Trends in Fishery Agency Assessments of Black Bass Tournaments in the Southeastern United States

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Abstract: Studies conducted during the last 30 years have identified benefits and adverse impacts and have documented increased frequency of fishing tournaments. This study used information provided by state fisheries management agency administrators to measure the frequency of black bass (*Micropterus* spp.) tournaments in southeastern states and assessed how reported changes in tournament frequency have impacted fisheries management. The average annual number of black bass tournaments reported by 14 southeastern states for 2009–2011 was 41,939, which was a 124% increase from the average annual number of tournaments for all freshwater species reported by southeastern states for 2002–2004. Despite this considerable increase, agencies reported that tournaments were generally beneficial. The highest ranking benefit factors (developed from factor analysis of 21 potential benefits) were unchanged from the same survey administered in 2005 and included the benefits of promotion of fishing, specific fisheries, and agency programs. Similarly, the highest ranking adverse-impact factors developed from 29 potential problems (resource overuse and user-group conflicts) were also consistent with the 2005 survey. Black bass tournaments offer benefits to fisheries management that could be better realized. The persistence and consistently high impact ratings of resource overuse and user-group conflicts along with generally low incidence of monitoring tournaments suggests that the negative impacts have become part of contemporary recreational fishing and are not problems that require management solutions.

Key words: benefits, competitive fishing, resource overuse, user-group conflicts

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The first survey of competitive fishing in the United States occurred in 1978 (Shupp 1979), and the numbers of these events for inland species has steadily increased since, with the greatest increase occurring since 2000 (Figure 1). Surveys by Duttweiler (1985) and Schramm et al. (1991b) revealed that high proportions of these tournaments are for black bass (*Micropterus* spp.) and this was likely the case for surveys reported by Kerr and Kamke (2003) and Schramm and Hunt (2007).

Various response trends have been noted as tournament numbers have increased. In the 1978 survey, fisheries agencies expressed concerns regarding user conflicts (tournament and non-tournament anglers), but few other negative impacts were noted, as 84% of responding states indicated either no negative impacts (e.g., fish population impacts, overharvest, angling effort) or positive impacts (e.g., fish collection assistance, economic contributions, promotion of fisheries and agency programs) of tournaments (Shupp 1979). All subsequent surveys indicated that user conflicts remained a prevalent agency issue (Duttweiler 1985, Schramm et al. 1991b, Kerr and Kamke 2003, Schramm and Hunt 2007). Negative impacts that increased included elevated angling effort (Duttweiler 1985, Schramm et al. 1991b) and impeded access (Schramm et al. 1991b, Kerr and Kamke 2003, Schramm and Hunt 2007). Publicity for fisheries and fisheries agencies was a prevalent positive impact (Duttweiler 1985, Schramm et al. 1991b, Schramm and Hunt 2007). Although Duttweiler (1985) reported an increase

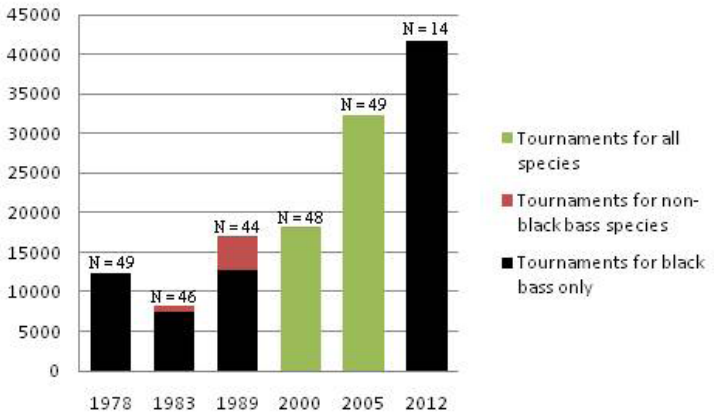

Figure 1. Estimated number of inland fishing tournaments in the United States or, for 2012, southeastern states. N = number of states responding. Estimates for 1978 are from Shupp (1979), for 1983 are from Duttweiler (1985), for 1989 are from Schramm et al. (1991), for 2000 are from Kerr and Kamke (2003), for 2005 (average for 2002–2004) are from Schramm and Hunt (2007), and for 2012 (average for 2009–2011) are from this paper.

