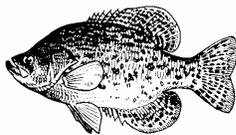
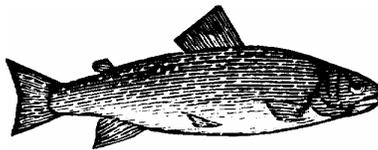
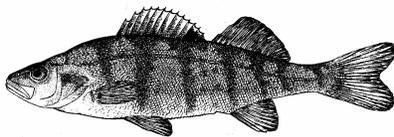
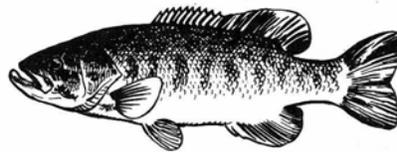
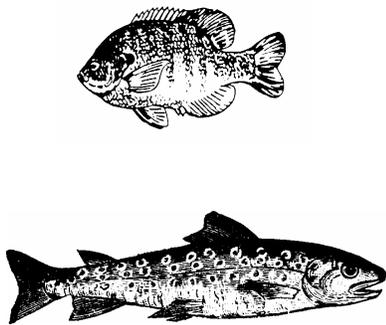


Fishing in South Dakota - 2010

Understanding Resident Anglers

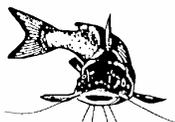
Attitudes towards the Use of Technology in Fishing

HD-17-11.AMS
Larry M. Gigliotti, Ph.D.



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Pierre, SD 57501

Fisheries Management with You in Mind
Serving People, Managing Wildlife





Suggested Citation

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This report was produced for Game, Fish and Parks' fisheries staff and administrators to evaluate the South Dakota 2010 fishing season from the perspective of anglers and to improve our understanding of resident and nonresident anglers. Recommendations made in this report are solely my opinion and are intended as suggestions for future discussion and consideration by GFP fisheries staff. Recommendations in this report do not necessarily reflect any final decisions by fisheries staff or GFP policy.

Larry M. Gigliotti

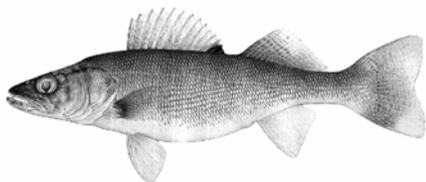
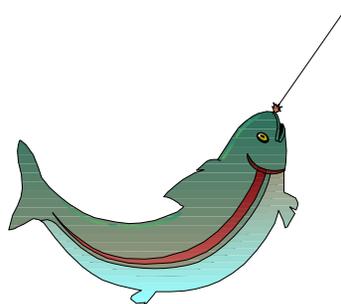


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Fishing in South Dakota - 2010

Understanding Resident Anglers

Attitudes towards the Use of Technology in Fishing

HD-17.AMS

Larry M. Gigliotti, Ph.D.



The purpose of the 2010 statewide survey of anglers was to provide a thorough understanding of our resident and nonresident anglers and to provide an overall estimate of fishing activity and harvest in South Dakota. This analyses and report will provide an in-depth understanding of resident angler attitudes and behaviors from the perspective of angler attitudes towards the use of technology in fishing.

Methods

A K-means cluster analysis procedure using four questions was used to produce a two-group model and a three-group model exploring resident anglers' attitudes towards the use of technology in fishing (Figure 1). Anglers had five response categories for each of the four items (strongly disagree, slightly disagree, neutral or no opinion, slightly agree, and strongly agree).

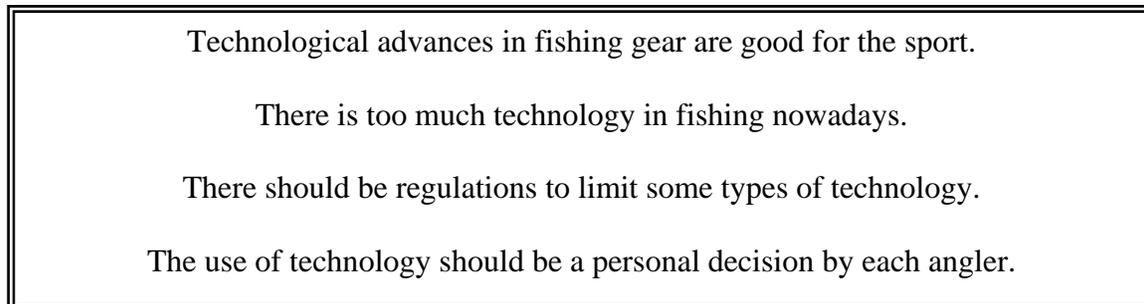


Figure 1. Four questions used to measure and classify angler attitudes towards the use of technology in fishing.



Results – Two-Group Technology Model

The two technology groups of resident anglers are almost equal in size, although there were some significant differences in the proportions by license type (Table 1). The two groups are very different in their attitudes towards the four technology items (Tables 2-A – 2-D). Most of the technocrats agreed that ‘technological advances in fishing gear are good for the sport’ while most of the traditionalists were neutral/undecided (Table 2-A). Most of the technocrats disagreed that ‘there is too much technology in fishing nowadays’ while many of the traditionalists agreed or were neutral/undecided (Table 2-B). Most of the technocrats disagreed that ‘there should be regulations to limit some types of technology’ while many of the traditionalists were neutral/undecided or agreed (Table 2-C). Almost all of the technocrats (98%) agreed that ‘the use of technology should be a personal decision by each angler’ while only 44% of the traditionalists agreed (44% neutral/undecided and 13% disagreed) (Table 2-D). The percent of resident angler technocrats increased almost 5% from about 42% in 2003 to almost 47% in 2010 (Table 3). It will be interesting to see if this trend continues.

While two technology groups are very different in attitudes related to the use of technology, the rest of these analyses explore the similarities/differences between these two groups on a variety of other factors. Overall, technocrats tended to fish about 5 more days in 2010 than did traditionalists, although traditionalists utilized rivers/streams slightly more than did technocrats (Table 4). Technocrats spent more time fishing from a boat in 2010 compared to traditionalists (60% vs. 54%) (Table 5). Technocrats had higher preference for walleye (61% vs. 50%), used lures (85% vs. 79%) and live bait (93% vs. 89%) more often compared to traditionalists (Tables 6 and 7). Technocrats fished more often than traditionalists in all companionship categories (Table 8).

Technocrats rated the fishing in 2010 in terms of numbers and sizes of fish caught slightly higher than did traditionalists and technocrats were slightly more satisfied with their overall fishing experiences in 2010 compared to traditionalists (Tables 9 and 10).

Technocrats did more fishing in the Missouri River System compared to the traditionalists (62% vs. 52%) but were relatively similar in their fishing in the Black Hills (23% vs. 26%) (Table 11). For the resident anglers fishing in the Black Hills, traditionalists spent slightly more time fishing in streams compared to the technocrats (27% vs. 22%) (Table 12).



Importance of Fishing. Overall, fishing was a more important recreational activity for the technocrats compared to the traditionalists (Table 13). Technocrats had a higher median net economic value of fishing compared to traditionalists (\$3,000 vs. \$1,000) (Table 14 and Figure 2).

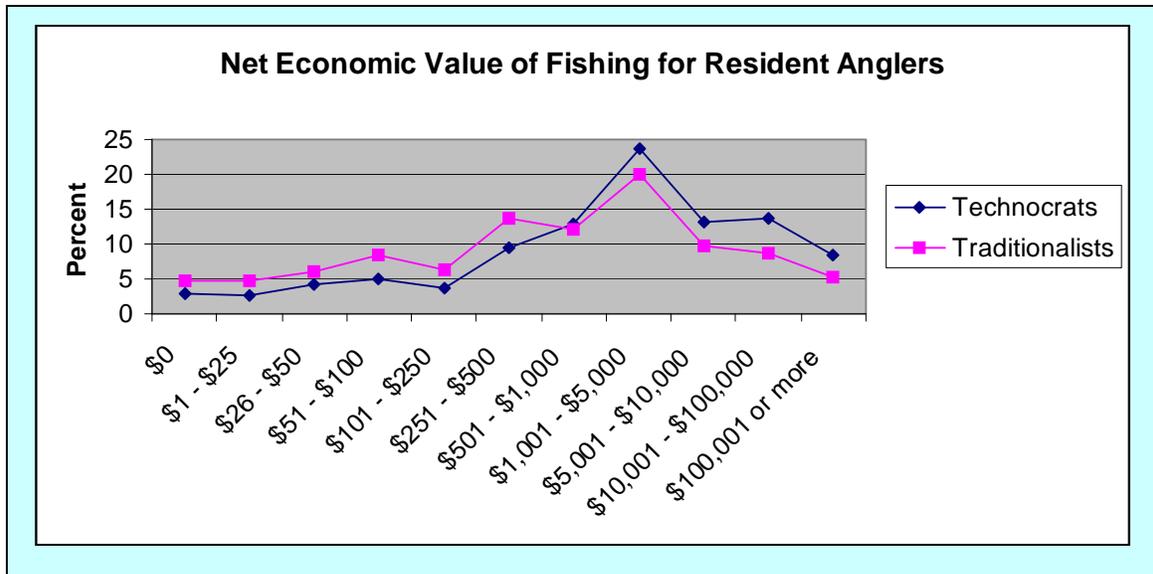


Figure 2. South Dakota resident anglers’ net economic value of fishing analyzed by angler technology type.

