

## **Dabbling and diving ducks**

The similarities in behaviour, ecology and habitat preferences of dabbling and diving ducks mean that several species can be surveyed simultaneously using similar methods, even though there are differences between species in the timing of breeding, choice of habitat, etc.

In Europe, the most detailed consideration given to the survey of breeding duck populations, including validation of survey methods, has occurred in Finland (eg Koskimies and Poysa 1985, 1987, 1989, Koskimies and Vaisanen 1991, Poysa and Nummi 1992, Poysa et al 1993, Poysa 1996). Although there have been relevant studies elsewhere – eg Iceland (Gardarsson 1979), Scotland (Boyd and Campbell 1967, Newton and Campbell 1975), Czech Republic (Musil 1995, 1996) – the methods developed in Finland allow surveys which are rapid and easy, with fieldwork which is systematic and standardised.

Standing waters (eg reservoirs, lakes) require slightly different survey techniques to those needed for drier wetland habitats (eg wet grassland, marsh, fen). The method suggested here for standing waters is based on the work conducted so far in Finland; that for wet grassland, etc, is based on the RSPB's reserve monitoring programme. These methods are recommended for wigeon, gadwall, teal, pintail, garganey, shoveler, pochard and goldeneye.

### **Breeding season survey – population**

#### **Information required**

- maximum number of males, females or pairs, alone or in groups
- map showing the boundary of the survey area.

#### **Number and timing of visits**

Three visits, about one month apart: early to mid-April, early to mid-May and early to mid-June.

#### **Time of day**

Early morning, visits to be completed by 1000 BST.

#### **Weather constraints**

Do not survey when visibility is poor, or in high winds when large expanses of water are very choppy.

#### **Sites/areas to visit**

Standing waters, usually fringed with emergent vegetation. Also wet grassland, marshes, fens, etc, occupied by breeding ducks.

#### **Equipment**

- 1:25,000 OS map of the survey area
- enlarged map showing the most important landmarks and the shape of the shoreline (optional)
- boat (optional)
- telescope (optional).

#### **Safety reminders**

Take extra care when working close to water and, if any boat trips are

necessary, make sure at least two people are present and that life-jackets are worn.

### **Disturbance**

For smaller sites with good vantage points and hides, systematic scanning of all habitat using a telescope causes less disturbance and produces less confusing results.

### **Methods**

When surveying standing water, map the boundary of the survey area and mark on the map the survey route. Walk as close to all suitable habitat as is (safely) possible, paying particular attention to ditches, small bays and reedbed edges. Use suitable vantage points to count the diving species on open water. It may not be necessary to visit some parts of the site if they are easily observed from a distance with binoculars or a telescope. To see all of the shoreline, however, you may need to walk or row around most of the waterbody keeping close to the shore. Two observers are essential when censusing large stretches of water by boat.

When surveying grassland / marsh habitats, set and mark a transect route on a map of the site which will take you to within 100 m of every point within suitable habitat. Walk along any ditches present as these birds could go unnoticed.

In both cases, reverse the direction of the route on the second visit to avoid visiting the same part of the site at the same time of day (particularly important at large sites), and use the same route each year.

Identify the species and sex of individuals and groups. Either record observations directly on a map or cross-reference notebook records to a map. Record the birds according to the following example:

Teal    ♂♀ + ♂ + ♂♀ + ♂ + 3♂♂ + 2♂♂ + ♀  
(♂ = single male, 3♂♂ = group of three males, ♂♀ = pair, etc)

Include all large groups, eg 5♂♂3♀♀ (or simply write the total number of individuals), but be careful to distinguish between breeding individuals and flocks of non-breeding or late wintering individuals, eg teal, which may be present late into the breeding season.

Try to avoid overlooking or double-counting birds which have flown or swum from one place to another by writing down the direction of flight and landing place of any birds seen in flight, especially if adjacent waterbodies are counted in succession on the same day.

### *Interpretation of census results*

Count the following as breeding pairs:

For wigeon, gadwall, teal, pintail, garganey, pochard and shoveler:

- single pair (♀♂)
- lone male (♂)
- males in groups of 2–4 (2–4 ♂♂ = 2–4 pairs)
- small male groups chasing a female (2–4 ♂♂ 1 ♀ = 2–4 pairs)
- lone females (♀), if their total number is larger than that of males (♂).

