

RIGHT WHALE NEWS

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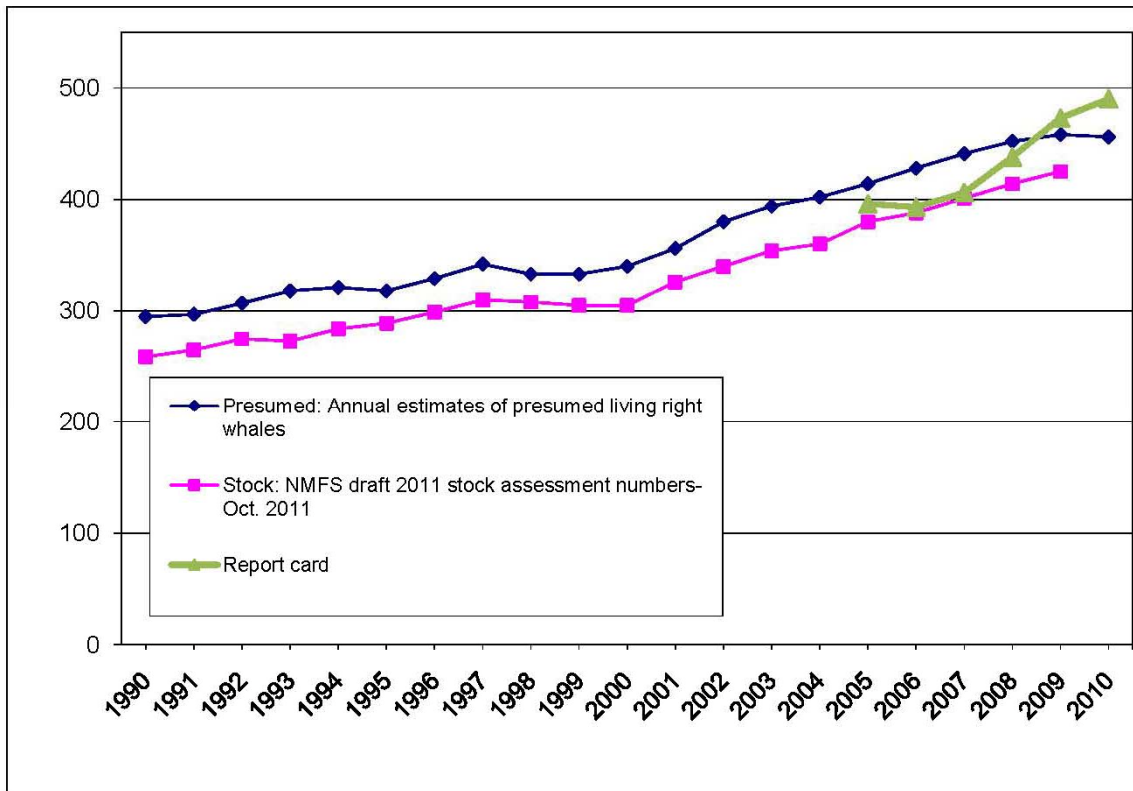
The 2010 North Atlantic Right Whale Population Estimate: 490

On 2 November 2011, the 2011 Annual North Atlantic Right Whale Report Card was presented to attendees at the Annual Meeting of the North Atlantic Right Whale Consortium. Based on the catalog of identified North Atlantic right whales for 2010, the New England Aquarium's best estimate of the cataloged population is 490. Note that this is an estimate of the *cataloged* population only; it is known from existing genetic analyses that the population includes uncataloged and genetically unsampled individuals, and therefore the population may be larger than currently estimated (Frasier *et al.* 2007). However, that unquantified increase may be offset by undetected and unpresumed deaths of cataloged whales, further complicating an accurate assessment of the *actual* population size.

The method used in the annual report card is just one of several to estimate the cataloged population size. The graph below includes the report card estimate along with two other techniques. The presumed-alive line (Knowlton *et al.* 1994) is a consistently measurable and easily available value, but it is not an accurate estimate of the recent population size due to lag time in data processing. The report card number (Pettis 2009) is the only number that assesses animals that have been photographed but not yet added to the catalog and is the best number for the previous year (*i.e.* the 2010 number can be calculated in 2011). The stock assessment numbers (Waring *et al.* 2011), which represent the minimum number of cataloged whales alive (*i.e.* the whale was either seen in that year, or seen both before *and* after), are published annually but are conservative and have a substantial delay.

It is important to note how close the older report card numbers (*i.e.* 2006-2007) are to the stock assessment estimations. This suggests that the report card method of estimation is able to provide information on the minimum population size 2-3 years before the stock assessment reports are published. The fact that the all but the last report card number are below the blue line means that the numbers in the report card are conservative.

The report included an assessment of the right whale population over time. Knowlton *et al.* 1994, based on presumed living right whales, estimated the population size at 295 individuals in 1992 (in the graph below, this number has been updated to 307, due mostly to data obtained since the original paper was published). Estimates beginning in the early 1990s show the gradual upward trend of the population during two decades.



Assessments of the North Atlantic right whale population based on three available methods. The three methods differ in terms of methods and timeliness. Additional detail is provided in the references below.

References:

Knowlton, A.R. and S.D. Kraus. 1994. Reproduction in North Atlantic right whales (*Eubalaena glacialis*). *Canadian Journal of Zoology* 72:1297-1305.

Frasier, T.R., B.A. McLeod, R.M. Gillett, M.W. Brown, and B.N. White. 2007. Right whales past and present revealed by their genes. Pages 200-231 in S.D. Kraus and R.M. Rolland, eds. *The Urban Whale*. Harvard University Press, Cambridge, MA.

Pettis, H. 2009. North Atlantic Right Whale Consortium Annual Report Card (01 November – 30 April 2009). International Whaling Commission Annual Meeting, May 2009. Reference Document SC/61/BRG1. Available at www.narwc.org.

Waring, G.T. *et al.* (eds.) 2011. DRAFT U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2011. Available at: www.nmfs.noaa.gov/pr/sars.