HawkWatch International (HWI) has been banding and monitoring raptors during migration at a network of sites in the western United States for more than 25 years (Hoffman and Smith 2003, Condor 105:397-419; (Hoffman, Smith, and Meehan 2002, Journal of Raptor Research 36:97-110). These long-term studies have allowed HWI to begin detecting trends in the numbers of raptors migrating through the region. For migration counts to be useful for monitoring and management of raptor populations requires knowledge of migrant source populations so that the geographic relevance of documented population trends is clear. Detailed knowledge of migration routes, route fidelity, and connections between specific summer and winter ranges further assists in assessing the reliability of migration counts as indicators of underlying population trends, and in enabling conservation efforts that encompass the full range of habitats and environs utilized by migratory raptors across the annual cycle.

More than 20 years of HWI band-return data recently helped delineate the broad outlines of three major raptor "flyways" in western North America. To further elucidate detailed migration routes and connections between specific summer/winter ranges, and generally to enhance understanding of the complex movement ecology of some species, we seek to outfit with satellite transmitters selected Red-tailed Hawks, Northern Goshawks, and Golden Eagles captured at long-term fall migration study sites in Washington, Oregon, New Mexico, Nevada, and Wyoming.

All transmitters will be fit by trained personnel to birds using backpack-style harnesses made of Teflon ribbon, with cotton thread release points designed to cause the harness to release from the bird after the units cease transmitting. All applications will conform to National Bird Banding Laboratory standards dictating that transmitters weigh less than 3% of the bird's body mass. Transmission lifespans, with units programmed to transmit for 6 hours every 2 days during migration seasons and 8 hours every 4 days during non-migration periods will range from ~9 months for 20g goshawk transmitters to 3+ years for 80-90g eagle transmitters. Movements of the birds may range from Alaska to southern Mexico, throughout western North America. All movement location data will be obtained under a service contract agreement with ARGOS, Inc.