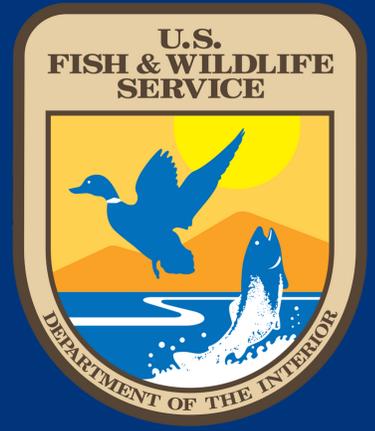


Harvest Surveys Modernization

Response and Experience Enhancement Collaboration

August 17, 2021



Prepared by DJ Case & Associates under subcontract to Kearns & West

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Background

The U.S. Fish and Wildlife Service (Service) was recently asked to provide recommendations to the Association of Fish and Wildlife Agencies (AFWA) Harvest Information Program (HIP) Working Group about an improved stratification design for the migratory bird harvest surveys. Currently, the information about hunting experiences collected from hunters during the HIP registration process is used to determine a national sampling frame of all migratory game bird hunters. There is some concern in the utility of information collected in sample design stratification, as well as questions about the quality of data reported either from third-party vendors or hunters themselves. In addition to providing a recommendation regarding the HIP certification process, the Service is transitioning its National Migratory Bird Harvest Survey from a mail survey to an online survey and would like to explore ways to enhance participant experiences. To inform this recommendation and transition, it would be helpful for the Service to know more about hunters' perceptions of the HIP registration process and its relationship to national migratory bird harvest surveys, and about hunter perceptions of the harvest survey itself.

The Service conducts annual surveys of migratory bird hunters to estimate the harvest of migratory game bird species. Historically, these surveys have been conducted as mail surveys. In recent years, with efforts to modernize data collection, the Service has transitioned these surveys to an online platform. Prior to the creation of HIP in the 1990s, there was no reliable sampling frame for all migratory game bird hunters. HIP was established to create a national sampling frame annually for migratory bird hunters, as well as to develop national harvest surveys for each migratory game bird species. Each state wildlife agency, except for Hawaii, provides the Service a list of the licensed migratory bird hunters in its state. Hunters are required to answer a series of screening questions about their previous year's hunting experiences, which are then used to group hunters based on species hunted and varying degrees of success (no harvest, low harvest, and high harvest). These groupings based on varying levels of success are intended to reduce variation within groups, improving sampling precision. Concerns over inaccuracies in data collected through the screening questions and the possible misperception of hunters that screening questions are used to estimate the current year's harvest parameters has prompted this evaluation of hunters' perceptions of HIP.

In addition, this harvest survey project seeks to explore ways the Service can improve hunters' experience with and participation in the online national migratory bird surveys. HIP was created to provide, through screening questions and harvest surveys, reliable harvest information to inform management decisions for migratory game birds. During pilot phases of the transition from mail to online harvest surveys, the Service has experienced lower response rates to the online survey than it typically received via the mail surveys. While there are many benefits to administering surveys online, they can come at the expense of lower response rates. This project explores ways the Service can enhance hunters' experiences with the online harvest survey to improve response rates and continue to provide accurate harvest information essential to the management of migratory game bird populations and continued hunting.

The Service coordinated with the Department of Interior's Office of Collaborative Action and Dispute Resolution (CADR) to contract with Kearns & West (K&W) for an assessment of hunters' perceptions of the HIP registration process, its relationship to national migratory game bird harvest surveys, and

current perceptions of the harvest survey.¹ K&W reviewed the draft report as a major deliverable under its contract with DOI CADR.

Methods

Coordination with the U.S. Fish & Wildlife Service

As a first step, the Service provided the Project Team with background information (development of HIP, previous HIP evaluation results, and harvest survey participation metrics) for review. The team reviewed these materials, along with internal literature reviews on survey sampling and design methodologies, to become familiar with the current issue context. A series of virtual meetings with representatives from the Service's Monitoring and Data Management Branch were held to finalize the format and methodology of the assessment. These meetings also provided an opportunity for the Service to keep the Project Team up to speed regarding harvest survey modernization and HIP evaluation projects.

The Service and Project Team identified the following research objectives and approach for the project.

