An approach for monitoring red-throated diver numbers in the Liverpool Bay Special Protection Area

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Red-throated diver Gavia stellata is present in UK marine waters throughout the year, but until recently, their wintering distribution was poorly understood, apart from in a few key locations. A number of candidate Special Protection Areas (SPAs) for this and other species were surveyed during 2000 - 2009 using traditional aerial survey techniques and resulted in the classification of the UK largest SPAs in the Outer Thames Estuary and in Liverpool Bay in 2010. In order for these SPAs to mean more than just lines on maps, it was important to set conservation objectives for the sites. For Liverpool Bay, the objective was that the peak number during a single winter of red-throated divers should not fall below the baseline estimated population of 1500 individuals.

The Joint Nature Conservation Committee (JNCC) has been tasked with designing a monitoring scheme for seabirds and marine mammals in order to meet the UK government's requirements under a number of international and domestic obligations. This included how to approach monitoring of new and potential SPAs in marine waters. Liverpool Bay SPA was used as a pilot for whether new digital aerial survey techniques could deliver better power to detect change in numbers of red-throated divers and other inshore waterbirds than was possible using traditional aerial survey methods.

HiDef Aerial Surveying Ltd and WWT Consulting Ltd were contracted to carry out two surveys in Liverpool Bay by JNCC. These surveys were completed in February and March 2011. Detailed analysis of the results showed that high levels of precision were possible using this technique and that it could be used to detect changes in the condition of this site using red-throated divers and other inshore species as a proxy for site condition.