Appendix A.

VERIFYING HIP DATA TRANSFERS FOR ALL METHODS OF HIP REGISTRATION

Report to the Flyway Technical Sections/Study Committees, March 18, 2010

Khristi Wilkins and Ken Richkus, Branch of Harvest Surveys, DMBM

Summary

The Harvest Information Program (HIP) was created to estimate the sport harvest of migratory birds in the U.S. Hunters must register for HIP in each State in which he or she hunts. Currently, hunters can register for HIP by a variety of methods that differ among States. These HIP registrations are compiled by States and sent to the U.S. Fish and Wildlife Service (USFWS) twice each month during the hunting season. Timely receipt of complete HIP registration data is one of the main requirements for the HIP to provide accurate estimates of migratory bird harvest in each state. To verify that the USFWS is receiving and processing the HIP data properly, we attempted to track hunters who registered via every method of HIP registration in every state. Out of the possible 131 methods of HIP registration available in 49 states, 80 methods from 29 states were checked. Most test HIP registrants' name and address information was sent to the USFWS, although in many cases we had to request missing data from state licensing agency or contractors. All HIP registrations from 20 states were received. Serious problems are suspected in 4 states: Georgia, Nevada, New Jersey, and West Virginia. We are trying to work with these states individually to correct the problems and have made significant progress in Nevada and New Jersey. Most data were also being sent in a timely manner. We were able to verify that data from one method of HIP registration were not being sent to the USFWS, and this problem now has been fixed. We identified one case where we were improperly omitting HIP registrations based on the date of the HIP registration. We will work with this state to correct this problem. Finally, we identified several states that have incomplete sample frames for other reasons and are trying to work with these states to correct these problems. We think it is very important to check the remaining methods of HIP registration to verify that we are receiving and handling data properly. Based on results of this study, we suggest that the following changes to the HIP program: (1) allow HIP name and address data to be sent year-round; (2) improve the USFWS ftp site; (3) perform systematic checks of HIP registrations; (4) develop better contacts in each state so we are kept apprised of changes in license year, HIP registration methods, and data contractors; and (5) consider including a code in the raw HIP name and address data sent by the states that identifies the method of HIP registration. We request the following actions from the Flyway Technical Sections/Study Committee members: (1) designate one person in each state as a point of contact with the USFWS for annual information on changes in license year, HIP registration methods, and data contractors (this may be the existing HIP coordinator), (2) encourage participation by states that were not shown to have successfully transferred all forms of HIP registrations, and (3) consider participation in a follow-up study to track HIP registrations by license type (e.g., out-of-state, lifetime, non-resident, landowner).

Introduction

The Harvest Information Program (HIP) is a cooperative program between state natural resource agencies and the U.S. Fish and Wildlife Service (USFWS) that was developed to improve estimates of harvest and hunting activity by migratory bird hunters in the U.S. The HIP provides the USFWS with the sampling frame for the Migratory Bird Harvest Survey (MBHS), which is used to estimate harvest of ducks, geese, brant, sea ducks, mourning doves, white-winged doves,

band-tailed pigeons, American woodcock, snipe, coots, rails, gallinules, and sandhill cranes[1]. By federal regulation (50 CFR 20.20)[2], licensed hunters of migratory birds must register for the HIP in each state in which he or she hunts each year. States are required to send those names to the USFWS's Branch of Harvest Surveys (BHS) within 30 days of hunter registration. We request that states send HIP name and address data twice each month shortly before and during the hunting season (approximately August-February). When the HIP registration data are received by the BHS, we select a sample of hunters and send them an MBHS survey form. It is important that we send survey forms out as soon as possible (usually within 7 days of receipt of names) so that hunters can keep accurate and complete detailed records of their hunting activity throughout the season. From completed survey forms, we calculate the average harvest-per-hunter. The statewide total harvest of migratory birds is estimated as the harvest-per-hunter times the total number of HIP registrations for each state and species-group (i.e., expansion factors). **Timely receipt of complete HIP registration data is one of the main requirements for the MBHS to provide accurate estimates of migratory bird harvest in each state.**

Many states hire contractors to help them meet their federal HIP obligation. Systems to register migratory bird hunters for HIP vary by state, and include: (1) electronic registration with license vendor when purchasing a hunting license; (2) registration over the phone by calling a toll-free number; (3) registration online; (4) filling out a paper permit when purchasing a hunting license; and (5) registering by mail. Data from all methods of HIP registration are compiled and sent to the BHS in an electronic file that is in a standard format. Individual states allow hunters to register for HIP using 1-6 methods, depending on the state. At our request, HIP registration data are generally sent twice per month from August-February. HIP registrations made earlier than the standard registration period are usually held back until August. The HIP relies on a complete sample frame (list of hunters) from each state so that: (1) all migratory bird hunters have a chance to be sampled for the survey (minimizing bias that can be introduced by non-representative samples); and (2) estimates of harvest per hunter are expanded by the correct number of hunters in each state. Since HIP was fully implemented in 1999, we have received an average of 3.9 million names of migratory bird hunters each year (Table 1). Based on historical information from federal Duck Stamp sales, state harvest surveys, and previous numbers of HIP registrations, we suspect that we should be receiving more HIP registrations from some states. This is problematic for harvest estimates at the state and management unit levels (e.g., Flyway, Woodcock Management Region, Dove Management Unit). If certain states consistently provide poor sample frame data and a large proportion of the harvest of a particular species occurs there, then management unit harvest estimates can be biased and imprecise.

