

Investigating the Sale, Purchase, and Collection of Federal Metal Bird Bands Among Waterfowl Hunters

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Executive Summary

This project investigated the cultural significance of metal bird bands within the waterfowl hunting community, and how this impacts the way that people report sold and purchased bands to the U.S Geological Survey Bird Banding Laboratory (BBL). The BBL has tracked migratory birds through the use of metal bird bands for a hundred years. Anyone who encounters a band, including hunters, birders, and other outdoor enthusiasts, can report the serial numbers online, contributing to a rich data set of thousands of sightings every year. Waterfowl hunters comprise the majority of those reporting bands due to their unique proximity to banded birds. Bands have become a prized trophy among the waterfowl hunting community and can serve as a representation of hunting skills and memories. This valuation of bands has led to the proliferation of both genuine and fake metal bird bands on e-marketplaces such as Ebay, which can potentially complicate the integrity of the data reported to the BBL. Semi-structured interviews were conducted with BBL staff members, waterfowl hunters, and bird band sellers to gain deeper insight into this emerging challenge to waterfowl data management. An additional online survey expanded our data collection regarding bird band reporting and collecting, by allowing those who have previously reported a bird band to the BBL to discuss their engagement with bands and wildlife conservation in an alternative, shortened format. Data was analyzed qualitatively to draw out common themes among participants.

From this analysis, I identified two primary groups purchasing bird bands: Signalers and Collectors. Signalers purchase bands in order to display them as if they had acquired the band themselves through hunting. Six out of eleven hunters interviewed noted that waterfowl hunting media has shifted towards an emphasis on acquiring banded birds and having a large volume of kills from a single hunt, despite these not being typical hunting experiences. The normalization of these depictions within hunting culture can contribute to less experienced hunters feeling pressure to legitimize themselves, leading to the purchase of bands to display as if they were harvested by the individual wearing them. This group might avoid reporting their purchased bands, or report them inaccurately, due to the stigma within hunting culture of displaying a band that someone did not acquire from their own hunt. The second group, Collectors, tends to purchase bands that are vintage or have a unique quality, such as coming from a species that is more rarely recovered. All of the band sellers interviewed were also collectors and primarily sold bands to maintain their collections through sales and trades. For this group, bands are often already reported by the time of purchase, or a seller might choose to report them in order to verify the bands authenticity. Despite an increased prevalence of fake bands circulating, their source remains unclear. However, the vast majority of hunters indicated through interviews and surveys that they highly value the experience of hunting a banded bird and prioritize reporting bands, both to learn more about the bird's journey and to contribute to scientific data. This interest in learning about the bird's migration also contributes to an interest in the Certificate of Appreciation being updated to include past band encounters, so that the reporter can see where else the bird might have traveled. The Certificate of Appreciation is a pdf automatically generated after a successful encounter report, containing the name and Bird bands and Certificates of Appreciation continue to be strong motivators and indications of hunting

satisfaction for waterfowl hunters. These motivations might have increasing competition with the desire to display bands as a portrayal of hunting success, a factor that must be considered in order to encourage accurate reporting protocols.

Introduction

This project was carried out in collaboration with the USGS Bird Banding Laboratory at Patuxent Wildlife Research Center in Laurel, Maryland and focuses primarily on the relationship between waterfowl hunters and federal metal bird bands. Though bird bands are used in a variety of contexts, this project is only referencing federal metal bird bands distributed through the USGS for scientific purposes. Bird bands are simple pieces of metal affixed to the legs of migratory birds, ranging in size to accommodate everything from tiny hummingbirds to large trumpeter swans. Each band contains a serial number that connects it to a database of information, containing the location and date of the banding, and the bird species and approximate age. The Bird Banding Laboratory (BBL) has been the center for all bird band based research in the U.S since 1920. In addition to catching and banding birds on site, they distribute bands to certified banders across North America. Up to 1.2 million birds are newly banded each year, with around 80-100,000 encounter reports coming in annually. This unique form of data collection relies upon the participation of civilians who come across the bird bands (attached to birds or otherwise) and then report them to the BBL. Originally, this process involved mailing the band itself into the BBL office. This evolved into a phone line, and now a fully online reporting system. Available in English, Spanish, and French, this online system receives over 90,000 reports a year. The BBL manages the organization and dissemination of this data, making much of it available online and facilitating data requests for any interested parties.

The majority of band encounter reports are made by waterfowl hunters, who have a unique proximity to frequently banded birds such as ducks and geese. In addition to contributing to wildlife management through data collection, hunters contribute massively to

wildlife conservation funds through buying items taxed under the Pittman-Robertson Act. Also known as the Federal Aid in Wildlife Restoration Act, it was passed by congress in 1937 to impose an 11% excise tax on hunting arms, ammunition and archery equipment, and a 10% excise tax on handguns. These funds are used for wildlife management research, improvement of wildlife habitat, and hunter education initiatives (USFWS 2018). The bands have become a significant part of waterfowl hunting culture, widely known to be a prized trophy that can represent memories and hunting skill. In recent years, both genuine and fake bands have begun to show up on e-marketplaces such as Ebay. Though not illegal, this can lead to time-consuming data management for the BBL staff when purchased bands are not reported correctly. If there is a possible discrepancy based on bird age or species, and BBL staff member will review the report and may reach out to the reporter for clarification before processing the report and issuing the Certificate of Appreciation. Despite adding an additional option specifically for Ebay purchased bands to the online reporting process, the proliferation of purchased and sold bands has continued to pose issues to data quality. Individuals may not utilize the option, choosing instead to input inaccurate information about when, where, and how the band was recovered. Additionally, fake band serial numbers or reproductions of genuine band numbers can be time consuming to figure out. This project seeks to provide more information on the role bands of taken on within waterfowl hunting culture and how this contributes to the issue of purchased bands being inaccurately reported. It will also examine hunter satisfaction with the Certificate of Appreciation and if any additional information is desired on the certificate itself.

