NORTHERN GOSHAWK REPRODUCTION RELATIVE TO SELECTION HARVEST IN ARIZONA

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In my 1990 publication, Goshawk (Accipiter gentilis) Reproduction and Forest Management (Wildl. Soc. Bull. 18:262-269), I limited my 1985-1987 analyses to 31 nest clusters which were consistent with the 1982 study plan. At the 1993 RRF annual meeting Boyce et al. suggested that I should have used all my 1987 data. The following analysis does so, except for nest clusters first discovered in 1987 (to avoid bias due to active territories being easier to discover). Rates of goshawk occupancy and nestling production in 1987, on the North Kaibab Ranger District, Arizona, were compared against the amount of selection harvesting 1973-1986 within an assumed home range of 2.7-km radius around the center of each nest cluster. Species use of clusters was confirmed by goshawks in nests (83% of clusters---was 97% for territories of my 1990 WSB publication), or was presumed from nest and stand characteristics along with nearby goshawks (15% of clusters---was 3% for WSB). Occupancy in 1987 was confirmed by eggs or goshawks in nests (86%---was 100% for WSB), recently fledged goshawks near used nests (9%), or by reconstruction of historical nest with adult goshawk nearby (5%). Young were counted near time of fledging. I separated 53 nest clusters into four categories: 12 in assumed home ranges which had received little or no harvesting 1973-1986; 14 which had selection harvesting on 10-39% of each home range area; 16 which had harvesting on 40-69% of each home range area; and 11 which had selection harvesting 1973-1986 on 70-90% of each home range area. For the four categories, respectively, occupancy rates were 83%, 43%, 31%, and 9% ($P < 0.001$). Mean young per nest attempt were, respectively, 2.0, 2.0, 1.0, and 0.0. Considering both occupied and unoccupied nest clusters, young produced per nest cluster were, respectively, 1.67, 0.86, 0.31, and 0.00 ($P < 0.001$). These and other data could indicate some real decline in the local breeding population and productivity, and/or represent movement of successful breeders from more logged to less logged areas.