in the number of state agencies recognizing positive economic contributions of tournaments, Schramm et al. (1991b) reported lower awareness of economic benefits than previous surveys, and Schramm and Hunt (2007) documented relatively low agency interest in measuring the economic aspects of fishing tournaments. Most recently, Kerr and Kamke (2003) and Schramm and Hunt (2007) reported an increasing number of states requiring a permit to conduct tournaments. Despite the abrupt rise in the number of tournaments from 2000 to 2005, Schramm and Hunt (2007) indicated that a majority of states had neither a strong beneficial or adverse view of tournaments.

High and potentially increasing numbers of tournaments suggest additional future challenges for state fisheries agencies and potential shifts in the implications of tournaments. Increased tournament coverage via television and internet web sites could further exacerbate agency management issues (e.g., angler catch expectations, fish mortality, using public resources for financial gain, angler ethics), as events are now much more visible to the public (Schramm and Hunt 2007). The potential for impacts, both positive and negative, is especially great for fisheries agencies in southeastern states, as 51% of the estimated nationwide competitive fishing events in 2005 occurred in this region (Schramm and Hunt 2007). Additionally, from 1989 to 2005, annual tournament numbers in the southeast increased from 9,449 to 18,736 (Schramm et al. 1991b, Schramm and Hunt 2007). Given that > 80% of U.S. tournaments target black bass (Duttweiler 1985, Schramm et al. 1991b), most agency discussions involving tournament issues are probably strongly influenced by black bass tournaments. To better understand the current effects and role of black bass tournaments in the southeastern states, we surveyed southeastern states' fisheries agency administrators using the same instrument as Schramm and Hunt (2007) to evaluate regional and state-level trends in tournament numbers and agency assessments since 2005.

Methods

We asked fishery agency chiefs from each southeastern state (n = 15) to complete a survey identical to that used by Schramm and Hunt (2007). However, our survey focused only on black bass tournaments, whereas the previous survey included all inland tournaments. A brief introduction explained the study scope (i.e., black bass tournaments only), purpose of the survey, and estimated completion time (15 minutes). Surveys were administered via email in February 2012, and up to three follow-up emails were sent to non-respondents through April 2012.

The survey began with a question asking the respondent to rate the overall effect of bass tournaments on their fisheries management agency's activities, with answers on a 10-point scale (1 = strong adverse effect; 10 = strong beneficial effect). Eight additional questions requiring a binary response (Yes or No) examined tournament exemptions to harvest regulations, permitting/registration requirements, external agency influences to attract tournaments, and tournament information provided to the public. Administrators were asked to provide either known or estimated number of black bass tournament events conducted each year in 2009, 2010, and 2011. The survey also asked respondents to list numbers of tournaments conducted for other species/species groups (i.e., all tournaments excluding those targeting black bass), the proportion of the annual total number of tournaments these other tournaments comprised, and whether agency-related effects of other tournaments were similar or different from black bass tournaments. Difference in overall effect ratings of tournaments between 2005 and 2012 was tested with a paired *t*-test. Statistical significance was declared at $\alpha = 0.10$ due to limited sample size.

We used two separate measurement scales from Schramm and Hunt (2007) to examine potential tournament-related benefits and problems, which included 21 and 29 items, respectively. These scales were developed from results of previous tournament and administrative surveys (Schramm et al. 1991b, Muth et al. 1998, Kerr and Kamke 2003). Administrators provided answers to each item based on a 4-point scale (often, occasionally, rarely, never). Lacking sufficient sample size to conduct exploratory or confirmatory factor analysis on the two measurement scales (Hair et al. 2010), we adopted the same factors developed by Schramm and Hunt (2007) from responses to the same questions from a larger sample. Factor items were summed and divided by the number of items in that factor to compute a factor score.

