

A NEW YORK PERSPECTIVE ON THE 2016 SUPPLEMENT TO THE CHECK-LIST OF NORTH AMERICAN BIRDS

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In July 2016, the AOU's *North American Classification Committee* (NACC) published its 57th Supplement to the *Check-list of North American Birds* (Chesser et al. 2016). As in previous years, the update has interesting and very real consequences for the *Checklist of the Birds of New York State* <<http://www.nybirds.org/Publications/ChecklistNYS.htm>>, which is maintained by NYSOA's New York State Avian Records Committee (NYSARC).

As a service to NYSOA members the present article provides a digest of the changes involving the species occurring in New York State with some background on the thinking that went into these often complex decisions. A strong theme in this update is improving the alignment of the AOU Check-list with other major lists such as those used by eBird and the *Handbook of Birds of the World* (HBW). See web addresses at the end of this article for links to these reference materials.

Readers are strongly encouraged to look at the 57th Supplement itself, and to read over the individual proposals and comments that the Committee considered. These documents provide welcome transparency to the process, along with a wealth of ornithological wisdom. Links to these, and also to several of the most prominent among other checklists, are given at the end of the present article. In pondering the details, it is worth reflecting on how the revisions affect your own perceptions of the birds themselves. Do they tell us more about their lives? Does this leave you with a better sense of the structure underlying the extraordinary diversity of living birds? It is also a good opportunity to think about the ways that you interact with ornithological publications, field checklists, sightings databases and other resources.

Shuffling the deck: does this bring clarity or confusion?

Modern avian systematics deals with evolutionary relationships among birds and relies on a combination of morphological, biochemical, biogeographical, vocal and behavioral evidence along with other measurable traits such as the relatedness of ectoparasites. In simple terms, diverse populations of birds can be progressively subdivided at the level of order then family then genus and finally species; each successive category proposing a more granular measure of shared ancestry. The extensive use of gene sequencing has been especially instructive—some might say, explosive—in terms of clarifying the higher-order relationships between the 35 or so orders and more than 230 families that

encompass all living birds (Fjeldså 2013, Cracraft 2013). Increasingly this work is often performed on a scale that requires a small army of scientists spread across multiple institutions if not the globe. Some of the discoveries are akin to an earthquake, violently shaking and rearranging what we thought we knew about the relationships between birds. For instance, we've already seen the caracaras and falcons wrenched away from the hawks and other diurnal raptors to be placed awkwardly between woodpeckers and parrots. Hold on tightly to your binoculars, because the seismic upheavals are not over yet.

Drawing most heavily on the congruent findings of two immense studies by separate research programs (Jarvis et al. 2014 and Prum et al. 2015), the 57th Supplement lays out a large number of radical higher-level changes, aftershocks following the initial quake. From the standpoint of the *Checklist of the Birds of New York State* the positions of a whopping fifteen orders of non-passerines and three families of passerines (song birds) are now changed. These are summarized in Table 1 and have been incorporated into the online checklist. In addition, the following Passerine families are now listed between Bombycillidae (Waxwings) and Calcariidae (Longspurs & Snow Buntings):

Passeridae - Old World Sparrows (House Sparrow)

Motacillidae - Wagtails & Pipits

Fringillidae - Finches & Crossbills

The New World vultures, represented in NYS by Turkey Vulture *Cathartes aura* and Black Vulture *Coragyps stratus*, have always been difficult to place. Although similar to other diurnal raptors (Old World vultures, eagles, hawks and falcons) on a superficial level, vultures exhibit a number of anatomical and behavioral differences from hawks and falcons such as the inability to grasp strongly with their feet and the rather disgusting habit of defecating on their bare legs as a way to cool themselves. When molecular studies by Sibley and Ahlquist (1990) indicated that American vultures, and their cousins the condors, were in fact closely related to storks (*Ciconiidae*), many commentators felt that the puzzle had finally been solved and the revision was adopted by the AOU in 1998. Then, to the chagrin of the "of course they are storks" crowd, the AOU reversed its stance in 2007 and moved the New World vultures into the Falcons and Caracaras (*Falconiformes*)! This too was short-lived and, based on the newer DNA sequencing studies, the New World vultures and condors are now in a separate order (*Cathartiformes*). This is considered a sister grouping to the hawks and allies (*Accipitriformes*). Given the uncertainties, the shuffles may continue and indeed affinities to other orders have been noted. The one thing that seems to be clear is that more analysis is needed, either to cement the present taxonomy or support additional changes.

