

The Roadkill Observation Collection System: Development of an Integrated Personal Digital Assistant (PDA) with a Global Positioning System (GPS) to Gather Standardized Information

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There are an estimated 1-2 million collisions with large mammals in the U.S and 45,000 in Canada each year. These wildlife-vehicle collisions have estimated direct annual costs to society of \$6-12 billion in the U.S. and \$281 million in Canada (in 2007 dollars). Three national (U.S.)/North American studies highlighted the need for **SYSTEMATIC** (systemic), accurate data collection for animal-vehicle collisions by transportation and natural resource agencies. This is needed to improve the identification and prioritization of sites for highway mitigation efforts. The facilitation of animal-vehicle collision data collection with a spatially accurate, efficient and easy to use system that decreases manual collection and data entry also has the potential to increase standardized WVC data collection across North America. The Roadkill Observation Collection System (ROCS) is multi-phased effort that has developed software for a tripartite system: rugged, handheld and integrated personal digital assistant (PDA)-global positioning system (GPS) data collectors, automatic uploads of data from the PDA-GPS units to a central electronic data repository and controlled access to the ROCS central data server to access data to examine results on visualization software, for evaluation and reports. Data collection for the latest phase of the ROCS system were conducted in 2010 and early 2011 in Iowa and New York by transportation maintenance crews. An evaluation of the spatially accurate data (within 5-10 meters of actual location) using the central ROCS server indicate the data can be used to identify areas of high animal-vehicle collisions, conduct cost-benefit analyses and has the potential for other useful evaluations. Field and system tests of the ROCS have been completed indicating a fully functional system that is now ready for broad geographic deployment.