Despite hunters and banding data featuring significantly in a variety of wildlife management literature, ethnographic research on North American hunters is rare. This is particularly interesting considering the centrality of hunters within wildlife conservation in the

United States, seen within the set of principles known as the North American Model of Wildlife Conservation (Organ 2013). Though not coined as such until the 21st century by biologist John Organ, the ideas contained within this model are commonly traced back to early 20th century conservation movements, made necessary after centuries of environmental exploitation by European settlers and their descendants. While European hunting in the early 20th century was predominantly considered an activity of the elites, many sports hunters in the U.S sought to make it an accessible pastime, representing American ideals of independence and masculinity. Theodore Roosevelt, 26th president of the United States, is seen as an iconic embodiment of these ideals, founding the hunter-conservationist Boone & Crockett club and making the conservation of land a priority of his administration (Brinkley & Holland 2009). This depiction makes hunters roles in wildlife conservation not merely a scientific aspect of management, but part of a cultural and political lineage.

A valuable contemporary source for this project was a content analysis carried out on three waterfowl hunting DVD's (Alessi, et al. 2013). Through a qualitative and quantitative analysis of the most prevalent themes within the videos, the authors noted a strong emphasis on the collection of bands, and a depicted shooting success rate that was far greater than known waterfowl hunting averages. The authors emphasized the role of hunting media in setting hunting expectations, noting that seeing depictions of frequent band encounters and high numbers of harvested birds can cause dissatisfaction if the viewer's own hunting experiences are not similar. The study also noted anecdotal evidence of "older" hunters blaming waterfowl hunting videos for a change in the "ethics" of "younger" hunters (with exact ages being undefined here). In *Hunting the Beast on YouTube: The framing of nature in social media* (Morner & Olausen 2017), analysis of boar hunting videos showed a tendency to frame the hunt as a "battle" and

play out a theme of man vs. nature in modern times of increased isolation from nature. These themes are all relevant to the inquiry posed by this project, which has found that generational differences and hunting media are significant factors in how hunters are engaging with bird bands.

While hunting remains a central feature of the North American Model of Wildlife Management (Organ 2012), studies show that hunting rates have been on a steady decline (Artelle 2013). This shift underscores the importance of continuing social science research into the motivations and experiences of hunters as wildlife conservation actors, including their connection to trophies such as bands.

Methods

The two modes of data collection utilized for this project were semi-structured qualitative interviews and a twenty-five question survey consisting of multiple choice and open-ended questions (see Appendix 1-4). Interviews were chosen as a method to allow for in-depth conversations around guiding questions, as well as the possibility for entirely new themes to emerge. Interview questions were developed to allow for a holistic understanding of the participants experience as a hunter or BBL staff member, as well as their individual experiences with bands. A survey was also conducted to reach a broader audience who might prefer a format with more confidentiality and less of a time commitment. Having a larger sample size answering focused questions within the survey also allows for comparison with emergent interview themes

(Handwerker 2001). Survey questions were designed to allow for a simple view into hunters affiliations, preferences, and habits regarding bands and wildlife conservation, as well as the Certificate of Appreciation.

Interviews took place with three groups: waterfowl hunters, Bird Banding Laboratory (BBL) staff, and individuals who have sold federal metal bird bands online. BBL staff were contacted via my internship supervisor Dr. Jenn Malpass, who supervised this project from May-August 2020. Dr. Malpass sent a message with a brief project description and my contact information to BBL staff members. Subsequent interviews were conducted with the seven staff members who contacted me showing interest in interviews. Waterfowl hunters were recruited via waterfowl-focused Facebook groups, and through subsequent snowball sampling, a practice where participants recommend others in their network who might also meet the criteria to be interviewed (Bernard 2017). This method can allow for further trust to be built within the community that is being sought out for interviews. Band sellers were contacted via Ebay and through snowball sampling among waterfowl hunters that I interviewed. This demographic proved the most difficult to obtain interviews with; out of approximately ten sellers contacted through the Ebay messaging platform, only one was directly recruited using this method.

The survey link, through the platform Qualtrics, was distributed through waterfowl-focused facebook groups and through direct emails to various local chapters of Ducks Unlimited and Delta Waterfowl throughout the country. Anyone who had previously reported a band to the BBL was eligible to participate in the survey, though recruitment efforts focused on the waterfowl hunting community. Previous interview participants were not individually sent the link to the survey, though it was posted in similar Facebook groups that were used for interview recruitment; it is unknown if any interview participants also completed the survey.

The University of Maryland Institutional Review Board approved the project (permit number 1609525-2) for human subjects research in June 2020, allowing me to conduct interviews and distribute the survey after gaining consent from participants. Interview consent forms were completed electronically prior to the start of interviews and collected via email. Surveys contained a consent message that had to be clicked prior to completing the survey. In total, interviews were conducted with eleven waterfowl hunters, six members of BBL staff, and three band sellers (see Appendix 3.) Interviews were conducted from June to August 2020 over the video chat platforms Zoom, Skype, Microsoft Teams, and Facebook Messenger video. Interviews took approximately thirty minutes to an hour and a half to complete and followed a semi-structure format. Questions varied by the type of participants (BBL staff, hunter, band seller) and included information on the individuals experiences with bands and waterfowl hunting more generally (see Appendix 1., 2., & 3) Interviews were recorded and transcribed using the application Otter.ai (Fu & Liang, 2016). Once interviews and surveys were completed, the transcripts and survey results were extensively reviewed in order to develop thematic codes for analysis (Bernard 2017). Seven codes were developed: Fake Bands, Vintage/Unique Bands, Social Media, Generational Differences, Buying/Selling, Memories Connected to Bands, and Conservation. A separate document was created for each code, and quotes from participants were sorted into each category during the analysis process. These documents allowed for a more efficient comparison and summary of the most significant findings from the data collection.

The survey was launched mid August. By the third week of September 2020, approximately 200 participants had fully completed the Qualtrics survey. Though a total of 260 entered the survey by this time, not all of the results were complete and usable for analysis. Surveys results were viewed and interpreted using the analytics feature within the software itself,

which produced reports with descriptive statistics and simple bar graphs for multiple choice questions. This level of analysis was sufficient for the questions being posed by this project. The codes developed for the interview transcripts were also used to interpret the write-in answers completed within the survey.

Results and Discussion

Once data were analyzed using the codes above, the emergent themes within each category were able to be examined more closely. Here I will discuss the most relevant findings within the data, including the role of a changing social media landscape driven by a younger demographic, the distinct motivations of those selling, buying, and reporting bands, and hunter opinions on the Certificate of Appreciation.