Although based on the latest scientific information, there remains an element of subjectivity in avian systematics with the prospect of continued flux as more information is collected and as our thinking about evolutionary

Table 1. Changes to the sequence of avian orders in the 2016 Supplement.

OLD

ANSERIFORMES (Geese, Swans, Ducks)
 GALLIFORMES (Gallinaceous birds)
 GAVIIFORMES (Loons)
 PODICIPEDIFORMES (Grebes)
 PROCELLARIIFORMES (Sea Birds)
 PHAETHONTIFORMES (Tropicbirds)
 CICONIIFORMES (Storks)
 SULIFORMES (Frigates, Boobies, Cormorants, Anhingas)
 PELECANIFORMES (Pelicans, Bitterns/Herons, Ibises)
 ACCIPTRIFORMES (Vultures, Osprey, Kites/Eagles/Hawks)
 GRUIFORMES (Rails, Gallinules, Coots, Cranes)
 CHARADRIFORMES (Stilts, Avocets, Oystercatchers, Plovers, Sandpipers)
 COLUMBIFORMES (Pigeons & Doves)
 CUCULIFORMES (Cuckoos)
 STRIGIFORMES (Owls)
 CAPRIMULGIFORMES (Goatsuckers)
 APODIFORMES (Swifts & Hummingbirds)
 CORACIIFORMES (Kingfishers)
 PICIFORMES (Woodpeckers)
 FALCONIFORMES (Falcons)
 PSITTACIFORMES (Parrots)
 PASSERIFORMES

NEW

ANSERIFORMES (Geese, Swans, Ducks)
 GALLIFORMES (Gallinaceous birds)
PODICIPEDIFORMES (Grebes)
COLUMBIFORMES (Pigeons & Doves)
CUCULIFORMES (Cuckoos)
CAPRIMULGIFORMES (Nightjars)
APODIFORMES (Swifts & Hummingbirds)
GRUIFORMES (Rails, Gallinules, Coots, Cranes)
CHARADRIFORMES (Stilts, Avocets, Oystercatchers, Plovers, Sandpipers)
PHAETHONTIFORMES (Tropicbirds)
GAVIIFORMES (Loons)
PROCELLARIIFORMES (Sea Birds)
CICONIIFORMES (Storks)
SULIFORMES (Frigates, Boobies, Cormorants, Anhingas)
PELECANIFORMES (Pelicans, Bitterns/Herons, Ibises)
CATHARTIFORMES (New World Vultures)
ACCIPTRIFORMES (Osprey, Kites/Eagles/Hawks)
STRIGIFORMES (Owls)
 CORACIIFORMES (Kingfishers)
 PICIFORMES (Woodpeckers)
 FALCONIFORMES (Falcons)
 PSITTACIFORMES (Parrots)
 PASSERIFORMES

relationships becomes more refined. This is a work-in-progress and it is impossible to know if the latest shuffles will remain in perpetuity or will succumb to further rearrangements. Concerned about this constant reordering and the confusion that results, a cadre of leading field guide authors have pushed for a more user-friendly and stable sequence of bird families and other distinctive taxa or groups that can be used in field guides and related publications (Howell et al. 2009). They don't disagree with the scientific reasoning for taxonomic overhauls but argue that in field guides, similarities in appearance are more important than the underlying evolutionary relationships and point out that field guide designs that mirror an official taxonomic sequence will soon become outdated.

