

## When Arribadas Fail to Arrive

N. Mrosovsky<sup>1</sup>

Department of Zoology, 25 Harbord Street, University of Toronto  
Toronto, Ontario, Canada M5S 3G5  
Email: mro@zoo.toronto.edu

In some years arribadas of olive ridleys fail to materialize at sites previously hosting these events. Although naturally this is worrying, it would seem improbable, though not impossible, that hundreds of thousands of turtles would all have met their end within one year. That this does not happen is shown by large arribadas occurring in the years after those without arribadas. But that still leaves the question as to what these turtles are doing in the years in which mass nesting is not observed.

I have taken figures from the literature for the number of turtles emerging in different years at Gahirmatha and plotted them against figures for the number of dead turtles washed ashore, expressed as a percentage of the number emerging (Fig. 1). The data come from Mohanty-Hejmadi (2000) and are based on records from the Wildlife Division, Government of Orissa. The graph shows that in years when large arribadas of a few lakh (a few hundred thousand) emerge, a few thousand dead turtles can be expected to wash ashore. That means that at such times the number of turtles found dead is about 1% of the number estimated to have emerged. However, in years when arribadas are absent, and only a few hundred turtles emerge, a few thousand dead turtles may still be recorded. In such years the number of dead turtles can reach about 5000% of the number emerging. Put in another way, there is no obvious relationship between the number of turtles emerging and the number of dead turtles: the number of dead is not a constant proportion of those emerging.

Of course, there are approximations in estimating numbers of turtles coming ashore. And the number of dead turtles will be affected by the number of trawlers active in the area, and the number of gill nets set. These will account for some of the variability in the relationship shown in Fig. 1. Notwithstanding factors contributing variability, one interpretation of these data is that in years when arribadas are skipped, the turtles still migrate to the breeding area, and are

available for incidental catch and other causes of off-shore mortality. But for some reason they do not come ashore – or perhaps do so elsewhere along the coast.

### References

MOHANTY-HEJMADI, P. (2000). Agonies and ecstasies of 25 years of sea turtle research and conservation in India. In H.J. Kalb & T. Wibbels (compilers), Proceedings of the 19<sup>th</sup> Annual Symposium on Sea Turtle Biology and Conservation. U.S. Dept. Commerce. NOAA Tech. Memo. NMFS-SEFSC-443, pp. 83-85.

<sup>1</sup> Supported by the Natural Sciences and Engineering Council of Canada.

Fig. 1. Number of dead turtles as a function of number of emerging turtles at Gahirmatha (data from Mohanty-Hejmadi 2000). Note log scales on both axes. If the absolute number of dead turtles were exactly the same each year, then when expressed as a % of the number emerging, the points would fall on a straight line on this plot.

