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The Ornithological Skills Pyramid: Creating a Benchmark for the Ecological Consultancy Community



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The baseline level of ornithological knowledge in commercial consultancy often falls below an acceptable standard. Using MKA Ecology's in-house bird skills evaluation process, we undertook a preliminary consultation to mirror the design of the BSBI's Botanical Field Skills Pyramid, but with a focus on commercial ecological surveying. We present the Ornithological Survey Skills Pyramid as a work in progress, and invite CIEEM member input.

Bird identification: a dark art?

Is it the perceived difficulty of identifying bird songs and calls? Most surveyors will detect 60–70% of species by call and song alone, so its importance cannot be underestimated. Among the uninitiated, the seeming

impossibility of learning bird song is often expressed. However, just think about this for a moment. How many songs on your playlist can you identify by their first riff? Hundreds? How many actor or sports pundit voices do you instantly recognise? Dog owners can even identify their own dog's bark, so learning individual sounds is not the actual problem.

It is more a question of timing, and learning over the course of a calendar year so that by the time you encounter the glory of a May dawn chorus, you know a solid foundation of bird songs well enough to pick out the individual species. You have the skill set already. It's just about training your aural muscle memory, and a bit of formal mentoring support.

Background

Experience tells us that the baseline level of ornithological knowledge in commercial consultancy can often fall below an acceptable standard. Moreover, training for continuous professional development in this taxonomic group is patchy at best. This

is compounded by the absence of a published reference of what constitutes an acceptable standard. The reasons for this may be attributable to the *false* presumptions that:

- it is self-evident by either designation or habitat type whether further bird surveys are required
- because bird surveys are less frequently recommended as a further survey requirement when compared to most other groups, the skills are not needed
- bird identification is inherently difficult, with a degree of elitism among those who have the skill, and requires the use of expensive specialist equipment
- if you are not a life-long birder there is no measurable standard you can aspire to and attain, resulting in self-exclusion from bird knowledge development.

This is in stark contrast to the position within the wider public and stakeholder community. Birds are arguably the taxonomic group with the broadest and most knowledgeable skill base in the wider community, leading to a vocal and informed local interest.

This situation has several impacts on the ecological consultancy profession:

- Some specially protected species and birds of conservation concern are probably not being appropriately evaluated in the Preliminary Ecological Appraisal (PEA)/Ecological Impact Assessment (EiA) process.



Figure 1. Hobby: a Schedule 1 species that is again declining after a period of sustained population increase (563% up since 1973). Hobbies are difficult to detect at breeding sites until young are being fed, and are easier to find in August. When did you last commission a species-specific hobby survey? Photo: David Wege.

- Poor species lists in preliminary evaluations promote a perception that professional ecology is ill-informed. This can be cited by knowledgeable stakeholders (of which there are many) as an indication of the low standard of professional ecological expertise, even if (as is often the case) the evaluation report is generally of high quality.

In bird and wildlife fora that cut across natural history communities, consultancy is often criticised for poor knowledge levels. Consultants find themselves called upon to defend the profession, and without an objective standard of skills measurement, the profession remains exposed to this (perhaps justifiable) criticism.

An accessible, achievable baseline for ornithological survey skills and knowledge

To kick-start the development of a measurable standard, and using MKA Ecology's in-house bird skills evaluation process, we undertook a preliminary consultation with the aim of mirroring the design of the Botanical Society of Britain and Ireland (BSBI) Botanical Field Skills Pyramid (Whild and Townsend 2007), but with a defined focus on commercial ecological surveying.

“ This benchmark is intended for all professional ecological surveyors who undertake PEA surveys within a commercial context. ”

Many ecologists are 'generalists'. Some will specialise in a specific taxonomic group, but a certain level of competence in all groups is required to evaluate a site. Our experience has shown that an early career ecologist can go from 'novice' to 'capable' (see Figure 2) within a year, given both in-house support and the desire for knowledge development. By refining the Ornithological Survey Skills Pyramid through further consultation, we have an opportunity to raise the standard within our consultancy community. Early career ecologists coming through can shine in this area, where the current generation as a whole perhaps have not. It's a matter of will, in-house support and self-belief. Now more than ever, there are many tools to assist in that journey, from the excellent British Trust for Ornithology bird identification series of identification videos (www.bto.org/develop-your-skills/bird-identification/videos) to self-development quizzes on bird song (www.birdid.no/bird/training.php).

Purpose of the pyramid

The Ornithological Survey Skills Pyramid describes the expertise required for delivering survey requirements and assessments associated with the development sector. The purpose is thus to formalise the learning curve required to undertake basic site evaluation surveys, but also to outline the skill base for undertaking bespoke ornithological surveys. The primary reason for developing the pyramid is the need for a baseline benchmark. However, in creating it we also recognised that the upper tiers of the ornithological survey skill base would benefit from a similar approach.

Intended audience and exclusions

This benchmark is intended for all professional ecological surveyors who undertake PEA surveys within a commercial context.

Certain specific elements of ornithological expertise are not included, including experience in ringing, policy areas and research. Nesting bird checks are also beyond the scope of this benchmark. No best practice guidance currently exists for nesting bird checks,

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resulting in wide interpretation of a practice which urgently requires an industry-wide review.

