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BREEDING SCHEDULE, CLUTCH SIZE AND EGG SIZE OF AMERICAN OYSTERCATCHERS (*Haematopus palliatus*) IN VIRGINIA

by Allan J. Baker and Michael Cadman

Despite extensive studies of the breeding biology of other species of oystercatchers in various parts of the world (e.g. Hall 1959, Harris 1967, 1969, 1970, Hartwick 1974, Heppleston 1972, Summers and Cooper 1977, Webster 1941), the American Oystercatcher *Haematopus palliatus* remains relatively unknown. Over the past three years we have been carrying out studies aimed at providing basic data on the breeding and feeding ecology of *H. palliatus*. Herein we present a preliminary report on some aspects of the breeding biology of the American Oystercatcher at our study site on Wallops and Assawoman islands, Virginia. A more comprehensive paper is currently being prepared for publication elsewhere.

Breeding schedule

During the winter, oystercatchers on the eastern shore of Virginia often congregate in feeding flocks on commercial beds of intertidal oysters. Birds disperse from the winter flocks in the last week of February and the first week of March. In our study area we first observed piping in defense of territory in the last week of February. Most birds arrive at the breeding sites (see Cadman 1979 for map of territories) through the month of March, including migrants which presumably have wintered further south.

In most cases, females arrive on their territories of the previous year before their mates, sometimes as much as three weeks earlier. This is in marked contrast to *H. ostralegus* on Skokholm, for example, where both sexes arrive together (Harris 1967). Lone birds defend their territories until their mates return or until they pair with new mates. Territory and pair-bond fidelity is high and nest scrapes are often placed within a few metres of those of previous years.

Egg-laying commences in early April with a peak in the third week of April. Many early clutches are destroyed by storms and high tides in late April, and this leads to another peak of laying in the second week of May. Hatching commences in mid May with a peak in early June. Egg and chick mortality were so high in 1978 and 1979 that we have few data on fledging; some chicks were flying by mid July. One pair was still together with two begging offspring in early December, but by January all birds rejoin the winter feeding flocks.

Clutch size

Clutches range in size from 1 to 4 eggs, the modal number being 3 (Table 1). When clutches are lost they are usually replaced within two weeks. One female laid three repeat clutches in response to repeated egg predation by foxes. Based on the small samples we have so far obtained, repeat clutches are not significantly smaller than first clutches (Table 1).

Table 1. Clutch size of American Oystercatchers in Virginia

	N	Clutch size				
		1 egg	2 eggs	3 eggs	4 eggs	$\bar{X}$
Overall (1978-80)	88	4	33	50	1	2.54
First clutches (1979)	34	1	14	18	1	2.56
Second clutches (1979)	8	1	3	4	0	2.38

Table 2. Size of eggs from complete clutches of American Oystercatchers in Virginia

	Egg size		
	Length (L)	Breadth (B)	Volume ($L \cdot B^2 / 10^3$)
Mean	56.8 mm	39.7 mm	89.7 cc
S.D.	1.86	1.10	4.97
N	89	89	89

Egg size

Descriptive statistics for egg measurements and 'volume' ($L \cdot B^2 / 10^3$) are given in Table 2. The length and breadth of eggs are negatively correlated ($r = -0.307$, $P = 0.003$, see Figure 1), reflecting the tendency for long eggs to be narrow and vice versa. Analysis of variance revealed that variation among females in egg size is highly significant (for length $F = 1.81$, $P < 0.05$; for breadth $F = 6.44$, $P < 0.001$; for volume $F = 5.75$, $P < 0.001$). However, unlike some other shorebirds (see Väisänen 1972, Miller 1979), average egg size is not significantly related to female size (as judged by bill length).

H. palliatus resembles *H. ostralegus* in that both species are relatively r-selected, having higher mean clutch sizes and smaller eggs than K-selected species such as *H. fuliginosus*, *H. ater* and *H. moquini*. The latter group of species has modal clutches of two large eggs. Undoubtedly, this dichotomy of investment strategies underscores differences in parental care among oystercatcher species.

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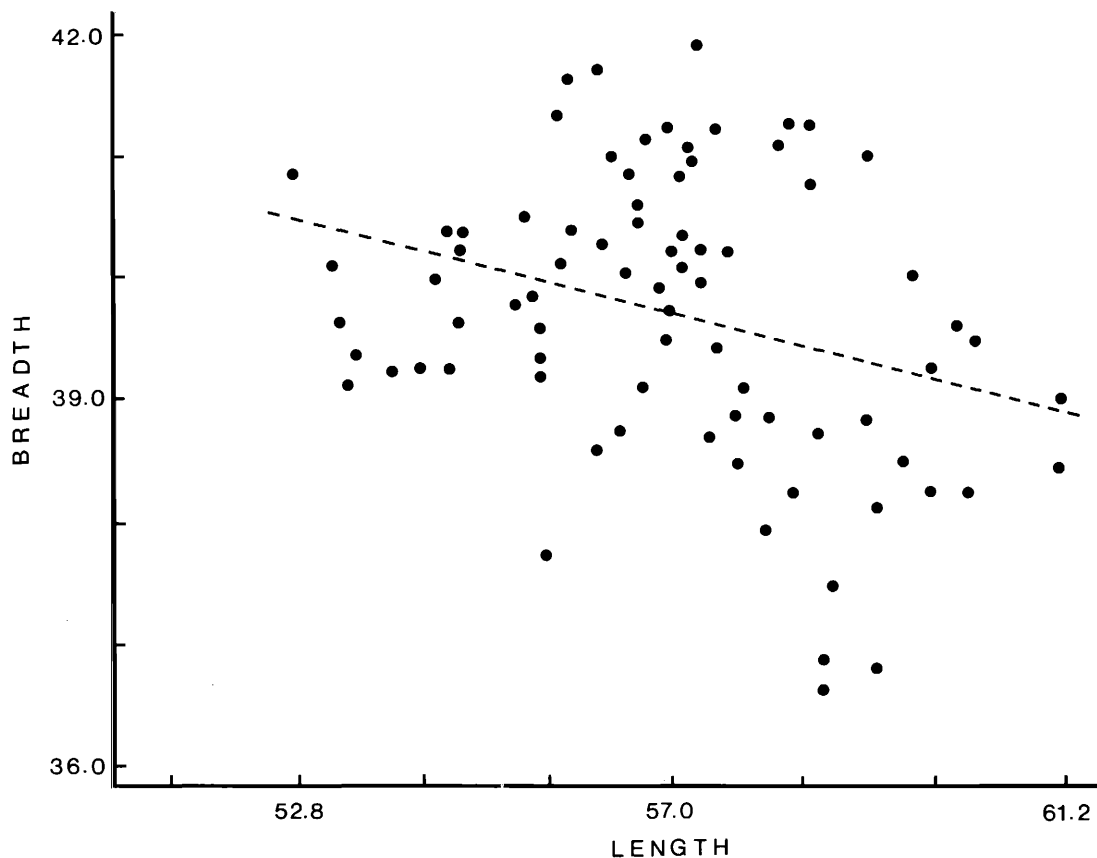


Figure 1. Bivariate plot of length against breadth of eggs of American Oystercatchers. Dashed line is regression of breadth on length, where breadth = $50.094 - 0.182 (\text{length})$, ($F = 9.04$, $p < 0.01$).

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