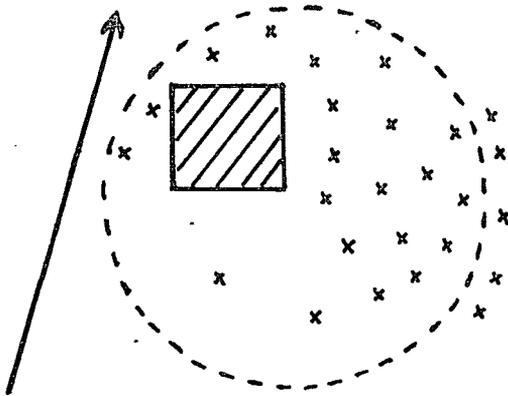


FLOCKING OF WILLIE WAGTAILS

On March 31, 1967, at 1700 hours, the day being sunny with a temperature of about 70°F, 37 Willie Wagtails (*Rhipidura leucophrys*) were observed on an area of about 50 yards diameter on a grassed playing field between the River Torrens and McKinnon Parade, Adelaide Parklands.

They did not seem to be in pairs, and most were calling. Others were calling from trees around the oval also but these were not counted. The area was damp, and one patch about 15 x 15 yards was being specially watered where it had been worn slightly.



In the diagram the circle represents the portion of the playing field upon which the Willie Wagtails were concentrated, the shaded square the area being watered, the arrow my path across the field, whilst the crosses show the general positioning of the birds. My approach may have affected the position of some of the birds.

The area seemed very rich in insects, upon which some of the birds were feeding.

MALCOLM GREGORY.

It is commonly accepted that Willie Wagtails are usually strongly territorial, and that territorial behaviour is an adaptation tending to ensure the optimum population density consistent with the amount of food available during periods of shortest supply. Nevertheless, the swiftness with which many territorial birds acquire another mate in cases of loss shows that usually there is also a considerable "floating population" of unmated birds.

Considered together with the fact that in the case of most adult vertebrate animals deaths caused by actual non-existence of sufficient food seems to be a rather uncommon cause of elimination; some people have come to believe that means other than territorial behaviour or starvation may also operate to provide a self-limitation of populations. That this does happen, in some cases at least, has been demonstrated with laboratory animals. (Rats, mice, guppies.)

V. C. Wynne-Edwards (*Animal Dispersion in Relation to Social Behaviour*, 1962) has put forward the hypothesis that the massed gatherings and displays observed in many animals — often at more or less regularly spaced intervals, and commonly closely following or immediately preceding breeding — have "evolved to provide the necessary feedback when the balance of population is about to be restored, or may need to be shifted, either as a seasonal routine or as an emergency measure." He has called these phenomena "epideictic displays."

This hypothesis has proved controversial, and has been criticized by ecologists and other workers in the biological field on several grounds; but this unusual gathering of a strongly territorial animal as observed by

Mr. Gregory seems to be an example of Wynne-Edwards' postulated epideictic display.

R. F. BROWN.

I would like to add the following records and comments:

(1) In March, 1953, 11 Willie Wagtails were counted in a short Tamarisk hedge infested with leafhoppers at the Glenelg Sewage Treatment Works. These birds were present throughout April, 14 being counted on April 28.

(2) On February 17, 1964, 28 Willie Wagtails were counted scattered about the lawns of the Glenelg Sewage Treatment Works. They were plentiful for a period, probably several weeks, but further records were not kept at the time. I knew of only one breeding pair within the Treatment Works area, but there could possibly have been one or two more.

(3) From my commencing regular observations at the I.C.I. Saltfields adjacent to the Bolivar Sewage Treatment Works in June, 1966, until at least early September, at least 20 Willie Wagtails were regularly counted amongst the samphire and small shrubs around each of two small salt pans (each an easy half-hour walk). There was a break in observations until January, 1967, when only three to four birds per salt pan were encountered. This habitat appears a most unsuitable breeding area for Willie Wagtails. At the time of writing (June, 1967), Willie Wagtails were again very numerous throughout the I.C.I. Saltfields area and the adjacent part of the Bolivar S.T.W.

(4) At least 15 Willie Wagtails were noted in two adjacent small dead trees near the I.C.I. — Buckland Park Lake gate on March 21, 1967.

(5) During the three years 1948-50 a regular twice monthly bird count was conducted, with Max Melvin and others along a section of the River Torrens and adjacent Parklands opposite the Adelaide Zoological Gardens. During the periods June or July to November numbers were fairly constant, averaging about 22 birds. Numbers increased from December, with maxima of 46 and 42 in April, 1948, 43 (2 surveys) and 41 (2 surveys) in March and May respectively 1949, and 35 (one of two surveys) in February, 1950. It was not recorded whether

these high counts included actual flocks of Willie Wagtails.

Several questions come to mind:

What happens to all the young birds produced in a successful nesting season? I have known the Glenelg Treatment Works pair to fledge four broods in one season. Do birds that cannot establish themselves in territories assemble in non-breeding flocks as do Magpies? In the non-breeding season does a concentration of food in a small area cause a temporary breakdown in territories, so that birds from adjacent territories plus birds from the "floating population" mentioned by Mr. Brown all join in the feast? These last two queries suggest possible explanations for the large, loose assemblages of my notes 2 and 3; and for the denser flocks of my note 1 and of Mr. Gregory's observation respectively.

Comments and observations by other bird observers are invited.

BRIAN GLOVER.