Results

Estimated Numbers of Tournaments

Completed surveys were received from 14 of 15 southeastern state agencies. Collectively, the average annual number of black bass tournaments reported for the 2009–2011 period (hereafter, 2012) for all 14 states was 41,939 (Table 1). Although two fewer states reported estimated number of tournaments in the 2005 survey than in the 2012 survey, bass tournaments alone were more than double the total inland tournaments for all species reported in 2005. In 2012, black bass tournaments were ≥ 90% of total annual events in each state (Table 1). Crappie (*Pomoxis* spp.) and catfish (Ictaluridae) tournaments were the most common non-bass events, as both were mentioned by 13 of the 14 reporting agencies.

With the exception of Missouri in 2005 and West Virginia in 2005 and 2012, all states reported estimated number of tournaments in both surveys (Table 1). Some states responded with both known and estimated numbers but considered known values in-

accurate due to incomplete, voluntary reporting. Thus, only estimated numbers were reported for these states. In 2012, the range of estimated bass events occurring annually was 500 (Virginia) to >10,000 (Texas). Alabama, Florida, and Tennessee each estimated that >5,000 events occurred annually, and including Texas, these four states accounted for 75% of total estimated events. Six states reported a >10% increase in the mean estimated number of annual tournaments from 2005, with Tennessee and Florida reporting the greatest increases at 562% and 163%, respectively. In contrast, estimated mean number of tournaments decreased between periods in Kentucky (27%), North Carolina (25%), Oklahoma (22%), and Virginia (17%).

Tournament Impacts on Fisheries Management

Overall, respondents indicated that bass tournaments generally benefited fisheries management, and average rating did not change from 2005 (6.4) to 2012 (6.2; paired *t*-test, $t = -0.46$, $n = 14$, $P = 0.65$), and no states reported strong adverse (rating ≤ 2) or beneficial (rating ≥9) effects (Table 1). Tournament organizations sought fisheries regulation exemptions in 9 and 10 states in 2005 and 2012, respectively, but few states granted any exemptions (Alabama and Florida in 2005; Florida, Missouri, and North Carolina in 2012; Table 2). More municipalities/public agencies and tournament/

Table 1. Known[a] or estimated number of annual fishing tournaments (number), and rating (10-point scale: 1 = strong adverse effect and 10 = strong beneficial effect) of overall effect of tournaments on fisheries management agencies in 2005 (includes tournaments for all species, number is average for 2002–2004; Schramm and Hunt 2007) and 2012 (black bass tournaments only, number is average for 2009–2011). Values in parentheses are the percentages of all tournaments that were black bass tournaments.

	2005		2012	
State	**Number**	**Effect rating**	**Number**	**Effect rating**
Alabama		7	8,833 (> 98)	7
Arkansas	1,000	8	1,000 (95)	7
Florida	1,917	6	5,033 (98)	7
Georgia	809	6	> 1,000 (97)	8
Kentucky	1,100	5	808 (> 90)	5
Louisiana		6	1,400 (> 95)	5
Mississippi	500	7	817 (95)	5
Missouri	1,866[a]	5	1,888[a] (95)	5
North Carolina	2,000	6	1,500	8
Oklahoma	1,305	8	1,020 (99)	7
Tennessee	1,133	5	7,500 (90)	4
Texas	6,000	7	> 10,000 (> 95)	7
Virginia	600	5	500 (95)	5
West Virginia	506[a]	8	640[a] (90)	7
Total	18,736		41,939	
Mean ± SE		6.4[a] ± 0.30		6.2[a] ± 0.35

a. Ratings were not significantly different between years (paired t-test; P = 0.65).

Table 2. Southeastern state fisheries agency (n = 14) assessments of tournament-related management impacts and level of administration in 2005 (includes tournaments for all species; data from Schramm and Hunt 2007) and 2012 (black bass tournaments only). The presence of state abbreviations indicates a response of "Yes."