Motivations for Fishing. Technocrats rated all eight motivations for why they like to fish slightly higher than did the traditionalists (Figure 3). The largest differences were for the three motivations (skills, trophy, and competition) that were combined into the single “sport” motivation. Technocrats and traditionalists were relatively similar in their selection of ‘social’, ‘relaxation’, and ‘food’ for their dominant motivation for fishing (Table 15). Almost 7% more traditionalists selected ‘nature’ and about 5% more technocrats selected ‘excitement’ for their dominant motivation for fishing. Although few anglers selected ‘sport’ for their dominant motivation for fishing, more than twice as many technocrats selected ‘sport’ compared to the traditionalists (3.1% vs. 1.2%).



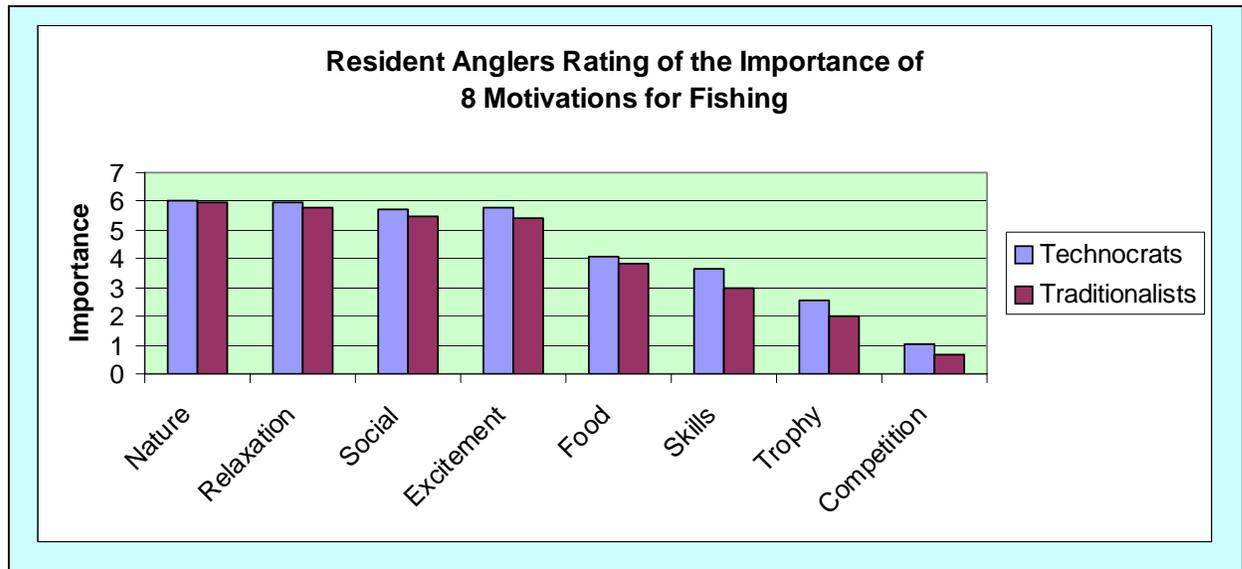


Figure 3. South Dakota resident anglers’ rating of the importance of eight motivations for fishing analyzed by angler technology type.

Attitudes towards Catching Fish. Technocrats and traditionalists were relatively similar in their response to the statement, ‘A fishing trip can be satisfying to me even if I don’t catch any fish’ (Table 16-A). However, catching large fish, a limit of fish and catching fish in general was rated as slightly more important by the technocrats compared to the traditionalists (Tables 16-B – 16-D).

Fisheries Management Issues. Technocrats and traditionalists had the same mean likelihood (-0.53)¹ of purchasing a Resident Family Fishing License (F=0.030; df=1/11,843; p=0.862). A higher percent of technocrats compared to traditionalists had fished in a tournament (50% vs. 34%) and fished in a tournament in 2010 (16% vs. 8%) (Table 17). Almost twice as many technocrats than traditionalists reported liking tournaments (35% vs. 18%) (Table 18). A higher percent of technocrats compared to traditionalists (86% vs. 78%) have used live fish as bait (Table 19).

¹ On a scale of -3=Very Unlikely to +3=Very Likely.



A slightly higher percentage of technocrats compared to traditionalists had experience fishing for musky (23% vs. 17%); although about the same percentage of experienced musky anglers had fished for musky in South Dakota (39%) (Table 20). A higher percentage of technocrats compared to traditionalists felt it was important to have some opportunities for musky fishing in South Dakota (Table 21).

A slightly higher percent of technocrats than traditionalists have used a spear-gun to take fish (5.3% vs. 3.5%) and of the experienced spear-gun anglers a slightly higher percent of technocrats than traditionalists have used a spear-gun to take fish in South Dakota (73% vs. 67%) (Table 22). Although most technocrats and traditionalists (65% and 69%; respectively) were neutral about the use of spear-guns to take fish, a slightly higher percentage of technocrats than traditionalists had positive attitudes towards spear-gun fishing (18% vs. 12%) (Table 23).

A slightly higher percent of technocrats than traditionalists have used archery gear to take fish (27% vs. 22%); although about the same percentage of archery anglers have used archery gear to take fish in South Dakota (85%) (Table 24). Although most technocrats and traditionalists (60% and 65%; respectively) were neutral about the use of archery gear to take fish, a slightly higher percentage of technocrats than traditionalists had positive attitudes towards archery fishing (32% vs. 24%) (Table 25).

A higher percent of technocrats own a boat compared to traditionalists (60% vs. 47%) and a higher percent of boat owning technocrats used their boat in 2010 compared to boat owning traditionalists (88% vs. 82%) (Table 26).

Demographics. Females comprised a slightly higher percentage of the traditionalists compared to the technocrats (16% vs. 10%) (Table 27). Traditionalists had a slightly higher mean age than the technocrats (47.3 years vs. 45.7 years). Overall, resident and nonresident anglers had about the same proportion of technocrats and traditionalists; although there were some differences among the resident and nonresident license types (Table 28).

Nonresident² technocrats had a slightly higher response via the Internet compared to traditionalists (92% vs. 87%) (Table 29).

² This variables was only measured for the nonresident anglers.



Results – Three-Group Technology Model

The three-group technology model recognizes that some anglers may not hold strong attitudes related to the use of technology in fishing and classifies anglers into three groups: technocrats (anglers with strong positive attitudes towards the use of technology in fishing), traditionalists (anglers with strong negative attitudes towards the use of technology in fishing), and the neutrals (anglers having neutral or weak attitudes related to the topic of technology in fishing). The neutrals are the largest group of resident anglers (57%), followed by technocrats (29%) and the traditionalists (14%) (Table 30). By separating out the neutrals in these analyses it is clear that the technocrats and traditionalists have very different attitudes regarding the topic of technology in fishing (Tables 31-A – 31-D and Figures 4 – 7).