To improve and maintain the quality of the HIP sampling frame, BHS staff have always performed non-systematic checks in particular states, to track receipt of individual HIP registrations. We have never tried to do this for every state and every method of HIP registration. Recently, we discovered that one state was unintentionally not sending us HIP registrations that were made online. Due to the complex nature of state licensing and HIP-registration systems, we suspect that this is not an isolated incident. Therefore, to identify major gaps in data transmission and handling, we attempted to track the names of individual hunters

[1] Currently, HIP registrations are used to sample sandhill crane hunters in Alaska and provide expansion factors in Alaska, Colorado, and South Dakota.

[2] Regulation created in 1993 (58 FR 15098), as amended in 1994 (59 FR 53336), 1996 (61 FR 46352), 1997 (62 FR 45708), and 1998 (63 FR 46401).

who had registered for HIP from all states to make sure their data were received and properly processed by the BHS.

Methods

To verify all methods of data transfer in all 49 states, a minimum of 131 HIP registrations needed to be checked (Table 1). In February and March 2009, we sent a written study proposal to members of the 4 Flyway Technical Sections or Study Committee. We asked a biologist in each state to ask at least one person to register for HIP via each way possible in that state, and submit the names and other identifying information to BHS. All 4 Flyways supported the proposal, formally or informally. Biologists provided us the requested information from study HIP registrants from June 2009 to January 2010 and we recorded that information in an Excel database.

The study database was compared with the national HIP database. The entire set of HIP name and address records received from 1 August 2009 to 20 February 2010 was used as the national database. These data records are in a standard format and sent as text files. This database included those records identified by BHS as erroneous HIP registrations. In states which have a HIP year that corresponds to a hunting year, BHS has a policy of assuming that all HIP registrations received after migratory bird seasons are closed but before the next HIP year are erroneous HIP registrations.

Study HIP registrations were matched electronically with the national HIP database using SAS software. We used several different matching criteria of decreasing specificity: (1) HIP registration state, date of birth, short (1st 3 letters) first name, and last name; (2) HIP registration state, date of birth, Soundex[3] short first name, Soundex last name; (3) HIP registration state, date of birth, Soundex last name, Soundex address; (4) HIP registration state, date of birth, Soundex address; (5) HIP registration state, Soundex last name, Soundex short first name, Soundex city. Because the inexact matching techniques can allow incorrect matches to be identified, all matches were verified with the original complete HIP registration record and study registration information. Study registrations not found by computer matching were searched for manually, by examining the individual records in the state sample frame database. We searched for 2 HIP registrations from Wyoming manually, because they were paper permits that were mailed to BHS. When data could not be found, we contacted the person in that state agency who is responsible for coordinating HIP. HIP coordinators and contractors worked with us to help track down the missing HIP registrations.

Results

Biologists from 31 states submitted 126 HIP registrations, 119 of which are in the current HIP year and can be checked at this time (data from Connecticut and Idaho cannot be checked until next year's HIP registrations are sent in August; Table 2). The distribution of samples allowed us to check 80 of the 131 methods (approx. 60%). The national HIP database contained approximately 3.0 million records from the 31 states participating in the study. An initial search located 94 of the study HIP registrations in the national sample frame data sent to BHS. An additional 5 records were found after missing data were requested from states or contractors. Thus, a total of 99 of the records were found in the national sample frame (Table 2). All HIP

[3] The Soundex algorithm converts words to letters and numbers, so that similar sounding words (e.g, Thom and Tom = T5) can be matched. We used the Soundex algorithm as implemented in SAS v 9.1.3.

registrations were received from 20 out of 29 states, and 13 of the missing registrations came from 3 states: New Jersey, Nevada, and West Virginia. Although we located 99/116=85% of the records, this does not mean that we are receiving 85% of the HIP sample frame, because: (1) each state's sample frame size differs, and (2) we don't know how many hunters register for HIP via each method in each state, and (3) incomplete HIP registration records cannot be located. Some or all of these missing records would likely have been requested by BHS in February 2010. However, having the known HIP registration information made it much easier for licensing agency or contractor personnel to track down the missing sources of data and to identify and fix patterns of mistakes.

