

## **North Atlantic Right Whale Anthropogenic Event Database Outputs**

### **Front End Outputs:**

1. As we develop a mock-up, review with a variety of folks. 1) Internal review with ACCOL, 2) external review with research and government orgs/agencies, 3) external review with members of industry.
2. Public facing outputs: It seems that the most prudent way to set this up is to have pre-defined outputs that we develop but not allow the public to create their own outputs. May be some desire to have limited output control here (e.g. selecting specific year range)
3. Interactive outputs (selecting year, individuals, various injury parameters, etc.) password protected.
  - a. Will require development of access protocols, use agreements, etc
4. Outputs have adaptability so that if there are additional outputs required, we can generate these.
5. Will require NARWC approval – akin to SAS and WhaleMap requests

### **Initial Output Ideas:**

1. Individual case history pages. Page would feature demographics, life history of individual, as well as summary of injury events
2. Characteristics of injury type (i.e. various outputs summarize entanglement related data, and the same for vessel strikes).
3. Some outputs we are regularly asked to present that would be include as outputs here: Entanglement/vessel strike by year, age, location; injury severity characteristics (w/gear, w/o gear, complexity) by year/age/sex; Gear type by year; country of origin output; gear part (groundline, endline, buoy attached, gillnet, etc); timeframe of detection
4. Injury impact outputs – many options of output displays (individual, annual summary, summary by injury type, etc)

**Below are some examples of potential output. Final outputs (in both design and data) will be determined by programmer and stakeholder input.**

## Individual Right Whale Case History Pages (these data are mock data)

1. Drop down of EGNO
2. Selected EGNO would populate general information about whale below EGNO field
3. Multiple tabs populated
  - a. Example here: Injury summary tab would be default
    - i. Summary of all injury events
      1. Format options – tabular form with year, concatenated summary of injury type, severity, etc.

### Whale Information

\* EGNO: 1509

Sex: F

Name: RAT

First Year Sighted: 1980

Last Year Sighted: 2005

Birth Year:

Death Year:

First Calving Year: 1986

Reproductive Span: 18

Longest Interval: 5

Average Interval: 3.600

Years Since Last Calving: 16

Total Calves Born: 6

### Sighting Summary

Year	SEUS	RB	NRTH	NE	MIDA	JL	GSC	BOF
1980	1	1	0	0	0	0	0	0
1985	0	62	0	0	0	0	0	0
1988	0	18	0	0	0	0	0	0
1990	0	5	0	0	0	0	0	0
1992	0	22	0	0	0	0	0	0
1995	0	4	0	0	0	0	0	0
1997	34	10	1	0	0	0	0	0
1999	0	10	0	0	0	0	0	0
2001	15	5	0	0	0	0	0	0
2003	8	2	0	0	0	0	0	0
2005	16	1	0	0	0	0	0	0

Injury Summary (tab)

Entanglement (tab)

Vessel Strike (tab)

### Injury Event Count

Entanglement	Vessel Strike	Other
4	2	0

### Injury Event Summary

Year	Age	Injury Type	Injury Description	Severity
1980	Unk	Entangled	No gear	Moderate
1988	A	Entangled	No gear	Moderate
1991	A	Vessel Strike	Prop cuts	Shallow
1994	A	Entangled	No gear	Minor
1999	A	Entangled	No gear	Minor
2003	A	Vessel Strike	External trauma	Deep

## b. Entanglement tab

- General whale information remains on the left, right window provides information by tab
- Information on the right under the entanglement tab could be graphical, tabular, combination of both
- In entanglement event summary table shown for example, we could have EVENT ID link to window below table (shown) with all details around this event (Pre- and initial injury dates/locations, injury timeframe, link to case study, images at pre- and initial injury sightings) as well as specific gear type, location, retrieval, disentanglement, etc). In this example, I have hypothetically clicked on event 260 to pull up all data relevant for that event. We could do the same for CASE ID, which would link to open all injury impact information (not shown) below the entanglement table. In a real world case, each of the fields in the EVENT ID window would be populated with all available data
- Pre-injury and initial injury information would be linked to the catalog, so that one could click on pre-injury images to see images from the last known injury free sighting and Injury images would bring up the images from the initial injury sighting.

c. **Vessel strike tab** – similar to entanglement, populated with VS data

### Whale Information

\* EGNO:  Sex:

Name:

First Year Sighted:  Last Year Sighted:

