

THE AMATEUR BIRDBANDER: THE BIRD BANDING LABORATORY PERSPECTIVE

by John Tautin

Birdbanding is an indispensable technique for studying birds. Aside from the curious naturalist's own powers of observation, few other means of studying birds have produced the information that banding has.

Amateurs have played an important role in North American birdbanding since it began early in the twentieth century. In 1902, Paul Bartsch, whose hobby was ornithology, began systematically banding Black-crowned Night-Herons in the District of Columbia. Amateurs were also involved from the beginning in Canada, where the first bird, an American Robin, was banded in 1905. Amateurs were instrumental in the founding and direction of the American Banding Association in 1909 (Cleaves 1913). In 1920, the Bureau of Biological Survey, forerunner to the U.S. Fish and Wildlife Service, assumed responsibility for the birdbanding program in the United States (Lincoln 1921), and Canada's banding office was established in 1923. These events followed the signing of the Migratory Bird Treaty between Canada and the United States and, in the United States, the enactment of the 1918 Migratory Bird Treaty Act which remains the foundation of federal involvement with migratory birds. Although the direction of birdbanding shifted from the private to the public sector in the 1920s, amateurs continue to be an integral part of birdbanding.

The Contributions of Amateur Birdbanders

Many amateur birdbanders have made outstanding contributions to ornithology and migratory bird conservation efforts. Amateurs have published scientific papers, some of which are standard references on particular subjects or species, in excellent refereed ornithological journals. Some amateurs have written books adding to our understanding and appreciation of birds. *Peacocks of Baboquivari* (Fisk 1983) and *Parrots' Wood* (Fisk 1985) by the late Erma Fisk come to mind. She listed her occupation as housewife when she applied for a birdbanding permit.

Some amateur banders, while not publishing major works themselves, accumulated significant data sets that proved of value to others later. Charles Broley, a well-known eagle bander of the 1940s and 1950s and a banker by profession, is an example. Another example is Edward McIlhenny who studied vultures and waterfowl at Avery Island, Louisiana. McIlhenny was a businessman and his family's name still appears on Tabasco sauce bottles.

Amateur birdbanders developed practical techniques and equipment for capturing and studying birds. The McCamey chickadee trap, the Rose wing measure, and Soucie's leg gauge are good examples of practical devices that

have aided professional and amateur banders (Anonymous 1990). Amateur banders have developed many of the accepted criteria for aging and sexing bird species (e.g., Olyphant 1972). Some have helped compile this information into larger references (e.g., Yunick in Pyle et al. 1987). Amateur banders have even developed statistical techniques for analyzing ornithological data. What began as Harold Mayfield's intuitive estimator (Mayfield 1961) is widely used today as a maximum likelihood estimator in survival studies. Mayfield, a personnel manager before his retirement, is best known for his work on the rare Kirtland's Warbler. Today, amateur banders are developing software for managing banding records.

Publications, equipment, and techniques are all examples of tangible contributions to ornithology made by amateur birdbanders, but amateurs have also made important intangible contributions to bird conservation through banding. Amateur banders are often in the forefront of local conservation projects and movements. On some occasions their work has resulted in the preservation of local habitats important to birds. Amateur banders are involved with conservation education, enlightening others about birds through lectures, demonstrations, and newspaper articles. Amateurs were also instrumental in the founding and operation of bird observatories and regional banding associations.

Unquestionably, some amateur banders have made outstanding contributions to ornithology and migratory bird conservation. It is easy to focus on their achievements and success and indeed a pleasure to acknowledge them. Many other amateur banders, however, have not been so productive and successful and their activities need to be considered as well in an objective discussion on the amateur bander.

A Study of Banders

Methods. The U.S. Fish and Wildlife Service's Bird Banding Laboratory conducted a study of banders to learn more about who they are, why they band, and what their banding activities are. Our study covered both professional and amateur banders. We randomly sampled ten percent of all master banders in the U.S. who had active permits at the end of 1987. We chose 1987 because it is the most current year for which we can assume that virtually all bandings have been reported and are in the database. Our ten percent sample included 265 banders.

Based mainly on information in their original applications for a permit, we categorized banders as institutions, university associates, biologists, amateurs, students, or undetermined. Institutions included national wildlife refuges, bird observatories, consulting firms, and others typically having station permits. University associates included faculty or research associates at colleges and universities. Typically, these were biology or ornithology professors. Biologists included banders employed in a non-academic position (such as a state or federal conservation agency) or having college-level training in ornithology,

zoology, wildlife science, or a closely related field. Amateurs were banders without college-level training in ornithology or related fields. Not surprisingly, the amateur category included people from many vocations. Students included those enrolled in graduate degree programs related to ornithology. Finally, the undetermined category was for banders whose occupation was unknown.

We next examined why individuals band, based primarily on subjective judgments of the reasons given by the bander at the time of application for a permit. We created three categories: banding for vocational reasons (job-related), banding for avocational reasons (personal desire to study birds), and banding for unknown reasons.

In the last part of our study we tabulated species and number of birds banded according to the category of bander and reason for banding.

Results. How many amateur banders are there? Many have speculated that most banders are amateurs. In our study, however, only 30% of master banders were amateurs. Biologists composed 28% of banders, faculty 21%, institutions 14%, students 4%, and unknown 3%.

For what reasons do amateurs band? As expected, almost all amateurs banded for avocational reasons unrelated to job requirements. Nearly all faculty and institutional banders banded for job-related reasons. It was surprising that approximately half of the banders in the biologist category banded for avocational reasons.