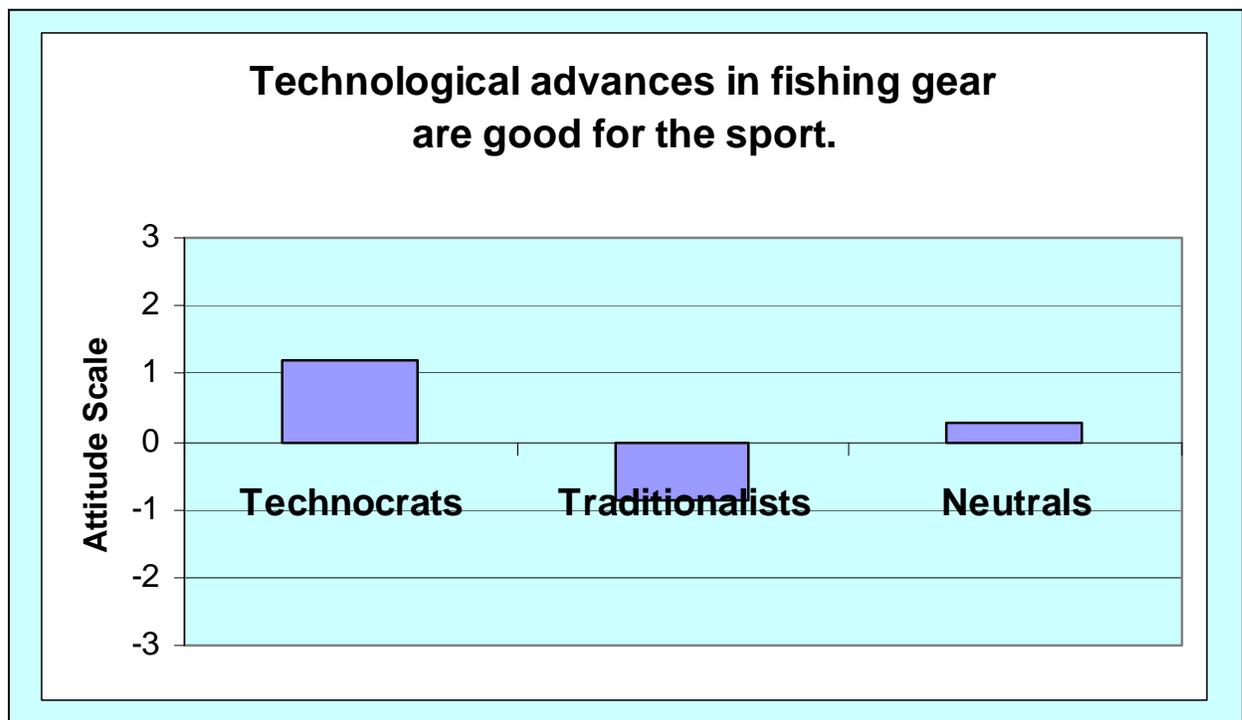


Figure 4. Resident anglers' mean attitude towards the statement, 'Technological advances in fishing gear are good for the sport' analyzed by the three-group angler technology types.



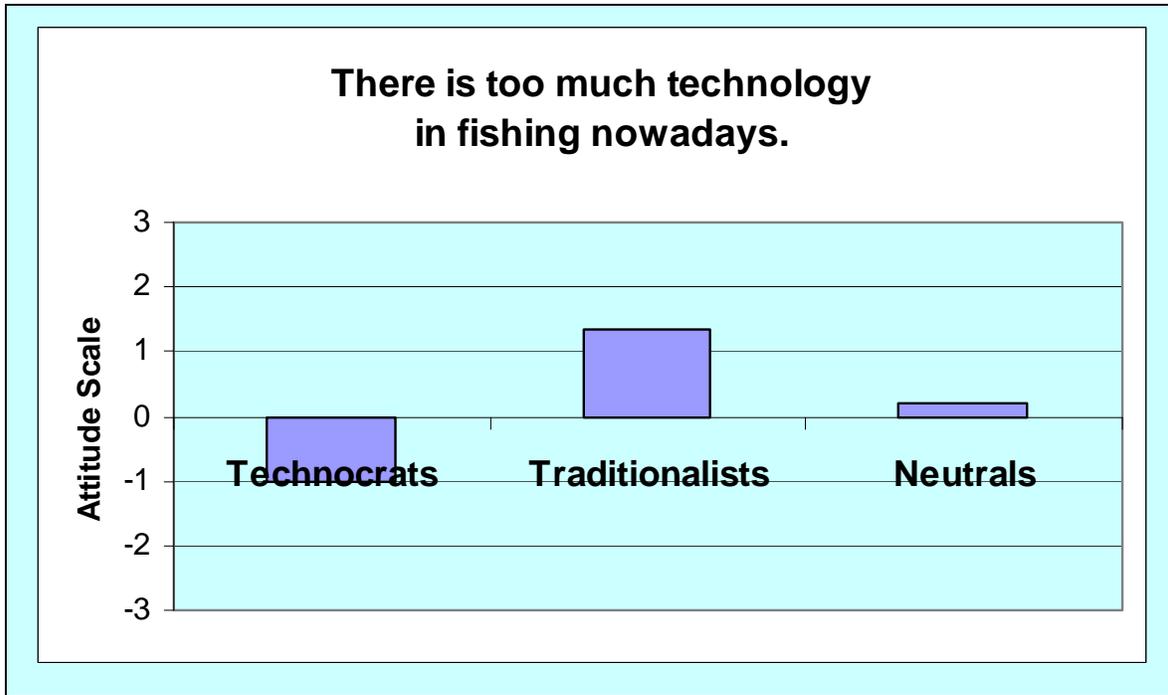


Figure 5. Resident anglers' mean attitude towards the statement, 'There is too much technology in fishing nowadays' analyzed by the three-group angler technology types.

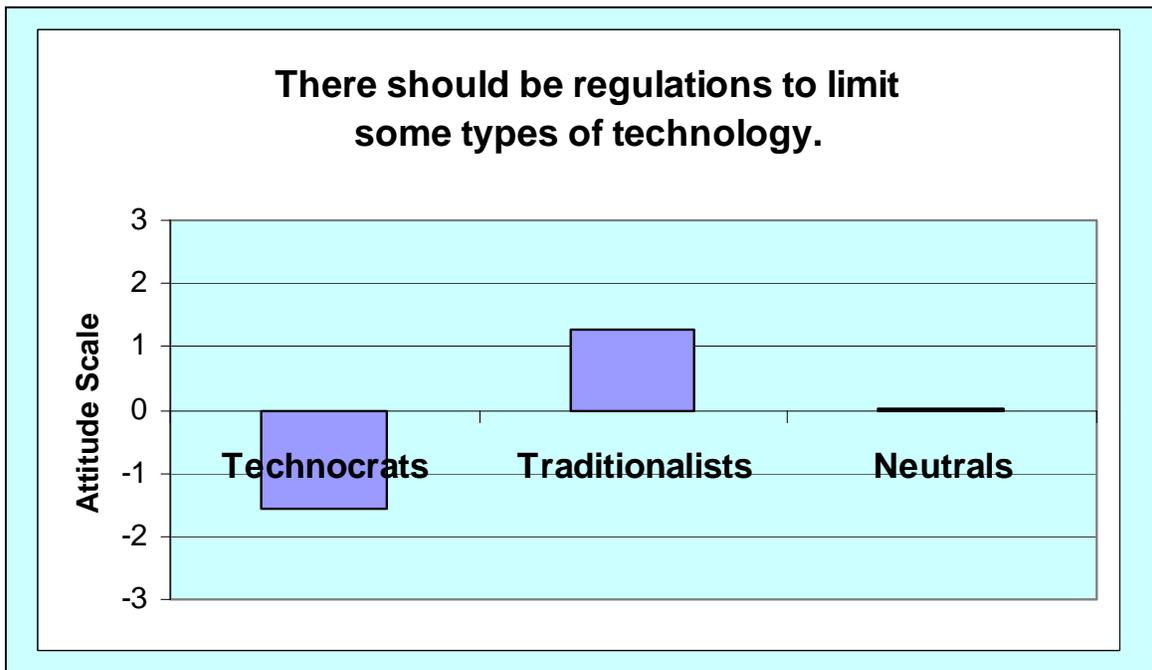


Figure 6. Resident anglers' mean attitude towards the statement, 'There should be regulations to limit some types of technology' analyzed by the three-group angler technology types.



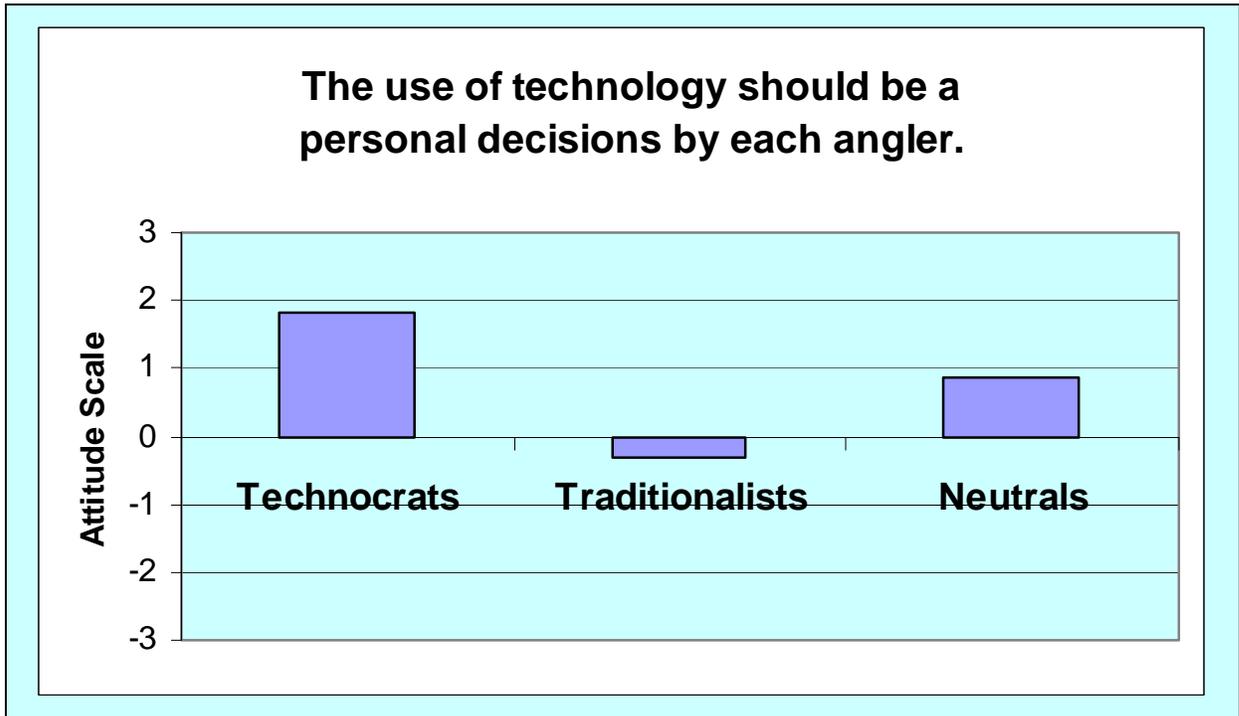


Figure 7. Resident anglers' mean attitude towards the statement, 'The use of technology should be a personal decision by each angler' analyzed by the three-group angler technology types.