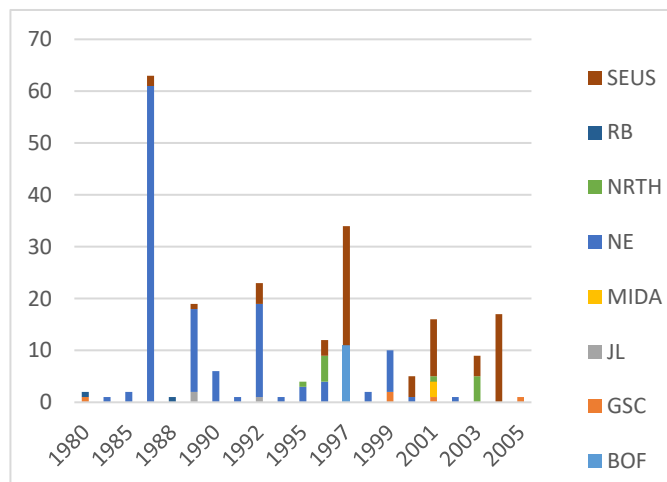
Birth Year:  Death Year:

First Calving Year:  Reproductive Span:

Longest Interval:  Average Interval:

Years Since Last Calving:  Total Calves Born:

### Sighting Summary



### Injury Summary (tab)

### Entanglement (tab)

### Vessel Strike (tab)

Year	Event	Severity	Event ID	Case ID
1980	Entangled, no gear	Moderate	<u>260</u>	<u>1</u>
1988	Entangled, no gear	Moderate	<u>262</u>	<u>2</u>
1994	Entangled, no gear	Minor	<u>263</u>	<u>3</u>
1999	Entangled, no gear	Minor	<u>264</u>	<u>4</u>

### Event ID 260

### Injury Description\*\*

### Injury Severity\*\*

### Age at Injury

### Case Study

### Pre-Injury Date

### Pre-Injury Area

### Age Class

### Pre-Injury Images

### Injury Date

### Injury Area

### Injury Images

### Injury timeframe

### Gear Configuration Risk

### Gear Type

### Gear Part

### Rope Diameter

### Constricting Wrap?

### Line Trailing?

### Multiple Anchoring Points?

### Origin of Gear

### Disentangled?

### Gear Retrieved?

### Retrieved Gear Location

### Date Line Gone

Graphics below are examples of outputs we have been asked to present at meetings, provide to managers, or have been included in publications and represent some of the outputs likely to be developed:

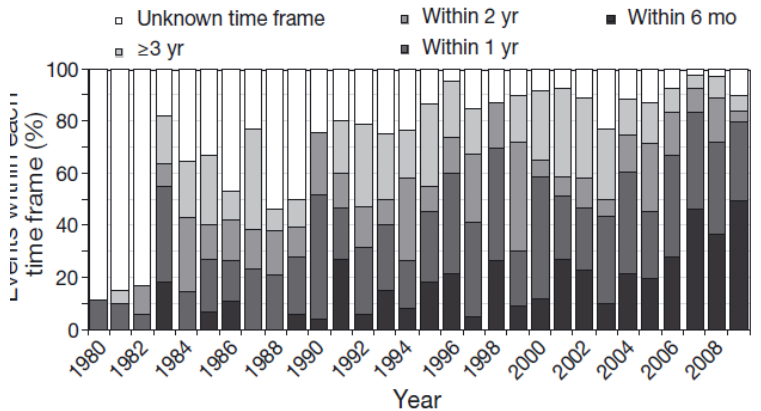
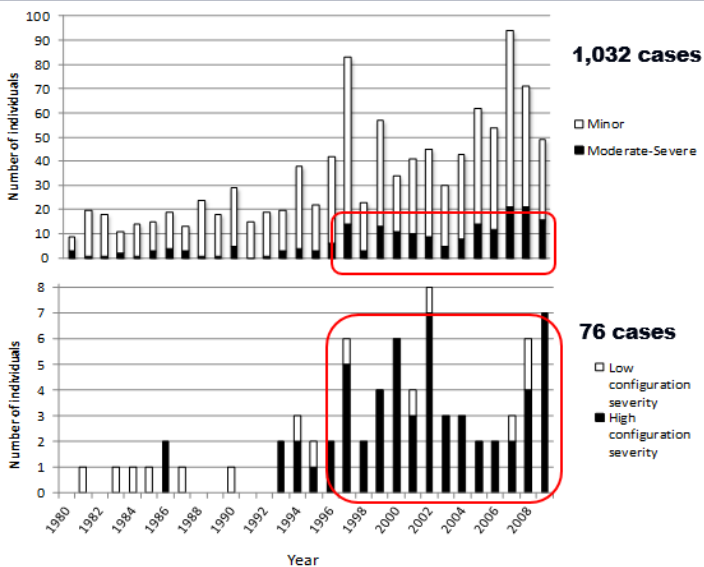
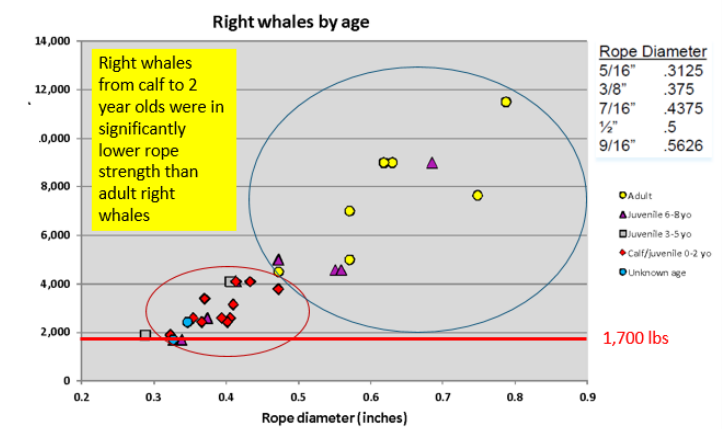
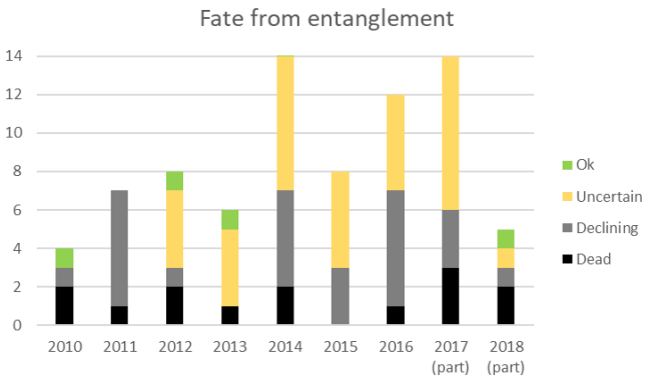
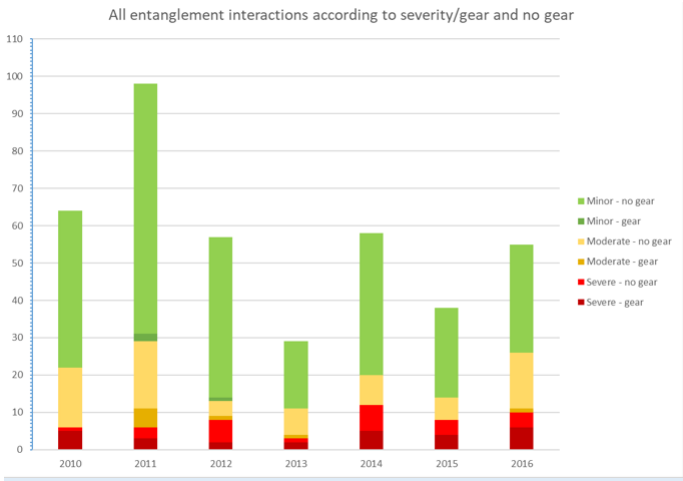
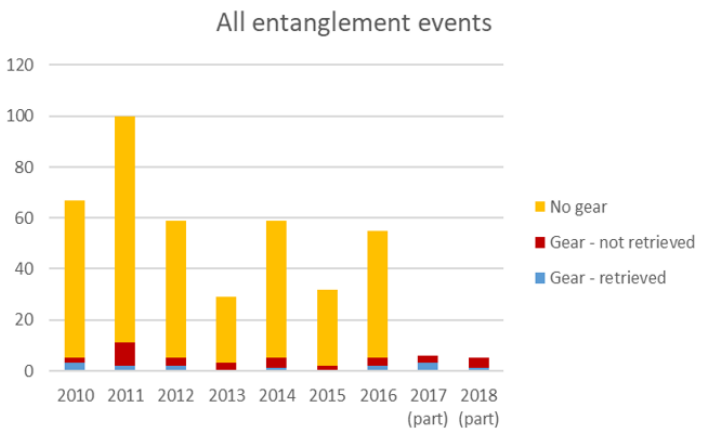


Fig. 3. *Eubalaena glacialis*. Detection of entanglement events within each time frame