Item	**2005**	**2012**
Do tournament organizations seek exemptions from current regulations?	AL, AR, FL, KY, NC, OK, TN, TX, WV	AL, AR, FL, LA, MO, NC, TN, TX, VA, WV
Are exemptions granted?	AL, FL	FL, MO, NC
Do municipalities or other public agencies in your state attempt to affect fisheries management decisions to make a fisheries resource attractive to bass tournaments?	AL, FL, GA, KY, LA, NC, TN, TX, WV	AL, FL, MS, NC, TN
Do bass tournament organizations or other private organizations attempt to affect fisheries management activities to make a fisheries resource attractive to black bass tournaments?	AL, FL, GA, KY, MO, NC, OK, TN, TX, WV	AL, AR, FL, KY, LA, MS, NC, TX, WV
Does your agency have:		
No-cost bass tournament registration?	WV	FL, GA, KY, WV
A for-fee bass tournament permit?	VA	
Any form of bass tournament reporting?	AL, FL, VA, WV	AL, AR, FL, GA, KY, MS, OK, TX, WV
Does a local, State, or Federal agency other than your agency have:		
No-cost bass tournament registration?	AL, AR, OK, MO, VA, KY, TX, WV	AL, AR, GA, KY, MS, MO, OK, TX
A for-fee bass tournament permit?	AR, FL, KY, LA, OK, TX	AL, AR, GA, KY, MS, NC, OK, TX, WV
Any form of bass tournament reporting?	AL, AR, FL, VA	TX
Should bass tournaments or bass tournament organizations pay a "use fee" (in addition to any tournament registration or permit fee) to your agency?	AL, TN, TX, VA	
Does your agency provide tournament information to:		
Bass tournament anglers?	AL, AR, FL, GA, KY, MS, OK, TN, WV	AL, AR, FL, GA, KY, MS, OK, TN, WV
Bass tournament organizations?	AL, AR, FL, GA, KY, MS, OK, TN, WV	AL, AR, FL, GA, KY, MS, OK, TN, WV
The general angler population?	AL, AR, FL, GA, KY, MS, OK, TN, WV	AL, AR, FL, GA, KY, MS, OK, TN, WV

private organizations attempted to influence fisheries management activities in 2005 (9 and 10 states, respectively) than in 2012 (5 and 9 states, respectively).

Agency Administration of Tournaments

Overall, agency administration of, and involvement with, tournaments changed little between 2005 and 2012, but in 2005, four states indicated that tournaments should pay use fees to fisheries agencies, whereas no states did in 2012 (Table 2). Only two state fisheries agencies had any requirements for tournament registration in 2005, but by 2012 three more states had implemented tournament-registration programs and Virginia ceased permitting. External agencies requiring for-fee permits increased from six in 2005 to nine in 2012. Nine state fisheries agencies had tournament-reporting programs in 2012, compared to four states in 2005. States with other local, state, or federal agencies with reporting programs decreased from four states to one.

Tournament-related Benefits to Agencies

The average agency ratings of the four beneficial factors of tournaments changed little between 2005 and 2012 (range of difference between years = 0.01–0.22), and the ranks of the four factors were consistent (Table 3). "Enhance management" and "Grow fishing" remained the more beneficial factors (2012 rating = 3.13 and 3.07,

Table 3. Mean score (SE) for factor and survey items associated with fishing tournaments that benefit southeastern state fisheries management agencies (n = 14). Scores for 2005 were for beneficial effects of tournaments for all species (data from Schramm and Hunt 2007); scores for 2012 were for beneficial effects of bass tournaments only. Items were scored on a 4-point scale with 1 = never, 2 = rarely, 3 = occasionally, and 4 = often.