Research Objectives

To interact with waterfowl and dove hunters across the United States to better understand:

1. Their awareness of the purpose of HIP Certification and screening questions;
2. Their ability to provide accurate answers to the HIP screening questions;
3. Their perceptions of HIP screening questions' efficacy for predicting current year's hunting experiences;
4. Their motivations related to harvest surveys;
5. Ways the Service can enhance the user experience with online harvest surveys;
6. Ways the Service can communicate more effectively with migratory bird hunters.

Focus Groups

Based on the stated research objectives and situation analysis, the Project Team determined that virtual focus groups were the best tool to collect the desired information.

Focus group interviews are well established and commonly used qualitative social science tools for gaining insights into why people think or behave as they do. A properly designed focus group draws out the motivational factors critical to understanding what is driving opinion or behavior. Focus groups do not generate statistics the way surveys do. Most importantly, they allow participants to express their deepest concerns, fears, and hopes in ways surveys cannot, and generate information and insights regarding target audiences and issues that otherwise might be overlooked.

In addition to collecting in-depth information from participants, focus groups also serve as powerful communication tools. By asking questions and facilitating discussion, participants will often share large amounts of critical information in a non-threatening and communicative way.

¹ Report prepared by DJ Case & Associates under subcontract to K&W (the "Project Team")

Locations

Service staff divided the country into four geographic regions for conducting 12 virtual focus groups (3 per region) that were approximately two hours in length (Figure 1):

1. Pacific Region – representing the Pacific Flyway;
2. Upper Interior Region – representing the northern portions of Mississippi and Central Flyways;
3. Lower Interior Region – representing the southern portions of Mississippi and Central Flyways;
4. Atlantic Region – representing the Atlantic Flyway.

The Service selected four states from each region to use for drawing the participant sample list (Table 1). All focus groups were conducted in the evening from approximately 6pm to 8pm with adjustments made for time zone differences.

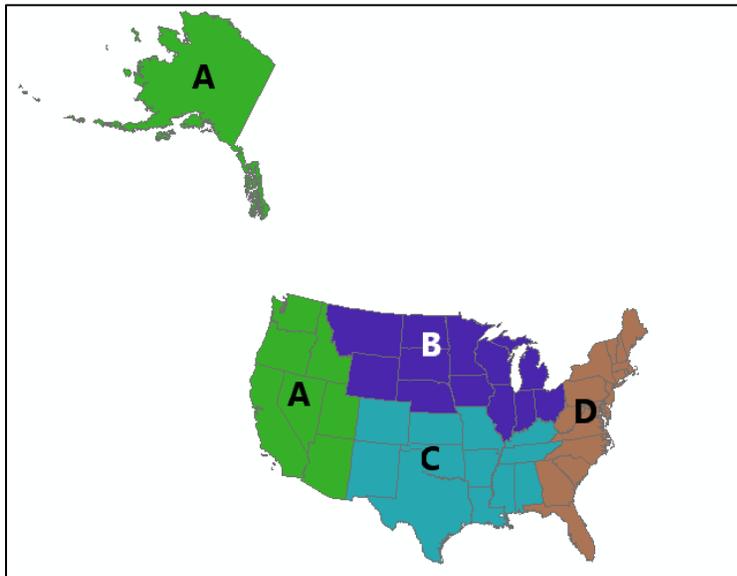


Figure 1: Geographic regions for migratory bird hunter focus groups
 Note: A) Pacific Region; B) Upper Interior Region; C) Lower Interior Region; and D) Atlantic Region

Table 1: Sampled states by geographic region for migratory bird hunter focus groups

Pacific Region	Upper Interior Region	Lower Interior Region	Atlantic Region
California	Minnesota	Arkansas	Georgia
Idaho	Missouri	Kentucky	Maryland
Nevada	North Dakota	Louisiana	North Carolina
Washington	South Dakota	Texas	Pennsylvania

Identifying and Inviting Participants

Focus groups in each region were designed to be grouped based on species hunted: dove only hunters, duck only hunters, and hunters who target both doves and ducks. Within each group every effort was made to ensure a mix in degree of hunter avidity. The Service further divided the sample list for each

region into four groups defined by species hunted (dove or duck) and degree of avidity (no harvest, low harvest, and high harvest) based on responses to HIP screener questions. A total of 1,500 hunters were selected for each of the four groups (Table 2). The sample list was reviewed to remove any duplication, as hunters could be registered in multiple states, and to verify an acceptable distribution between in-state hunters and out-of-state hunters.

