

# MAPS BANDING CODES - 2025

## Skull Pneumaticization

- 0 - None; single pinkish layer.
- 1 - Trace at very back of skull; 1-5% of total area.
- 2 - 6-33% at back; distinct contrast; whitish dots.
- 3 - 34-66%; rear half and some of front, midline, and sides.
- 4 - 67-94%; two oval red spots either side of cranium - rest completed.
- 5 - 95-99%; two tiny pinkish spots. (Some birds stay at class 5.)
- 6 - Complete, fully pneumaticized.
- 8 - Skull examined but degree of pneumaticization not determinable.

## Cloacal Protuberance

- 0 - Cloaca not enlarged.
- 1 - Small (conical; wide at base, narrow at tip.)
- 2 - Medium (cylindrical; as large at tip as at base.)
- 3 - Large (bulbous; larger at tip than at base.)

## Brood Patch

- 0 - None present, breast feathered.
- 1 - Feathers dropped, skin smooth and dark red; some vascularization.
- 2 - Skin vascularized and wrinkled, fluid present.
- 3 - Vascularization extreme, skin wrinkled, much fluid.
- 4 - Wrinkled skin, thin and dry; vascularization and fluid mostly gone.
- 5 - Vascularization, fluid, and wrinkles gone; pinfeathers appearing.

## Fat

- 0 - No fat anywhere.
- 1 - Furcular hollow less than 5% full.
- 2 - Furcular hollow 5-33% full.
- 3 - Furcular hollow about half full (34%-66%).
- 4 - Furcular hollow full, 67%-100%, fat thick in wingpits and on abdomen.
- 5 - Fat bulging above furcular hollow, in wingpits, and on abdomen.
- 6 - Fat greatly bulging in all areas.
- 7 - Excessive; fat nearly joined from all areas.

## Body Molt

- 0 - None.
- 1 - Trace; a few feathers anywhere on body.
- 2 - Light; a number from any individual tract.
- 3 - Medium; a number from several tracts or most of head.
- 4 - Heavy; more than half from most tracts; more than ½ of body.

## Flight-feather Molt

*(primaries and secondaries (not tertials or tail))*

*Most species do not molt juvenile flight-feathers. Check Pyle 1997 for each species. The code "S" essentially means "flight-feather molt occurring" - It may not always be exactly symmetrical*

- N - None.
- A - Adventitious, accidental, asymmetric.
- S - Full, normal symmetric molt.
- J - Growth of juvenile (1st-generation) flight feathers.

## Flight-feather Wear

*(outer four primaries; not rectrices)*

- 0 - None; light feather edges remain.
- 1 - Very slight edge wear; no fraying or nicks.
- 2 - Slight; definitely worn but very little fraying, very few nicks.
- 3 - Moderate; definite fraying and nicks; chips along vanes.
- 4 - Heavy; feathers worn and frayed, tips missing.
- 5 - Excessive; extreme wear, shafts exposed beyond vanes, tips broken off.

## Juvenile Body Plumage

*(include body feathers only; not wing feathers)*

- 3 - Juvenile plumage growing in or full.
- 2 - In preformative molt; more than half of juvenile plumage remains.
- 1 - In preformative molt; less than half of juvenile plumage remains.
- 0 - None; no juvenile plumage remaining.

## Molt Limits & Plumage

Unless a tract is completely composed of alternate feathers, alternate feathers in a tract are ignored.

- J - Juvenile; feather tract comprised entirely of retained juvenile feathers or non-feathered body part shows characteristics indicative of a young bird
- L - Molt limit; molt limit between juvenile and formative feathers
- F - Formative; feather tract comprised entirely of formative feathers
- B - Basic; feather tract entirely of basic feathers or non-feathered body part shows characteristics indicative of an adult bird
- R - retained; both juvenile and basic feathers are present within the tract (typically with woodpeckers only)
- M - Mixed; multiple generations of basic feathers are present in the tract (typically with woodpeckers only)
- A - Alternate; **ALL** feathers in the tract are of alternate plumage; **exception** – if some of the body feathers are alternate, then the BPL column should be scored A.
- N - definitely not juvenile feathers, but whether or not they are formative or basic feathers cannot be determined with confidence
- U - Unknown; feather tract or non-feathered body part examined, but shows ambiguous characteristics or cannot be coded with confidence

## Status (more status codes online at BBL website)

- 300 – Normal, healthy, banded bird.
- 301 – Healthy, color-banded bird.
- 318 – Blood sample taken; healthy, banded bird.
- 325 – Radiotag/GPS; healthy, banded bird.
- 500 – Banded but injured or diseased.
- 700 – Held over 24 hours for observation or rehabilitation.
- 000 – Unbanded or dead.