FACTOR (in bold) Items in Factor: Fishing tournaments help my agency …	Factor reliability	Factor or item mean		Percentage of agencies reporting receiving realized benefits often or occasionally for item	
		2005	2012	2005	2012
Enhance management	**0.87**	**3.14 (0.11)**	**3.13 (0.14)**		
promote fishing as a valued activity		3.35 (0.20)	3.50 (0.20)	86	86
by promoting positive attitudes toward my agency		3.35 (0.13)	3.07 (0.20)	100	79
better communication with anglers		3.07 (0.22)	3.21 (0.19)	71	76
by stimulating requests for information about fishing		3.14 (0.14)	3.00 (0.18)	93	78
by generating political support for fisheries management efforts		2.79 (0.15)	3.00 (0.18)	65	79
obtain additional angler input on potential fishery issues		3.14 (0.20)	3.00 (0.21)	79	71
Grow fishing	**0.75**	**3.11 (0.13)**	**3.07 (0.18)**		
by promoting awareness and use of fishery resources		3.43 (0.17)	3.07 (0.20)	83	79
recruit new anglers		2.79 (0.15)	3.07 (0.20)	71	79
Economic measurement	**0.79**	**2.45 (0.11)**	**2.67 (0.22)**		
estimate or recognize economic aspects of fishing		2.57 (0.25)	2.86 (0.23)	57	71
by generating local economic benefit information		2.64 (0.20)	2.65 (0.25)	64	50
better measure angler expenditures		2.14 (0.21)	2.50 (0.23)	36	43
Biological monitoring	**0.79**	**1.50 (0.07)**	**1.32 (0.06)**		
collect fishery assessment data to replace agency efforts		1.36 (0.17)	1.07 (0.07)	7	0
estimate exploitation rate		1.71 (0.16)	1.93 (0.22)	7	28
collect fish to replace current agency efforts		1.57 (0.17)	1.14 (0.10)	7	0
collect biological data from fish to replace agency efforts		1.36 (0.13)	1.14 (0.10)	0	0
Non-factored items					
reduce harvest by stimulating a live-release ethic among anglers		3.14 (0.29)	3.14 (0.27)	79	71
collect fishery assessment data to supplement current agency efforts		2.93 (0.27)	2.71 (0.27)	64	50
collect biological data to supplement agency efforts		2.36 (0.17)	2.07 (0.20)	43	29
collect fish to supplement current agency efforts		2.43 (0.14)	2.21 (0.19)	43	36
generate revenue for my agency		2.28 (0.30)	2.79 (0.26)	36	57
estimate population size		1.50 (0.14)	1.64 (0.17)	0	7

respectively), with 71% to 86% of agencies reporting benefits occasionally or often (hereafter, primary benefits) from the eight items in these factors. Although ratings for individual items differed between years, "Economic measurement" (2005 = 2.45; 2012 = 2.67) and "Biological monitoring" (2005 = 1.50; 2012 = 1.32) were not considered primary benefits by most states (Table 3).

Average respondent ratings for five of the six non-factored items differed little between 2005 and 2012 (item score differences <0.3) (Table 3). "Reduce harvest by stimulating a live-release ethic among anglers" and "Collect fishery assessment data to supplement current agency efforts" continued to remain primary benefits by more than half of the responding agencies. Although "Generate revenue for my agency" was considered a primary benefit by only 36% of agencies in 2005, 57% of responding agencies considered this item a primary benefit in 2012.

Tournament-related Problems to Agencies

Scores for all six, adverse-impact factors differed little between 2005 and 2012 (differences ranged from 0.07–0.24), and the rank of the factors were similar between years (factors ranked three and four were transposed) (Table 4). The greatest adverse-impact factors in both years were "Resource overuse" and "User-group conflicts," and 64%–100% of the respondents reported problems either occasionally or often (hereafter, primary problems) for six of the seven items comprising these factors.

The adverse-impact factors of "Cost to agency," "Non-traditional management model," "Fish introductions," and "Fish population impacts" remained relatively minor concerns (Table 4). Items in these factors were seen as primary problems by ≤ 50% of respondents, except for "Stimulating controversy about the use of public resources for private financial gain" and "Creating situations in which economic benefits are pitted against biologically sound management recommendations" that continued to be considered as primary problems by 64% of respondents.