Social Media and Generational Differences

The Social Media and Generational Differences codes showed that hunters are perceiving a shift in waterfowl hunting culture that has been driven by social media, and revealed how this shift might impact the subsequent sale of bands. Hunters were the primary group discussing social media. Ten out of eleven hunters expressed a critical or negative views of the way social media has shifted priorities towards “*a lanyard full of bands,*” and “*huge bird piles,*” rather than an appreciation for the experience of hunting in and of itself. One hunter expressed a view that Youtube in particular was leading to a more gamified mode of hunting, saying “*On video, it makes us look like the bloodthirsty savages that the anti-hunting would say that we are...there's*

some of the others that I think do it on YouTube that is all about the body count, and I don't like it when it's that's what it is: kill shots and bodies.”

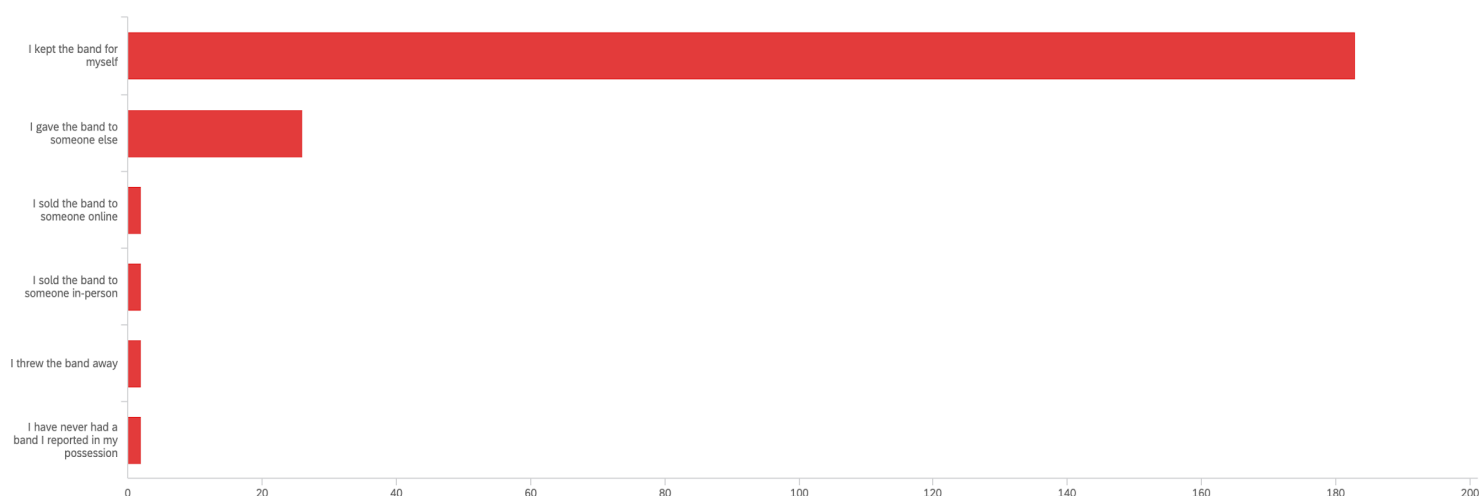
Six out of the eleven hunters interviewed indicated that it was “*younger*” hunters who were primarily consuming this new influx of hunting imagery on social media. Whereas seasoned hunters might know from experience that bands are objectively difficult to come by and not expect to have many, less experienced hunters might become insecure when consistently seeing images of large band collections. This can lead these hunters to pursue buying newer looking bands to add to a lanyard or other display method in order to legitimize themselves, or present an image of being a skilled hunter. One hunter described this, saying “*Younger generations are more likely to pay to have something in their collection..they see a bunch of bands [on another hunter's lanyard] and think ‘wow, that guy really gets after it.’*” This desire for bands can potentially be seen as one of the most powerful drivers for band proliferation, including the production of fake bands.

Though social media was largely attributed to promoting a view of hunting that emphasized results rather than the experience, many hunters also expressed an appreciation for the sense of community they were able to find on various waterfowl focused social media platforms. This can include forums where people share advice on various techniques, Facebook groups where people network and plan hunting trips with new friends, and Youtube channels where hunters give primers to beginners with an interest in the sport. This unprecedented access to information on the sport was one reason many of the hunters spoken with had optimism for the continued recruitment of the sport, including among more diverse demographics such as women and Black, Indigenous, and people of color. One hunter expressed that he is hopeful to see more representation of women and people of color in hunting media, with several expressing

that they hope the perception of hunters as all being highly conservative is something that can be shifted in coming years. Considering the strong role social media seems to play in dictating norms for hunters entering the sport, it also has the potential to be leveraged to counter misinformation or unrealistic expectations around hunting, and emphasize the importance of band reports.

Q8 - What have you done with the federal bird band(s) you have reported? Check as many as apply.

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Types of Bands: New, Vintage, Fake

The types of metal bird bands being bought and sold online tend to fall into three primary categories: vintage bands (often having the address to send the band from when it was a mail-in process), newer bands (containing the call-in number and www.reportband.gov to reflect the switch toward other reporting methods), and fake bands. Fake bands might be replicas of genuine bands, or contain an entirely different set of numbers not used by the BBL; both of these types of

fake bands have the potential to cause reporting issues. Through discussing these bands with hunters and sellers I was able to identify two distinct types of band purchasers: “Collectors”, who buy bands to display and keep in their homes, often collecting around certain themes such as a species or banding locations; and “Signalers”, who purchase bands to display and pass off as products of their own hunting experiences.

Sellers acquire vintage bands in a variety of ways, including garage or estate sales, hunting shows, or from being passed down from a relative. Many hunters indicated that this type of band is not one that they would display as their “own” hunted band, such as on a lanyard, but in another place in their home or office. One hunter described his reticence to wear a purchase band, saying “*On a much less serious scale, it’s like a Stolen Valor sort of thing.*” All of the sellers spoken with indicated that they were largely collectors of vintage or unique bands themselves, and sold/traded many of this type of band. Factors that could make a vintage band desirable include being from a “rare” species that is seen as not being banded very often, a band from a bird with a particularly long life, and bands sold in sets with consecutive serial numbers. While a previously reported vintage band can more easily be verified as genuine, one seller indicated that many “*love something odd and unreported, so they can report it.*” These types of bands are of primary interest to the “Collector” category of buyer.