## Disposition

- M - Malformed (deformity such as crossed mandibles).
- O - Old (healed) injury.
- I - Ill (diseased).
- S - Stress or shock.
- E - Eye injury.
- T - Tongue injury.
- W - Wing injury.
- B - Body injury.
- L - Leg injury.
- P - Predator-caused mortality.
- D - Dead (or permanently removed).

## Feather Pull

- O - two Outer rectrices
- I - one Inner and one outer rectrix

## WRP – Wolfe-Ryder-Pyle Ageing codes (2022 update)

The first of the three characters indicates the cycle:

- F - first cycle
- S - second cycle
- T - third cycle – used mostly for woodpeckers for MAPS purposes
- 4 - fourth cycle – not typically used for MAPS purposes
- D - definitive cycle
- U - unknown cycle

The second of the three characters indicates the molt status:

- C - mid-cycle, no molting feathers on bird
- P - bird in molt
- U - unknown

The third of the three characters indicates the plumage the individual is into which it is molting:

- J - juvenile plumage, distinguished from definitive basic plumage as the first generation of feathers (after down)
- F - formative plumage
- A - alternate plumage
- B - basic plumage
- X - auxiliary formative
- U - unknown plumage

An adjunct code – placed before the three-character core code –to indicate when the core code cannot be specifically defined.

M - at minimum

H or A- specific to FCF. To separate HYs (H) and SYs (A)

The most common codes used during MAPS:

- FPJ - **F**irst **p**rejuvenile molt, molting into juvenile plumage.
- FCJ - **F**irst **c**ycle **j**uvenile plumage, in full juvenile plumage, only juvenile feathers are present.
- FPF - **F**irst **p**reformative molt, molting into formative plumage.
- FCF - **F**irst **c**ycle **f**ormative plumage, in full formative plumage, has a mixture of juvenile and formative feathers.
  - H-FCF – HY bird in FCF plumage
  - A-FCF – SY bird in FCF plumage
- M-FCF - **M**inimum **f**irst **c**ycle **f**ormative or unknown plumaged adults.
- FPA - **F**irst **p**realternate molt, molting into first alternate plumage.
- FCA - **F**irst **c**ycle **a**lternate plumage, full alternate plumage, a mixture of juvenile, formative and alternate feathers.

M-FCA - **M**inimum **f**irst **c**ycle **a**lternate

SPB - **S**econd **p**rebasic molt, molting into definitive basic plumage. During this portion of the molt, must retain some juvenile, formative or first alternate feathers as contrast to the new basic feathers.

M-SPB - **M**inimum **s**econd **p**re-basic **m**olt

DCB - **D**efinitive **c**ycle **b**asic plumage, full basic plumage.

DPA - **D**efinitive **p**realternate molt, molting into definitive alternate plumage.

DCA - **D**efinitive **c**ycle **a**lternate plumage, full alternate plumage, a mixture of basic and alternate feathers.

DPB - **D**efinitive **p**rebasic molt, molting into definitive basic plumage. During this portion of the molt, must retain at least some worn definitive basic and/or definitive alternate feathers as contrast to the newly replaced basic feathers.

FCU - **F**irst **c**ycle **u**nknown plumage, known to be in first cycle but unknown if in formative or alternate plumage.

DCU - **D**efinitive **c**ycle **u**nknown plumage, known to be in definitive cycle but unknown if in definitive or alternate plumage.

UCU - **U**nknown **c**ycle **u**nknown plumage.

Less common codes:

SCB - **S**econd **c**ycle **b**asic plumage, basic plumage with a few retained juvenile feathers. This code will most likely be used only for woodpeckers during MAPS banding.

TPB - **T**hird **p**rebasic molt, molting into definitive basic plumage. During this portion of the molt, must retain at least some juvenile and prior generation basic feathers as contrast to the newly replaced basic feathers.

TCB - **T**hird **c**ycle **b**asic plumage, the individual is in basic plumage with a few retained prior generation basic feathers. This code will most likely be used only for woodpeckers during MAPS banding.

*UPB, UPU, and UUU can be used when insufficient information is available for ageing but these should be used infrequently.*