Average respondent ratings varied little between 2005 and 2012 (differences ranged from 0.00–0.28) for six of the seven non-factored items (Table 4). The rating for "stimulating controversy about disposal of dead fish after a tournament" increased from 2.07 to 2.57, and respondents indicating primary problems with this issue increased from 14% to 49%. All 14 state agencies reported "Concentrating fish at tournament release sites" as a primary problem.

Discussion

Tournaments in the southeastern United States have steadily increased. Our study, which relied on agency administrator-reported estimates and included only black bass tournaments, indicated that the most abrupt rise has occurred during the last seven years. Georgia and Texas responded with what they considered conservative estimates of total black bass tournaments, West Virginia only reported a known but incomplete estimate, and South Carolina did not respond to the survey. Thus, the actual number of black bass tournaments was likely underestimated by the 2012 survey. Unquestionably, black bass tournaments are frequent uses of public waters in southeastern states; since 2005, either annual event frequency increased or managers are more aware of tournaments.

Our comparison of agency responses between years was imperfect, as the 2005 survey included tournaments for all species and the 2012 survey included only black bass tournaments. Nevertheless, Schramm et al. (1991b) reported that >90% of tournaments in the southeastern states targeted black bass, and similar percentages were reported in this survey. Thus, responses to the 2005 survey probably were strongly influenced by black bass tournaments, and we suggest that differences in survey responses to generic versus bass-specific tournament questions had negligible effects.

A larger issue than the imperfect comparison between the 2005 survey (all tournaments) and the 2012 survey (bass tournaments only) is the accuracy of the estimated number of tournaments. We have treated all responses to the survey, including the estimated number of tournaments, as accurate. The issue of accuracy pertains to estimates of the number of tournaments in this study as well as all preceding studies of tournaments (Shupp 1979, Duttweiler 1985, Schramm et al. 1991b, Kerr and Kamke 2003, Schramm and Hunt 2007). Recognizing the potential growth in tournaments and their importance to management, Schramm et al. (1991a) recommended implementation of a permitting system that would have multiple benefits including estimation of numbers of tournaments. Lacking some form of tournament reporting program, accuracy of estimated numbers of tournaments is affected by the awareness of tournaments by the responding administrator (or their designated respondent). In addition, assessment of trends in numbers of tournaments (or any other aspect of tournaments) over time is vulnerable to changes in responding individuals. For example, the substantial increases in tournament frequency since the 2005 survey (Schramm and Hunt 2007) noted for Florida, Tennessee, and Texas may be largely a consequence of changes in responding individuals and may not reflect actual changes over time. Note that the large changes can result from inflated estimates in 2009–2011 or underestimates in 2002–2004.

The need for accurate tournament reporting may warrant discussion among administrators. While 75%–100% of the states outside the southeastern region of the United States require some form of tournament registration or permit (Schramm and Hunt 2007), relatively few southeastern states have such programs. The

Table 4. Mean score (SE) for factor and survey items associated with fishing tournaments that adversely impact southeastern state fisheries management agencies (n = 14). Scores for 2005 were for adverse effects of tournaments for all species (data from Schramm and Hunt 2007); scores for 2012 were for adverse effects of bass tournaments only. Items were scored on a 4-point scale with 1 = never, 2 = rarely, 3 = occasionally, and 4 = often.