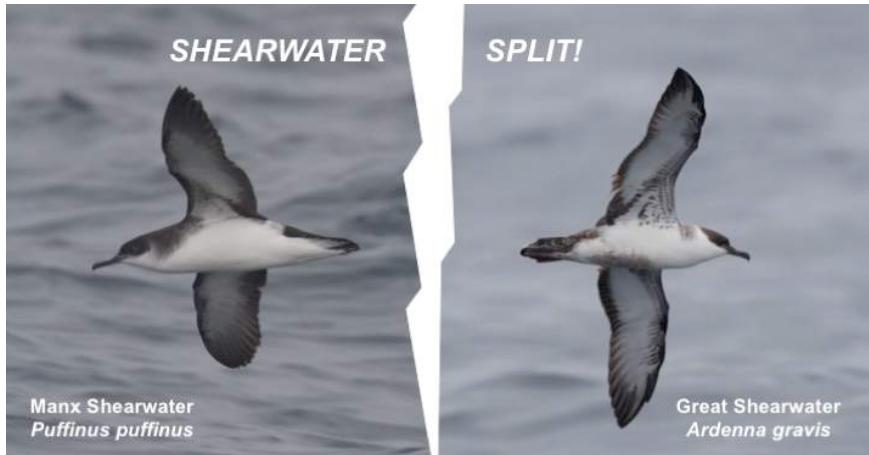
I'm inclined to agree. Having learned in my youth the classic sequence used by Bruun and Singer (1975), I still find it difficult to flip to the right section of a modern field guide or jump quickly to the right place on a checklist. In the revised *Checklist of the Birds of New York State*, there are now almost eighty species separating the grebes from the alcids, which they can resemble, and twice that many between grebes and loons. When struggling to identify a fast diving bird it makes sense to have the main candidates only a page or two apart, if that. Similarly, larks and longspurs are often found in the same habitat and can be mistaken for one another and yet are also widely separated when presented in the current taxonomic order. Should seasoned birders need to use the index to find the ever-mobile New World vultures? The conversation about whether or not to follow taxonomic order or something more intuitive or at least stable is for another discussion. However, this is something that everyday birders, the ultimate users of field guides and checklists, should be expressive about.

Buried among these tectonic shifts are a couple of comparatively trivial changes to the list positions within the shorebirds and vireos. The genus *Actitis*, which for us includes Spotted Sandpiper *Actitis macularius*, and the *Tringa* sandpipers, with four representatives on the NYS list, move down to just above the Phalaropes. Further down the list, analysis of nuclear and mitochondrial DNA sequences prompted a major overhaul of the organization of genera and the linear sequence of North American vireos (Slager et al. 2014). As a result, the list positions of Warbling Vireo *gilvus* and Philadelphia Vireo *V. philadelphicus* are swapped. These small moves are a manageable inconvenience.

New genus names for two shearwaters and Sandhill Crane

OK, let's begin with the shearwaters. No armchair lifers for anyone, just recognition of the differences between two of the larger shearwaters: Sooty and Great Shearwater, which become *Ardenna griseus* and *Ardenna gravis*, respectively, and the two smaller 'black-and-white' shearwaters: Manx and Audubon's Shearwaters, which remain in the genus *Puffinus*. This partition seems intuitive and will find ready acceptance with most field birders. It is based

on the findings of two now rather dated molecular studies (Penhallurick and Wink 2004; Austin et al. 2004) and was already recognized by a number of important agencies including BirdLife International (del Hoyo and Collar 2014).



In animal cells there are two sets of genetic information, the very large and complex genome that is stored in the nucleus and a much smaller set in the mitochondria. The nuclear genes are contributed by both parents whereas the mitochondrial genes are inherited from the mother only. Mitochondrial genes are favored in molecular phylogenetic studies because they evolve fast enough to accumulate differences between populations that have diverged very recently; however, there are technical biases associated with using mitochondrial rather than nuclear gene sequences (Prychitko and Moore 2000). Both shearwater studies used the same mitochondrial gene and confirmation using nuclear genes is needed. That said, the *Ardenna/Puffinus* split makes sense in terms of the physical appearance of these species and, is also supported by differences in their geographic distribution. Sooty and Great Shearwaters breed on temperate islands in the Southern Hemisphere and migrate across the equator into the North Atlantic during their non-breeding season. Manx Shearwaters, on the other hand, breed in the North Atlantic, predominantly in the British Isles and Iceland, and make a trans-equatorial migration in the other direction. Although not yet proven, some of the Manx Shearwaters seen in New York might come from colonies in Atlantic Canada and nesting may occur as close to us as Massachusetts. Audubon's Shearwater is also an exclusively northern hemisphere breeder, with the majority nesting in the Bahamas and presumably following the Gulf Stream into New York offshore waters. As a side note, the relationship trees cited in these studies suggest that Sooty Shearwater is more closely related to Great Shearwater than to Short-tailed Shearwater (*A. tenuirostris*), which looks very similar to Sooty Shearwater and is also a

southern hemisphere breeder that migrates into the northern hemisphere in austral winter.

