

Feather Fascination!

with local Birdwatcher,

Jim Butler

Socially Managing Cooperative Breeding

THE White-browed Scrubwren (12cm) is widespread and abundant and one of Australia's most active birds. Its distribution stretches clockwise along 70% of the continental coast, from Northern Queensland to mid-Western Australia. However, its small size and its habit of rarely breaking cover while it forages amongst the dense undergrowth of the forest scrub layer, makes it very difficult to see and photograph. It feeds mostly on insects and spiders. Its calls are harsh scolding chatterings, especially when disturbed; and it's an adept mimic.

Groups of White-browed Scrubwrens are sedentary and hold permanent territories. They are also cooperative breeders. A widespread characteristic of cooperatively breeding animal groups is the unequal sharing by the males of reproduction within the group, giving rise to Reproductive Skew Theory. This theory examines the adaptive causes underlying this skewed mating occurrence and how it is achieved socially. One prediction is that there will be a positive association between a dominant male's monopolization of reproduction and his relatedness to the other males. This prediction has been tested by studies of White-browed Scrubwren groups.

DNA fingerprinting was used to examine the genetic parentage and mating system of groups of breeding



White-browed Scrubwrens. Among groups with two males and one female, two different mating tactics were found. Firstly, when both males were related, the subordinate males only sired offspring in a small number of broods. In this situation, subordinate males mostly gained their reproductive benefits indirectly through the related dominant male. Secondly, when both males were unrelated, they usually shared paternity in the brood. This resulted in both males directly gaining reproductive benefits from their contribution to the success of the breeding group. Overall, when male members were closely related, the dominant male largely monopolized mating events; whereas when the members were not related the two males shared paternity equally. This positive association between monopolization of reproduction and relatedness is a Reproductive Skew Theory prediction.

Search for these wonders of sophisticated genetic adaptation

~ Jim