Contemporary bands, that contain the www.reportband.gov address, were indicated by one seller to be “*the ones that go for the most money.*” All of the sellers indicated that the increased interest in new-looking bands was something that is on the rise, and attributed it to the desire for hunters to pass off the bands as being from their own hunts. This makes newer bands of primary interest to the “Signaler” category of band buyer. The supply for these newer bands can come both from the seller’s own hunts and from trades and purchases with others from their

own vast collections. While older bands might immediately be flagged by the BBL system as unlikely to have been recently hunted, newer bands pose a larger issue for accurate data management, as many selling these bands are specifically listing them as unreported. The actual encounter information may or may not be disclosed as part of the sale, and it was not clear that sellers provided any guidance to buyers on specific reporting protocol following a purchase.

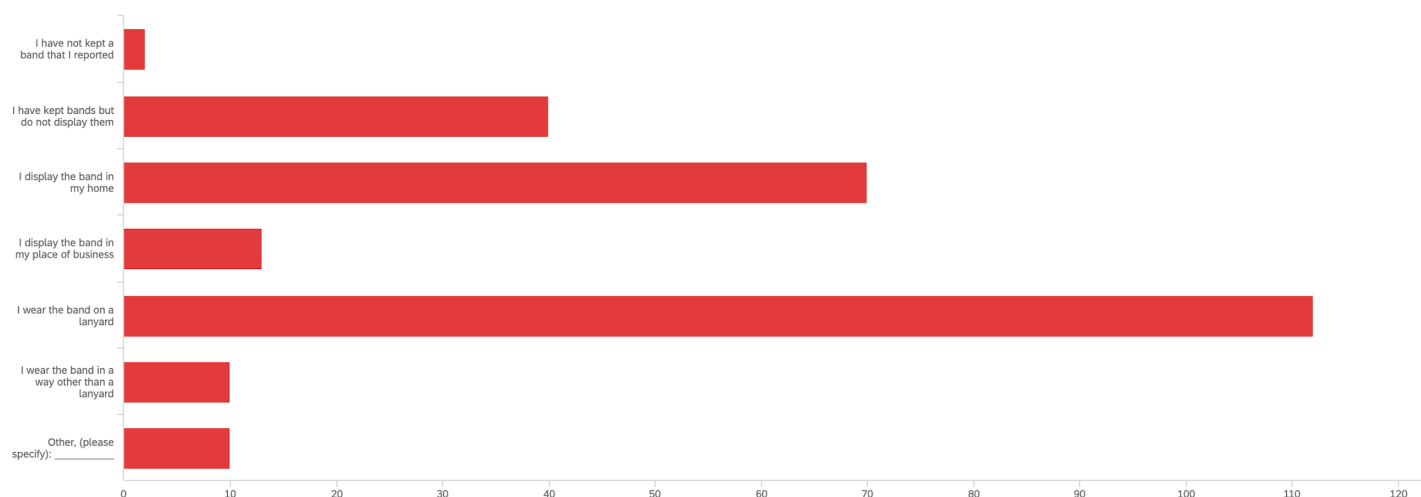
Fake bands appear to be an emerging problem that BBL staff, hunters, and sellers are all aware of, but have a limited understanding of the exact source. BBL staff indicated that they have received encounter reports from bands that were identified as fake after examining the inscription, which could contain a non-official font or is a number mismatched with the type of reporting method used during the time it would have been issued. One hunter indicated that the increasing awareness that fake bands are out there makes reporting more important for him, because he wants to be able to display a certificate when showing off a band on social media to show its authenticity. All of the sellers had extensive thoughts on the prevalence of fake bands and the challenges they pose to their selling operations. All said they have had instances where they purchased a fake band without realizing it, but were able to tell it was fake once they received it and noticed subtle issues. They indicated that techniques to “age” the band also seemed to be used on these fakes. While they were ultimately able to perceive that the band wasn’t genuine, they acknowledged others likely can’t, leading to reports without realizing it. The increase in fake bands, largely in the last 3-5 years, according to one hunter, can most likely be attributed to the increased demand for “newer” looker bands for the purposes described in the previous section. This can drive not only individual hunters to buy them, but hunting guides who might put bands onto shot birds before they get to a customer’s hands. One hunter described this

phenomenon, saying *“In Mexico I’ve heard of hunting guides having stashes of bands and slapping bands onto birds so hunters can be happy to take home a banded bird.”*

All sellers interviewed knew of one another, despite not having been recruited for the interviews in connection with each other (such as through snowball sampling). Additionally, several of the hunters interviewed were aware of these sellers, primarily through facebook groups. Each of the sellers routinely bought, sold, and traded bands among other sellers, both at in-person hunting shows and online. This indicates that sellers are often in community with each other as they sell to maintain their own collections and exchange information about topics such as fake bands. These connections within a relatively small community could potentially be utilized in order to broadly communicate better protocols around accurate band reporting and the avoidance of fake bands.

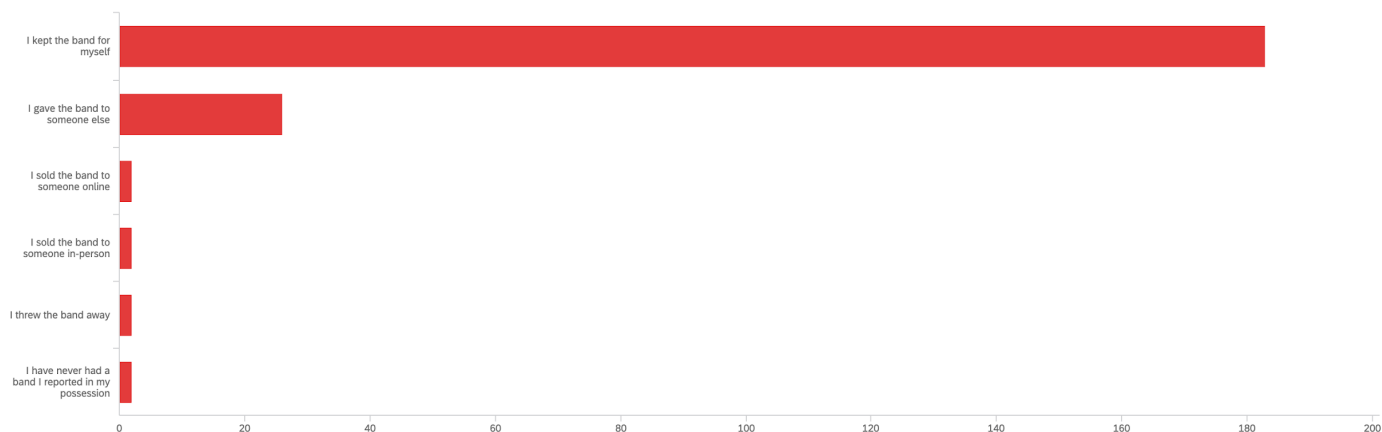
Q9 - If you have kept any federal bird band(s) that you have reported, how do you display it/them? Check as many as apply.