Table 2: Sample list strata by geographic regions

Geographic Region	Group Description	Dove Avidity	Duck Avidity	Number Sampled
Pacific	Neither dove nor duck	No harvest	No harvest	1,500
Pacific	Dove only	Low or high	No harvest	1,500
Pacific	Duck only	No harvest	Low or high	1,500
Pacific	Dove and Duck	Low or high	Low or high	1,500
Upper Interior	Neither dove nor duck	No harvest	No harvest	1,500
Upper Interior	Dove only	Low or high	No harvest	1,500
Upper Interior	Duck only	No harvest	Low or high	1,500
Upper Interior	Dove and Duck	Low or high	Low or high	1,500
Lower Interior	Neither dove nor duck	No harvest	No harvest	1,500
Lower Interior	Dove only	Low or high	No harvest	1,500
Lower Interior	Duck only	No harvest	Low or high	1,500
Lower Interior	Dove and Duck	Low or high	Low or high	1,500
Atlantic	Neither dove nor duck	No harvest	No harvest	1,500
Atlantic	Dove only	Low or high	No harvest	1,500
Atlantic	Duck only	No harvest	Low or high	1,500
Atlantic	Dove and Duck	Low or high	Low or high	1,500

The Service sent initial recruitment emails to half of the sample list for each geographic region to invite hunters to participate in a focus group. Interested hunters were directed to an online survey, where they were asked questions about their hunting experience and availability for three different focus group dates and times. Finally, if respondents wished to be considered for focus group participation, they were asked to provide their name and contact information for follow-up by the Project Team. One week following the initial recruitment email, interest in participation was reviewed, and if necessary, an invitation email was sent to the remaining half of the sample list in that region.

The Project Team filled each focus group with participants based on their responses to the online recruitment survey. The composition of groups was based on the type of migratory bird hunting (dove only, duck only, and both dove and duck). Groups were set up to have a mixture of avidity levels determined by the number of years a person hunted the relevant species in the last five years, and the approximate number of times he/she hunted the species in a typical year. Every effort was made to have a mix of ages and gender in each group.

Once participants were assigned to a group, confirmation emails were sent to the participants who were then asked to confirm their participation via a brief tech check. Participants were able to schedule a specific time for their tech check or drop into a tech check section that was pre-scheduled. Tech checks were used to confirm hunters had access to the internet, had the ability to log on to Zoom, and could operate their camera and microphone. Participants were also provided instructions on what to expect

during the focus group discussions. Finally, participants were sent a reminder email the morning of their scheduled focus group with the necessary information for logging into the Zoom meeting that evening.

Topic Guide

Working closely with the Service, the Project Team developed a script or topic guide to elicit attitudes and opinions to inform the research objectives. The topic guide was used to guide discussions at every focus group, although the facilitator could ask a variety of probing and follow-up questions based on hunters' responses. The Project Team facilitator opened every meeting with a brief explanation of background and objectives, went over consent information, and led the group through the topic guide. Upon completion, the Project Team answered any questions that may have arisen during the meeting, described the next steps for the research, and thanked all for attending.

Harvest Survey User Testing

Gathering user feedback is a cornerstone for building a product or service. As part of the focus group process participants were asked to test the Service's online harvest survey. Following testing, the Project Team facilitator led the participants in discussion about their experience and opinions about the online harvest survey.

At the outset of the project, a third-party platform designed to facilitate remote, unmoderated testing was used to guide participants through entering multiple hunting trip scenarios into the online survey. After using this platform in the first few focus groups, limiting factors became apparent. Hunters were already required to use Zoom to participate in the virtual focus group, and the Service's online survey added a second technical component to the meetings. The addition of the third-party user testing platform added a third technical component to the meetings, which proved extremely challenging for some participants. In addition, while all participants were able to use the platform without issues during the tech checks, many ran into bandwidth issues during the actual meetings. To mitigate these issues, the third-party platform was removed from the process and participants went directly to the online harvest survey site and completed the survey using hunting scenario information provided during the focus group. This removed a layer of complexity from the virtual focus group and allowed the user testing to continue without confounding participants' experiences with the survey.

Qualitative Research

It is important to note that this research methodology is qualitative in nature. The Project Team made no attempt to identify or interview a representative sample of the target audiences interviewed in this project, nor did researchers use statistical techniques to generalize results across a large population. Rather, researchers sought general themes and broad insights into issues, concerns, and problems that may affect hunters' harvest survey experiences. Consequently, non-precise terms such as "few," "many," "most," and "nearly all" are purposefully used throughout the *Results* section. These terms are intended to give a general sense of how the target audiences responded, without the risk of attaching unintended (and potentially inappropriate) quantitative results to qualitative research data.