The other genus name change affecting the *Checklist of the Birds of New York State* is the move of Sandhill Crane from *Grus* to *Antigone* so that the species name is now *Antigone canadensis*. As with the shearwaters, this brings the AOU in line with other authorities (del Hoyo and Collar 2014), and is also based on a study of mitochondrial gene sequences that indicates a closer affinity to *Antigone* cranes (Saurus, White-naped and Brolga) than to the *Burgeranus* (Wattled), *Anthropoides* (Blue, Demoiselle) and *Grus* (Red-crowned, Whooping, Common, Hooded and Black-necked) cranes (Krajewski et al. 2010). In this case the lineage trees are derived from complete mitochondrial genomes rather than just a portion of a single mitochondrial gene. That said, the new arrangement could still be upset by analysis of nuclear genes. An interesting point to consider is that, although it is no longer in the *Grus* genus, Sandhill Crane can hybridize with members of genera other than its own, such as Whooping Crane *Grus americana*, Common Crane *Grus grus* and even Wattled Crane *Burgeranus carunculatus*.

Common and Hoary Redpolls survive...for now at least.

Looking ahead, the Supplement notes that a decision on a proposal to bring together ('lump') Common (*Acanthis flammea*) and Hoary Redpolls (*A. hornemanni*) into one species has been postponed. The decision—if and when it comes—will doubtless be influenced by a 2015 study which compared more than 23,000 variable sites in the Redpoll genetic material and found no evidence of prolonged reproductive isolation (Mason and Taylor 2015). Researchers in the Lovett group at the Cornell Lab of Ornithology, Nick Mason and Scott Taylor have written a less technical account of their work, which can be viewed here:

[<https://www.allaboutbirds.org/from-many-one-how-many-species-of-redpolls-are-there/>](https://www.allaboutbirds.org/from-many-one-how-many-species-of-redpolls-are-there/)

Their work is really fascinating and has important ramifications for field identification that again are beyond the scope of this essay. Thinking forward, if the NACC votes to combine the two species, then the NYS list, which currently stands at 490 species, will be reduced by one!

The last modification impacting the *Checklist of the Birds of New York State* affects the English name of *Alauda arvensis*, an introduced species that is now extinct ('extirpated') in New York State but retained on the list. This is changed from Eurasian Sky Lark to Eurasian Skylark. Some readers will be aware that this 'new' name was already used by the AOU in the 34th to 39th Supplements (1982-1993) but in 1995 was changed to Sky lark and then in 1998 to Sky Lark, with an upper case L. Exciting stuff, eh? Anyhow, Eurasian Skylark seems a wise choice and hopefully it will stay put for a while. It is

already used by most global and local taxonomies, is consistent with the names of other lark species and provides distinction from the closely related Oriental Skylark (*A. gulgula*) and highly localized Razo Skylark (*A. razeae*).

In addition to the changes discussed here, there are other changes in the 57th Supplement that will be of interest to traveling birders, including the splitting of Western Scrub-Jay into the more coastal California Scrub-Jay (*A. californica*) and interior southwestern Woodhouse's Scrub-Jay (*A. woodhouseii*). Those who've birded in California and in Arizona may well have seen both, but so far no Scrub-Jay of any kind has been observed in New York State.

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LINKS TO THE 57TH SUPPLEMENT AND OTHER MATERIALS

57th Supplement to the AOU Check-List:

<<http://www.aoucospubs.org/doi/pdf/10.1642/AUK-16-77.1>>

Proposals and comments considered for the 57th Supplement:

<http://checklist.aou.org/nacc/proposals/current_proposals.html>

HBW/ BirdLife International Checklist:

<<http://www.birdlife.org/datazone/info/taxonomy>>

Clements Checklist, used by eBird:

<<http://www.birds.cornell.edu/clementschecklist/>>