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Q8 - What have you done with the federal bird band(s) you have reported? Check as many as apply.

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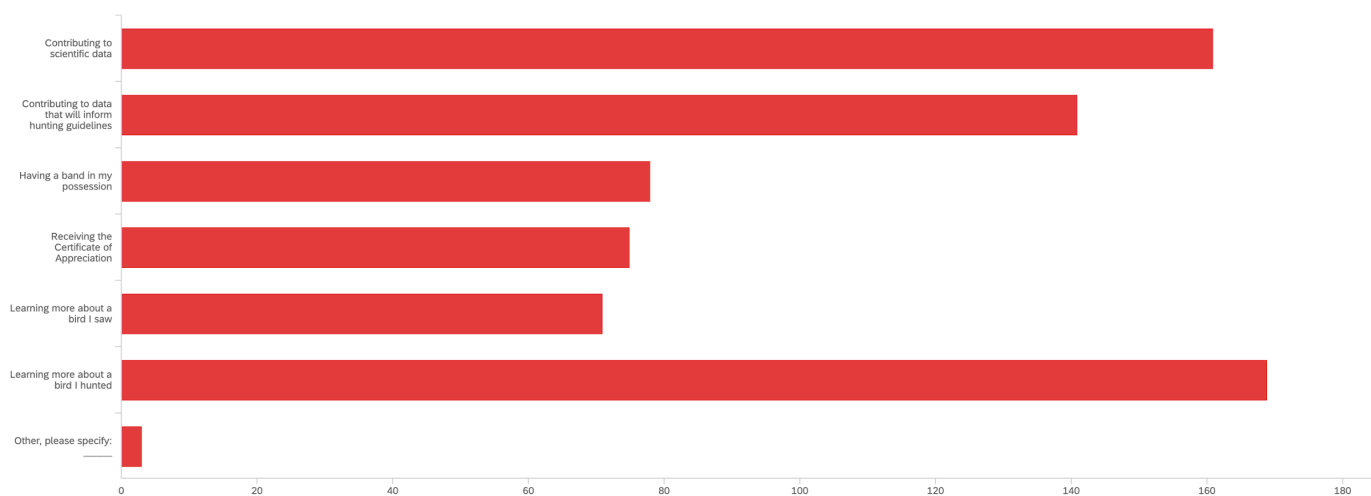
Connection to Conservation and Migration

In addition to acquiring bands as trophies or collectible items, most hunters highly value the data they gain after reporting a band, particularly the date and location where the bird was banded. Several hunters indicated that this connected them to the process of migration, with one hunter saying the band information was important to him to one day “teach my children about migrations patterns.” Additionally, every hunter interviewed indicated a belief that hunters were essential to wildlife conservation, with one describing hunters as “the original conservationists,” and another saying “we [as hunters] have been on the frontlines of the environmental movement.” Eighty percent of survey respondents indicated that contributing to scientific data was one of the most satisfying aspects of reporting a band. This sense of connection to wildlife conservation through scientific data is an important motivating factor that should continue to be utilized to encourage accurate band reporting, regardless of if the band was purchased or taken

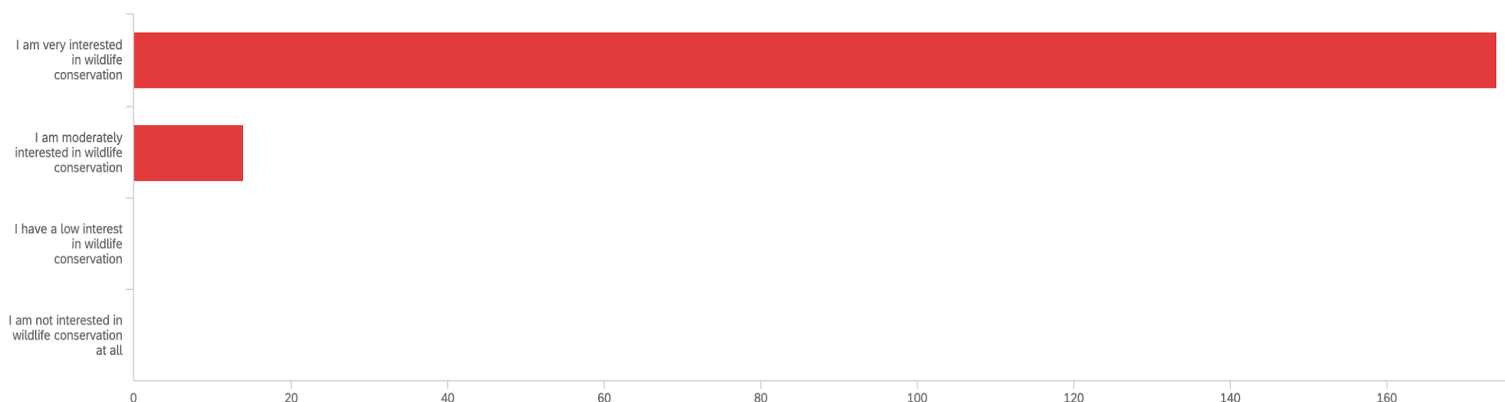
from a hunted bird. The Certificate of Appreciation is currently a significant motivator for many to report correctly.

Q11 - What is the most satisfying aspect of finding and reporting a federal bird band for you? Check as many as apply.

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Q4 - What is your level of interest in wildlife conservation?