FACTOR (in bold) Items in Factor: Fishing tournaments adversely affect my agency by …	Factor reliability	Factor and item mean		Percentage of agencies reporting realized problems often or occasionally	
		2005	2012	2005	2012
Resource overuse	**0.83**	**3.12 (0.14)**	**3.04 (0.11)**		
crowding at access sites		3.43 (0.14)	3.28 (0.13)	100	100
concentrating fishing effort		3.14 (0.23)	2.86 (0.18)	86	71
increasing complaints about exploitation of game fishes		2.86 (0.14)	2.86 (0.18)	79	71
crowding of anglers on the water		3.07 (0.16)	3.14 (0.14)	86	93
User-group conflicts	**0.74**	**2.76 (0.14)**	**2.52 (0.11)**		
increasing conflicts among anglers		3.29 (0.13)	2.86 (0.18)	100	71
increasing conflicts with non-angling user groups		2.79 (0.24)	2.64 (0.13)	64	64
stimulating anti-fishing sentiments		2.21 (0.15)	2.07 (0.16)	29	21
Cost to agency	**0.74**	**2.00 (0.20)**	**1.83 (0.12)**		
additional fiscal and personnel costs at tournaments		2.21 (0.26)	1.86 (0.14)	43	7
additional fiscal and personnel costs of permitting tournaments or managing data from tournaments		1.93 (0.30)	1.64 (0.20)	29	14
promoting negative public attitude about my agency		1.86 (0.18)	2.00 (0.18)	14	21
Non-traditional management model	**0.84**	**2.27 (0.15)**	**2.39 (0.11)**		
stimulating controversy about the use of public resources for private financial gain		2.76 (0.21)	2.57 (0.17)	71	64
changing perceptions of traditional uses of game fishes		2.43 (0.23)	2.64 (0.25)	50	50
creating situations in which economic benefits are pitted against biologically sound management recommendations		2.21 (0.28)	2.71 (0.22)	50	64
establishing unreasonable catch expectations		2.42 (0.20)	2.42 (0.23)	43	50
conveying an image that all resources are healthy and fish are abundant		2.00 (0.18)	2.00 (0.15)	21	14
making fishing a spectator sport		1.79 (0.19)	2.00 (0.23)	14	21
Fish introductions	**0.74**	**2.18 (0.19)**	**2.39 (0.11)**		
creating pressure for my agency to introduce non-native fishes		2.21 (0.19)	2.36 (0.13)	36	36
encouraging unauthorized fish introductions		2.14 (0.27)	2.43 (0.20)	43	43
Fish population impacts	**0.83**	**1.82 (0.09)**	**1.75 (0.16)**		
reducing the abundance of larger fish		1.92 (0.18)	2.00 (0.23)	14	21
reducing fish recruitment		1.71 (0.22)	1.71 (0.16)	7	7
reducing population fitness		1.79 (0.19)	1.71 (0.22)	14	7
reducing standing stocks of gamefish		1.85 (0.15)	1.57 (0.14)	7	0
Non-factored items					
concentrating fish at tournament release sites		3.29 (0.23)	3.21 (0.11)	86	100
reducing fishing and boating courtesy		2.86 (0.21)	2.86 (0.18)	64	71
promoting a live-release ethic that conflicts with management goals		3.29 (0.19)	3.14 (0.25)	86	79
stimulating controversy about disposal of dead fish after a tournament		2.07 (0.13)	2.57 (0.23)	14	49
increasing legal or enforcement problems		1.93 (0.16)	2.21 (0.19)	14	36
seeking exemptions to waterbody or statewide regulations		2.14 (0.14)	2.21 (0.24)	21	50
altering the number, location, or time fish are stocked		1.36 (0.13)	1.29 (0.13)	0	0

number of southeastern states with some form of registration or permitting has increased from two states in 2002–2004 to four states (29% of 14 responding states) in this survey period. While interest in the number of tournaments appears to be growing, all four states with some form of tournament registration also indicated that their tournament records underestimated the actual number of tournaments. The increasing frequency of bass tournaments in most southeastern states observed in this study may provide additional reasons for monitoring tournaments. However, lack of registration or permitting programs could be due to the additional fiscal and personnel costs associated with implementation and may be unnecessary at some waters, given that other agencies in over half of the states required registration and forfee permits in 2012. Additionally, fisheries management programs that target specific angler groups can alienate constituents and are often avoided (Gilliland 2000). For example, efforts to establish a no-cost tournament registration program in Texas during the early 1990s were met with strong opposition from tournament groups due to the additional obligations and potential agency control of events (D. Terre, Texas Parks and Wildlife Department, personal communication). Decisions about the need to implement tournament-monitoring programs, as well as the accuracy of monitoring, will remain independent administrative decisions.