Developing the skill set

The training required to move surveyors through this progressive pyramid has not been addressed here. As with all field skills, experience, repetition and mentorship are key to progression. We firmly believe that the progression to Level 3 can be achieved through the dual processes of in-house training combined with self-development. The development from Level 3 to 5 and above is more challenging and requires a great deal of personal commitment should one wish to specialise in this taxonomic group. It is still eminently achievable but, as with all specialisms, the journey can be challenging and requires personal commitment. That high interest level that will only ever appeal to a few.

Review process

The Ornithological Survey Skills Pyramid (Figure 2) is presently a work in progress, although a discreet consultation process has taken place. The pyramid has been subject to initial review by the CIEEM Professional Standards Committee, Dawn Balmer, Guy Belcher, Jamie Dunning, Phil Edwards, James Heywood, Tim Hounsome, Jane Kohler, Will O'Connor, Rob Robinson, Andy Symes, Duncan Watson and Paul Watts. It has also been informed by the developing *Bird Survey Guidance for Ecological Impact Assessment: Provisional Guidelines* (directed by the CIEEM Bird Survey and Assessment Steering Group). As a work in progress, we would welcome your input, so please do contact the authors by **1 May 2021**.

Levels of the pyramid

Each level builds on/is additional to the previous one, and requires fulfilment of all/most knowledge areas/

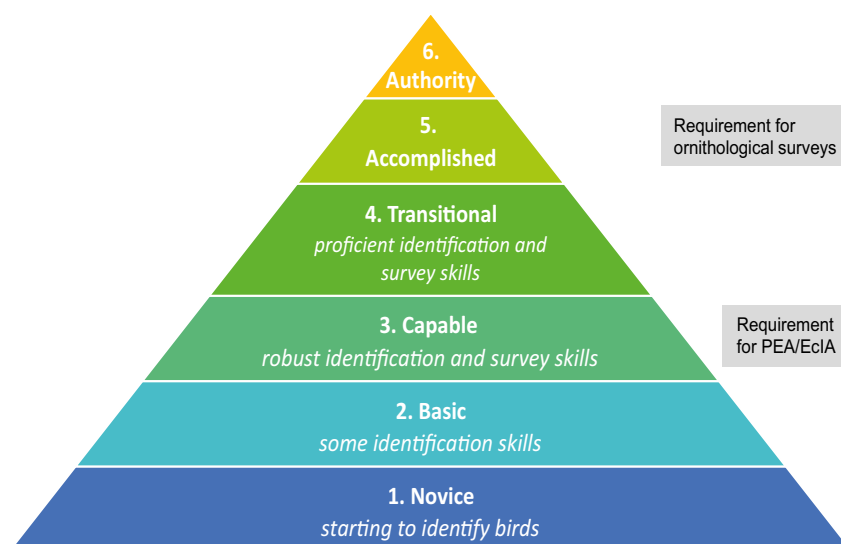


Figure 2. The Ornithological Survey Skills Pyramid

1. Novice: starting to identify birds

Can recognise some (c.20, e.g. see Appendix 1) common bird species by sight, but very limited bird call or song identification. Ideally participating in the BTO's Garden BirdWatch and/or RSPB's Big Garden Birdwatch.

2. Basic: some identification skills

Can identify the common birds of garden, urban and rural areas (c.50–70 species, e.g. see Appendix 2) by sight, and can identify some of these species in flight and by call and song. Aware of bird behaviours and phenology (breeding season and migration) but not yet a detailed understanding.

3. Capable: robust identification and survey skills

Minimum requirement for undertaking PEA and EcIA

Within a defined geography and set of habitats, able to identify most of the common resident, migrant breeding and wintering species by sight, and the commonest of these in flight and by song and/or call. Creating accurate lists on PEA surveys (as appropriate to their geographic and habitat expertise), but able to recognise their own limitations in terms of knowledge and experience, and taking guidance prior to surveys to address limitations and potential pitfalls. Able to recognise the need for further ornithological survey. Familiar with the most frequently encountered birds listed on Schedule 1 of the Wildlife and Countryside Act (1981) (Appendix 3) and the UK Red List for Birds (Birds of Conservation Concern) (www.bto.org/our-science/publications/psob and Eaton *et al.* 2015) within their geography and

set of habitats. Can identify common raptors and farmland waders at distance. Has an understanding of bird phenology (breeding season, migration, bottlenecks, flocks and roosts/influxes of winter migrants, etc.), and the importance of it for predicting species presence (especially those on Schedule 1 and Birds of Conservation Concern). An awareness of the conservation status, distribution and ecological requirements of species which are likely to be encountered within the survey area and adjacent habitats (informing an awareness of species that could be missed on a single visit). Has an understanding of legislation around protected species. Ideally submitting their observations to BirdTrack, eBird or their county bird recorder as they build their field experience. May be participating in transect and/or territory mapping projects (including in the voluntary sector).