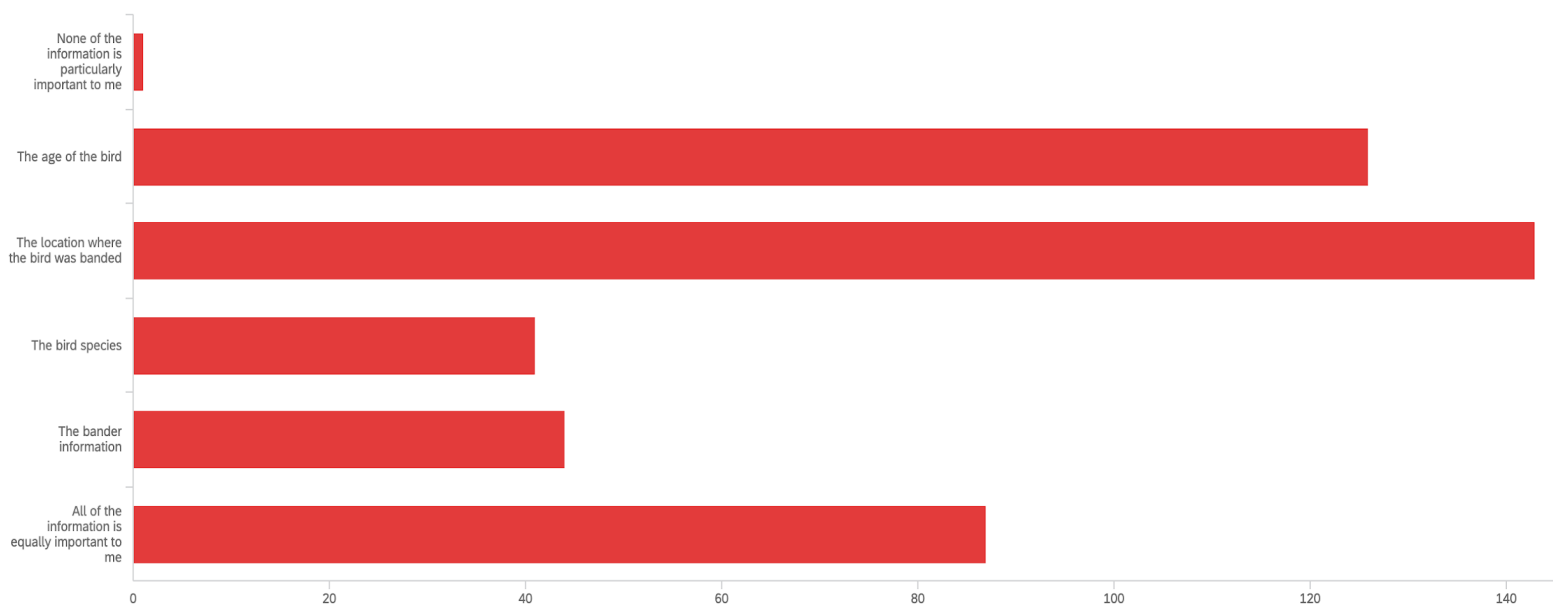


Certificate of Appreciation

Interviewed hunters discussed a high rate of satisfaction with the Certificate of Appreciation, and 89% of survey respondents indicated that they were content with the current amount of information on the certificate. A common suggestion for improvement, from ten out of eleven hunters interviewed, was to include previous encounter data on the certificate so that they could see previous places the bird had traveled. Additionally, thirteen write-in comments echoed these sentiments, with one commenter saying “It would be interesting to know if the bird had been caught or observed through the years and where and when those encounters occurred.” The only additional comments regarding the Certificate of Appreciation were from hunters who had previously experienced receiving a certificate in the mail expressing a desire to still receive a paper copy from the BBL, a practice discontinued in 2011.

Q18 - Is there any additional information you would like to see on the Certificate of Appreciation?

Q17 - What information on the Certificate of Appreciation is most important to you? Check all that apply.



Key Takeaways

Those who are purchasing federal metal bird bands primarily fall into two categories: “Collectors” who tend to buy vintage and/or unique bands for their collections, and “Signalers” who tend to buy more recently issued bands to display as if they acquired the band from their own hunting experience. Social media depictions of hunting increasingly emphasize the acquisition of bands and a large volume of bird kills. These depictions can incite insecurity in hunters, particularly less experienced hunters who might feel pressure to legitimize their hunting skills. Some hunting media, particularly on Youtube, can contribute a “gamified” view of hunting that focuses on the final products of hunting (bands, bird piles) rather than the process.

This can lead to “Signalers,” choosing to purchase and display bands as a representation of their hunting ability. “Signalers,” who are most likely dealing with recently issued bands or fake bands that look new, might avoid reporting bands or report them incorrectly due to the stigma of buying bands within the waterfowl hunting community. This group, and the unrealistic hunting norms they may have internalized from hunting media, is potentially the largest challenge to accurate encounter reports. “Collectors,” who often sell bands to maintain their collections and network within online communities, tend to be motivated to report in order to have the added authenticity of the Certificate of Appreciation. Hunters, band sellers, and BBL staff perceive fake bands as an increasing phenomenon, with an unclear source. However, interview and survey data showed that the vast majority of hunters highly value contributing to the scientific data that comes from band reports, and prioritize reporting them when they encounter them. As hunting media becomes subject to generational shifts, utilizing the networks of both Collectors and Signalers to continue encouraging a culture of respect for band reports will continue to be an essential consideration.

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APPENDIX

1. Hunter Interview Questions

Part 1: Experience in Hunting and Conservation

- How long have you been a hunter? How long have you been a waterfowl hunter?
 - What kinds of waterfowl do you hunt?
- Why is hunting waterfowl so important to you? [can insert specific type of waterfowl if they've indicated they only hunt ducks or only geese]
 - Who do you usually hunt with?
 - Where do you usually go to hunt? Is this a place [Are these places] you visit throughout the hunting season or do you make a special trip? When?
 - Have you ever hunted competitively?
- What is the most satisfying part of hunting for you?
 - What would constitute a “good day” of hunting for you?
- Based on your experiences and perceptions, what is the role of hunters in current conservation efforts?

- In your opinion, what might be some other ways could hunters contribute to conservation?
- How do you think current generations and past generations of hunters might value conservation differently?
- How do you see the future of waterfowl hunting?