Of the 99 records that were found in the HIP sample frame database, 97 had been classified properly by BHS. Two from South Carolina had been incorrectly classified by BHS as being erroneous HIP registrations because the HIP registrations had been issued after the hunting seasons had closed. HIP registrations were generally sent in a timely fashion from the states to the FWS (Table 3). Causes for missing HIP sample frame data included: contractor or state licensing agency did not send data for HIP registrations that were made from March-July (Colorado, Delaware, Utah), state was unknowingly not including HIP registrations of a particular license type (Nevada, suspected in Wyoming), unknown contractor error (New Jersey), or undetermined (Georgia). The most serious problems were in Georgia and New Jersey (none of the study HIP registrations were received), and in Nevada and West Virginia (most of the HIP registrations were not received). We think that Nevada Department of Wildlife has corrected the problem in Nevada. We are working closely with the licensing division of New Jersey Division of Fish and Wildlife to resolve the problem in this state, and are attempting to work with Georgia Department of Natural Resources and West Virginia Department of Natural Resources.

This study shows that the following states…

…are sending data from all methods of HIP registration with no problems	Alaska, Arkansas, Colorado, Florida, Illinois, Kentucky, Louisiana, Maryland, Michigan, Mississippi, Missouri, Nebraska, New York, North Carolina, North Dakota, Pennsylvania, South Dakota, Texas, Utah
…may not be sending all data	Nevada (missing early internet registrations), West Virginia (only received data for 1 out of 4 registration methods), Wyoming (missing HIP registration by paper registration at a civic agency)
…need to test additional method	Indiana (POS-electronic HIP registration), Rhode Island (POS-paper HIP registration), South Carolina (online HIP registration)
…may have problems unrelated to method of HIP registration.	Arizona, Delaware, Georgia, New Jersey, West Virginia, Wyoming
…cannot be checked until next year	Connecticut, Idaho
…did not participate	Alabama, California[4], Iowa, Kansas, Maine, Massachusetts, Minnesota, Montana, New

[4] Participation from California and New Mexico will require special preparation because these states exclusively send BHS paper permits.

Hampshire, New Mexico[4], Ohio, Oklahoma, Oregon, Tennessee, Vermont, Virginia, Washington, Wisconsin

Discussion

Patterns of missing data. – All data from 20 out of 29 states were received by BHS. Only 1 instance of missing data was known to be caused by the method of HIP registration: the missing internet registrations in Nevada. This was caused by a bug in the code that has been fixed by NVDOW. We would like to repeat this study in Nevada next year to make sure the code is now functioning as expected. In addition, the missing civic paper license in Wyoming may be due to the HIP registration method, but we cannot be sure until we receive all of the paper licenses for this HIP year from Wyoming.

Most errors were caused by data not being sent to the USFWS because of a state license structure that differed from the migratory bird hunting season. License years in individual states include (but are not limited to): 1 January-31 December, 1 March-28 February, 1 April-31 March, 1 May-30 June, 1 July-30 June, 1 August-30 July, 1 September-31 August, and 1 October-30 September. Six states do not have established license years, and hunting licenses are valid for 365 days from the date of purchase. This is further complicated by different starting dates for license sales in some states. To make it easier for hunters and administration of HIP, some states have defined a HIP year that is different from their license year but is concurrent with the migratory bird hunting season. In these cases, their HIP registrations are valid from September-March, regardless of license structure. Because we cannot know to which HIP year a hunter was assigned to by a particular state, we felt it should be the state's responsibility to send us data for the proper HIP year at the proper time of year. In the case of states with a calendar year license (1 January - 31 December), this means holding back HIP registrations made 1 January – 31 July, and sending them to us in August with the first data file. In states where licenses go on sale in the spring, we asked that states hold the sales from spring and summer and send them in the fall. However, each year BHS has spent considerable staff time tracking down missing data files.

In cases when several names were sent by the same method, but not all hunters were found, it is suspected the missing data are caused either by delay in transmission of paper permits (Arizona and Wyoming), special handling of a particular license type (lifetime license in Wyoming), or other unknown problem unrelated to method of HIP registration (Delaware, Georgia, New Jersey, West Virginia).

Erroneous HIP registrations. – Two HIP registrations from South Carolina were incorrectly classified by BHS as erroneous HIP registrations. These were HIP registrations dated 22 May 2009 and 27 May 2009 and received in a data file dated 1 June 2009. In states which have a HIP year that corresponds to a hunting year, BHS has a policy of assuming that all HIP registrations received after migratory bird seasons are closed but before the next HIP year are erroneous HIP registrations (e.g., ≈10,000 records from 14 states in 2008-09). Based on this study, we can see that this policy was incorrect for South Carolina. However, South Carolina has changed their HIP registration process to not allow hunters to register for HIP after the waterfowl seasons have closed (B. Kyzer, South Carolina Department of Natural Resources, personal communication). This should prevent this problem in South Carolina. We need to review our handling of HIP registrations that occur outside of the hunting season and check with individual states when HIP registrations are sent at seemingly inappropriate times of the year.

