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FINDINGS ABSTRACT

Where Does the Money Go? Awareness of Federal Duck Stamp Fund Expenditures Among Illinois Waterfowl Hunters

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The Federal Migratory Bird Hunting and Conservation Stamp, known colloquially as the "duck stamp," came into existence with the Migratory Bird Hunting and Conservation Stamp Act of 1934. This Act required all waterfowl hunters 16 years of age or older to purchase an annual stamp to legally hunt any waterfowl in the United States. During the 2016–17 license year federal duck stamps cost $25 USD. Over 98% of funds garnered through stamp sales are allocated to the Migratory Bird Conservation Fund and used to purchase and enhance habitat on wetlands needed for breeding and wintering waterfowl and waterbirds (e.g., American Woodcock *Scolopax minor* and Common Snipe *Gallinago gallinago*). More than $850 million (USD) has been produced since the Act's inception, resulting in protection of more than 6 million acres of critical habitat (Madison, 2016). The annual duck stamp purchase has been required of migratory waterfowl and waterbird hunters for more than 80 years and has been touted as a hallmark in conservation funding (Smith, 2014).

Considering the length of the stamp's existence and that all waterfowl hunters are required to purchase one annually, the question arises as to the extent waterfowl hunters are aware of how federal duck stamp funds are used. This article examined Illinois waterfowl hunters' awareness of the duck stamp. A random sample of 5,000 individuals who purchased a state waterfowl permit (an additional permit, along with the federal duck stamp, required by individuals who hunt waterfowl in a particular state) were randomly selected prior to the 2002–03 and 2015–16 waterfowl seasons. Three waves of questionnaires and postcard reminders were sent to potential respondents following the conclusions of both seasons. A total of 3,150 (68%) responded in 2002–03 study and 2,012 (44%) responded in 2015–16. Nonresponse follow-up studies did not identify response bias for either year. Each questionnaire contained identical items investigating waterfowl hunters' awareness of how federal duck stamp funds were allocated. Participants were asked, "In your opinion, which of the following describes where the majority of funds from the sales of Federal Migratory Bird (Duck) Stamps are used?" Six response options plus an open-ended "other" category were provided; respondents were instructed to choose one response (Table 1). Questionnaires also contained a question measuring how often participants hunted waterfowl. Potential response categories from the 2002–03 questionnaire included "every year," "most years," and "some but not most years" (Miller, Anderson, Colligan, & Campbell, 2003). The 2015–16 study asked the same question but provided response options on a 5-point unipolar scale from "Every year" to "Never"

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Table 1. Waterfowl hunters' perceived expenditures from federal duck stamp funds, by year.

"In your opinion, which of the following describes where the majority of funds from the sales of Federal Migratory Bird (Duck) Stamps are used?"	2002–03 license year (%)	2015–16 license year (%)
Purchase wetlands and other duck habitat	26	29
Administration of federal waterfowl programs (salaries, vehicles, etc.)	24	16
Create food plots in wintering grounds	5	5
Payments to landowners to promote duck breeding	3	2
Predator control in breeding grounds	4	2
Don't know/not sure	38	44
Other	<1	3

Note. ($\chi^2 = 33.09$, $p = .608$, $V = .056$)

(Williams, Schweizer, Campbell, & Miller, 2016). Pearson Chi-square tests were conducted to assess differences in responses for perceived expenditures of federal duck stamp funds by license year and by frequency of hunting participation. Cramer's V was used to assess effect sizes where V of .1 = minimal, .3 = typical, and .5 = substantial (Vaske, 2008). A multinomial logistic regression model was developed to test significance of year and frequency of participation for main and interaction effects on the dependent variable perceived expenditures.

Less than a third of hunters from each sample (26% from 2002–03, 29% from 2015–16) selected the correct response: duck stamp funds are used to "purchase wetlands and other duck habitat" (Table 1). The majority of respondents from each license year reported that they did not know how these funds were spent. No significant differences in responses were found between license years ($\chi^2 = 33.09$, $p = .608$, $V = .056$). Significant differences in perceived expenditures existed by levels of participation among the within-year groups (Tables 2 and 3). Year and reported frequency of participation showed a significant interaction effect with perceived expenditures (Table 4). Greater percentages of hunters who reported they hunted every year identified the correct response for both 2002–03 (28%) and 2015–16 (33%) than hunters who reported other levels of participation (Tables 2 and 3). Greater proportions of hunters at the lowest levels of participation reported they did not know where duck stamp funds were spent for both 2002–03 (50%) and 2015–16 (71%) groups (Tables 2 and 3). Although chi-square tests indicated significant differences across participation groups these results had minimal effect sizes (2002–03: $\chi^2 = 29.61$, $p = .003$, $V = .100$; 2015–16: $\chi^2 = 77.00$, $p < .001$, $V = .101$).

Overall, these findings suggest that waterfowl hunters are not aware of how federal duck stamp funds are used to benefit conservation. Considering the length of time federal duck stamps have been in existence and their meaningful contribution to habitat

Table 2. Waterfowl hunters' perceived expenditures from Federal duck stamp funds, by hunting frequency (2002–03 license year).

"In your opinion, which of the following describes where the majority of funds from the sales of Federal Migratory Bird (Duck) Stamps are used?"	Every year (%)	Most years (%)	Some but not all years (%)
Purchase wetlands and other duck habitat	28	23	18
Administration of federal waterfowl programs (salaries, vehicles, etc.)	24	28	23
Create food plots in wintering grounds	5	5	3
Payments to landowners to promote duck breeding	3	2	3
Predator control in breeding grounds	4	3	3
Don't know/not sure	36	38	50
Other	1	1	<1

Note. ($\chi^2 = 29.61$, $p = .003$, $V = .100$)

Table 3. Waterfowl hunters' perceived expenditures from Federal duck stamp funds, by hunting frequency (2015–16 License Year)

"In your opinion, which of the following describes where the majority of funds from the sales of Federal Migratory Bird (Duck) Stamps are used?"	Every year (%)	Most years (%)	Occasional years (%)	Rarely (%)	Never (%)
Purchase wetlands and other duck habitat	33	25	26	27	14
Administration of federal waterfowl programs (salaries, vehicles, etc.)	16	14	20	13	6
Create food plots in wintering grounds	5	5	3	4	4
Payments to landowners to promote duck breeding	2	3	3	4	3
Predator control in breeding grounds	2	2	2	2	1
Don't know/not sure	38	49	45	49	71
Other	4	1	<1	2	2

Note. ($\chi^2 = 77.00$, $p < .001$, $V = .101$)

Table 4. Multinomial logistic regression for year and participation on perceived expenditure.

Effect	−2 log likelihood	$\chi 2$	*p*-value
Intercept	255.92		
Reported hunting frequency	444.12	188.20	<.001
Year	789.70	533.78	<.001
Reported hunting frequency * Year	1,125.85	898.96	<.001

protection, these results indicated waterfowl hunters are unaware of the benefits provided through their purchase. Although a recent increase in the cost of the federal duck stamps (from $15 to $25 USD) has not resulted in a decline in sales it is nevertheless incumbent on the U.S. Fish and Wildlife Service and state agencies to promote the conservation benefits of this program to ensure continued sales (Wentz, 2017). Additionally, it is important that the nonhunting public is aware of how waterfowl hunters, through their annual purchase of federal duck stamps, positively affect conservation efforts and that purchase of federal duck stamps enhances wetland protection. Hunters, bird watchers, and a wide array of wildlife species are direct recipients of benefits from this program. Management agencies need to ensure an informed public continues to support the federal duck stamp program.

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