Part 2: Bird Bands – Finding, Reporting, Collecting

- Have you ever collected bands while hunting from a bird you shot? Just found in the field?
 - Do you display the bands from birds you hunt? How? Where?
 - Do you display the bands from birds you found? How? Where?
- Could you describe what the bands you collect from birds you hunt mean to you?
 - Based on your experiences and observations, could you describe what bird bands mean to the larger waterfowl hunting community in general?
 - Are there any similarities or differences you see between the general community and yourself? [additional probe if they are having trouble with previous probe]
- Have you ever given or received bands as a gift?
 - Who did you gift a band to? What was the occasion?
 - From whom did you receive a band? What was the occasion?
- Have you ever reported any of the bands you've collected while hunting to the Bird Banding Lab?

- Could you describe your experience/s with reporting bands a bit? What did you like or dislike? What made this reporting easy or frustrating?
- What was your biggest incentive to report the bands you collected while hunting?
- Do you have any concerns about reporting bands that might prevent you from reporting?
 - What could the BBL do, if possible, to alleviate these concerns?
- What information did you receive after reporting a band was most interesting to you?
 - What, if any, additional information do you wish you'd received about the bird you reported?
- Did you keep the certificate of appreciation generated by the BBL to acknowledge your report?
 - What aspects of the certificate do you like?
 - What additional information would you like to see on this certificate?
- Do you have any experience with buying and/or selling bands?
 - *If you have sold a band*, where did you acquire it initially? Did you report it after acquiring it?
 - *If you have bought a band*, what did you do with the band after purchasing? Did you report it after buying it?
- Do you have any questions for me?

2. Band Seller Interview Questions

Part 1: Bird Band Seller/Buyer Background

- How long have you been selling bird bands online? Buying bird bands online?
 - Do you only buy bands? Only sell bands? Or both?
 - What online platforms do you use to buy and sell bird bands?
- Do you buy or sell any other items online related to waterfowl hunting? hunting in general? Birds and birding?
 - If so, what sorts of items you buy and/or sell?
- Is waterfowl hunting an important part of your life beyond buying/selling bird bands online? If so, could you describe your involvement?
 - When and where did your interest in waterfowl hunting begin?
 - What aspect of waterfowl hunting is the most rewarding for you?
- Could you describe what role, if any, that bird banding has in wildlife conservation?
- Could you tell me about what you know about the reporting process for federal bird bands?
 - How would you rate your level of familiarity (expert, knowledgeable, novice, no clue a process exists)?

Part 2: Experiences with Online Sales of Bird Bands

Online Sellers

- Could you tell me about what interested you in getting involved in the sale of bird bands?
- What qualities do buyers seem to look for when purchasing bird bands?

- How, if at all, do these desirable qualities affect the bands you acquire for sale?
How you describe the bands you sell? How you price your bands?
- Where do you get the bands that you sell?
 - Do you sell bands from birds you hunt, or that you buy or find elsewhere?
 - When acquiring a band to sell, what information about the band is important to you?
- Do you report bands prior to selling them?
 - What is your biggest motivation for reporting or not reporting a band prior to selling them?
 - Do you have any concerns about reporting a band before selling it? If so, could you tell me about those concerns?
- Do you disclose the reporting status of bands to buyers? Why or why not?
- Do buyers ever inquire about the reporting status of bands before purchase?
 - If so, are they typically looking to acquire bands that have/have not been previously reported?

Online Buyers

- Could you tell me about what motivated you to buy (or start buying) bird bands online?
- What qualities do you look for when purchasing a band online?
 - What information about a band is important to you? This could include, but is not limited to, information about how it was acquired, where the band was taken, or the bird species.
- Do you report bands that you've purchased online? [*return to this later in questions*]

- Do you consider yourself to be a bird band collector?
 - How many bands do you own?
 - How many of these bands were purchased online? In person at, for example, a garage sale?
 - Were any your bands given to you as a gift?
 - How many did you collect yourself while hunting?
 - Could you tell me about what you enjoy most about collecting bird bands?
- Could you tell me more about what you do with the bands after you buy them?
 - Do you display your bands?
 - If so, how do you display your bands?
 - Where do you display your bands?
 - Do you wear bands?
 - When do you wear your bands? What activities are you doing?
 - What do you enjoy about wearing your bands?
 - If you are a waterfowl hunter, is there a difference in the way you wear or display band that you bought versus bands you took during a hunt? If yes, could you tell me more about the differences in how you display these bands?
- ***Online Buyers who report bands:***

- What is your motivation to report bands after purchase?
- Did you use the “Ebay” option when reporting a purchased band? Why or why not?
- Could you tell me about any concerns you may have about reporting bands you bought online? [*bought elsewhere? Or were given as a gift? For those who answered yes to these questions*]
- **Online Buyers who do not report bands:**
 - What is the primary reason you do not report bands after purchase?
 - Could you tell me about any concerns you may have about reporting bands you bought online? [*bought elsewhere? Or were given as a gift? For those who answered yes to these questions*]
 - If you acquired a band from a bird that you hunted personally, would you report that band? Why or why not?

Part 3: Broader Market Questions

- Who (or what group of people) do you believe values bird bands most?
- Why do you think people buy and sell bird bands?
- Could you describe any trends you’ve observed in the sales of bird bands online? For example, price increases/decreases, a demand for antique versus contemporary bands, fake bands, selling of bands in smaller or larger bundles, overall growth or decline in sales, etc.
- Do you know of bands being sold in settings outside of Ebay? If so, what are these settings and how might they differ from how bands are sold on Ebay?

- Do you have any questions for me?

3. BBL Staff Interview Questions

Part 1: Background of Bird Banding Lab Employee

- How long have you been working at the BBL?
 - Could you describe what you do?
 - If they've been there for more than 3-5 yrs, you might ask also how their job at the BBL has changed over time.
- Do you hunt/birdwatch/band birds?
 - Did you do any of these activities prior to working at BBL?
 - If so, which activities? For how long?
 - If you are a waterfowl hunter, how do you see the future of waterfowl hunting?
- Have you ever reported a bird band?
 - Could you describe how you came across this bird band (what you were doing)?

