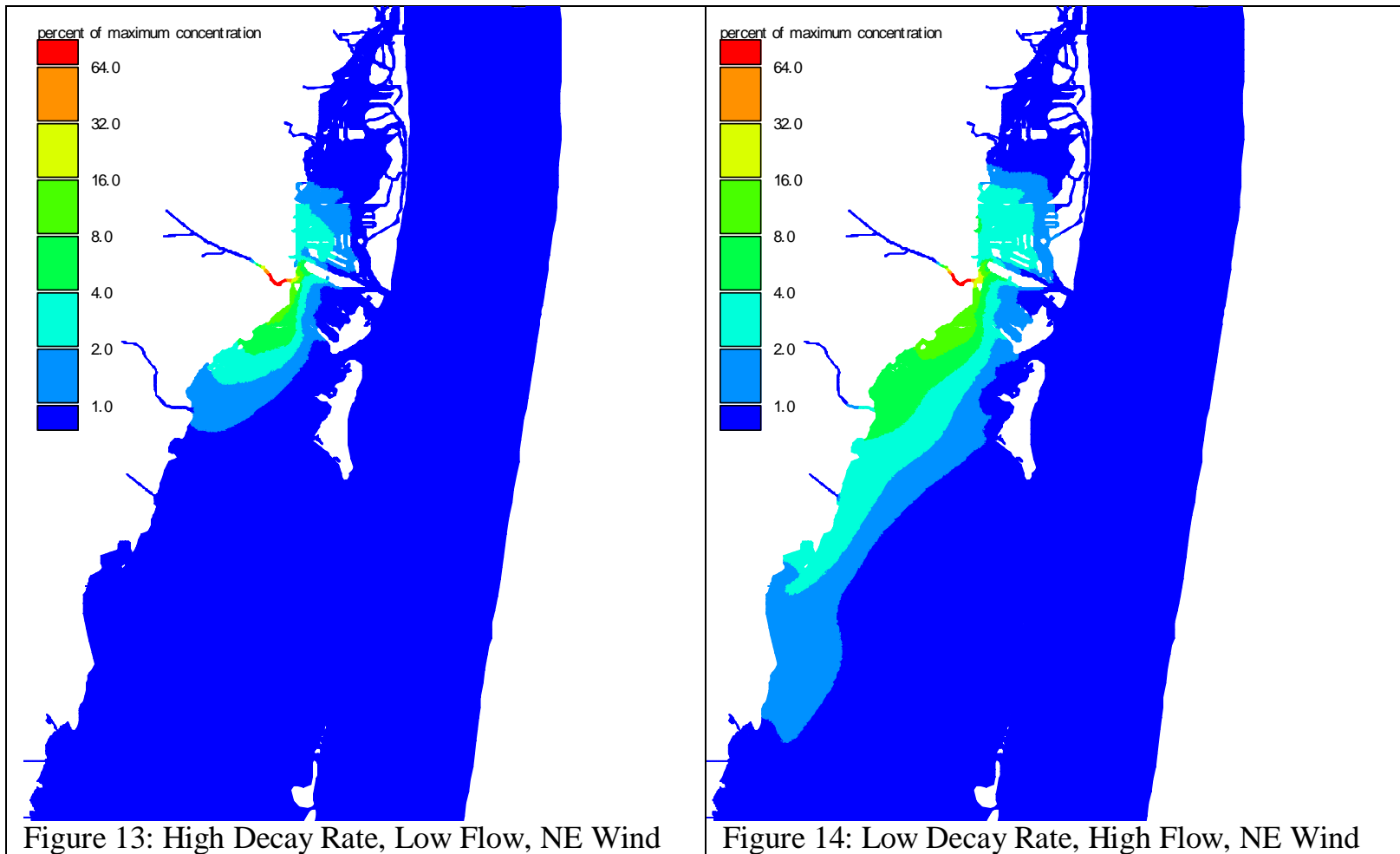
Date	Location	Cause	Symptoms	Acute or chronic
June 2008	Miami River near 17 <sup>th</sup> Ave	Watercraft	Broken ribs w healing, torn diaphragm, hernia	chronic
Nov 2007	Miami River near Flagler Bridge	Watercraft	Broken ribs with signs of healing; chronic infection	chronic
Sep 2007	Miami River 431 NW S River Dr	Watercraft	Massive internal injuries and hemorrhage (stomach, lungs, ribs, sternum, spine separation)	acute
Jan 2003	Tamiami Canal 160 m u/s of MR	Watercraft	Skull fractures, blood clots in stomach, airway and fracture site	acute
Feb 2001	Miami River w of 27 Ave	Watercraft	Massive internal injuries and hemorrhage (lung, kidney, ribs, muscle)	acute
Mar 1994	Miami River near 27 Ave	Watercraft	Massive internal injuries and hemorrhage (skull, ribs, lung, spine separation)	acute
Mar 1989	Miami River near 17 Ave	Watercraft	Large fresh prop wounds penetrate chest cavity; pregnant	acute
Oct 1988	Miami River near 23 Ave	Watercraft	Rescued alive, died months later at Seaquarium; multiple broken ribs, punctured lung, etc.	chronic
Aug 1987	Miami River at 36 St	Watercraft	Large prop severed animal into 3 pieces	acute
Feb 1978	Tamiami Canal near Bertram	Watercraft	Crushed skull, hemorrhage	acute

# Miami River and Tamiami Canal Carcasses

Date	Location	Cause	Symptoms	Acute or Chronic
Mar 2007	Palmer Lake	Human-Other	Tangled in mooring line attached to bottom; starved	It died at site
Jan 2001	Miami River at Miami Ave	Human-other	Blunt trauma to head, hemorrhage	acute
Feb 2000	Tamiami Canal near S-25b	Human-other	Extensive internal injuries and hemorrhage (skull, kidney, liver, muscle)	acute
Dec 1995	Wagner Creek	Human-other	Multiple skull and jaw fractures, hemorrhage	acute
Oct 1995	Miami River near Tamiami Canal	Human-other (large vessel crushing likely)	Found between hull of freighter and bulkhead; massive internal injuries (17 freshly broken ribs, torn lung)	acute
Jan 1981	Miami River near 33 Ave	Human-other	Blunt trauma to head, butchered; carcass weighted down	acute
Jan 1981	Miami River near 33 Ave	Human-other	Blunt trauma to head, partially butchered; carcass weighted down	acute

# USACE Circulation Model

Simulation of Release of "Tracer" In lower River in NE Wind



# USACE Circulation Model

Simulation of Release of "Tracer" In lower River in SE Wind