Wrong HIP year. – BHS did not classify any HIP registrations into the wrong HIP year. However, we have created an artificial classification system to handle hunters from the states that use a 365-day license and no special HIP year. To sample hunters in these states, BHS has a policy of creating artificial cut-off dates for sampling purposes (28 February or 31 March). This should not be a problem for hunters who purchase licenses every year at around the same time, because each year the hunter will be classified into a different HIP year by BHS. While this may cause some hunters to be classified into the incorrect HIP year, we have not been able to develop a better alternative under the 365-day licensing system. The impact of this problem is small on the management-unit scale, but may be larger on the state-level.

Possibility of not finding record in sample frame database. – Some electronic HIP records are received without name and address information. Others have information in the wrong fields (e.g., first and last name in first name field, first and last name reversed) or with typographical errors (correct date of birth = 05/14/1978, but date of birth in data file = 05/14/1987). These records could not have been matched to the study names and thus would appear as not having been received by BHS for this study. We have no way of estimating how often this could have happened. We think that the incidence of not finding names is low in this study because most states with missing HIP registrations had small sample frames and they were not states with high proportion of incomplete records. It is important to note that even hunters with incomplete or incorrect identifying information are counted in the final expansion factors. As long as the missing name and address information are random (e.g., not more prevalent for more successful hunters), this should not cause any bias in harvest estimates.

Incorrect address in database. – Two point-of-sale HIP registrations from Kentucky contained old mailing addresses. The HIP data supplied from Kentucky contained previous addresses that appeared to have been carried over from a previous HIP registration, and is likely a function of the HIP registration system employed in that state. This has been seen in other states in the past as well. This is something that must be addressed at the state level. While incorrect mailing addresses do not influence expansion factors, out-of-date mailing addresses decreases efficiency of the survey and precision of estimates. Furthermore, if certain types of hunters tend to move more often (e.g., younger hunters) this can introduce a source of bias into the survey estimates.

Manipulation of expansion factor. – When generating preliminary and final estimates, BHS has a policy of estimating the proper expansion factor if we suspect that the number of HIP registrations received is not correct. This can happen if the complete sample frame was not received and imparts a negative bias in harvest estimates. Adjusting the expansion factor is especially important for preliminary estimates for states that use paper permits (e.g., Alaska, Arizona, California, New Mexico, Wyoming) because there can be a time lag between permit issuance and transmission of information to BHS. We hope that the correct expansion factor is known by the time final estimates are calculated. However, in some cases, we suspect that we never receive the complete sampling frame or expansion factors from states (Table 1). In these cases, we make our best guess at the final expansion factor based on prior history and discussion with licensing personnel and biologists. **Using estimated expansion factors helps address the bias imparted by an incomplete sampling frame and expansion factor, but does not address the bias that can be imparted by an unrepresentative sample.** Our biggest concerns are with the following states:

1) Arizona, Georgia, Kentucky, Maine, Mississippi, New Jersey, Tennessee - inconsistent number of HIP registrations received over time.
2) Illinois, Louisiana, and South Carolina - recent increases in number of HIP registrations (possible sample frame inflation in recent years or underestimation of expansion factor in early years). This often happens when states change contractors, license structure, or HIP registration methods.
3) West Virginia – only 1 out of 5 HIP registrations found in database. Also, data files sent this year include data from 2007 and 2008.

Application of results in developing a national HIP sampling frame. – In this study, 98 out of 99 HIP registrations were matched electronically using rudimentary data matching techniques. One record with incomplete information was matched manually by looking through the state's entire electronic database. The results of this study suggest that it should be possible for BHS to develop a single national sampling frame for HIP from the 49 separate electronic sampling frames. This would require agreement on an acceptable level of error (erroneous matches and missed matches). A national HIP sampling frame would have the following benefits: (1) allow us to estimate the total number of hunters at the management unit level with estimates of variance, (2) remove positive bias in harvest estimates currently imparted by hunters incorrectly reporting out-of-state hunting on their HIP survey forms, (3) increase efficiency of HIP sampling, and (4) allow large-scale human dimensions studies of hunter retention and recruitment. However, this switch would require a significant amount of time and computer programming, both to develop the consolidation programs and for the development of new analytical methods to address out-of-state hunting. Furthermore, a national sampling frame will not be feasible until all states start providing electronic data[5].

Conclusions

We found that most HIP name and address data are being sent by states and are being properly processed by BHS for the states that participated in this study. Thirty-one states participated in this study and 60% of the possible data transmission methods were checked. Twenty states had all methods tested and verified. It would be useful to track HIP registrations for the other methods and states as well. We would like to work with all states for which complete HIP data were not received by BHS. Because results from this study suggest that license type may be a more important cause of data omission than method of HIP registration, it would be useful to review HIP transmissions by license type. This will be a more complex study, because the types of licenses vary so much among states. We would like to work with state biologists who are interested in pursuing this line of inquiry.