Results

The Project Team recruited 76 hunters to participate in 12 focus groups. A total of 67 hunters actually participated (Table 3). Overall, there was a balanced mix of participants based on species hunted and age (Table 4). Participants were nearly all male. While there was similarity in terms of the number of years participants had been dove or duck hunting, dove hunters were more skewed toward participants who went dove hunting five times or less in a typical year.

Table 3: Number of participants in 12 virtual focus groups

Group	Date	# Recruited	# Participated
Atlantic – Dove only	1/19/2021 6:00pm ET	7	7
Upper Interior – Dove only	1/20/2021 6:30 pm CT	4	4
Atlantic – Dove/Duck	1/21/2021 6:00 pm ET	9	9
Upper Interior – Dove/Duck	1/26/2021 6:30 pm CT	7	6
Atlantic – Duck only	1/27/2021 6:00 pm ET	7	5
Upper Interior – Duck only	1/28/2021 6:30 pm CT	6	4
Lower Interior – Dove only	2/9/2021 6:30 pm CT	6	5
Lower Interior – Dove/Duck	2/17/2021 6:30 pm CT	6	5
Pacific – Dove only	3/2/2021 6:00 pm PT	5	5
Pacific – Duck only	3/4/2021 6:00 pm PT	8	6
Pacific – Dove/Duck	3/10/2021 6:00 pm PT	7	7
Lower Interior – Duck only	3/11/2021 6:30 pm CT	4	4

Table 4: Composition of focus group participants

<i>Species hunted</i>	<i>Number of Participants</i>	
Dove only hunters	18	
Duck only hunters	20	
Dove and Duck hunters	29	
<i>Age categories</i>	<i>Number of Participants</i>	
18 to 29 years	12	
30 to 39 years	13	
40 to 49 years	10	
50 to 59 years	11	
60 to 69 years	13	
70 or more years	8	
<i>Number of Times in a Year</i>	<i>Duck Hunters</i>	<i>Dove Hunters</i>
5 or fewer times	13	31
6 to 10 times	15	10
11 to 20 times	10	5
21 to 30 time	4	0
31 or more times	7	1
<i>Years Out of Past 5 Years</i>	<i>Duck Hunters</i>	<i>Dove Hunters</i>
1 year	6	5
2 years	3	4
3 years	3	6
4 years	4	5
5 years	31	27

The range and scope of hunters' perceptions and experiences were very similar across all focus groups, so the following findings are based on combined results from all 12 focus groups. Findings are organized here by four main issues addressed in the focus groups. These responses are not in the same order as the questions were asked during the discussions, but rather are grouped into similar topics as follows:

Issue 1: Awareness and understanding of HIP Certification Program

Issue 2: Communicating with hunters

Issue 3: Data provision

Issue 4: Survey enhancement

Prioritization of these issues is a subjective assessment by the researchers, based on focus group responses, verbal and non-verbal cues, and discussions after the focus group. It is an attempt to provide the Service with a relatively "coarse-scale" sense of priority to help with modernization efforts, without implying that the qualitative nature of the research can provide fine-scale prioritization.

Issue 1: Awareness and Understanding of HIP Certification Program

- Overall, hunters knew a HIP certification number was required to hunt migratory birds in their state.

Nearly all the groups mentioned HIP as being a licensing requirement to hunt migratory birds in their state; however, there were some hunters who were not sure about this requirement. In some cases, hunters who purchased lifetime licenses or sportsmen licenses were less certain about whether HIP was required for them. It should be noted that all focus group participants had current HIP certifications even if they were unaware of this requirement.

- Most hunters recognized the HIP questions when given to them.

Even if participants did not recognize the HIP name, when provided the screening questions they recognized having been asked them before. In some cases, participants indicated they didn't remember seeing some of the questions. This could be due to a variety of factors: memory recall; states customize how they ask some of the screening questions and the basic format presented may not have stimulated recall; if species are not present in a state or hunting seasons are not established, relevant questions are not asked; and if purchased through a third-party vendor, not all questions may have been asked.

- Most hunters did not understand the purpose of the HIP screener questions.