The technocrats and traditionalists in the 3-group model with the neutrals removed had the same types of differences in behaviors, attitudes and characteristics as was found in the 2-group technology model, only with larger differences between the two groups (Tables 32 – 56 and Figures 8 and 9). The neutrals tended to fall somewhere between the technocrats and the traditionalists on most of the variables measured in this study with a few exceptions with the neutrals being relatively similar to the traditionalists in some attitudes, behaviors and characteristics (e.g., see Tables 41, 42, 48, 52, 54 and Figure 8). In one example, the neutrals were relatively similar to the technocrats in mean age; both being younger than the traditionalists (Table 54).



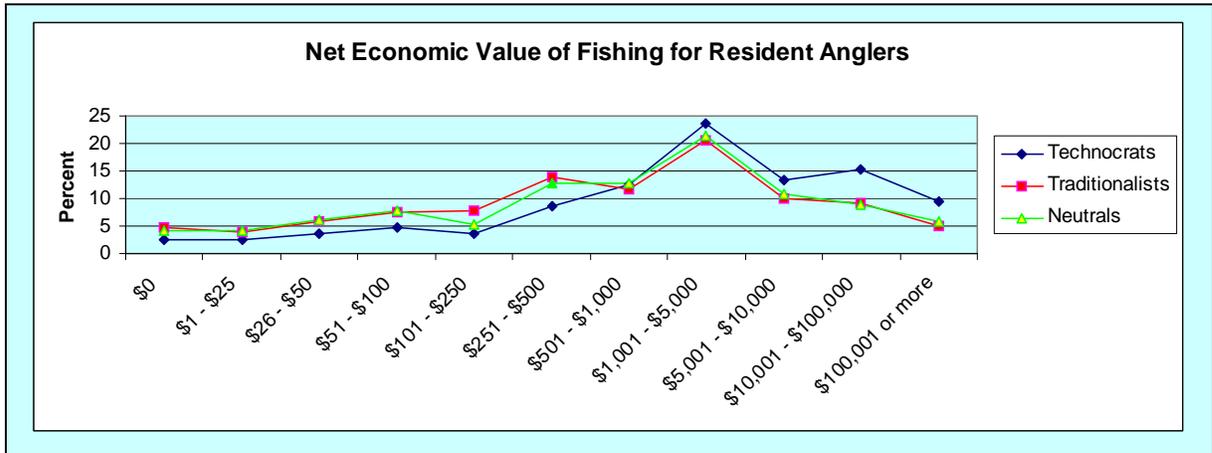


Figure 8. South Dakota resident anglers’ net economic value of fishing analyzed by the three-group angler technology types.

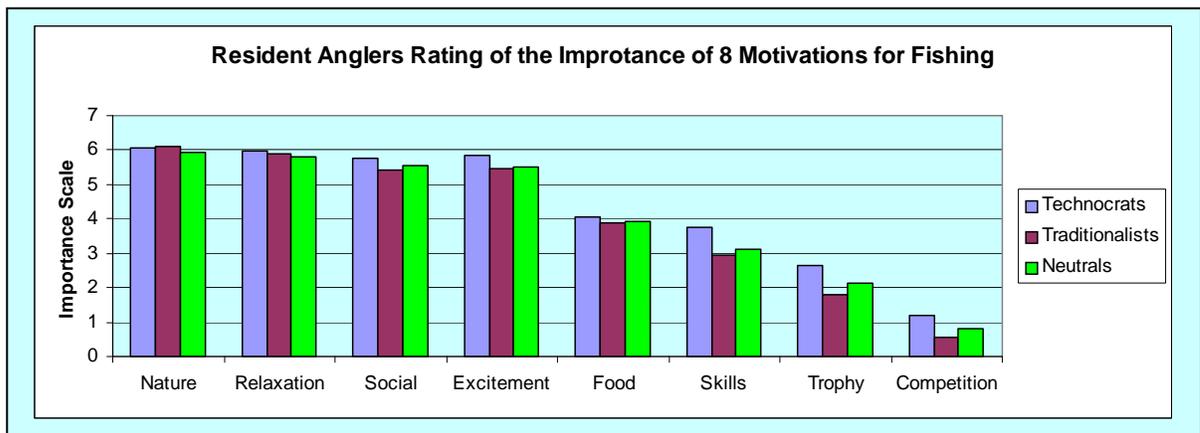


Figure 9. South Dakota resident anglers’ rating of the importance of eight motivations for fishing analyzed by the three-group angler technology types.



Discussion

The simple 2-group technology model classifies resident anglers into two groups based on anglers' attitudes related to the use of technology in fishing. This analysis demonstrates a basic human dimensions principle that anglers are not a single group with similar needs and desires. The 2-group technology model demonstrates fundamental attitudinal differences related to fishing (attitude towards the use of technology in fishing) and that these differences have an effect or are related to many other angler behaviors, attitudes and characteristics.

The tables in the 2-group technology model section (Tables 1 – 29) lists the results for the resident anglers as a single group followed by the same results for the 2-group model (technocrats and traditionalists). The 2-group technology provides a deeper, more thorough understanding of anglers. A combined, single description of anglers' attitudes, behaviors and characteristics will likely suggest management strategies that favor an "average" angler, which does not actually fit many anglers. The model provides management guidance for a more diverse angling public. The technology model also suggests one value-system related to fishing that may contribute to conflicts among anglers.

The 3-group technology model (Tables 30 – 56) is a bit more complex and recognizes an attitudinal principle that attitudes include both direction (positive or negative) and *strength*, by identifying a group of anglers with relatively neutral attitudes related to technology in fishing. By factoring out the neutrals, this analysis identifies more clearly the role of having a strong attitude (favorable or opposed) related to technology plays in behaviors and other fishing related attitudes held by anglers. In summary, the technocrats (compared to the traditionalists) are more involved in fishing (fish more often, rate fishing higher in importance and have a higher net economic value for fishing), do a higher percent of their fishing from a boat, which makes sense since many technological gadgets for fishing involve boats, rated fishing in 2010 better in terms of numbers and sizes of fish, were more satisfied with their 2010 fishing experiences, had higher desires for catching fish and for larger fish, were involved in more types of fishing (tournament, spear-gun, and archery), had higher preference for walleye fishing, and did more fishing with friends, which indicates that fishing is more interwoven into their social network (which can increase the overall importance of fishing to the individual).



TABLES

Understanding Resident Anglers

Attitudes towards the Use of Technology in Fishing

2-Group Technology Model

Table 1. K-means cluster analysis 2-group solution for the four variables measuring attitudes towards the use of technology in fishing.

Angler Type Based on Attitudes towards Use of Technology in Fishing		Number	Percent	
Technocrats		5,542	46.5%	
Traditionalists		6,386	53.5%	
Total		11,928	100%	
Angler Technology Type	License Type			
	Combination	Annual	Senior	Jr. Combination
Technocrats	49.5%	43.6%	38.9%	35.2%
Traditionalists	50.5%	56.4%	61.1%	64.8%
Total	7,200	3,261	1,106	361

Table 2-A. South Dakota resident anglers' attitude towards the statement, "Technological advances in fishing gear are good for the sport" analyzed by angler technology type.

Attitude (scale)	Technological advances in fishing gear are good for the sport.		
	Combined	Technocrats	Traditionalists
Strongly Disagree (-2)	4.6%	0.6%	8.1%
Slightly Disagree (-1)	10.8%	2.2%	18.3%
Neutral / No Opinion (0)	39.4%	20.9%	55.4%
Slightly Agree (+1)	33.5%	52.4%	17.1%
Strongly Agree (+2)	11.7%	23.8%	1.2%
Total	11,928	5,542	6,386
Mean	0.37	0.96	-0.15
95% C.I.	0.35 – 0.39	0.94 – 0.98	-0.17 – -0.13
SUMMARIZED ATTITUDE			
ATTITUDE (SUMMARIZED)	COMBINED	TECHNOCRATS	TRADITIONALISTS
DISAGREE	15.5%	2.9%	26.4%
NEUTRAL / NO OPINION	39.4%	20.9%	55.4%
AGREE	45.2%	76.2%	18.2%

Table 2-B. South Dakota resident anglers’ attitude towards the statement, “*There is too much technology in fishing nowadays*” analyzed by angler technology type.