Part 2: Bird Band Reporting

- Could you talk about your experience working with the band encounter reports?
 - If your position does not work with band encounter reports: What have you heard from other staff members about their experience of working with band encounter reports?
- What are some common issues that make for inaccurate encounter reports?
 - Are there any issues specific to online sales of birds bands on platforms such as Ebay?

- What do you wish more encounter reporters knew before reporting?
- What aspects of managing encounter report data are most challenging?
 - What suggestions do you have for improving this data management process?
- In the context of managing encounter data, how would you describe your interactions with the waterfowl hunting community?
 - What about the bird watching community?
 - Others, such as online band buyers?
- Why do you believe motivates people to buy and sell bands on platforms such as Ebay?
- What feedback have you received regarding appreciation certificates from band encounter reporters?
 - What additional information do you think could be valuable to add to appreciation certificates?
- Do you have any questions for me?

4. Survey Questions

- 1. Have you read the above information and consent to participating in this research?**
 - Yes
- 2. How many times have you visited reportband.gov to report a federal bird band?**
 - Never [would direct to end of survey]
 - One time
 - Two times
 - Three times
 - Four times or more

3. How would you describe your engagement with birds and wildlife? Check as many as apply.
- I am a birdwatcher
 - I am a hunter
 - I am an outdoors enthusiast
 - I am a student studying related topics
 - I am a professional working with related topics
 - None of the above
4. What is your level of interest in wildlife conservation?
- I am very interested in wildlife conservation
 - I am moderately interested in wildlife conservation
 - I have a low interest in wildlife conservation
 - I am not interested in wildlife conservation at all
5. In what ways do you make contributions to wildlife conservation? Check all that apply.
- Through buying items that are taxed under the Pittman-Robertson act
 - Through buying duck stamps
 - Through donating to conservation based NGOs or non-profit organizations
 - Through my participation in citizen science initiatives
 - Through my academic and/or professional work
 - Other (please specify) _____
6. What wildlife related organizations/groups do you participate in?
- I do not participate in any wildlife related organizations
 - I belong to a hunting club
 - I belong to a hunting-based conservation organization
 - I belong to a wildlife conservation related professional organization
 - I participate in a bird watching group
 - I belong to a wildlife conservation non-profit organization or NGO
 - Other (please specify) _____
7. How did you acquire or come in contact with the federal bird band(s) you have previously reported? **Check as many as apply.**
- I saw the band on a live bird
 - I found the band on a dead bird that I or another person hunted
 - I found the band on a dead bird that I found outside of a hunting context
 - I purchased the band from Ebay
 - I purchased the band from an estate sale
 - I was given the band as a gift
 - Other, (please specify): _____

8. What have you done with the federal bird band(s) you have reported? Check as many as apply.
- I kept the band for myself
 - I gave the band to someone else
 - I sold the band to someone online
 - I sold the band to someone in-person
 - I threw the band away
 - I have never had a band I reported in my possession
9. If you have kept any federal bird band(s) that you have reported, how do you display it/them? Check as many as apply.
- I have not kept a band that I reported
 - I have kept bands but do not display them
 - I display the band in my home
 - I display the band in my place of business
 - I wear the band on a lanyard
 - I wear the band in a way other than a lanyard
 - Other, (please specify): _____
10. Do you collect federal bird bands? Check as many as apply.
- Yes, I collect bands from birds I have found or hunted
 - Yes, I collect bands that I have bought, or been given as gifts
 - Yes, I collect bands that come from a variety of sources. Such as: _____
 - No, I do not have an interest in collecting bands
 - No, but I would be interested in collecting bands
11. What is the most satisfying aspect of finding and reporting a federal bird band for you? Check as many as apply.
- Contributing to scientific data
 - Contributing to data that will inform hunting guidelines
 - Having a band in my possession
 - Receiving the Certificate of Appreciation
 - Learning more about a bird I saw
 - Learning more about a bird I hunted
 - Other, please specify: _____
12. What is the significance of owning a federal bird band for you? Check as many as apply.
- It represents a bird I found
 - It represents a bird I hunted
 - It is a reflection of my bird watching skills
 - It is a reflection of my hunting abilities
 - It shows my participation in a scientific program
 - I don't find owning a bird band to be significant
 - Other, please specify: _____

- None of the above
13. Have you ever purchased a federal bird band? *Note: purchasing a federal bird band is a legal activity.*
- Yes, and I reported the band after purchase
 - Yes, and I did not report the band after purchase
 - No, and I would not be interested in buying a band
 - No, though I would be interested in buying a band
14. If you have purchased a federal bird band, where did you buy it from?
- I have not purchased a bird band
 - I purchased it from a friend or family member
 - I purchased it from someone I did not know personally online
 - I purchased it from someone I did not know personally in-person
15. Have you ever sold a federal bird band?
- No, I have not sold a federal bird band
 - Yes, I sold a federal bird band from a bird I hunted
 - Yes, I sold a federal bird band that I had previously bought myself
 - Yes, I sold a federal bird band that I had acquired from another source
16. What do you do with the Certificate of Appreciation that is generated after a successful band encounter report? Check as many as apply
- I do not do anything with the Certificate of Appreciation
 - I download it to my computer to have a copy of it
 - I print it out to keep a copy of it
 - I print it out and display it
 - I post a pdf of it on social media
17. What information on the Certificate of Appreciation is most important to you? Check all that apply.
- None of the information is particularly important to me
 - The age of the bird
 - The location where the bird was banded
 - The bird species
 - The bander information
 - All of the information is equally important to me
18. Is there any additional information you would like to see on the Certificate of Appreciation?
- No, I am content with the current amount of information
 - Yes, I would like to see more information. Please specify _____

19. If you encounter a federal band in the future, what is the likelihood of you reporting that information at reportband.gov?

- Extremely unlikely
- Not very likely
- Somewhat likely
- Very likely
- Extremely likely

20. Do you have any concerns that might prevent you from reporting a band?

- No, I do not.
- Yes. Please specify _____.

21. What is your age group?

- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65+
- Prefer not to answer

22. What is your gender?

- Female
- Male
- Gender non-conforming
- Other ____

23. What is the highest level of education you have completed?

- Less than high school
- Graduated high school
- Trade/technical school
- Some college, no degree
- Associates degree
- Bachelor's degree
- Advanced degree (Masters, PhD, M.D, etc)
- Prefer not to answer

24. What is your zip code? Please enter in the space below