When HIP was implemented in 1999, staff of BHS and Branch of Information Technology (BIT) assumed that transfer of HIP name and address data would become smoother and more standardized as time went on. After 10 years of HIP, we have learned that this will not be the case because: (1) each state has to fold the HIP registration process into its existing license structure which may not lend itself to registering migratory bird hunters in a standard fashion, and (2) changes in data contractors and personnel can cause both predictable and unpredictable errors. Improving individual state harvest estimates requires close communication between state

[5] About 180,000 HIP registrations are submitted on paper. These are from Alabama (approx. 10% of sample frame), California (100%), New Mexico (100%), and Wyoming (approx. 73%). BHS enters the complete permit information only for those hunters who are selected to participate in the HIP survey.

licensing agencies or their contractors and BHS. While this has worked well in many states, it has been difficult to establish in others. The assistance of a state biologist can improve the quality of the information received by apprising BHS of changes in license structure and HIP registration methods, emphasizing the importance of these data to the licensing personnel or data contractors, or knowing the right person to contact should a problem arise. We hope that one of the important consequences of this study will be the engagement of the state biologists in the work of maintaining and improving the HIP system.

The quality of the harvest estimates for each state is directly related to the quality of the sample frame data received by BHS. Because HIP could not be implemented under a federal permit, the states have the responsibility of ensuring that data from the proper HIP year are sent to BHS at the appropriate time. As HIP has developed over time, this standard structure has been harder to maintain. Results of this study indicate that BHS should consider several changes to the handling of HIP data to minimize errors of omission and misclassification. Errors of omission occur when sample frame data are not sent to BHS. This usually happens with states that have license years that do not correspond to migratory bird hunting seasons. Errors of omission also occur when states add or change methods of HIP registration or switch data contractors. Errors of omission and misclassification of hunters as non-migratory bird hunters are serious errors that can cause bias in the harvest estimates. Misclassification of license year of individual hunters should not bias the estimates as long as the misclassification is random. Because these types of changes are apparently a permanent characteristic of the HIP registration system, BHS needs to develop standard quality control methods to periodically review HIP registration methods in each state. This should include ensuring we know: (1) the license structure of each state; (2) the HIP year for each state (if this differs from the license year); (3) when licenses/HIP registrations start being available each year; (4) all the methods of HIP registration available in that state; and (5) when states change licensing or HIP registration contractors. This information needs to be provided to us in a systematic manner by the appropriate state contact each year.

The Flyways should be interested in improving harvest estimates – especially those states that affect the quality of the estimates at the management unit level (e.g., Georgia for mourning dove harvest, Maine for sea duck and woodcock harvest, Kentucky and Tennessee for duck harvest). Harvest estimates, using both MBHS and Parts Collection Survey data, are sometimes the most important information we have for a species or species-group (e.g., band-tailed pigeons, snipe, coot, rail, gallinule, buffleheads, merganser species, goldeneye species). Harvest estimates are used in many management plans (e.g, mourning doves, woodcock, scaup, canvasbacks, pintails, sandhill cranes, many Canada goose populations). For these reasons, the cooperative HIP program is very important to both state and federal migratory bird managers. Continued cooperation between state and federal personnel as well as systematic review by federal personnel will be required to maintain the quality of this program.

Next Steps for Branch of Harvest Surveys

1) BHS should allow states to send HIP data year-round (instead of restricting all states to send data from August-February).
2) If HIP data are sent year-round, BHS must implement computer checks of all HIP data to assign hunters to the proper year based on date of HIP registration. For this method to work, states must make sure that the date of HIP registration in the electronic file is the date the hunter registered for HIP, not the date the registration was transcribed, received,

transmitted, etc. Furthermore, BHS needs to know the correct classification dates (see #2 in "Requested Action from Flyway Technical Sections/Study Committee Members").

3) Misclassification of hunters as non-migratory bird hunters should be prevented if BHS knows the license structure and HIP year dates for each state.
4) Staff of BHS and Branch of Information Technology (BIT) should work with the USFWS Office of Information Resources and Technology Management to see if the ftp site can be improved. This website was created in 1999 to allow states to securely and conveniently send large data files to BHS. However, the security requirements (periodic inactivation of accounts, mandated password changes, manual resetting of accounts by BIT staff) make the site inconvenient for clients to use. The Denver location of the ftp server makes it difficult for BIT to know of or fix problems. In some cases, data transmission is seriously delayed because of these problems. Advances in servers, storage capacity, and security may allow the USFWS to improve the efficacy of the site.
5) Each August, BHS should send an annual request for information to a relevant HIP contact in each state, asking about changes in license year, contractor, and HIP registration methods. This request may be incorporated into BIT's annual "HIP kick-off letter" each August if the HIP data contact can also provide relevant licensing information.
6) To maintain the quality of the HIP data, we need to perform systematic checks to ensure that we are receiving and properly processing all HIP data. A reasonable schedule is to check 10 states each year, so that all states are reviewed every 5 years.
7) Consult with licensing agencies about the possibility of including an additional field in the HIP data that indicates the method of HIP registration and/or license type. For those states concerned with the quality of HIP registration information from particular sources (e.g., Walmart) we could consider including codes specific to this. Ideally, states could monitor this information themselves, but conversations with biologists have suggested that many state licensing agencies don't have the time or interest in doing so.

