

# STOCK ASSESSMENT REPORT

## Data on Abundance and Status of the North Atlantic Right Whale

Richard M. Pace, III  
NEFSC  
Woods Hole, MA

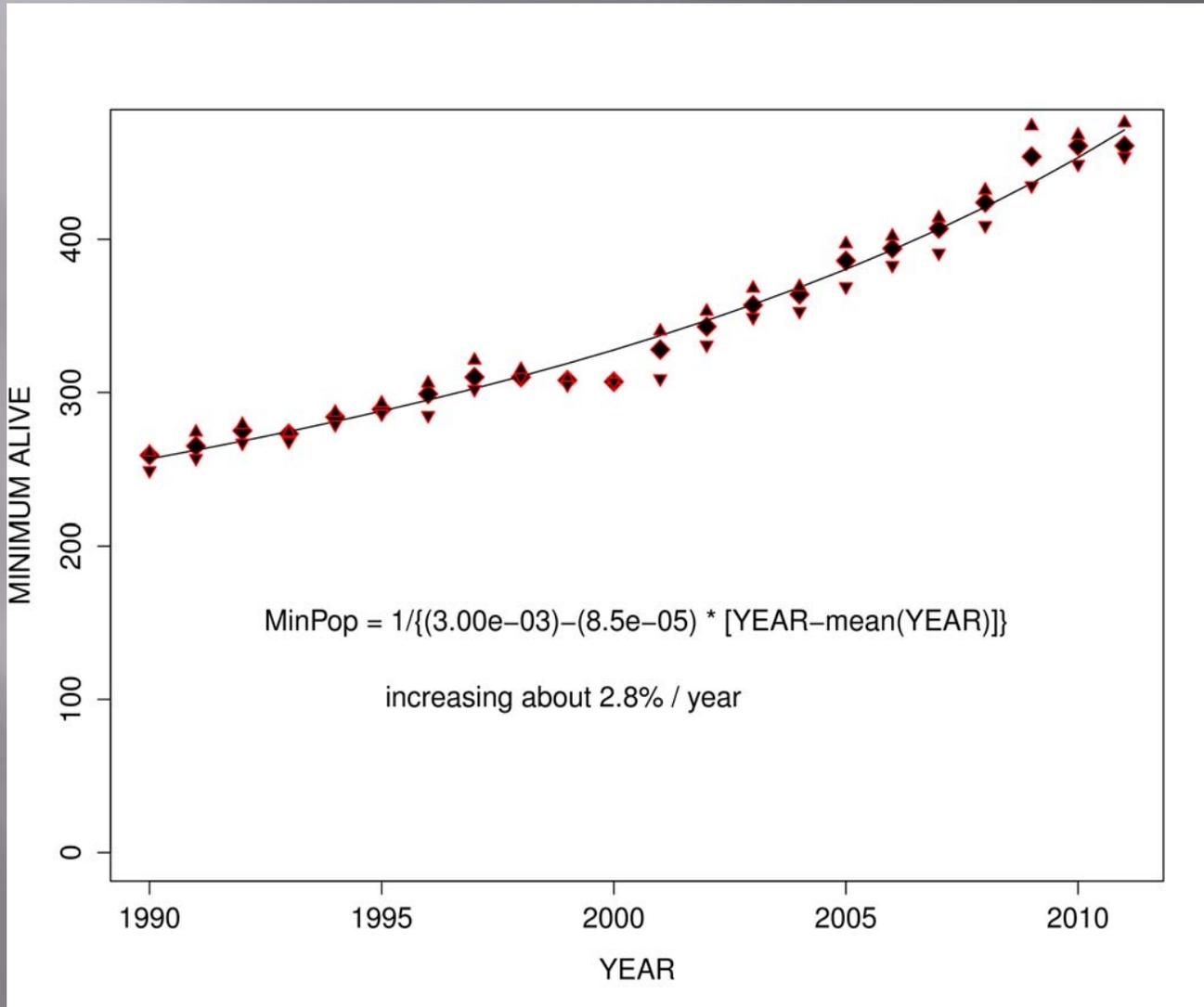
# Background

- NMFS is required to produce an estimate of abundance the population is not likely less than
- Report on trends
- Contrast a productivity index derived from that abundance with human-caused mortality

# North Atlantic Right Whale

- Individually identifiable
- Considerable effort to photograph in several geographic areas
- Produce an annual index of abundance using
  - A pictorial catalog of all whales ever identified
  - The sum of all whales seen in a given year
  - Add whales seen before and after that given year
  - Add calves seen in that year that were not given a catalog number

# RIGHT WHALE Nmin



2011 Nmin  
476+15=491

Data were included through October 2014 but the calculation method would be unreliable beyond 2011 because not enough time has elapsed to “recapture” animals alive, but not seen in the last year evaluated