Of the 67 participants, only 1 participant correctly stated the purpose of the HIP screener questions. Nearly all participants thought the purpose was for management of the species, and that their responses to the screening questions were used to calculate harvest estimates and species population metrics. A few participants expressed shock when hearing responses to HIP questions were not used for harvest estimates, but rather for developing the sampling frame for national migratory bird harvest surveys.

In addition to not understanding the purpose of the HIP questions, participants routinely confused the HIP questions with post-season harvest surveys (federal or state) and the Parts Collection survey.

- Most hunters did not think the HIP questions were burdensome, but some expressed difficulty recalling last year's harvest numbers.

When asked if they had any concerns answering the HIP screening questions, most participants thought they were simple and straightforward. In some cases, participants showed hesitancy because of difficulty remembering what they harvested the previous year. This seemed to be a bigger issue for participants that either had higher harvest rates due to larger bag limits (dove hunters) or the number of times they hunted in a season (duck hunters). Some participants expressed concerns for how the data would be used, which will be discussed in the issues that follow.

Some hunters expressed confusion on how to answer HIP questions when they hunt in multiple states. A few participants wondered if they should answer with total harvest across all the states or just for a specific state. Another question that arose was whether to include Eurasian collared doves in harvest totals for questions pertaining to doves.

Several participants indicated they kept hunting logs and could tell you exactly how many birds they harvested last year; however, some indicated they may not have their logs with them or may be in too much of a hurry when purchasing their license.

Participants thought the broad response categories provided for the screening questions were helpful and expressed confidence that they could put themselves into the correct category. Many participants expressed concern that the broad response categories did not provide sufficient detail for calculating harvest estimates, providing further evidence hunters are not clear on the purpose of the HIP screening questions.

- Hunters found it more difficult to predict their harvest amounts for the upcoming season than to recall last year's harvest totals.

Participants said it was very difficult to predict the number of birds they will harvest in the upcoming season, as it was dependent on multiple variables. Several indicated they would just base it off last year's experience, while others indicated they would use an average. How that average was determined varied. Some participants said they would use the average per hunt from last year and then multiply that by the number of times they thought they would go this year. Others indicated they would use a 3- or 5-year average to come up with this number.

A few participants indicated they were able to hunt as much as they wanted and in one instance even more than they wanted. For those who did not get to hunt as much as they wanted, several barriers were identified:

- Weather
- Work schedule
- Access to hunting places and/or proximity to hunting areas
- Family commitments
- Crowding at hunting areas
- Competing hunting interests and seasons
- Money
- Limited travel with COVID-19

- Availability of birds
- Lack of relationships with landowners
- Equipment owned and/or availability of ammunition
- Availability of hunting partners
- Lack of campground

Issue 2: Communicating with Hunters

- Nearly all participants expressed genuine interest in knowing why the data is collected and how it will be used.

In all the focus groups, participants continually emphasized the need to know what the purpose of the survey was and how the Service was going to use the data they provided. One participant indicated that when he went back to the website, he was able to find information about how the data is used but it was buried within the site. Participants repeatedly indicated that it was important for the Service to explain how participating in the survey benefited hunters.

- Many participants were confused about state and federal agencies' roles.

It was not uncommon to hear in the focus groups that participants weren't sure if the surveys they received were from state or federal agencies. Based on survey descriptions they provided, it is likely that many were confusing state agency harvest surveys with the Service's harvest survey. At least one participant thought the state agency's end-of-season harvest survey was done to provide harvest information back to the Service. In addition to confusion between state agencies and federal agencies, some participants weren't sure if the Service's Parts Collection Survey was the same thing as the harvest survey.

While the objectives of the focus groups did not include gauging hunters' understanding of the regulatory process for migratory game bird hunting, several participants asked questions about this process. There was confusion on what was within the state's jurisdiction and what was set at the federal level.

- Participants indicated email was a good way to communicate with them.

While participants said email was a good way to communicate with them, many indicated that their inboxes are flooded with messages, advertising, and survey requests, making it likely that messages would go unread.

- Nearly all participants thought survey reminders would be a good thing.

Survey reminders were viewed as important and/or necessary, because participants felt that as the season goes on it might slip their minds to go in and fill out their hunt log. Hunters agreed that too many reminders or too frequent reminders would be irritating and likely cause them to opt out of receiving them.