Requested Action from Flyway Technical Sections/Study Committee Members

1) Strongly encourage participation from all states in each Flyway. States not participating this first year were: Alabama, Alaska, Iowa, Kansas, Kentucky, Maine, Massachusetts, Minnesota, Montana, New Hampshire, Ohio, Oklahoma, Oregon, Tennessee, Vermont, Virginia, Washington, Wisconsin. [NOTE: California and New Mexico not in this list because of their paper permits]
2) Each state should designate one person (biologist, HIP coordinator, or licensing agency personnel) as an appropriate point of contact for BHS to learn about changes in license year, contractor, and HIP registration methods. This person may be the existing HIP contact in that state.
3) Each state representative will inform BHS of changes in license year, contractor, and HIP registration methods each August.
4) When problems are suspected or changes have been made to the license year, contractor, or HIP registration methods, biologists should send in HIP registration information for individual hunters so that BHS can verify that all data are being received. **Known HIP registrations with state registration numbers are very important for states and contractors to trace and solve problems.**

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Table 1. Number of HIP registrations received from states, 1999-2008.

State	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
AK	9,333	9,789	9,421	8,942	9,086	8,240	8,834	8,844	8,772	8,702
AL	96,378	97,997	94,416	95,075	110,891	91,389	105,968	153,094	95,600	112,042
AR	147,132	172,564	185,607	182,400	170,276	176,060	174,979	189,620	137,346	175,315
AZ	40,440	56,157	55,602	58,201	58,068	51,036	41,154	37,733	36,743	27,037
CA	157,775	157,657	179,104	131,869	70,943	141,552	138,636	143,361	140,556	140,943
CO	48,300	46,427	47,621	41,565	43,422	41,568	41,576	61,827	63,200	56,063
CT	7,787	7,342	7,337	7,065	6,841	6,729	6,046	5,929	5,567	6,211
DE	8,937	8,705	8,902	8,960	8,082	8,460	8,151	8,028	8,132	6,282
FL	81,623	10,528	44,714	61,728	80,398	100,246	105,304	109,596	110,031	104,751
GA	148,898	95,691	167,141	151,176	95,728	177,388	145,304	162,595	146,677	142,005
IA	30,285	31,244	40,209	37,326	35,428	35,358	45,653	52,999	43,859	30,234
ID	46,621	49,329	48,344	40,178	47,018	48,180	47,408	49,206	20,255	45,360
IL	69,134	72,306	75,809	75,391	57,294	78,285	77,294	122,308	128,180	118,632
IN	33,880	34,061	36,035	35,358	34,945	34,919	31,080	33,592	30,907	31,327
KS	57,266	58,689	58,567	59,167	58,944	46,384	43,874	55,515	56,077	50,715
KY	45,165	50,751	55,018	54,666	52,943	57,645	12,808	19,197	10,112	5,142
LA	144,610	137,677	133,292	129,660	138,701	139,782	130,483	153,541	220,822	240,187
MA	5,582	5,659	5,856	5,949	6,650	6,669	7,023	7,533	6,914	7,703
MD	50,164	49,231	55,800	37,056	44,824	47,476	44,831	46,290	37,919	47,808
ME	67,220	58,841	57,551	57,551	26,234	37,327	26,993	33,209	30,919	43,066
MI	103,675	105,361	89,320	120,212	152,340	149,003	142,316	142,974	146,298	140,040
MN	107,995	183,692	179,685	183,879	185,822	189,069	171,622	182,368	180,250	172,127
MO	68,070	66,477	68,044	66,868	71,125	68,108	66,058	70,975	71,789	67,563
MS	59,542	61,917	59,693	17,940	58,717	113,796	34,437	91,832	37,488	51,346
MT	16,004	15,890	20,145	38,194	38,399	41,066	38,488	41,511	40,659	31,089
NC	209,076	230,206	239,251	194,608	198,031	220,782	185,334	181,995	209,634	206,651
ND	52,546	41,097	49,641	48,354	54,534	52,554	55,570	49,887	51,819	47,138
NE	47,467	43,477	41,824	39,000	40,708	39,247	36,147	35,219	34,825	23,774
NH	14,453	6,078	5,527	5,638	3,761	4,379	5,867	3,246	7,147	8,637
NJ	13,262	11,784	11,288	10,998	10,935	10,806	10,382	5,645	4,380	7,510
NM	19,307	22,001	21,785	20,389	20,054	22,442	20,719	17,346	21,841	17,697
NV	10,423	9,854	9,900	10,384	9,744	9,057	8,950	8,940	7,441	6,965
NY	37,291	35,698	35,902	32,895	33,476	34,229	34,942	37,024	37,669	32,339
OH	111,715	374,492	86,448	99,999	98,785	95,970	89,526	94,602	80,186	79,344
OK	66,862	58,632	50,862	55,331	50,313	52,554	43,754	35,220	42,385	40,963
OR	56,659	56,134	54,491	54,078	52,991	53,267	46,286	52,482	42,654	46,853
PA	119,831	120,621	119,330	121,083	117,709	114,709	100,088	98,177	95,950	97,918
RI	2,222	1,984	2,058	1,493	862	1,756	1,372	1,723	751	1,399
SC	94,951	87,830	85,985	99,020	55,882	108,930	130,935	139,731	124,982	141,635
SD	49,103	45,961	48,297	46,817	44,557	43,201	41,454	31,690	35,655	41,168
TN	120,542	299,613	223,809	302,765	138,226	176,792	152,192	75,424	72,297	88,104
TX	763,361	810,533	796,667	779,128	679,148	862,634	792,846	827,729	903,688	903,825
UT	32,709	31,643	30,187	21,663	28,067	29,190	29,442	31,093	32,627	24,174
VA	45,841	44,768	45,598	48,451	43,015	44,058	43,472	46,919	47,292	29,466
VT	7,458	6,997	7,328	6,680	6,028	7,439	3,235	5,529	6,444	10,208
WA	47,097	45,207	47,284	45,032	45,168	45,335	45,025	21,709	37,901	37,230
WI	162,420	173,258	163,397	168,579	171,523	163,774	156,691	151,343	150,462	141,123
WV	3,259	3,485	3,632	3,459	3,579	4,508	3,628	3,600	3,933	6,020
WY	12,565	11,697	10,920	10,491	10,410	11,758	10,375	9,629	9,507	8,800