Attitude (scale)	There is too much technology in fishing nowadays.		
	Combined	Technocrats	Traditionalists
Strongly Disagree (-2)	10.3%	20.8%	1.2%
Slightly Disagree (-1)	16.4%	30.6%	4.1%
Neutral / No Opinion (0)	42.2%	38.7%	45.3%
Slightly Agree (+1)	22.8%	9.0%	34.8%
Strongly Agree (+2)	8.2%	1.0%	14.5%
Total	11,928	5,542	6,386
Mean	0.02	-0.61	0.57
95% C.I.	0.00 – 0.04	-0.64 – -0.59	0.55 – 0.59
SUMMARIZED ATTITUDE			
ATTITUDE (SUMMARIZED)	COMBINED	TECHNOCRATS	TRADITIONALISTS
DISAGREE	26.7%	51.3%	5.3%
NEUTRAL / NO OPINION	42.2%	38.7%	45.3%
AGREE	31.1%	10.0%	49.4%

Table 2-C. South Dakota resident anglers’ attitude towards the statement, “*There should be regulations to limit some types of technology*” analyzed by angler technology type.

Attitude (scale)	There should be regulations to limit some types of technology.		
	Combined	Technocrats	Traditionalists
Strongly Disagree (-2)	20.2%	42.0%	1.4%
Slightly Disagree (-1)	15.3%	29.2%	3.2%
Neutral / No Opinion (0)	41.8%	27.4%	54.3%
Slightly Agree (+1)	15.8%	1.1%	28.6%
Strongly Agree (+2)	6.9%	0.3%	12.6%
Total	11,928	5,542	6,386
Mean	-0.26	-1.11	0.48
95% C.I.	-0.28 – -0.24	-1.14 – -1.09	0.46 – 0.50
SUMMARIZED ATTITUDE			
ATTITUDE (SUMMARIZED)	COMBINED	TECHNOCRATS	TRADITIONALISTS
DISAGREE	35.5%	71.2%	4.6%
NEUTRAL / NO OPINION	41.8%	27.4%	54.3%
AGREE	22.7%	1.4%	41.2%

Table 2-D. South Dakota resident anglers’ attitude towards the statement, “*The use of technology should be a personal decision by each angler*” analyzed by angler technology type.

Attitude (scale)	The use of technology should be a personal decision by each angler.		
	Combined	Technocrats	Traditionalists
Strongly Disagree (-2)	2.6%	0.1%	4.6%
Slightly Disagree (-1)	4.8%	0.3%	8.7%
Neutral / No Opinion (0)	24.4%	1.6%	44.2%
Slightly Agree (+1)	30.0%	26.2%	33.3%
Strongly Agree (+2)	38.2%	71.8%	9.1%
Total	11,928	5,542	6,386
Mean	0.97	1.69	0.33
95% C.I.	0.95 – 0.98	1.68 – 1.71	0.31 – 0.36
SUMMARIZED ATTITUDE			
ATTITUDE (SUMMARIZED)	COMBINED	TECHNOCRATS	TRADITIONALISTS
DISAGREE	7.3%	0.4%	13.4%
NEUTRAL / NO OPINION	24.4%	1.6%	44.2%
AGREE	68.5%	98.0%	42.4%

Table 3. Resident angler type based on attitudes towards the use of technology in fishing comparing 2003 and 2010 survey results.

Angler Technology Type	Resident Anglers	
	2003	2010
Technocrats	41.7%	46.5%
Traditionalists	58.3%	53.5%
Total	2,949	11,928

Table 4. Total days fished by resident anglers in 2010 analyzed by angler technology type and days fished by water type.

Parameter	Combined	Angler Technology Type		
		Technocrats	Traditionalists	
Mean days fished in 2010	16.6	19.3	14.2	
95% C.I.	18.6 – 19.4	18.8 – 19.8	13.8 – 14.7	
Number	11,928	5,542	6,386	
Water Type	Technocrats		Traditionalists	
	Days Fished	95% C.I.	Days Fished	95% C.I.
Missouri River System	8.4	8.0 – 8.8	5.6	5.3 – 5.9
Rivers	1.6	1.4 – 1.7	2.0	1.8 – 2.2
Large Lakes/Reservoirs	6.9	6.5 – 7.2	4.8	4.6 – 5.1
Small Lakes/Ponds	4.8	4.5 – 5.0	4.2	4.0 – 4.5

Table 5. Type of fishing by resident anglers in 2010 analyzed by angler technology type.

Angler Technology Type	Type of Fishing (Mean Percent / 95% C.I.)			
	Shore	Boat	Ice	Spear/Archery
Technocrats	28.6% (27.6 – 29.6)	59.8% (58.7 – 60.8)	10.8% (10.2 – 11.4)	0.9% (0.7 – 1.1)
Traditionalists	44.1% (43.0 – 45.2)	48.3% (47.2 – 49.4)	6.6% (6.2 – 7.1)	1.0% (0.8 – 1.2)
Total	36.7% (35.9 – 37.5)	53.8% (53.0 – 54.5)	8.6% (8.4 – 9.0)	0.9% (0.8 – 1.1)

Table 6. Resident anglers' preferred fish analyzed by angler technology type.

Preferred Fish	Combined	Angler Technology Type	
		Technocrats	Traditionalists
Walleye	54.9%	60.7%	49.7%
Bass	8.6%	8.2%	8.8%
Yellow Perch	7.6%	7.9%	7.3%
Trout	6.9%	4.8%	8.8%
No Preference	6.7%	4.8%	8.5%
Northern Pike	3.6%	3.3%	3.8%
Catfish	3.6%	2.6%	4.6%
Crappie	2.9%	2.6%	3.2%
Sunfish	2.2%	2.0%	2.3%
Chinook	1.0%	1.4%	0.7%
White Bass	0.7%	0.5%	0.8%
Musky	0.3%	0.4%	0.2%
Bullhead	0.3%	0.2%	0.5%
Carp	0.3%	0.4%	0.3%
Other	0.3%	0.1%	0.4%
Number	10,788	5,138	5,650

Table 7. Fishing methods used by resident anglers analyzed by angler technology type.

Fishing Methods Used ¹	Combined	Angler Technology Type	
		Technocrats	Traditionalists
Fly	9.2%	8.7%	9.7%
Lures	81.9%	85.4%	78.8%
Live Bait	91.2%	93.4%	89.3%
Total Number of Cases	10,717	5,111	5,606

¹Multiple responses possible.

Table 8. Resident anglers' fishing companions analyzed by angler technology type.

Resident Anglers Fished (with)... ¹	Combined	Angler Technology Type	
		Technocrats	Traditionalists
Alone	42.1%	45.7%	38.8%
Family	84.1%	85.5%	82.8%
Friends	64.8%	71.5%	58.6%
Tournament	11.3%	15.3%	7.6%
Club	2.0%	2.7%	1.3%
Nonresident Friends/Relatives	29.0%	33.2%	25.0%
Number of Cases	10,825	5,156	5,669

¹Multiple responses possible.

Table 9. South Dakota resident anglers' rating of the fishing in 2010 in terms of numbers and sizes of fish caught analyzed by angler technology type.

Rating of the Fishing (scale) ¹	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
Very Poor (-2)	3.2%	2.5%	3.8%
Poor (-1)	8.9%	7.5%	10.2%
Fair (0)	30.4%	28.4%	32.3%
Good (+1)	44.4%	46.1%	42.8%
Excellent (+2)	13.2%	15.5%	11.0%
Total	10,485	5,044	5,441
Mean	0.55	0.65	0.47
95% C.I.	0.54 – 0.57	0.62 – 0.67	0.44 – 0.49

¹No opinion responses removed from the analyses.

Table 10. South Dakota resident anglers' satisfaction with their overall fishing experiences in 2010 analyzed by angler technology type.

Satisfaction (scale)	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
Very Dissatisfied (-3)	3.5%	3.1%	3.8%
Moderately Dissatisfied (-2)	5.1%	4.3%	5.8%
Slightly Dissatisfied (-1)	9.1%	8.4%	9.6%
Neutral / No Opinion (0)	15.5%	11.8%	18.8%
Slightly Satisfied (+1)	16.3%	16.4%	16.2%
Moderately Satisfied (+2)	31.1%	33.4%	29.1%
Very Satisfied (+3)	19.4%	22.5%	16.7%
Total	10,821	5,150	5,671
Mean	1.07	1.24	0.92
95% C.I.	1.04 – 1.10	1.20 – 1.29	0.88 – 0.96
SUMMARIZED RESULTS			
SATISFACTION	RESIDENT ANGLERS		
	COMBINED	TECHNOCRATS	TRADITIONALISTS
DISSATISFIED	17.6%	15.8%	19.2%
NEUTRAL / NO OPINION	15.5%	11.8%	18.8%
SATISFIED	66.9%	72.3%	62.0%

Table 11. Resident anglers' fishing in the Missouri River System and Black Hills in 2010 analyzed by angler technology type.