What species and how many birds do amateurs band? First, 35% of our amateur sample banded no birds in 1987. A similar percentage of the other categories also banded no birds. Those amateurs who did band in 1987 tended to be generalists, banding an average of 700 birds of thirty-five different species. Most banded common and easily accessible birds that frequent feeders or can be caught at migration stopovers. The four species most frequently banded by amateurs were Dark-eyed Junco, House Finch, Pine Siskin, and American Goldfinch. These four species alone accounted for 22% of all birds banded by amateurs. Bluebirds, Gray Catbirds, and White-throated Sparrows were also frequently banded. Amateurs banded 36% of all birds banded in 1987, 50% of all nongame birds, and high percentages (>75%) of many passerine species.

The species and numbers of birds banded suggest that a significant portion of amateur banders are likely not contributing to advancements in ornithology and the conservation of birds. Many appear to be banding on an incidental or opportunistic basis and not following well-developed study plans. The same is likely true for portions of other categories of banders as well.

The Future Role of Amateur Birdbanders

The amateur bander has been part of birdbanding in North America since its beginning over seventy years ago. Thirty percent of all banders today are amateurs. But with the changes occurring in the migratory bird field, many are

wondering about the future of the amateur birdbander. The Bird Banding Laboratory, the U.S. Fish and Wildlife Service, and the Canadian Wildlife Service do not have a uniform and clear view of the future. Nongame bird programs in both countries are in early stages of evolution and neither banding needs nor the role of various parties involved are well-defined. Consequently, we can only speculate on the future role of amateur birdbanders.

We envision a continuing but gradually changing role for amateur birdbanders. Fewer amateur banders will likely be involved in independent studies and more in cooperative studies, a trend consistent with developments in nongame bird research and management. These developments are occurring in many areas. Nongame bird programs are in place in most states and both state and federal programs are expanding. Government expansion will continue as funding grows.

Ornithological work in the academic community is also expanding. Many universities and colleges have Ph.D. level ornithologists on their staffs. They are graduating more students with degrees in biology and ornithology. As a result, increasing numbers of professionals are available for ornithological work.

An increasing number of consulting firms and individual consultants are conducting ornithological research, particularly on environmental contaminants and birds. Advancements in population surveys and field techniques such as radio-telemetry continue to be made. Statisticians are creating change by designing better experiments and developing new and powerful techniques for analyzing data. In short, nongame bird research and management is becoming more sophisticated and scientific.

Some amateur banders will keep pace with changes in nongame bird research and management, particularly those banders who are professionals in other disciplines such as medicine where progressive change is the norm. Some banders, however, will find that work once considered to be useful research does not compare favorably with contemporary work. For example, longevity records (maximum observed life span) were sometimes used in the past as indicators of how long birds lived. Longevity records are simple to obtain and require no analyses. Life table analyses of recovery/recapture data have also been used frequently by amateurs and professionals alike to estimate survival. Today these approaches to studying bird survival are being replaced by superior methods. There now exists a series of sophisticated statistical models for estimating survival and population sizes. The models produce good estimates given sufficient data. The models are complex, however, and most biologists cannot use them without assistance. It is hard to envision many amateurs using these models in their bird studies.

As a consequence of the changes in nongame bird research and management, we believe that we will see fewer amateurs conducting independent research on birds. Instead, more amateurs will likely be involved in

cooperative studies collaborating with professionals. For example, several banders are assisting health departments on studies of birds as carriers of ticks which cause Lyme disease. There is increasing interest among public agencies and private institutions in banding as a technique for population monitoring. The Monitoring Avian Productivity and Survivorship (MAPS) scheme proposed by the private Institute for Bird Populations is an example. MAPS is similar in concept and operation to the British Constant Effort Scheme where standardized banding of local bird populations occurs during the breeding season. MAPS is not fully developed nor has it been endorsed as a monitoring scheme by either the U.S. Fish and Wildlife Service or the Canadian Wildlife Service. Nonetheless, it is off to a modest start and some amateur banders are already participating. If it or similar schemes become more widespread, the assistance of numerous amateur banders would be needed.

In another aspect of population monitoring, the U.S. Fish and Wildlife Service is presently investigating the value of fall migration banding as a means of monitoring some bird populations. Several amateur banders who kept good long-term data sets are collaborating on this study.

In the future, more amateurs will likely operate in groups conducting joint projects or collectively producing data for use by museums, bird observatories, or other groups studying regional or local bird questions. For example, the Ottawa Bander's Group in Ontario, Canada has formed a network of professional and amateur banders working together to collect data.

As agency nongame bird programs develop and information needs are identified, we may see general calls for banders to target selected species of interest. Amateurs who otherwise might not have good reason for banding would be able to band and make a contribution. They often have time and skills that agencies and institutions needing banding data do not. Recaptures, which can be many, as opposed to recoveries which are few, are the data sought by increasing numbers of professional banders. Much work is required to get them. Amateurs may be encouraged to collect recapture data for analysis by professionals. Such a partnership could enable large scale studies of species that to date have only been studied locally.

Conclusion

Amateur birdbanders have played an important role in North American birdbanding since its beginning in 1902. Through their writing of books and papers, their development of techniques and equipment, and their involvement in conservation projects and education, many banders have made outstanding contributions to ornithology and bird conservation. Others have had more modest success as banders, while some have not made contributions. Thus, no single definitive statement can be made about amateur banders.

Amateurs remain prominent in banding today. The future role of amateur

banders may be speculative at this point, but we are optimistic that there will be a continuing role. That role will likely change but in the long run the change could be for the better, with banders, agencies, institutions, programs, and birds all benefiting.

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