

VOLUNTEERS DRIVE THE NORTH AMERICAN BREEDING BIRD SURVEY (BBS)

Keith L. Pardieck and *Dave Ziolkowski, Jr.
 Patuxent Wildlife Research Center, 12100 Beech Forest Rd., Laurel, MD 20708 - *dziolkowski@usgs.gov

Introduction

The BBS is the primary source of long-term, large-scale population data for over 400 of North America's breeding bird species. Jointly coordinated by the U.S. Geological Survey and Canadian Wildlife Service, the BBS is comprised of three main components:

- 1) a standardized, scientifically rigorous sampling design
- 2) a relatively straight forward and simple field protocol
- 3) a volunteer based field observer workforce

Since its inception in 1966, the BBS has become one of the most efficient large scale monitoring efforts costing tax payers only \$750 per species per year, thanks to the efforts of our dedicated volunteers.

In light of its successes, the BBS has served as the model for many volunteer-based monitoring programs, and with its trend data, has even promoted the formation of several major conservation initiatives, including Partners in Flight and the North American Bird Conservation Initiative. Here we 1) examine BBS volunteer demographics to develop a profile of our volunteers and 2) examine annual volunteer activity information to better understand the relationship between BBS management activities and long term participation trends.

Three primary sources were used in this study:

- Query results from the 4.2-million-record BBS database assembled over 40 years and including information from over 10,500 observers.
- Results of a 1997 U.S. Fish and Wildlife Service (USFWS) survey of BBS participants documenting the experience level of volunteer observers, tabulated from 1456 responses (88%) (full summary of questionnaire at www.pwrc.usgs.gov/bbs/bbsnews/Poll98/)
- Results of a 2004 Canadian Wildlife Service (CWS) survey of current and recently retired Canadian BBS participants documenting demographic characteristics of their cooperators, tabulated from 263 responses. (summary of questionnaire soon to appear at www.cws-scf.ec.gc.ca/birds/)

Background

Qualified volunteer observers are recruited in each state or province by a volunteer coordinator who is usually in contact with a large portion of the birding community. The observer experience includes:

- Receiving package containing rules, all necessary forms, and map of roadside route
- Scouting route as needed and surveying it once annually
- Assuring only assigned observer collects route data
- Selecting one day with good weather conditions from an established period at the height of the breeding season
- Starting 1/2 hour before local sunrise, counting all birds heard or seen within 3 minutes within 1/4 mile radius of point
- Repeat counting at 49 more stops, each located 1/2 mile apart
- Completing paperwork and submitting data
- Reviewing final data report and notifying national office if errors present

Volunteers contribute over 29,000 hours and drive more than 150,000 miles in the service of the BBS annually:

- The average observer volunteers 10 hours per route
- Approximately 1900 observers and 1000 observer assistants participate (Box 2)
- Roughly 2/3 of the more than 4000 available routes are sampled annually (Box 2)

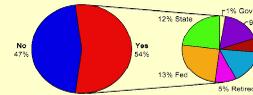
Box 1. BBS Participant Profile



BBS observers are highly experienced

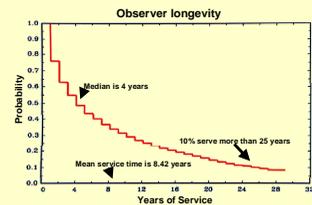
- Nearly 90% of observers have pursued bird related interests for more than a decade (USFWS)
- All spend >1 hour a week birding, 72% spend > 5 hours

Are the observers professionals?



Over half of US observers work in a profession related to birds

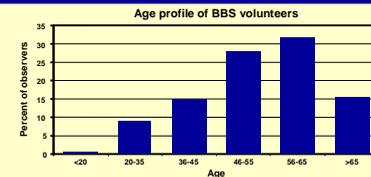
- 54% of all observers have careers affiliated with birds (USFWS)
- Half of those are with state or federal wildlife agencies



Observer retention averages a tenth of a lifetime

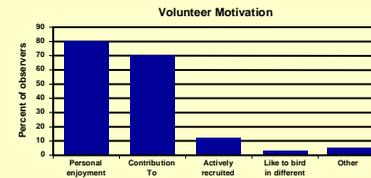
- The average observer volunteers for 8 years
- 10% remain active past 25 years
- 75% remain after their 1st year

Kaplan-Meier survivorship analysis (ca. 1994) unpublished data



There is a right skew in the BBS observer age profile

- 75% of observers are greater than 45 years of age (CWS)
- 48% > 55 years of age, 25% < 46 years of age