Percent of Resident Anglers Fishing in the...	Combined	Angler Technology Type	
		Technocrats	Traditionalists
Missouri River system	56.9%	62.4%	51.9%
Number of Cases	10,821	5,155	5,666
Black Hills	24.7%	23.3%	25.9%
Number	10,779	5,135	5,644

Table 12. Type of waters fished by resident anglers' fishing in the Black Hills in 2010 analyzed by angler technology type.

Percent of Fishing in the Black Hills...	Combined	Angler Technology Type	
		Technocrats	Traditionalists
Streams (95% C.I.)	24.6% (23.1 – 25.9)	22.0% (20.1 – 24.0)	26.6% (24.7 – 28.5)
Reservoirs/Ponds (95% C.I.)	75.4% (74.1 – 76.8)	78.0% (76.0 – 79.9)	74.4% (71.4 – 75.3)
Number	2,633	1,181	1,452

Table 13. South Dakota resident anglers' rating of the importance of fishing analyzed by angler technology type.

Importance of Fishing (scale) ¹	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
Not (0)	7.9%	5.3%	10.1%
Slightly (1)	19.2%	15.8%	22.3%
Moderately (2)	31.6%	29.5%	33.4%
Very (3)	30.4%	35.2%	26.1%
Most (4)	10.9%	14.2%	8.0%
Total	11,614	5,461	6,153
Mean	2.17	2.37	2.00
95% C.I.	2.15 – 2.19	2.34 – 2.40	1.97 – 2.02

¹No opinion responses removed from the analyses.

Table 14. Net Economic Value of Fishing: South Dakota resident anglers' net economic value of fishing analyzed by angler technology type.

Value	Combined	Angler Technology Type	
		Technocrats	Traditionalists
Median Net Economic Value	\$1,500	\$3,000	\$1,000
Net Economic Value	Combined	Angler Technology Type	
		Technocrats	Traditionalists
\$0	3.8%	2.9%	4.7%
\$1 – \$25	3.6%	2.6%	4.7%
\$26 – \$50	5.2%	4.3%	6.1%
\$51 – \$100	6.8%	5.1%	8.5%
\$101 – \$250	5.0%	3.8%	6.4%
\$251 – \$500	11.6%	9.6%	13.7%
\$501 – \$1,000	12.6%	13.0%	12.1%
\$1,001 – \$5,000	22.0%	23.7%	20.1%
\$5,001 – \$10,000	11.5%	13.1%	9.7%
\$10,001 – \$100,000	11.2%	13.6%	8.6%
\$100,001 or more	6.9%	8.4%	5.2%
Number	5,856	3,010	2,846

Table 15. South Dakota resident anglers' most important motivation for fishing analyzed by angler technology type.

Most Important Motivation for Fishing	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
Social	29.0%	28.6%	29.4%
Nature	25.6%	22.0%	28.8%
Excitement	16.8%	19.7%	14.4%
Relaxation	15.8%	15.9%	15.7%
Food	10.6%	10.7%	10.5%
Sport¹	2.1%	3.1%	1.2%
Total	11,912	5,536	6,376

¹Sport is a combination of three motivations: trophy, skills, and competition.

Table 16-A. Attitude towards Catching Fish: South Dakota resident anglers' agreement/disagreement with the statement, 'A fishing trip can be satisfying to me even if I don't catch any fish' analyzed by angler technology type.

Attitude (scale)	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
Strongly Disagree (-2)	3.9%	4.8%	3.2%
Disagree (-1)	11.6%	12.7%	10.7%
Neutral / No Opinion (0)	10.1%	7.8%	12.0%
Agree (+1)	39.4%	40.2%	38.6%
Strongly Agree (+2)	35.0%	34.5%	35.5%
Total	11,906	5,531	6,375
Mean	0.90	0.87	0.92
95% C.I.	0.88 – 0.92	0.84 – 0.90	0.90 – 0.95
SUMMARIZED RESULTS			
ATTITUDE	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
DISAGREE	15.5%	17.5%	13.9%
NEUTRAL / NO OPINION	10.1%	7.8%	12.0%
AGREE	74.4%	74.7%	74.1%

Table 16-B. Attitude towards Catching Fish: South Dakota resident anglers' agreement/disagreement with the statement, 'The bigger the fish I catch, the better the fishing trip' analyzed by angler technology type.

Attitude (scale)	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
Strongly Disagree (-2)	11.1%	10.8%	11.5%
Disagree (-1)	17.0%	16.8%	17.2%
Neutral / No Opinion (0)	27.5%	23.9%	30.6%
Agree (+1)	34.1%	36.7%	31.9%
Strongly Agree (+2)	10.2%	11.8%	8.8%
Total	11,875	5,515	6,360
Mean	0.15	0.22	0.09
95% C.I.	0.13 – 0.17	0.19 – 0.25	0.07 – 0.12
SUMMARIZED RESULTS			
ATTITUDE	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
DISAGREE	28.2%	27.6%	28.7%
NEUTRAL / NO OPINION	27.5%	23.9%	30.6%
AGREE	44.4%	48.5%	40.7%

Table 16-C. Attitude towards Catching Fish: South Dakota resident anglers' agreement/disagreement with the statement, 'Catching a limit of fish to take home is important to me' analyzed by angler technology type.

Attitude (scale)	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
Strongly Disagree (-2)	19.1%	18.2%	19.9%
Disagree (-1)	19.3%	18.8%	19.8%
Neutral / No Opinion (0)	28.9%	25.8%	31.6%
Agree (+1)	25.4%	28.7%	22.6%
Strongly Agree (+2)	7.2%	8.5%	6.2%
Total	11,880	5,519	6,361
Mean	-0.18	-0.09	-0.25
95% C.I.	-0.20 – -0.15	-0.13 – -0.06	-0.28 – -0.22
SUMMARIZED RESULTS			
ATTITUDE	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
DISAGREE	38.4%	37.0%	39.7%
NEUTRAL / NO OPINION	28.9%	25.8%	31.6%
AGREE	32.7%	37.2%	28.7%

Table 16-D. Attitude towards Catching Fish: South Dakota resident anglers' agreement/disagreement with the statement, 'Catching fish is an important component of fishing' analyzed by angler technology type.

Attitude (scale)	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
Strongly Disagree (-2)	3.9%	3.1%	4.7%
Disagree (-1)	7.0%	6.1%	7.8%
Neutral / No Opinion (0)	15.9%	11.9%	19.5%
Agree (+1)	44.8%	45.7%	44.0%
Strongly Agree (+2)	28.4%	33.3%	24.1%
Total	11,881	5,520	6,361
Mean	0.87	1.00	0.75
95% C.I.	0.85 – 0.88	0.97 – 1.03	0.72 – 0.78
SUMMARIZED RESULTS			
ATTITUDE	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
DISAGREE	10.9%	9.2%	12.4%
NEUTRAL / NO OPINION	15.9%	11.9%	19.5%
AGREE	73.1%	78.9%	68.1%

Table 17. Resident anglers' experience fishing tournaments analyzed by angler technology type.

Percent of Resident Anglers that...	Combined	Angler Technology Type	
		Technocrats	Traditionalists
Ever fished in a tournament	41.5%	49.8%	34.3%
Fished in a tournament in 2010	11.6%	16.1%	7.7%
Total Number of Cases	11,837	5,506	6,331

Table 18. Attitude towards Fishing Tournaments: South Dakota resident anglers' general attitude towards fishing tournaments analyzed by angler technology type.

Attitude (scale)	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
Strongly Dislike (-3)	7.9%	5.6%	9.9%
Moderately Dislike (-2)	7.9%	7.1%	8.6%
Slightly Dislike (-1)	8.8%	8.0%	9.6%
Neutral / No Opinion (0)	49.2%	44.1%	53.7%
Slightly Like (+1)	7.9%	8.9%	7.0%
Moderately Like (+2)	11.4%	14.9%	8.3%
Strongly Like (+3)	6.8%	11.3%	2.9%
Total	11,816	5,502	6,314
Mean	0.03	0.33	-0.24
95% C.I.	0.00 – 0.05	0.29 – 0.37	-0.27 – -0.20
SUMMARIZED RESULTS			
ATTITUDE	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
DISLIKE	24.7%	20.8%	28.0%
NEUTRAL / NO OPINION	49.2%	44.1%	53.7%
LIKE	26.1%	35.1%	18.3%

Table 19. South Dakota resident anglers' use of live fish as bait analyzed by angler technology type.

