RECRUITMENT OF GRAY WOLVES IN MONTANA

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Recruitment is an important vital rate driving population growth of large mammals. Although large mammals are thought to be regulated by extrinsic factors, cooperative breeding may result in intrinsic factors driving population dynamics, specifically recruitment. The majority of studies evaluating the effects of intrinsic and extrinsic factors on recruitment have not been conducted in a social species that cooperatively breeds, and those that have did not explicitly account for the effects of social structure. We evaluated how intrinsic and extrinsic factors affected variation in recruitment for gray wolves in Montana using an integrated population model. We hypothesized that variation in recruitment was driven by intrinsic factors such as pack size or population size. Alternatively, we hypothesized that extrinsic factors drive variation in recruitment and predicted that winter severity, forest cover, road density, or harvest would explain the most variation in recruitment. We found that the main driver of recruitment in wolves was primarily intrinsic factors, specifically pack size. Mean number of pups recruited per pack appeared to vary little over time despite changes in management practices and decreased survival of yearling and adults following harvest implementation. Although recruitment does not appear to compensate for changes in survival, the population has remained relatively stable, suggesting that current harvest rates are sustainable. Recruitment in a large bodied, cooperatively breeding species appears to be driven primarily by intrinsic factors.