



Primary moult (figures reproduced from *Moult in Birds*)

In the field, to record primary moult scores rapidly, start from the primary nearest the bird's body (the way the bird moults) and record the stage of moult and then put (as a superscript) the number of feathers at that stage. The scores to use are:

- 0 an old feather
- 1 old feather missing or new feather completely in pin
- 2 new feather just emerging from sheath, up to one third grown
- 3 new feather between one and two thirds grown
- 4 new feather more than two thirds grown, but waxy sheath still at its base
- 5 new feather fully-grown with no trace of sheath at its base

(Codes V - very old, and U uncertain or unchecked, can also be used)

Primary moult can be recorded as a 10 or more character code in which each digit corresponds with a primary, starting from the innermost, or as a score from 0 to 50. Recording the individual scores is preferable as it provides more information about the progress of moult and distinguishes between different moult stages that have the same score. In addition, the raggedness score (Bensch & Grahn 1993), a measure of the 'gap' in the wing, can be calculated from a set of primary feather scores (for each actively growing feather take the score away from 5 to get the raggedness score - ie a feather with a score of 1 has a raggedness score of 4 etc). Each feather score can be recorded separately, or a shorthand can be used. For the shorthand, the superscripts must add up to 10 (eg for the mid wing moult example $1 + 2 + 1 + 1 + 5 = 10$) and multiplying the numbers by the superscripts and adding the result will give the score out of 50 (eg $5 \times 1 + 4 \times 2 + 3 \times 1 + 2 \times 1 + 0 \times 5 = 18$) - in this case 18 (but note that recording scores for all the individual feathers is much more useful).

Examples are given below:



Example 1: Early wing moult

310000000

$3^1 1^0 8$

(three to the one, one to the one, 0 (oh) to the eight)

Moult score = 4

Raggedness score = 6



Example 2: Mid wing moult

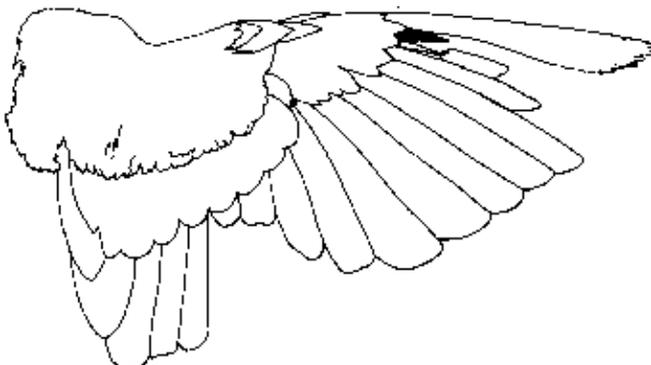
544320000

$5^1 4^2 3^1 2^1 0^5$

(five to the one, four to the two, three to the one, two to the one, 0 to the five).

Moult score = 18

Raggedness score = 7



Example 3: Late wing moult

555532100

$5^5 3^1 2^1 1^0 2$

(five to the five, three to the one, two to the one, one to the one, 0 to the two).

Moult score = 31

Raggedness score = 9