ACCOUNTING FOR BEHAVIORAL RESPONSES IN RISK MANAGEMENT

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We will briefly describe the software we have developed with BAE Systems to help the Royal Navy mitigate the environmental risks associated with sonar use. In its current implementation this package only accounts for the risks to marine mammals of permanent threshold shift (PTS) and temporary threshold shift (TTS). However, it also estimates the number of individual marine mammals whose movement patterns and diving behavior may be affected. We will explain how the biological significance of these behavioral responses can be assessed in terms of their effects on the Darwinian fitness of the individuals that are affected, and the intrinsic rate of increase of the population of which they are part. We will also describe the information that is required to parameterise the transfer functions that link behavioral change and its population consequences, and suggest how this information might be obtained.