When asked about timing there was no clear consensus among participants on the ideal frequency for reminders. Some thought no more than 3 emails: the original invitation, a reminder mid-season, and a reminder at the end of the season. Others thought monthly

reminders would be fine, and a few participants thought weekly reminders would be fine. While there wasn't a clear winner for reminder frequency, there was clear agreement that allowing hunters to customize when and how they receive reminders would be ideal.

Issue 3: Data Provision

- Most hunters expressed a sense of responsibility when it came to providing harvest data.

Nearly all participants indicated they would participate in the harvest survey if asked. Those who were hesitant said they would intend to but feared the email would get buried in their inbox and/or it would just slip their mind. Some participants indicated that while they were willing to fill out the survey, they "thought it would be a pain" to keep track of all the necessary information throughout the season.

When asked why they thought it was important for hunters to complete the harvest survey, every group mentioned the need to do their part to further responsible management and wildlife conservation. In addition to doing their part for conservation, participants offered several reasons they felt participating in the survey was important:

- Way of giving back to the sport
 - Desire to help the Service
 - Improve the hunting experience
 - Accurate estimates on wounding loss
 - Understanding the number of birds available for harvest
 - Importance of showing the younger generation cares and is involved
 - Leads to good data management
 - Making sure the hunter voice is heard
 - Ensuring hunting opportunities for future generations
- Hunters expressed some concerns about the accuracy of harvest data provided.

On the subject of entering data into the HIP survey, some concerns were expressed about how accurate the information would be. Some participants kept hunting logs independent of the harvest survey and felt that they could enter accurate information no matter when they received the survey request. Others did not keep a log and felt that if they got the survey request after they started hunting, their data wouldn't be as accurate since they did not know they needed to be keeping track.

Another area of confusion was how to deal with group hunts. Several participants hunted as part of a group and indicated it is not always clear who shot which bird. They expressed concern that some birds may be double counted. Others thought that if they knew more birds were harvested that day by the group than individually, they should report those to the Service as well. One participant expressed concern that, when hunting with his child who would not be eligible to receive a survey, his child's harvest should also be captured in the data. In spite of these specific concerns, when asked how they would enter the information when hunting in a group most participants indicated they would answer the question as it is asked and only provide their individual harvest.

Hunters who hunted species with large bag limits or who went hunting numerous times throughout the season expressed concerns with their ability to recall harvest amounts, dates, and/or locations, especially if they received the survey at the end of the season or well into the season. This issue was increased for hunters who targeted multiple species in a season.

- Some hunters expressed concerns about how the data they provided would be used.

In the absence of knowing how the Service intended to use the survey data, participants expressed concerns that fall within three areas: enforcement, bag limit reductions, and season restrictions. Other concerns revolved around issues of confidentiality and data privacy.

Some hunters felt they needed to be careful what they reported because they did not want a game warden to show up on their doorstep or to end up on some sort of watchlist. Concerns about perceptions of being over the possession limits or whether meat in the freezer applied to possession limits were the primary enforcement issue mentioned in this regard.

Other concerns mentioned in the groups were how harvest reports would affect future bag limits and season restrictions. This was a concern in the sense that if harvest reports or participation rates were low, the Service might interpret that as lack of interest and get rid of the hunting season. However, most participants agreed that if the data indicated a population was in trouble, the Service should reduce bag limits or restrict seasons to protect the resource.

- There were mixed reactions to why participants thought some hunters might provide inaccurate information on their harvest surveys.

Whether participants did this themselves, knew other hunters who did this, overheard other hunters talking about it, or were just considering the question hypothetically, multiple explanations were offered for why inaccurate information might be reported, as follows:

- Not wanting to report over bags
- Trying to mess with the system/government
- Not understanding the importance of the data
- Fear of restrictions to bag limits and loss of opportunity
- Under-reporting to increase bag limits
- Ego or bragging
- Not wanting to show high success in a specific area
- Reporting group harvests
- Memory/forgetting
- Just to get through a mandatory survey
- Vendors entering information so it is one less thing to ask hunters

On the other hand, some participants could not think of any reasons why someone would want to provide erroneous information. Some participants did not think trying to intentionally influence regulations in one direction or another was as big an issue today because of the liberal framework, and felt it was less an issue in dove hunting than duck hunting.

Issue 4: Survey Enhancement

During the online survey user tests participants were asked about their experiences with registering for the survey, entering their harvest information, and submitting the survey. In addition, participants were asked how the survey could be improved and how the Service could increase the number of hunters who participate in the survey.