Do you use live fish as bait?	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
NO	17.9%	13.6%	21.7%
YES	82.1%	86.4%	78.3%
Total	11,694	5,456	6,238

Table 20. Resident anglers' fishing for musky analyzed by angler technology type.

Percent of Resident Anglers that ...	Combined	Angler Technology Type	
		Technocrats	Traditionalists
ever fished (anywhere) for musky	20.2%	23.4%	17.4%
Total Number of Cases	11,801	5,501	6,300
If yes, percent that...			
Ever fished for musky in SD	39.0%	39.2%	38.8%
Total Number of Cases	2,406	1,286	1,120

Table 21. South Dakota resident anglers' rating of the importance of having some opportunities for musky fishing in South Dakota analyzed by angler technology type.

Importance of Musky Fishing opportunities (scale)	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
Not (0)	35.9%	34.1%	37.5%
Slightly (1)	17.6%	19.5%	16.0%
Moderately (2)	17.7%	19.8%	15.8%
Very (3)	7.2%	9.0%	5.6%
No Opinion (missing)	21.6%	17.6%	25.1%
Total	11,796	5,493	6,303
Mean	0.95	1.05	0.86
95% C.I.	0.93 – 0.97	1.02 – 1.08	0.83 – 0.89

Table 22. Resident anglers' fishing with a spear-gun analyzed by angler technology type.

Percent of Resident Anglers that ...	Combined	Angler Technology Type	
		Technocrats	Traditionalists
ever used a spear-gun to take fish	4.3%	5.3%	3.5%
Total Number of Cases	11,767	5,484	6,283
If Yes, percent that...			
used a spear-gun to take fish in SD	70.2%	72.7%	67.1%
Total Number of Cases	537	297	240

Table 23. Attitude towards Spear-Gun Fishing: South Dakota resident anglers' general attitude towards use of spear-guns for taking fish analyzed by angler technology type.

Attitude (scale)	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
Strongly Dislike (-3)	7.5%	6.9%	8.0%
Moderately Dislike (-2)	5.2%	4.8%	5.5%
Slightly Dislike (-1)	5.6%	5.1%	6.0%
Neutral / No Opinion (0)	67.1%	65.2%	68.7%
Slightly Like (+1)	4.8%	5.6%	4.1%
Moderately Like (+2)	6.4%	7.4%	5.6%
Strongly Like (+3)	3.4%	5.0%	2.1%
Total	11,279	5,210	6,069
Mean	-0.11	0.00	-0.19
95% C.I.	-0.13 – -0.08	-0.04 – 0.03	-0.22 – -0.16
SUMMARIZED RESULTS			
ATTITUDE	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
DISLIKE	18.3%	16.8%	19.5%
NEUTRAL / NO OPINION	67.1%	65.2%	68.7%
LIKE	14.6%	17.9%	11.8%

Table 24. Resident anglers' fishing with archery gear analyzed by angler technology type.

Percent of Resident Anglers that ...	Combined	Angler Technology Type	
		Technocrats	Traditionalists
ever used archery to take fish	24.5%	27.4%	21.9%
Total Number of Cases	11,768	5,482	6,286
If Yes, percent that...	Combined	Technocrats	Traditionalists
used a archery to take fish in SD	84.8%	85.0%	84.6%
Total Number of Cases	2,895	1,504	1,391

Table 25. Attitude towards Archery Fishing: South Dakota resident anglers' general attitude towards use of archery gear for taking fish analyzed by angler technology type.

Attitude (scale)	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
Strongly Dislike (-3)	3.6%	2.8%	4.2%
Moderately Dislike (-2)	2.9%	2.5%	3.2%
Slightly Dislike (-1)	3.5%	3.2%	3.8%
Neutral / No Opinion (0)	62.7%	59.7%	65.1%
Slightly Like (+1)	9.0%	9.1%	9.0%
Moderately Like (+2)	11.6%	13.5%	10.25
Strongly Like (+3)	6.7%	9.3%	4.7%
Total	8,903	3,990	4,913
Mean	0.33	0.47	0.21
95% C.I.	0.30 – 0.35	0.43 – 0.51	0.17 – 0.24
SUMMARIZED RESULTS			
ATTITUDE	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
DISLIKE	9.9%	8.5%	11.1%
NEUTRAL / NO OPINION	62.7%	59.7%	65.1%
LIKE	27.4%	31.9%	23.8%

Table 26. Percent of resident anglers owning a boat and use of boat in the past year (2010) analyzed by angler technology type.

Percent of Resident Anglers that ...	Combined	Angler Technology Type	
		Technocrats	Traditionalists
Own a boat	53.0%	60.2%	46.6%
Total Number of Cases	11,767	5,480	6,287
If Yes, percent that...	Combined	Technocrats	Traditionalists
used their boat in 2010	85.3%	88.2%	82.0%
Total Number of Cases	6,241	3,299	2,942

Table 27. South Dakota resident anglers' gender and age analyzed by angler technology type.

Gender	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
Female	13.1%	10.3%	15.5%
Male	86.9%	89.7%	84.5%
Total	11,702	5,454	6,248

Age	RESIDENT ANGLERS		
	Combined	Technocrats	Traditionalists
Mean	46.6	45.7	47.3
95% C.I.	46.3 – 46.8	45.4 – 46.1	46.9 – 47.6
Total Number	11,699	5,454	6,245

Table 28. Angler technology type analyzed by residence and license types.

Angler Technology Type	Resident Anglers		Nonresident Anglers	
	Number	Percent	Number	Percent
Technocrats	5,542	46.5%	2,520	47.6%
Traditionalists	6,386	53.5%	2,772	52.4%
Total	11,928	100%	5,292	100%

Angler Technology Type	Resident License Type			
	Combination	Annual	Senior	Jr. Combination
Technocrats	49.5%	43.6%	38.9%	35.2%
Traditionalists	50.5%	56.4%	61.1%	64.8%
Total	7,200	3,261	1,106	361

Angler Technology Type	Nonresident License Type			
	Annual	Family	Three-Day	One-Day
Technocrats	49.4%	45.7%	44.7%	52.5%
Traditionalists	50.6%	54.3%	55.3%	47.5%
Total	1,899	1,255	1,465	673

Table 29. Nonresident survey response mode analyzed by angler technology type.

Nonresident Survey Response Mode	Nonresident Angler Technology Type			
	Technocrats		Traditionalists	
	Number	Percent	Number	Percent
Internet	2,309	91.6%	2,419	87.3%
Mail	211	8.4%	353	12.7%
Total	2,520	100%	2,772	100%

Chi-square: $X^2=26.371$; $df=1$; $p<0.001$ Cramer's V = 0.071

3-Group Technology Model

Table 30. K-means cluster analysis 3-group solution for the four variables measuring attitudes towards the use of technology in fishing.

Angler Type Based on Attitudes towards Use of Technology in Fishing	Number	Percent		
Technocrats	3,468	29.1%		
Traditionalists	1,722	14.4%		
Neutrals	6,738	56.5%		
Total	11,928	100%		
3-Group Angler Technology Type				
3-Group Angler Technology Type	License Type			
	Combination	Annual	Senior	Jr. Combination
Technocrats	31.5%	26.9%	22.9%	19.4%
Traditionalists	13.2%	15.4%	19.7%	14.4%
Neutrals	55.3%	57.7%	57.4%	66.2%
Total	7,200	3,261	1,106	361

Table 31-A. South Dakota resident anglers' attitude towards the statement, "Technological advances in fishing gear are good for the sport" analyzed by the 3-group angler technology types.

Attitude (scale)	Technological advances in fishing gear are good for the sport.		
	Technocrats	Traditionalists	Neutrals
Strongly Disagree (-2)	0.6%	25.0%	1.5%
Slightly Disagree (-1)	1.4%	43.0%	7.4%
Neutral / No Opinion (0)	11.9%	24.8%	57.3%
Slightly Agree (+1)	50.5%	6.5%	31.7%
Strongly Agree (+2)	35.6%	0.7%	2.1%
Total	3,468	1,722	6,738
Mean	1.19	-0.85	0.26
95% C.I.	1.17 – 1.22	-0.89 – -0.81	0.24 – 0.27
SUMMARIZED ATTITUDE			
ATTITUDE (SUMMARIZED)	TECHNOCRATS	TRADITIONALISTS	NEUTRALS
DISAGREE	2.0%	68.0%	8.9%
NEUTRAL / NO OPINION	11.9%	24.8%	57.3%
AGREE	86.1%	7.2%	33.8%

Table 31-B. South Dakota resident anglers' attitude towards the statement, "There is too much technology in fishing nowadays" analyzed by the 3-group angler technology types.