Table 2. Summary of HIP registration tracking study, 20 February 2010. Yellow cell indicates state uses that method of HIP registration. Number of boxes in yellow cells indicate number of names sent in for study. Key: □=name not found by BHS; ◘= registration received by BHS but not processed properly; ■=registration received and processed properly by BHS; ■=registration received by BHS after additional data requested from state or contractor, ■=HIP registration for next year can't be checked at this time.

	Method of HIP registration							
State	**POS [1] - electronic**	**POS - paper**	**phone**	**on-line**	**civic - electronic**	**civic - paper**	**civic - phone**	**mail**
Alabama								
Alaska		■		■				
Arizona		□■■						
Arkansas	■		■	■	■			
California								
Colorado			■ [2]	■ [2]				
Connecticut	■■			■■				
Delaware			□■	□■■				
Florida	■		■	■				
Georgia	□			□				
Idaho			■	■	■			
Illinois	■		■	■				
Indiana			■■■	■■■				
Iowa								
Kansas								
Kentucky	■■■■■■		■■	■				
Louisiana	■■■		■■■	■■■				
Maine								
Maryland	■			■				
Massachusetts								
Michigan	■			■				
Minnesota								
Mississippi	■		■	■				
Missouri	■		■	■				■
Montana								
Nebraska			■	■				
Nevada			■■	□□□□■				
New Hampshire								
New Jersey	□ [3] □ [3]		□ [3]	□ [3] □ [3]				
New Mexico								
New York			■■■	■■				
North Carolina	■		■	■■■				■
North Dakota	■		■	■				
Ohio								
Oklahoma								
Oregon								
Pennsylvania	■			■■	■			
Rhode Island						■■		
South Carolina	■■		■		■■	◘ [4]		■◘ [4]
South Dakota	■							
Tennessee								
Texas	■		■	■				
Utah			■ [2] ■ [2]	■ [2] ■				
Vermont								
Virginia								
Washington								
West Virginia	■	□□				□	□	
Wisconsin								
Wyoming		□■		■■		□		

[1] Point of sale.
[2] Early HIP registrations that contractor forgot to send.
[3] Unknown contractor error.
[4] HIP registration issued in May, BHS assumed erroneous.

Table 3. Comparison of HIP registration date, file date, and processing date.