For goldeneye:

- adult male (♂)
- pair (♀♂).

Exclude groups of five or more males in the estimates of breeding pairs. Larger groups and flocks are probably non-breeding or wintering flocks.

For each visit, calculate the number of pairs for each species and use the maximum number of pairs recorded during any of the visits for year-to-year comparisons.

### Breeding season survey – productivity

A quarter to a third of the UK goldeneye population nests in artificial nestboxes. Many of these sites are well-monitored by the Scottish Goldeneye Study Group. The following method will give an *index* of productivity for a range of dabbling and diving ducks.

#### Information required

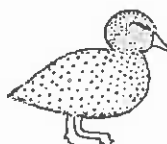
- number of males, females or pairs, alone or in groups
- number of ducklings, broods and brood sizes (also size of young).

#### Number and timing of visits

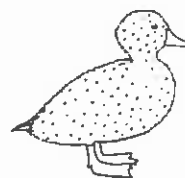
Two visits, one in mid-June and one in mid-July. The first visit should, if possible, correspond with the third visit of the population survey (above).



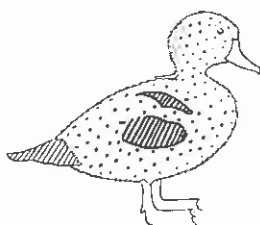
**Class I A** Down-covered; 1–7 days old.



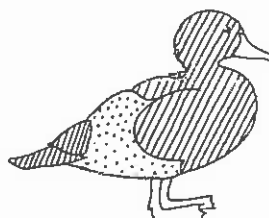
**Class I B** Down-covered but colour fading; 8–13 days old.



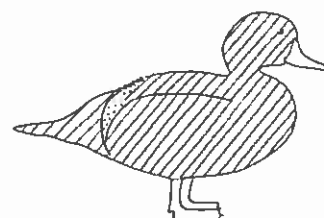
**Class I C** Down-covered but colour faded, body elongated; 14–18 days old.



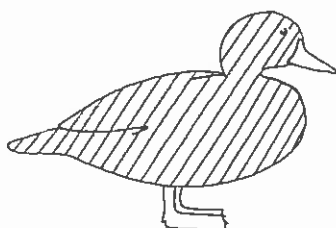
**Class II A** First feathers appear, replacing down on sides and tail; 19–27 days old.



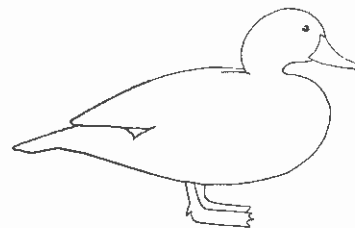
**Class II B** Over half of body covered with feathers; 28–36 days old.



**Class II C** Small amount of down remains, among feathers of back; 37–42 days old.



**Class III** Fully feathered but incapable of flight; 43–55 days old, flying at 56–60 days.



Adult dabbling duck.

**Figure 5**  
Plumage development of young waterfowl (after Gollop and Marshall 1954).

**Time of day , Weather constraints, Sites/areas to visit,  
Equipment, Safety reminders, Disturbance**

As for population survey (above).

**Methods**

Use the same survey area and survey route adopted for the population survey (above). Record all ducks seen, noting their sex and whether they were individuals or groups, as for the population survey. Record the number of lone adults, the number of young and the number of broods attended by adults. Record the age class of the young as a fraction (eg  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$ , etc) of the adult size. Figure 5 shows the plumage development of young waterfowl and will help with ageing. This can help distinguish between different broods on subsequent visits. Pay particular attention to places where duck broods may seek concealment. Record the additional information according to the following example:

Teal ♀ + 8 ( $\frac{1}{4}$ ) Female with eight quarter-grown young  
or Teal ♀ + 8 ( $\frac{3}{4}$ ) Female with eight three-quarters-grown young

For each species, report productivity as the maximum number of young of at least  $\frac{3}{4}$  adult size (about three weeks old) seen on any one visit, divided by the number of breeding pairs (from the population survey, above).

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