4. Transitional: proficient identification and survey skills

Routinely undertaking PEA/ EcIA surveys across a range of geographies and habitats, and providing supervision/oversight for those at Level 3

Can identify by sight, typical song and call any of the 244 species of breeding, passage or wintering birds for which there are significant populations in the UK (i.e. the species assessed for the UK Red List for Birds (see Eaton *et al.* 2015) and that are relevant to the surveyor's geographies/habitats). Able to identify, through a knowledge-based process, more challenging and rarer species. Demonstrated knowledge of common identification pitfalls (and ability to mitigate appropriately). May have specific

species-group or habitat expertise such as waders/waterbirds, estuaries, etc. Able to judge which species are likely to be encountered in a given habitat, geography and time of year (accounting for phenology, behaviour and geographic distribution), with special reference to Schedule 1 species and Species of Conservation Concern. Able to undertake territory mapping, species-specific surveys and accompanied estuary surveys having shadowed a Level 5 or 6 ornithologist on a range of surveys. May be a member of a relevant society and submitting their observations as appropriate.

5. Accomplished: very good identification and survey skills

Minimum requirement for undertaking ornithological surveys professionally (and independently)

Experienced in identification of the bird species that occur in the UK on their breeding and wintering grounds, and at migration bottlenecks, or able to identify them through a knowledge-based process. Able to identify species in flight based on calls and short views. Can easily identify waders/waterfowl at an estuary in winter and experienced in the use of a telescope for identification and observation. Familiar with identification and ageing of difficult groups such as gulls and waders. Experienced in counting large flocks accurately (within 10%). Full understanding of bird phenology, habitat requirements and geographic distribution. Confident in undertaking breeding and wintering (e.g. Wetland Bird Survey, WeBS) bird surveys unsupervised and in a variety of habitats, using territory mapping/ transect/point count methodologies as appropriate. Able to determine which survey methodology is appropriate, and also the knowledge and awareness of how to analyse the results. Has a full understanding of the legislation around protected species.

6. Authority: excellent field ornithologist

A widely experienced field ornithologist and in a position to train in ornithological survey skills, ecological assessment and survey, survey design and analysis. Significant experience observing all species that do/could occur in the UK. May be involved in one or more of: WeBS counts, Breeding Bird Surveys (BBS), atlas projects or species-specific research. Confident in determining where species-specific surveys are needed, and under which methodology (e.g. for nocturnal/ crepuscular species).

expertise/experience in the previous tier before progression. At each level, the surveyor should be able to recognise their own limitations in terms of knowledge and experience.

Levels 1–3 present a pathway to delivering PEAs and EclAs, which all

professional ecologists should aim to achieve.

Levels 4–6 describe levels that require significant desire, commitment and passion but provide a benchmark for undertaking bespoke ornithological surveys.

The pyramid allows for flexibility in terms of geography, habitat factors and circumstances.

Appendices

Appendix 1. Top 20 commonest birds in RSPB's Big Garden Birdwatch (2020)

House Sparrow	Robin	Feral Pigeon
Starling	Long-tailed Tit	Coal Tit
Blue Tit	Magpie	Carrion Crow
Woodpigeon	Chaffinch	Greenfinch
Blackbird	Collared Dove	Wren
Goldfinch	Dunnock	Song Thrush
Great Tit	Jackdaw	

Appendix 2. The 70 regularly recorded birds in RSPB's Big Garden Birdwatch.

House Sparrow	Bullfinch	Redpoll
Starling	Rook	Mistle Thrush
Blue Tit	Jay	Yellowhammer
Woodpigeon	Herring Gull	Barn Owl
Blackbird	Blackcap	Red-legged Partridge
Goldfinch	Common Gull	Tawny Owl
Great Tit	Siskin	Chiffchaff
Robin	Pied Wagtail	Raven
Long-tailed Tit	Sparrowhawk	Lesser Black-backed Gull
Magpie	Buzzard	Linnet
Chaffinch	Goldcrest	Little Owl
Collared Dove	Red Kite	Great Black-backed Gull
Dunnock	Mallard	Mute Swan
Jackdaw	Redwing	Meadow Pipit
Feral Pigeon	Stock Dove	Corn Bunting
Coal Tit	Green Woodpecker	Grey Partridge
Carrion Crow	Treecreeper	Tufted Duck
Greenfinch	Moorhen	Skylark
Wren	Marsh Tit	Great Crested Grebe
Song Thrush	Fieldfare	Lapwing
Great Spotted	Kestrel	Gadwall
Woodpecker	Grey Heron	Teal
Nuthatch	Grey Wagtail	Wigeon
Pheasant	Reed Bunting	

Appendix 3. Most frequently encountered breeding species from Schedule 1: Birds of the Wildlife and Countryside Act (1981)

Great Bittern	Avocet	Cetti's Warbler
Garganey	Stone-curlew	Dartford Warbler
Goshawk	Little Ringed Plover	Firecrest
Marsh Harrier	Mediterranean Gull	Marsh Warbler
Red Kite	Little Tern	Bearded Tit
Hobby	Barn Owl	Crossbill
Peregrine	Kingfisher	Cirl Bunting
Quail	Woodlark	
Corncrake	Black Redstart	

References and further reading

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