Name of Method: Wader Energy Balance and Tidal Cycle Simulator (WEBTICs model)

Summary of Method: The model was designed by Alterra with the aim of simulating food uptake by oystercatchers and the distribution of birds over the exposed intertidal areas. The mudflats are described in the model through a series of points with a position, height and area. Within each point there maybe prey items characterised by type, weight and density. As the model is run, it simulates tidal cycles and calculates the amount of time the average and ideal bird has to spend feeding in order to meet its energy requirements. During the winter period, foraging intensities are combined with a stress index. In order to populate the model, site specific information required includes weather, tidal data, elevation level of foraging areas, shellfish information in foraging areas and information on commercial shellfisheries.

Advantages of Method: The language used is standard Fortran 95, enabling the model to run on all major platforms (Linux, Windows, Macintosh, and Unix). The method is also valuable in determining the effect of one activity (i.e. fishing) on oystercatchers.

Limitations of Method: The model was developed for a specific purpose and contains several key assumptions, including that all birds are equal, that birds have a perfect knowledge of the area and that there is no cost associated with bird displacement from one area to another.

References: Rappoldt, C, Ens, BJ, Kersten, MAJM and Dijkman, EM, 2004. Wader Energy Balance & Tidal Cycle Simulator WEBT ICS ; Technical Documentation version 1.1. Wageningen, Alterra. Report 869. 95 pages; 20 _gs.; 15 tables.; 35 refs.