

Whinchats, *Saxicola rubetra*, Slovenia

Survival & predator avoidance in the post-fledgling period

BACKGROUND

It is well known that European populations of farmland birds, are decreasing due to modern agricultural practices. The 'stay-and-hide' strategy for predator avoidance is ineffective against agricultural mowing machinery.

In the study area, Ljubljansko barje, Slovenia, the Whinchat population has decreased by 50% in the last 10 years. Mortality caused by earlier mowing is highly responsible for this decline, after habitat change and reduced invertebrate food.

Survival and behavioural data in juvenile Whinchats after fledgling is limited so the aims of this study were to...

- i) Present mortality & survival rates without mowing interference
- ii) Describe a behaviour in the first days after leaving the nest, as understanding of predator-avoidance strategy of fledglings is crucial for planning an efficient conservation measure.



Davorin Tome

EQUIPMENT USED

- **Biotrack PIP3** backpack radio transmitters - 0.6g weight, 20 days expected battery lifespan. Over 3 years, 74 juvenile birds were tagged.
- **Biotrack Sika** Manual tracking receiver - 138.000—173.999 MHz
- **Flexible 3-element Yagi antenna** - 142 MHz



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INSIGHTS

1. Chicks started leaving the nest at 13 days of age. There is a steep decline in survival rate between age 12 days and 16 days (from 1.0 down to 0.7).
2. Predation was the cause of 18 out of 21 mortality events (carcasses located by radio tracking).
3. There is a 50% probability a 20 day old Whinchat will stay still and not escape when a threat approaches, reducing to 20% by 22 days age, when the main response is to fly away instead.
4. To reduce threats to fledglings from mowing, it is therefore recommended that mowing be postponed 10 days more, to when most fledglings will be able to avoid an approaching mowing threat, rather than when 80% of the birds are fledged, as currently suggested.

IN CONCLUSION

Radio tracking fledglings has shown us that the current mowing postponement until fledging is not a sufficient measure to halt population decline for Whinchats. We suggest at least 10 more days, when the majority of fledglings will have changed from the 'stay and hide' to the 'escaping through flight' strategy.

This case study is a summary of: Davorin, T., Denac, D. (2011), Survival and development of predator avoidance in the post-fledging period of the Whinchat (Saxicola rubetra): consequences for conservation measures. Journal of Ornithology. doi: 10.1007/s10336-011-0713-2.

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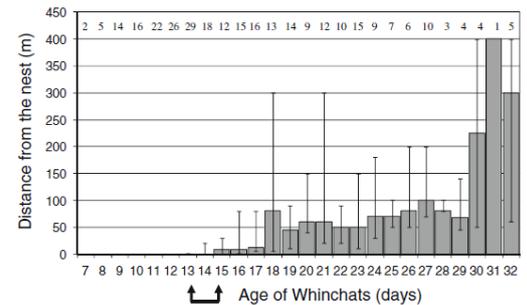


Fig. 1 Median distances of young Whinchats from the nest (bars), with minimum and maximum lines also shown. Arrows indicate the period when the birds were leaving the nest; numbers at the top are sample sizes

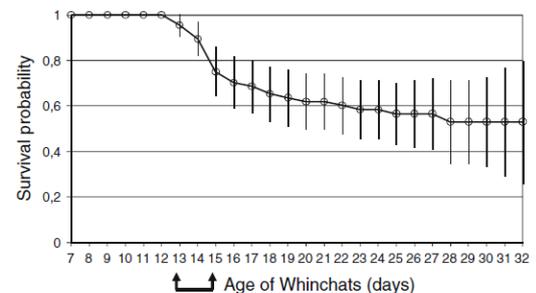


Fig. 2 Cumulative survival probability of young Whinchats versus age, calculated using Kaplan-Meier estimates ($N = 74$). Vertical lines are 95% confidence intervals, arrows indicate the period when birds were leaving the nests

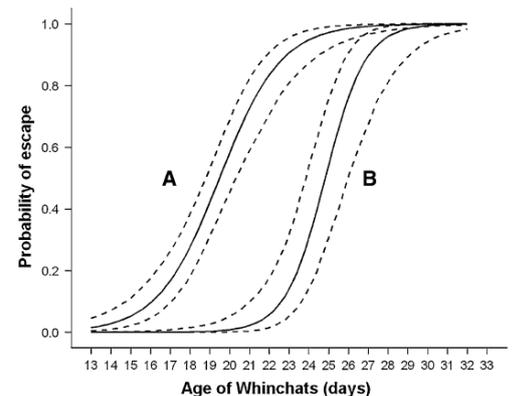


Fig. 3 Predicted escape probabilities of Whinchat fledglings in relation to their age. Left solid line (a) represents the probability that fledglings will escape from the approaching threat irrespective of the distance; right solid line (b) represents the probability that they will escape when the threat is at a distance of 5 m or more. Dashed lines show the 95% confidence intervals of the predicted values



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