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EYE COLOUR IN GREY TEAL

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Age structure is an important parameter of waterfowl populations. It indicates annual fecundity and mortality (Caughley 1977), and affects reproductive output in adult individuals (Krapu and Doty 1979, Frederickson and Hansen 1983, Afton 1984). No reliable methods currently exist for ageing Australian waterfowl after they have lost their juvenile notched tail feathers (Kingsford 1988). A useful indicator of age in many species of birds is eye colour (Trauger 1974).

We have had anecdotal reports of differing eye colours with age in Grey Teal *Anas gibberifrons,* and Reader's Digest (1986) reports that the adult Grey Teal colour is bright red and the immature colour is brown. One of us (WL) therefore recorded eye colour on 160 wild Grey Teal caught at Lake Salisbury (29°50'S., 142°44'E.) in north-western New South Wales in May, 1987. We wanted to determine the variations with age and sex.

Adults were sexed by cloacal examinations and juveniles were identified by the presence of notched tail feathers (Hochbaum 1942, Kingsford 1988). Photographs were taken of the eye colour of 47 individuals. Colours are described according to the standard colour charts of Kornerup and Wanscher (1978). For each colour, a general and specific name and a code are given. For example, within the general colour of 'light brown' there is one particular colour which has the specific name 'burnt Sienna' and a colour chart reference code of 7D8.

The eye colour in adult grey Teal varied along a gradient from light brown to vivid red. The apparent overall colour in each individual was caused by differing patterns of vivid red, brown and occasionally greyish brown within the iris. Therefore five categories based on these patterns are described, as well as a hazel category (Table 1).

TABLE 1

Categories of eye colour of Grey Teal trapped at Lake Salisbury in May 1987. All colour names are after Kornerup and Wanscher (1978).

Eye colour category	Specific colour name (impression) of total eye colour)	Description of iris pattern
Vivid red	Primary red (10A8)	Completely red.
Red	Crayfish red (9B8)	Red with a thin brown (hazel) ring around the pupil only, or a thin brown ring around the outer edge of the iris only.
Brownish red	Lake red (9C8)	Red with both inner and outer brown rings.
Reddish brown	English red (8D8)	Red with broad brown or grey-brown (drab 5E3) rings, or minor brown mottling only.
Light brown	Burnt Sienna (7D8)	Red with broad brown rings and mottling throughout the iris.
Brown	Hazel (6E8)	Yellowish brown (5E8), some red mottling.

TABLE 2

Percentages of 160 trapped Grey Teal in each eye colour category.

Category	Adult male n=108	Adult female n=46	Juvenile n=6
Vivid red	31.5	4.3	0.0
Red	26.8	15.2	0.0
Brownish red	14.8	19.6	0.0
Reddish brown	17.6	19.6	0.0
Light brown	9.3	41.3	16.7
Hazel	0.0	0.0	83.3
Total	100.0	100.0	100.0

Table 2 gives the percentage of adult males (n=108), adult females (n=46) and juveniles (n=6) in each category of eye colour. Fifty-eight percent of adult males had either vivid red or slightly duller red eye colour. Only 9 percent had light brown eyes. Sixty-one percent of adult females had either light brown or reddish brown overall eye colour, and only 4 percent had bright red eyes. Of the six juveniles caught, one had light brown eyes and the rest had hazel eye colour.

Trauger (1974), working with a known-age population of Lesser Scaup *Aythya affinis,* found that yearling females had brown or brownish olive eyes. Females three years or older had yellowish or yellow eyes, and the eye colour changes progressively between the first and third years. In contrast, male Lesser Scaup had a more rapid shift in eye colour with age from olive-brown to bright yellow.

We speculate that Grey Teal have similar age-related changes in eye colour. The higher proportion of males with bright red eyes could be explained by a more rapid transition from brown to red. A comprehensive study of relationships between eye colour and age in Grey Teal could be undertaken on a captive population. We recommend such a study.

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