

Implantation of Transmitters and Data Loggers in the Coeloms of Birds

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I have identified 243 publications (limited to journal articles or book chapters) describing the use of data loggers or transmitters (VHF or satellite) that were implanted into the coeloms of birds. The publications span the years from 1965 through 2009. Taxonomically, implanted birds represent 18 Orders, 31 Families, and 81 species and sub-species. Of the implanted birds, 34 species or subspecies have been implanted during projects by biologists or cooperators of the USGS' Alaska Science Center since 1993. Intra-coelomic implantation of birds with satellite transmitters began in 1993, when the first implantable unit of sufficiently small size became available. At least 36 publications have appeared that deal with implanted satellite transmitters in birds.

The development by Machin and Caulkett of a new anesthetic regime that replaced the inhalant anesthetic, isoflurane in oxygen with injectable drugs (propofol, bupivacaine, and lidocaine) that do not require shipment of Hazardous Materials have made transmitter implantation in remote areas simpler. The basic surgical technique has changed little since the contemporary techniques were described by Olsen, Korschgen, and Kenow in the early 1990s. Some species, such as grebes, that are refractive to the present implantation technique, may require alterations and some of those procedures are now being tested. Adverse effects of implanted transmitters are just now being described.