- Overall, registering for the online survey created the most frustration for participants.

Most participants were able to register for the survey and create an online account without difficulties. For some, however, this step was challenging and led to them becoming frustrated with the survey. Several participants who self-identified as not being tech savvy indicated they would probably have to have a family member or friend help them complete the survey, with some even saying that if it is online, they would not be able to do the survey. These same individuals expressed a strong desire to participate in the survey but were unable to navigate the process without help. For participants who were more tech savvy, they were able to navigate through the process without help, but felt it was a bit cumbersome.

The 12-digit alphanumeric registration code was described several times as irritating. Not being able to copy and paste it into the site was mentioned throughout the focus groups. The fact that the code was random and had no meaning to respondents also seemed to add to the effort it took to find/remember the number and enter it.

Many participants did not like having to create an account with their email and a password. We heard multiple times that everything requires an account and password these days and keeping track of it all was a bit much. A few participants experienced difficulties logging in when their email and password would not work, and then not being able to re-enter the registration code.

There were also minor issues with knowing where to click to enter the registration code versus logging into an account. The participants who ran into this issue were primarily using their phones and were able to work through it in the end.

Across all the focus groups, this was the step that required the most assistance from the facilitator to allow participants to move on to the data entry portion of the survey.

- Participants generally saw the data entry as being easy, and in some cases maybe too easy.

Hunters thought the data entry process was easy and straightforward. In some cases, participants thought there wasn't enough information collected, specifically noting a need to report species of ducks. When asked why they thought this was an issue, they felt like it was necessary information for responsible management of populations.

Some hunters were confused by the drop-down menu allowing them to select more than one species (i.e., ducks and geese). Once they realized they could, they liked this feature but felt providing instructions to this effect would be good.

- The submission process was straightforward, with only minor issues.

Hunters indicated the process to submit their hunt log at the end of the season was fairly simple. Some indicated it took them a minute to figure out why the box was grayed out, but once they found the statement they needed to check they were able to hit “submit.” A few participants experimented with going back into their logs after submitting for the season and were happy to see they could add an additional hunt if necessary.

- While hunters thought the survey was easy to complete, they did offer suggestions for ways to improve the survey (recommendations not listed here are addressed below).
 - Adjusting the color contrast between the site background and text
 - When rendering on a mobile device the icons become tiny, which can make it challenging to use your fingers to click in the right place
 - Use hover bubbles to provide instructions for respondents who need clarification
 - Clarification on when harvest information becomes a new hunt (for example if you hunt in multiple counties on the same day are these the same log entry or separate entries)
 - Use unique links with the registration code embedded in them
 - Set up to where you don’t have to continually log into the site
 - Having a way for folks to enter group harvest data as well as individual harvest data
- Many participants who hunted several times throughout the season or harvested higher number of birds feared entering their harvest information could become time consuming.
- Nearly all participants liked the idea of customizable survey reminders.

Most hunters preferred to receive their harvest surveys before the season started so they would be able to keep track as the season went along. They saw this as a necessary condition for entering accurate information. For those hunters who wanted to get the survey at the end, they liked the idea of being able to go in one time and either enter all their daily hunts or to enter a single season total.

Regardless of when they preferred to receive their survey, nearly all participants thought reminders were a good idea. They liked the concept of being able to customize when they received survey reminders and how they received them (email, text message, platform notification, etc.).

- Participants thought incentives would be a way to increase hunter participation in the survey.

Hunters liked the idea of incentives to encourage participation. And while a few participants thought the survey should be mandatory, most felt incentives were a better approach. Examples provided ranged from intangible to tangible incentives.

- Knowing how the data is being used
- Receiving the National Harvest Reports
- Receiving a report based on their data that shows how it fits within their region
- Visualizations of survey results, particularly at scales most relevant to individual hunters
- Raffles and drawings for hunting-related prizes

- Ability to use the survey as a hunting log and track across seasons
- While there was a consensus among focus group participants that incentives could be a good way to increase response rates, participants also acknowledged that some hunters do not want to do business with the government or provide the government with their data. It was offered that contracting with a third party to administer the harvest survey may help to mitigate this concern.
- Provide multiple modes for survey administration.

Hunters felt it would improve response rates if there were multiple ways to complete the survey. Modes that they specifically mentioned were: online, paper, tele-check, and apps. One participant asked if it would be possible to allow hunters to opt-in (not as part of a statistical sample) and provide their harvest information and still allow the Service to calculate accurate harvest estimates.

