Testing the feasibility of releasing captive-bred burrowing owls

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In preparation for a time if and when captive breeding becomes necessary for burrowing owl (Athene cunicularia) recovery, we tested the feasibility of two techniques for releasing captive-bred burrowing owls in Saskatchewan. The first technique involved releasing pairs of captive-bred adults. Between 1997 and 2002, we released 26 pairs of owls. Pairs remained in release enclosures for varying lengths of time. After enclosures were removed, eight of the 26 pairs (31%) remained together, while another six individuals successfully paired with wild owls. Pairing success increased with the length of time enclosures were left on the nests. At least six of the 52 released adults failed to migrate and were re-captured in late autumn. In addition, we have not found any captive-released adults returning to breed in our study area (compared to wild owls: males 47% return rate, females 18%), suggesting a possible problem with released adults' ability to migrate. Clutch sizes, fledging success, and post-fledging dispersal did not differ from that of wild owls; however, survival of release-juveniles (8 of 14 radio-tagged = 57%) was generally lower than that of wild juveniles (48 of 69 = 70%). Only one of the 62 fledglings (1.6%) raised by captive-bred parents has returned to our study area following migration, however, that level of recruitment is comparable to wild owls (mean 4%; range 0.95 % - 6.64%) in this area. The second release technique involved fostering owlets hatched in captivity into wild or captive-released nests. Young owls were fostered at two different ages: one group at approximately three weeks post-hatch (n=6 in 2002) and a second group (n=9 in 2001, n=14 in 2002) at six weeks post-hatch (fledging). Survival of fostered juveniles was slightly lower than that of wild juveniles when chicks were fostered at fledging age. However, we found no differences between fostered chicks and their wild siblings in terms of growth rate or behaviour. Using video surveillance, we also found that chicks released at fledging age behaved no differently than wild chicks in terms of feeding and predator avoidance.