

Roper, J. J., Sullivan, K. A. and Ricklefs, R. E. 2010. Avoid nest predation when predation rates are low, and other lessons: testing the tropical-temperate nest predation paradigm. – *Oikos* 119: 719–729.

Appendix 1

Western slaty antshrike reproduction

Methods

The breeding season for the western slaty antshrike *Thamnophilus atrinucha* was studied in the field on Pipeline Road in Soberania National Park, in central Panama (1 January – 12 December, 1993). Antshrikes weigh approximately 24 g, are common, permanently monogamous, territorial, and nest in the forest understory (Oniki 1975, Roper 2005). They occur from Guatemala and Belize to western Colombia (Ridgley and Tudor 1994, Howell and Webb 1995). All breeding attempts were recorded for 21 pairs of color-banded birds, and total annual reproduction was determined for 30 pairs. Clutch size is invariably two and both members of the pair build nests, incubate eggs and nestlings and feed nestlings and fledglings (Oniki 1975, Stiles and Skutch 1989). The nesting cycle lasts 21–26 days and consists of a 12–14 d incubation period and a 9–12 d nestling stage (Roper 2005). Nesting cycle (dates of construction, egg laying, hatching, fledging) and the number of nesting attempts for each pair were recorded. Daily nest survival was estimated using the program Mark (2009).

Results

Nest predation and nesting success

Of 107 nesting attempts, 89 were lost to predation. Daily survival was 91.4% (nest predation rate = 0.086 d^{-1} , standard error = 0.009). Seventeen nests were successful, of which young from 14 survived until independence. Pairs averaged 5.1 nesting attempts. The modal number of nesting attempts was four, with a range of 2 – 12 attempts $\text{pair}^{-1}\text{ year}^{-1}$ (Table A1).

Breeding-season length

On 1 January 1993, the first nest was found under construction and near 1 October the last nest failed. No breeding attempts occurred for the remainder of 1993 (until 12 December). From 1 January – 1 October is 270 days. Breeding-season length, when calculated to include variation in the number of nests initiated each month, following Ricklefs and Bloom (1977) was 225 days. In all months in which breeding occurred, 16% – 80% of the pairs had active nests.

Renesting-intervals

Birds initiated new nests from 4.5 – 72 days (average = 23 d) after failed nesting attempts. After successful nests the renesting interval ranged from 48 to at least 157 days (average = 91 d). The 157 d interval represents seven pairs that fledged young and did not re-nest for the remainder of the year, during which time the young remained in their natal territory. Dropping these seven nests, the maximum renesting interval after success was 86 days. The interval between the end of nest construction and laying the first egg was 1 – 90 days (Table 5).

References

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Table A1. Intervals in days for western slaty antshrike nesting in 1993.

| Interval after | n | Average | Minimum | Maximum |
|----------------------------|----|---------|---------|---------|
| Success ^a | 14 | 91 | 48 | 157 |
| Success ^b | 7 | 71 | 48 | 100 |
| Failure ^c | 69 | 23 | 4.5 | 72 |
| Construction ^d | 55 | 7.1 | 1 | 90 |
| Attempts/pair ^e | 21 | 5.1 | 2 | 12 |

^afrom the date of fledging until the pair initiated the next nest or that nest was found. Includes seven pairs that were open-ended: the young were still with the parents, and they had not nested again at the end of observations in 1993. ^bexcludes those seven observations. ^cfrom the estimated date of predation until the next attempt is initiated or found. ^dthe interval between apparent end of nest construction and the date the first egg was laid in the nest. ^enumber of nest attempts of all pairs with complete data. Mode was 4 attempts and 13 pairs attempted ≤ 4 nests.