- Across all the focus groups, participants independently brought up the development of a smartphone app as a way to improve the harvest survey.

Participants liked the idea of a smartphone app regardless of whether they saw themselves as tech savvy or not. One individual indicated that if the survey was in an app form, he would definitely use it and be more likely to participate. In addition to seeing the app as a way to improve on some of the online survey functions, hunters could see themselves logging their hunts when they got back to their vehicles or even while in the field or blind.

Benefits for having the survey on an app that hunters mentioned were:

- Ability to save and remember account access information so it wouldn't have to be re-entered every hunt
- Ability to auto-populate data entry fields or set defaults that could be changed when hunters change hunting locations
- Ability to tailor app notifications to remind hunters to enter their data
- Ability to use as a personal hunt log and track experiences across seasons
- Ability to compare an individual's stats against a larger group
- Create customizable profiles
- Track additional information beyond what is needed for the harvest survey, while still allowing users to only enter the necessary information for the survey, including:
 - Enter harvests by species and sex of ducks
 - Game birds shot but lost
 - Use of a retriever dog
 - Weather descriptions (wind speed and direction, rain, snow, ice, clear skies, ambient temperature, wind chill, etc.)

Recommendations

Based on the input collected through focus groups, the Project Team submits the following recommendations regarding the Harvest Information Program and efforts to modernize the national

migratory bird harvest surveys. These are numbered for ease of reference—numbers do not necessarily indicate priority.

1. Work with internal and external partners to increase outreach and education efforts with migratory game bird hunters. Many hunters were unaware of the purpose for the HIP screening questions or how that data was used. Hunters expressed concerns about data privacy and concerns of negative repercussions, such as enforcement actions, because of their participation. Some hunters were also confused as to whether their information was for the state or the Service. Efforts to increase the Service's brand awareness among hunters, as well as hunters' understanding of how the Service and states work together to manage migratory game birds, could help reinforce the importance of participating in the harvest survey program.
2. The online harvest survey experience is a hunter experience. Attention is a sought-after commodity and earning the attention of an audience is tough, especially if they are also having to overcome technical barriers. Hunters are going to be naturally inclined to engage with information they find relevant and interesting. The Service should explore ways to customize the entire harvest survey experience to show hunters why it is worth paying attention to. Using survey data and citizen science to produce visualizations that are of interest to hunters can help bring hunters to the site and increase their likelihood of remembering to log their hunts.
3. Explore the feasibility of developing a smartphone app. This was mentioned as a way to improve the survey in all 12 focus groups. Administering the survey via an app could allow for easier customization of the harvest survey experience. Through customizable profiles, hunters could choose which additional information, if any, they would like to log and set up how and when they would like to receive a notification about filling out their hunt log. Customization is done by the hunter and allows them to control their experience, increasing their sense of agency and investment in the survey experience. An app would also create opportunities to incorporate "gamification" into the survey experience. Gamification is the integration of game thinking and mechanics into non-game experiences to motivate increased levels of engagement. Game mechanics such as leader boards, badges and levels based on achievements can be used to enhance the enjoyment of those taking the survey by making tasks more engaging and interesting to complete.
4. Explore ways for changing survey administration processes to recruit harvest survey participants at the season's beginning. Most hunters preferred to receive the survey at the beginning of the season and felt they would be able to provide more accurate information in this case.
5. Make finding information about HIP and harvest surveys simple for hunters. Most hunters are not going to take the time to dig through information that is not relevant to them to find out why you are asking for their harvest information. This could be accomplished by:
 - Including information about confidentiality and data privacy when contacting hunters
 - Including disclaimers in a prominent location on the harvest survey
 - Working with states to include information on their HIP questionnaires as well

6. Cast a broad net to improve survey response rates. Most hunters said they would participate in the online harvest survey if asked to; however, hunters who were less tech savvy said they probably would not. In addition, those who said they would participate also said they knew hunters who would not participate if it was an online survey. Continuing to provide paper surveys as an option for hunters to take the survey (along with online) can significantly increase survey response rates.
7. In the long-term, explore feasibility of an open application that would allow hunters to opt-in to the survey. This would be a significant departure from the current sampling methodology and would require considering issues of statistical modeling on the back end of data collection, as well as data privacy and use considerations. As survey response rates across the board continue to decrease, finding new ways to collect the data necessary for responsible management decisions will become increasingly important.