State	Date of issue reported by hunter	Date of issue in electronic database	Date data were processed by BHS [1]
AR	7/24/2009	7/27/2009	9/4/2009
AR	9/4/2009	9/4/2009	9/17/2009
AR	9/9/2009	9/9/2009	9/17/2009
AR	.	8/27/2009	9/4/2009
AZ	9/1/2009	9/1/2009	10/8/2009
AZ	9/10/2009	9/10/2009	10/8/2009
CO	4/1/2009	4/6/2009	1/22/2010
CO	4/2/2009	4/2/2009	1/22/2010
DE	8/19/2009	8/19/2009	9/4/2009
DE	8/27/2009	8/27/2009	9/4/2009
DE	8/28/2009	8/28/2009	9/4/2009
FL	9/3/2009	9/3/2009	9/17/2009
FL	9/17/2009	9/17/2009	10/8/2009
FL	11/18/2009	11/18/2009	12/4/2009
IL	2/19/2009	2/19/2009	8/13/2009
IL	4/3/2009	4/3/2009	8/13/2009
IL	.	1/21/2009	8/13/2009
IN	8/10/2009	8/10/2009	9/4/2009
IN	8/10/2009	8/10/2009	9/4/2009
IN	8/11/2009	8/11/2009	9/4/2009
IN	8/11/2009	8/11/2009	9/4/2009
IN	8/12/2009	8/12/2009	9/4/2009
IN	8/12/2009	8/12/2009	9/4/2009
KY	1/9/2009	4/1/2009	11/19/2009
KY	3/7/2009	3/7/2009	11/19/2009
KY [2]	4/1/2009	4/1/2009	11/19/2009
KY	4/8/2009	4/8/2009	11/19/2009
KY	4/17/2009	4/17/2009	11/19/2009
KY	4/17/2009	4/17/2009	11/19/2009
KY	4/20/2009	4/20/2009	12/4/2009
KY [2]	5/15/2009	4/30/2009	11/19/2009
KY	8/19/2009	8/19/2009	12/4/2009
LA	7/8/2009	7/8/2009	9/4/2009
LA	7/11/2009	7/11/2009	9/4/2009
LA	7/12/2009	7/12/2009	9/4/2009
LA	9/1/2009	9/1/2009	9/17/2009
LA	9/1/2009	9/1/2009	9/17/2009
LA	9/1/2009	9/1/2009	9/17/2009
LA	9/4/2009	9/4/2009	9/17/2009
LA	9/5/2009	9/5/2009	9/17/2009
LA	9/5/2009	9/5/2009	9/17/2009
LA	9/6/2009	9/6/2009	9/17/2009
MD	8/31/2009	9/1/2009	9/17/2009
MD	9/1/2009	9/3/2009	9/17/2009
MI	3/2/2009	3/2/2009	8/13/2009
MI	3/15/2009	3/15/2009	8/13/2009
MO	7/13/2009	7/13/2009	8/13/2009
MO	7/14/2009	7/15/2009	8/13/2009
MO	7/15/2009	7/15/2009	8/13/2009
MO	7/16/2009	7/16/2009	8/13/2009
MS	8/7/2009	8/8/2009	9/4/2009
MS	9/1/2009	8/19/2009	9/4/2009

Table 3, continued.

MS	.	8/25/2009	9/4/2009
NC	5/28/2009	5/28/2009	9/4/2009
NC	5/28/2009	5/28/2009	9/4/2009
NC	6/1/2009	6/5/2009	9/4/2009
NC	7/27/2009	7/27/2009	9/4/2009
NC	8/3/2009	8/3/2009	9/4/2009
NC	10/23/2009	10/23/2009	11/9/2009
ND	4/4/2009	4/2/2009	8/13/2009
ND	4/4/2009	4/2/2009	8/13/2009
ND	4/13/2009	4/13/2009	8/13/2009
NE	8/30/2009	8/30/2009	9/4/2009
NE	.	8/31/2009	9/4/2009
NV	3/24/2009	3/24/2009	7/23/2009
NV	4/20/2009	4/20/2009	7/23/2009
NV	10/15/2009	10/14/2009	11/9/2009
NY	8/11/2009	8/11/2009	9/4/2009
NY	8/11/2009	8/11/2009	9/4/2009
NY	8/24/2009	8/24/2009	9/4/2009
NY	8/24/2009	8/24/2009	9/4/2009
NY	8/31/2009	8/31/2009	9/4/2009
PA	6/19/2009	6/19/2009	10/23/2009
PA	6/25/2009	6/25/2009	10/23/2009
PA	6/30/2009	6/30/2009	10/23/2009
PA	7/7/2009	7/7/2009	10/23/2009
RI	8/27/2009	8/27/2009	9/17/2009
RI	8/27/2009	9/4/2009	11/19/2009
SC	5/22/2009	5/22/2009	8/13/2009
SC	6/17/2009	6/17/2009	7/23/2009
SC	6/17/2009	7/17/2009	7/23/2009
SC	6/21/2009	7/9/2009	7/23/2009
SC	6/29/2009	6/29/2009	7/23/2009
SC	9/4/2009	9/4/2009	9/17/2009
SC	6/15/2009	6/15/2009	7/23/2009
SC	.	5/27/2009	8/13/2009
SD	1/31/2009	1/31/2009	8/13/2009
TX	8/26/2009	8/26/2009	9/4/2009
TX	8/30/2009	8/30/2009	9/4/2009
TX	9/8/2009	9/8/2009	9/17/2009
UT	3/31/2009	3/31/2009	1/22/2010
UT	4/1/2009	4/1/2009	12/4/2010
UT	3/31/2009	3/31/2009	1/22/2010
UT	3/30/2009	3/30/2009	1/22/2010
WV	8/19/2009	1/5/2007 [3]	7/23/2009
WY	7/5/2009	7/5/2009	8/13/2009
WY	7/17/2009	7/14/2009	8/13/2009

[1] All data processed by Branch of Harvest Surveys (BHS) within 3 days of scheduled download day.
[2] Old mailing address in HIP database.
[3] Not a typographical error. Common occurrence in electronic files from West Virginia.