Although estimated number of black bass tournaments increased in southeastern states, four states reported decreases since 2005. The decreasing frequency of tournaments in Oklahoma from 1,675 in 2000 (Kerr and Kamke 2003), to 1,305 in 2005, and to 1,020 in this study is at least partially due to a shift from smaller (i.e., 20–30 boats), more numerous bass club tournaments to fewer but larger (i.e., 200–300 boats) events (E. Gilliland, Oklahoma Department of Wildlife Conservation, personal communication). This change in tournament format may account for declines in other states. Nevertheless, it may be important for agencies to document total tournament participants or participant days, as well as events, to better monitor trends in overall tournament activity.

Our survey results suggested that the considerable increase in tournament numbers since 2005 has had little effect on state fisheries agencies. Most agency ratings were consistent between years and indicated that tournaments generally benefited fisheries management; further, the higher ranking benefit and adverse-impact factors changed little. Respondents consistently indicated that tournaments enhanced fisheries management by promoting fishing, specific fisheries, and agency programs. The persistence of concerns about resource overuse and user-group conflicts suggested that little progress has occurred and resolving these issues may be difficult (Schramm and Hunt 2007).

Initial concerns about negative impacts of competitive fishing largely centered on fish population effects. Schramm et al. (1991b) suggested that these concerns may be perceived or anticipated and encouraged measurement of actual biological effects. Although these concerns continue to surface, Schramm and Hunt (2007) found that fishery administrators or managers considered fish population-level impacts the lowest ranking of six problem factors. Our study revealed that population-level impacts continue to be the lowest ranked problem factor, even though tournament frequency has more than doubled since 2005. The low agency concern likely reflects research that consistently demonstrates negligible population impacts of black bass tournaments (Hayes et al. 1995, Kwak and Henry 1995, Allen et al. 2004, Edwards et al. 2004, Driscoll et al. 2007). However, population-level impacts may increase as tournament effort and catch increase (Hayes et al. 1995, Allen et al. 2004). Additionally, all 14 state agencies reported problems with concentration of fish at tournament release sites. Concentration can occur for more than two months after release (Stang et al. 1996, Gilliland 2001, Wilde and Paulson 2003, Hunter and Maceina 2008), but population impacts are likely minor given the results of studies cited above.

Tournament results can provide reliable information about largemouth bass populations at minimal expense (e.g., Gabelhouse and Willis 1986, Dolman 1991, MacMillan et al. 2002, Driscoll et al. 2007), especially at waters where numerous, large (>50 participants) tournaments occur and tournament-angler sample size and catch are high. Trends in tournament-related variables (e.g., proportion of anglers with creel limits and weights over 15 pounds, average weights of top three places and big bass) can provide additional fishery and population-level insight (Driscoll and Ashe 2011), especially for larger bass (>480 mm) that may not be adequately sampled with electrofishing (Carline et al. 1984). Results from most large tournaments are now readily accessible via the internet and can be retrieved relatively easily. Despite the greater opportunities to collect more and perhaps better data due to increases in tournaments, and possibly tournament size, fewer agencies reported taking advantage of them since 2005. These trends are consistent with the observation by Schramm et al. (1991b) that the opportunity to collect useful population data was frequently cited as a benefit, but the data were seldom collected. The question of why this often-cited opportunity was not exploited by more agencies, especially in light of increasingly stringent agency budgets, remains unresolved.

Tournaments, particularly bass tournaments, are frequent uses of public waters and appear to be increasing in most southeastern states. Despite the increasing frequency of tournaments and the persistence of crowding and user conflicts as adverse impacts, overall fisheries agencies consider tournaments moderately ben-

eficial. Limited formal efforts to monitor tournaments suggest that "adverse impacts" do not necessarily equate to "problems that need to be solved." In conclusion, we suggest that tournaments still offer benefits that could be better realized, and potential negative impacts have become part of the mix of contemporary recreational fisheries management.

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