Observations on the longevity and fecundity of the western Yellow-breasted Chat in the south Okanagan valley, British Columbia, Canada.

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Abstract: A breeding male Yellow-breasted Chat (*Icteria virens auricollis*) lived for at least six years and showed fidelity to territory during those years. A female lived for at least five years and was found on the same study site for three of the five years. The male successfully fledged 22 chats at a fecundity rate of 3.14 while the female fledged nine chats at a fecundity rate of 2.25. The observations arose from annual colour-banding of chats during a survey starting in 2001 in the south Okanagan valley, British Columbia, Canada. The British Columbia population of the western subspecies of chat is endangered.

Key words: Yellow-breasted Chat, *Icteria virens auricollis*, longevity

Longevity records are important to provide basic life-history information on species that are not well studied (Boal *et al.* 2006) and can provide data for species survival programs (Chaney *et al.* 2003). Longevity changes with body size and larger species tend to live longer (Hill 1950; Lindstedt and Calder 1976). Bird species with smaller clutch sizes (two to three eggs) also tend to live longer than species with larger clutch sizes (three to six eggs) (Cody 1966; Ehrlich *et al.* 1988; Martin *et al.* 2006). The Yellow-breasted Chat (*Icteria virens auricollis*) weighs between 22 and 27 g and usually lays between three and six eggs (Eckerle and Thompson 2001) and although there are other factors that affect longevity, the small body size and larger clutch size of the chat might indicate a relatively shorter life span for this species.

However, there are few longevity data available on passerines including chats. One record indicated the minimum age of a chat banded at Point Pleasant, W.Va. and recaptured at Marietta, Ohio to be eight years 11 months (Klimkiewicz *et al.* 1983). Similarly, maximum age for other wood warblers include eight years 11 months for the Yellow Warbler (*Dendroica petechia)* (Klimkiewicz *et al.* 1983), 11 years and six months for the Common Yellowthroat (*Geothlypis trichas)* (Klimkiewicz *et al.* 1983), seven years for the Yellow-rumped Warbler (*Dendroica coronata)* (Klimkiewicz *et al.* 1983) and nine years eight months for the Black-throated Blue Warbler (*Dendroica caerulescens*) (Klimkiewicz and Futcher 1989). In the south Okanagan, we have been colour-banding chats since 2001 and therefore we cannot determine ages of banded individuals for longer than six years. But, during 2006, two colour-banded chats were observed, one male and one female, that had been banded in 2001. The male was banded on 2001 June 05 as an after-hatch-year and is therefore at least six years old. He weighed 26.5 g. The female was banded as a nestling on 2001 June 14 and by the end of the 2006 study season she was five years 1.5 month old. She came from a nest containing three nestlings and she had the greatest mass of the nestlings. Her mass was 16.9 g while her two siblings weighed 16.0 and 14.0 g.

During 2002, the colour-banded male returned to the same study site where he was banded and from 2003 to 2006 he has shown territory fidelity by breeding in the same territory each year. From 2002 to 2006, this male has successfully fledged 22 chats at a fecundity rate of 3.14. In 2006, he had a double brood with three nestlings fledging on June 16 and another three nestlings fledging on July 15. One of his 2003, one of his 2004, three of his 2005 and two of his 2006 nestlings have since returned to breed in our study site. One of the 2006 nestlings that returned was from the second brood.

The more elusive colour-banded female was not seen every year since 2001 but she was observed during 2003, 2004 and 2006. During these years she showed site fidelity by breeding in the same study site each year. This female has successfully fledged nine chats at a fecundity rate of 2.25. During 2004 and 2006, her nest was parasitized by Brown-headed Cowbirds (*Molothrus ater*) and in addition to fledging her own young, she also fledged one Cowbird in 2004 and two in 2006. None of her offspring has yet been observed in our study area.

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