Observers are motivated by the experience and by ethics

- 80% of observers remark being most motivated by personal enjoyment
- 70% additionally recognized conservation as a primary motivating factor



Most volunteers leave for reasons outside of the BBS

- Hearing loss accounts for 45% of retiring volunteers
- Relocation and schedule conflicts are the next two most cited reasons for leaving the program

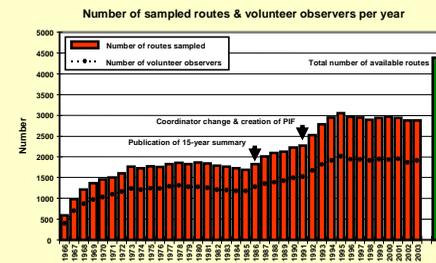
Box 2. Volunteer Trend Data

Most observers sample one route annually

- 68% of observers sample only one route
- 21% sample 2 routes
- 11% sample 3 or more routes

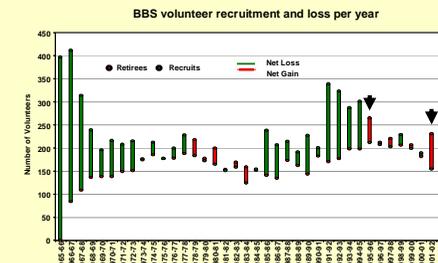
Growth has not occurred evenly over the history of the BBS

- Participation hit it first plateau of ~1300 observers and 1700 routes starting in 1974
- A period of growth began in 1986 and lasted until the mid-1990s that raised the number of observers to 1900 and the number of routes to 3000



Observer losses and gains correlate with management events

- The publication of the first comprehensive summary of BBS findings in 1986 followed by extended efforts in outreach fostered a five-year period of growth
- Change in national coordinator and formation of Partners in Flight conservation initiative spurred a period of rapid growth between 1991 and 1995
- A large loss of volunteers followed a major recruitment push in 1995-96
- A second major loss of observers occurred in 2002 following the initiation of a methods training and certification program



Discussion

1) Recruiting volunteers and then matching them to the right assignment is one of the most important challenges that citizen science programs face. The BBS is unusual here in seeking a relatively large number of volunteers to fill just one role, a highly skilled and highly knowledgeable niche suitably occupied by a small portion of the volunteer community. The results of our surveys indicate that we have managed to attract the right volunteers to our program:

- Eighty-nine percent have been birding for more than 10 years
- All spend at least 1 to 5 hours weekly pursuing bird related interests
- About 72% spend more than 5 hours per week in this pursuit
- On average, 75% of recruits participate for more than one year

2) BBS participation has hit two plateaus, one running from the mid 70's to the mid 80's and another from the mid 90's until now. The intervening years showed steady increases in the number of routes sampled and number of observers. The questions we face now are 1) whether there is another decade of growth in the future of the BBS and 2) how best to realize that potential? Combined consideration of our participation trends and our knowledge of our volunteer base points us in specific directions:

Recruitment

- Our second largest net loss of volunteers followed our last major recruiting push in 1995-96. Are efforts beyond our norm exhausted on a greater proportion of volunteers who are not a good fit to our program?
- State coordinators commonly remark that they can fill the majority of their routes but that filling routes in less populated areas of their state is their greatest challenge. Experienced birders are a small portion of the population as a whole; are we at or near the balance of diminishing returns?

Volunteer effort

- The average observer is now voluntarily sampling 3% more routes per year than in the 1980's. Would efforts to encourage more volunteer effort be interpreted as pressure and be more likely to lead to more 'burn-out'?

Retention

- A quarter of our new recruits leave after their first year. Are the majority of these observers just not well suited to the BBS, or are there specific first year concerns that we could design a strategy to ameliorate?
- The volunteer base exhibits some degree of neophobia with the largest net loss of long-time observers occurring in 2002 when many observers cited that the adoption of a methods training program was their impetus for leaving. Can we find a uniform way to subtly introduce changes in the future?
- In the long run, volunteers who retire from the BBS most often cite hearing loss as their primary reason for leaving. Hearing aids are used effectively by some professionals; is extending volunteer longevity through the use of hearing aids an appropriate course of consideration for the BBS?

Conclusions

- Know your participant base
- Combine your knowledge of your volunteer base with detailed records of your annual recruitment and attrition to reveal profitable, and sometimes unexpected, avenues for future growth

Acknowledgments

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