# ANOTHER VIEW OF ANNUAL POPULATION GROWTH

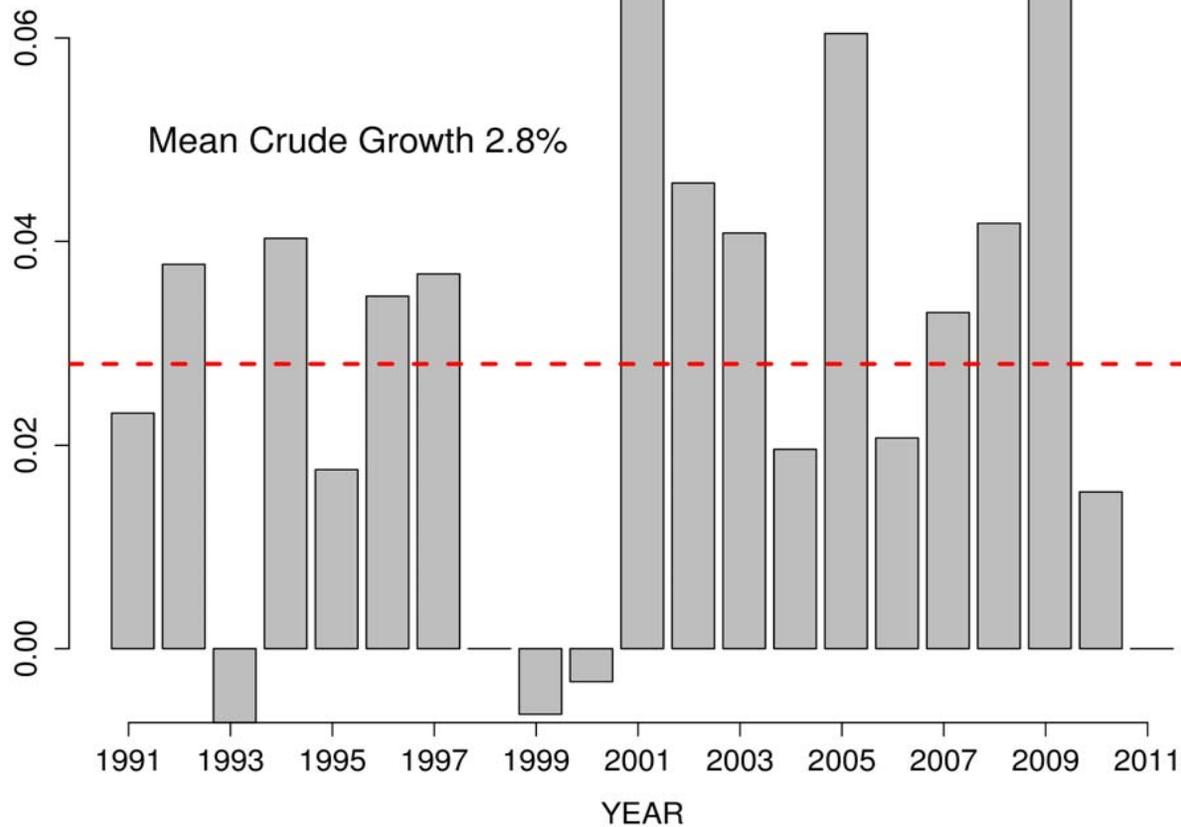
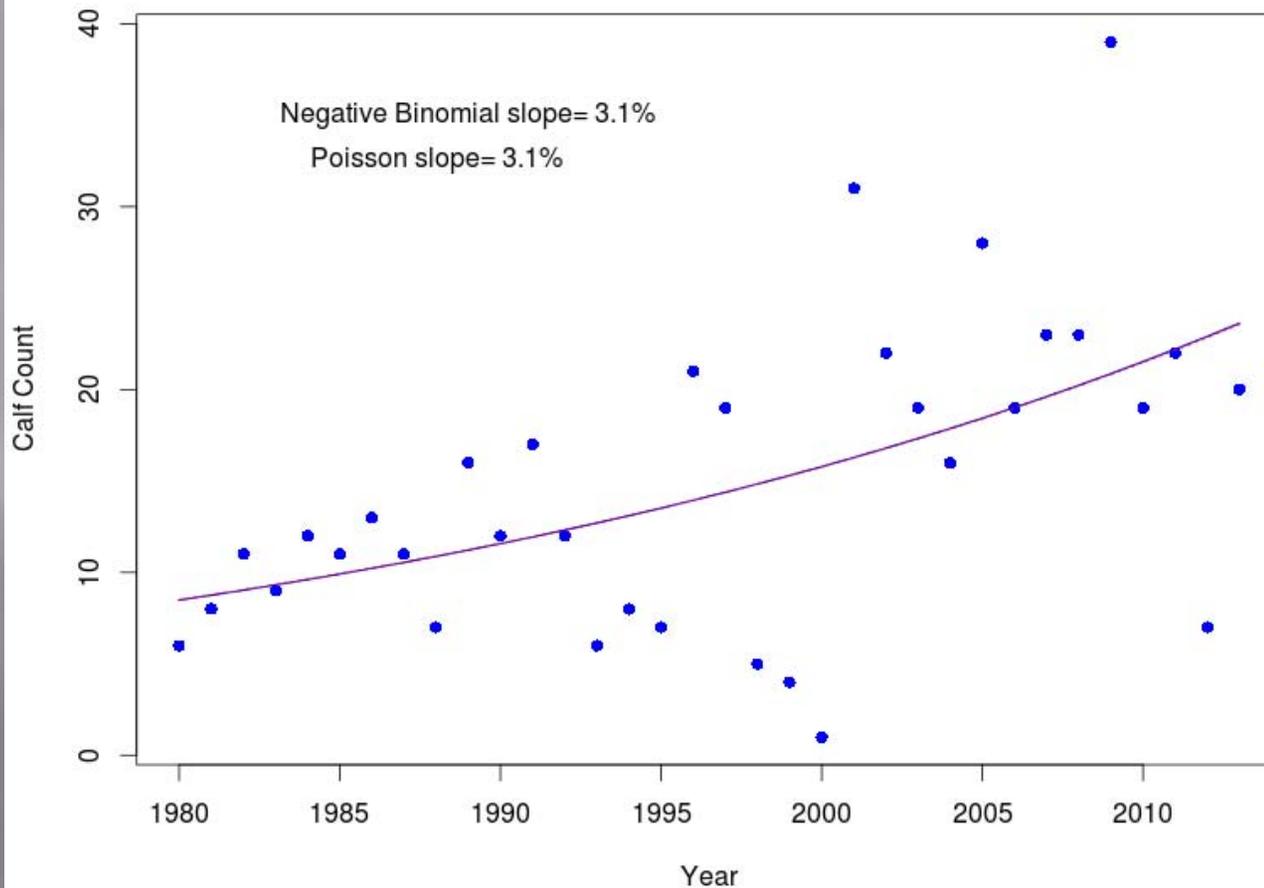