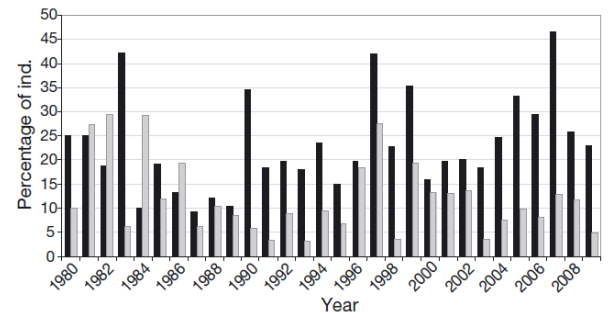
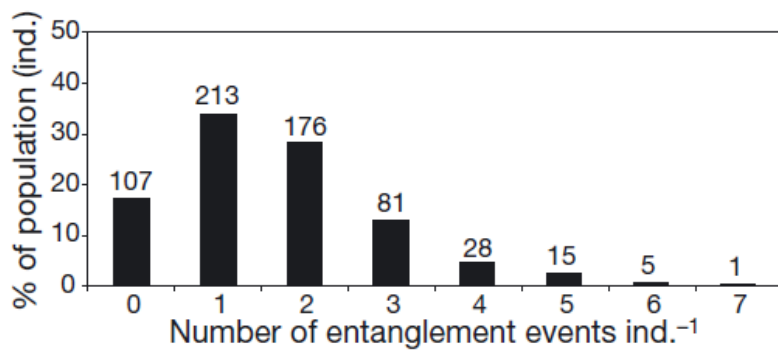
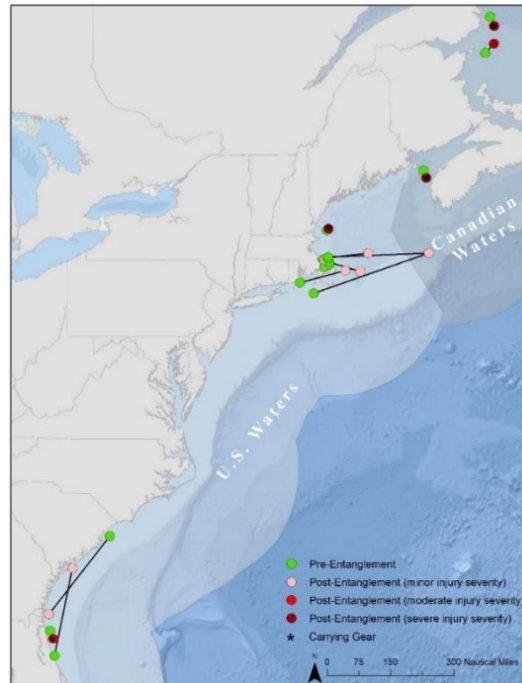
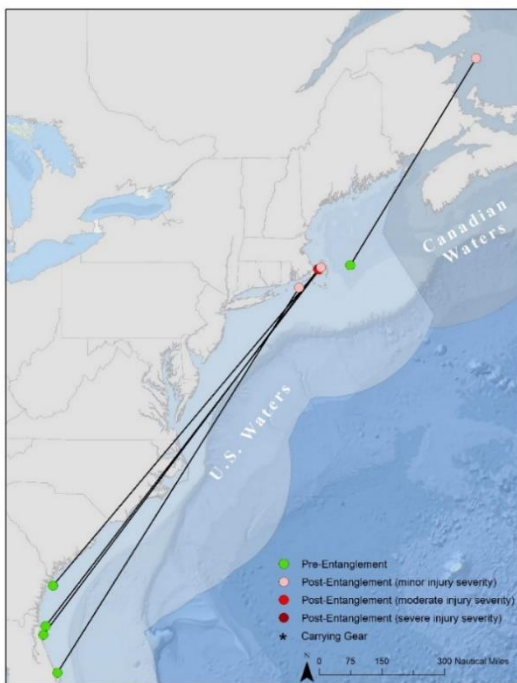


Fig. 4. *Eubalaena glacialis*. Percentage of calves/juveniles (black bars) and adults (gray bars) seen in given year with evidence of new entanglement

Mapping of short timeframe detections – these events occurred within a 2 month period. Ideally could link start and end dates of each event with a lat/long and be able to choose what timeframe to use to create these types of maps. Would also need to link each event by severity/gear or no gear. Consider something similar for vessel strikes.



## Injury Impact Outputs

