

## **In-situ Verification of Mobile PIT Tag Detection Systems**

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Tests of PIT\_tag detection efficiency used at fixed locations, such as dams, are generally unsuitable for evaluations of mobile PIT tag detection systems. For example, the efficiency of a surface pair trawl detection system was tested by releasing tagged fish directly into the net and recording the number of these fish detected, but this did not produce precise estimates of efficiency because the number of fish that escaped the net following release was unknown. To test the efficiency of a system that detected tags on piscivorous bird colonies, we scattered tags over the colonies prior to the nesting season. We then dragged flat plate detectors over the area and calculated efficiency based on the number of those tags detected. These estimates were problematic because they assume that the test tags remain undamaged and in place on the colony for several months. We monitor our mobile detection systems continuously for proper electronic tune. However, empirical tests were required to compare the performances of different electronic components within a system, as well as different antenna systems. The processes that we developed to evaluate the performances of mobile PIT-tag detection systems *in situ* are described.