Chart depicts  $N_{min}(t+1)/N_{min}(t)$   
True Growth Rate  
is likely slightly  
lower

# Calf Production



Highly variable  
But  
Trend matches  
Population  
trend

# RIWH Human Caused Mortality

| TYPE                  | 2009     | 2010     | 2011     | 2012     | 2013     | Total                       |
|-----------------------|----------|----------|----------|----------|----------|-----------------------------|
| Not Serious Ent       | 5        | 2        | 7        | 10       | 4        | 28                          |
| Serious Ent*          | 3        | 1        | 5        | 2        | 1        | 12                          |
| Mort Ent              | 0        | 3        | 1        | 2        | 0        | 6                           |
| Serious Vessel        | 0        | 0        | 2        | 1        | 0        | 3                           |
| Mort Vessel           | 0        | 1        | 1        | 0        | 0        | 2                           |
| <b>Total Ent SI/M</b> | <b>3</b> | <b>4</b> | <b>6</b> | <b>4</b> | <b>1</b> | <b>18 (3.6)<sup>T</sup></b> |

\*Does not include whales with potentially serious injury causing wraps that were Disentangled

<sup>T</sup>Five year average use to compare against PBR in Stock Assessment Report

# Humpback Nmin

- ▣ 2015 SAR (2009-2013 data) Nmin is calculated similarly to RIWH
- ▣ Accounting practice based on Mark Recapture
- ▣ Much more an underestimate than RIWH because it likely does not include some of the stock that feeds on Scotian shelf
- ▣ Higher than Nmin calculated from line transect methods
- ▣  $N_{min}=823$

# HUWH Human Caused Mortality

| TYPE                  | 2009      | 2010      | 2011     | 2012     | 2013     | Total                       |
|-----------------------|-----------|-----------|----------|----------|----------|-----------------------------|
| Not Serious Ent       | 8         | 7         | 13       | 25       | 5        | 58                          |
| Serious Ent*          | 9         | 8         | 9        | 5        | 2        | 37                          |
| Mort Ent              | 2         | 4         | 0        | 0        | 2        | 8                           |
| Serious Vessel        | 0         | 0         | 0        | 0        | 0        | 0                           |
| Mort Vessel           | 0         | 3         | 3        | 0        | 2        | 8                           |
| <b>Total Ent SI/M</b> | <b>11</b> | <b>12</b> | <b>9</b> | <b>5</b> | <b>4</b> | <b>45 (9.0)<sup>T</sup></b> |

\*Does not include whales with potentially serious injury causing wraps that were Disentangled

<sup>T</sup>Five year average use to compare against PBR in Stock Assessment Report

# Future Monitoring

- ▣ Much on the RIWH Front
  - May change to a MRR Estimate of abundance to derive  $N_{min}$  due to changing RIW distribution
  - BHM that should provide direct assessment of Entanglement mortality rates including latent mortality
- ▣ HUWH Stock is part of a DPS to be delisted
  - Will change the conservation factor in the PBR calculation