Attitude (scale)	There is too much technology in fishing nowadays.		
	Technocrats	Traditionalists	Neutrals
Strongly Disagree (-2)	32.4%	1.2%	1.2%
Slightly Disagree (-1)	42.4%	0.5%	7.1%
Neutral / No Opinion (0)	20.1%	5.0%	63.1%
Slightly Agree (+1)	4.9%	49.5%	25.3%
Strongly Agree (+2)	0.2%	43.8%	3.3%
Total	3,468	1,722	6,738
Mean	-1.02	1.34	0.22
95% C.I.	-1.05 – -0.99	1.31 – 1.38	0.21 – 0.24
SUMMARIZED ATTITUDE			
ATTITUDE (SUMMARIZED)	TECHNOCRATS	TRADITIONALISTS	NEUTRALS
DISAGREE	74.9%	1.7%	8.3%
NEUTRAL / NO OPINION	20.1%	5.0%	63.1%
AGREE	5.1%	93.3%	28.5%

Table 31-C. South Dakota resident anglers' attitude towards the statement, "There should be regulations to limit some types of technology" analyzed by the 3-group angler technology types.

Attitude (scale)	There should be regulations to limit some types of technology.		
	Technocrats	Traditionalists	Neutrals
Strongly Disagree (-2)	64.6%	0.3%	2.5%
Slightly Disagree (-1)	29.0%	0.5%	12.0%
Neutral / No Opinion (0)	6.0%	11.1%	68.0%
Slightly Agree (+1)	0.4%	48.1%	15.5%
Strongly Agree (+2)	0.0%	40.0%	2.0%
Total	3,468	1,722	6,738
Mean	-1.58	1.27	0.02
95% C.I.	-1.60 – -1.56	1.24 – 1.30	0.01 – 0.04
SUMMARIZED ATTITUDE			
ATTITUDE (SUMMARIZED)	TECHNOCRATS	TRADITIONALISTS	NEUTRALS
DISAGREE	93.6%	0.8%	14.5%
NEUTRAL / NO OPINION	6.0%	11.1%	68.0%
AGREE	0.4%	88.0%	17.5%

Table 31-D. South Dakota resident anglers' attitude towards the statement, "The use of technology should be a personal decision by each angler" analyzed by the 3-group angler technology types.

Attitude (scale)	The use of technology should be a personal decision by each angler.		
	Technocrats	Traditionalists	Neutrals
Strongly Disagree (-2)	0.2%	14.3%	0.7%
Slightly Disagree (-1)	0.2%	27.5%	1.4%
Neutral / No Opinion (0)	1.4%	36.9%	33.1%
Slightly Agree (+1)	14.1%	16.2%	41.7%
Strongly Agree (+2)	84.1%	5.1%	23.1%
Total	3,468	1,722	6,738
Mean	1.82	-0.30	0.85
95% C.I.	1.80 – 1.83	-0.35 – -0.25	0.83 – 0.87
SUMMARIZED ATTITUDE			
ATTITUDE (SUMMARIZED)	TECHNOCRATS	TRADITIONALISTS	NEUTRALS
DISAGREE	0.5%	41.8%	2.1%
NEUTRAL / NO OPINION	1.4%	36.9%	33.1%
AGREE	98.2%	21.3%	64.9%

Table 32. Total days fished by resident anglers in 2010 analyzed by 3-group angler technology types and days fished by water type.

Parameter	3-Group Angler Technology Types					
	Technocrats		Traditionalists		Neutrals	
Mean days fished in 2010	20.8		14.9		14.9	
95% C.I.	20.0 – 21.5		14.1 – 15.8		14.4 – 15.3	
Number	3,468		1,722		6,738	
Water Type	Technocrats		Traditionalists		Neutrals	
	Number	95% C.I.	Number	95% C.I.	Number	95% C.I.
Missouri River System	9.4	8.8 – 9.9	5.6	5.0 – 6.2	5.9	5.6 – 6.2
Rivers	1.6	1.4 – 1.8	2.2	1.8 – 2.6	1.8	1.7 – 2.0
Large Lakes/Reservoirs	7.3	6.8 – 7.7	5.0	4.5 – 5.6	5.2	4.9 – 5.5
Small Lakes/Ponds	4.9	4.5 – 5.2	4.8	4.2 – 5.3	4.2	4.0 – 4.5

Table 33. Type of fishing by resident anglers in 2010 analyzed by the 3-group angler technology type.

3-Group Angler Technology Type	Type of Fishing (Mean Percent / 95% C.I.)			
	Shore	Boat	Ice	Spear/Archery
Technocrats	25.4% (24.2 – 26.6)	61.9% (60.6 – 63.2)	11.8% (11.0 – 12.5)	0.9% (0.7 – 1.3)
Traditionalists	47.7% (45.6 – 49.9)	45.3% (43.2 – 47.4)	6.4% (5.6 – 7.3)	0.6% (0.3 – 0.9)
Neutrals	40.0% (38.9 – 41.0)	51.6% (50.5 – 52.6)	7.5% (7.0 – 7.9)	1.0% (0.8 – 1.2)
Total	36.7% (35.9 – 37.5)	53.8% (53.0 – 54.5)	8.6% (8.2 – 9.0)	0.9% (0.8 – 1.1)

Table 34. Resident anglers' preferred fish analyzed by the 3-group angler technology type.

Preferred Fish	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Walleye	61.9%	46.3%	53.4%
Yellow Perch	8.1%	7.2%	7.4%
Bass	8.0%	8.2%	8.9%
Trout	4.2%	11.0%	7.3%
No Preference	4.0%	7.25	8.1%
Northern Pike	3.3%	4.6%	3.5%
Crappie	2.8%	4.3%	2.7%
Catfish	2.3%	5.4%	3.9%
Sunfish	2.2%	2.8%	2.0%
Chinook	1.6%	0.9%	0.7%
White bass	0.7%	0.9%	0.6%
Musky	0.4%	0.1%	0.3%
Carp and buffalo	0.4%	0.3%	0.3%
Bullhead	0.1%	0.5%	0.4%
Other	0.1%	0.2%	0.3%
Number	3,229	1,523	6,036

Table 35. Fishing methods used by resident anglers analyzed by the 3-group angler technology type.

Fishing Methods Used ¹	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Fly	9.0%	11.0%	9.0%
Lures	86.3%	79.3%	80.2%
Live Bait	93.7%	88.5%	90.6%
Total Number of Cases	3,210	1,515	5,992

¹Multiple responses possible.

Table 36. Resident anglers' fishing companions analyzed by the 3-group angler technology types.

Resident Anglers Fished (with)... ¹	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Alone	48.1%	43.0%	38.6%
Family	86.5%	80.9%	83.6%
Friends	74.3%	59.5%	61.0%
Tournament	18.0%	6.7%	8.9%
Club	3.5%	1.1%	1.4%
Nonresident Friends/Relatives	36.1%	26.5%	25.7%
Number of Cases	3,239	1,527	6,059

¹Multiple responses possible.

Table 37. South Dakota resident anglers' rating of the fishing in 2010 in terms of numbers and sizes of fish caught analyzed by the 3-group angler technology types.

Rating of the Fishing (scale) ¹	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Very Poor (-2)	2.2%	4.7%	3.3%
Poor (-1)	7.0%	12.7%	8.9%
Fair (0)	28.1%	31.7%	31.3%
Good (+1)	45.7%	40.3%	44.7%
Excellent (+2)	16.9%	10.7%	11.7%
Total	3,176	1,470	5,839
Mean	0.68	0.40	0.53
95% C.I.	0.65 – 0.71	0.35 – 0.45	0.50 – 0.55

¹No opinion responses removed from the analyses.

Table 38. South Dakota resident anglers' satisfaction with their overall fishing experiences in 2010 analyzed by the 3-group angler technology types.

Satisfaction (scale)	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Very Dissatisfied (-3)	2.9%	5.4%	3.3%
Moderately Dissatisfied (-2)	4.2%	7.0%	5.0%
Slightly Dissatisfied (-1)	8.5%	9.9%	9.2%
Neutral / No Opinion (0)	10.4%	16.4%	17.9%
Slightly Satisfied (+1)	16.8%	16.8%	16.0%
Moderately Satisfied (+2)	32.5%	27.3%	31.4%
Very Satisfied (+3)	24.7%	17.2%	17.2%
Total	3,234	1,528	6,059
Mean	1.30	0.83	1.01
95% C.I.	1.25 – 1.36	0.74 – 0.92	0.97 – 1.05
SUMMARIZED RESULTS			
SATISFACTION	3-GROUP ANGLER TECHNOLOGY TYPES		
	TECHNOCRATS	TRADITIONALISTS	NEUTRALS
DISSATISFIED	15.6%	22.3%	17.5%
NEUTRAL / NO OPINION	10.4%	16.4%	17.9%
SATISFIED	74.0%	61.3%	64.6%

Table 39. Resident anglers' fishing in the Missouri River System and Black Hills in 2010 analyzed by the 3-group angler technology types.

Percent of Resident Anglers Fishing in the...	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Missouri River system	64.2%	50.5%	54.6%
Number of Cases	3,235	1,525	6,061
Black Hills	22.9%	28.6%	24.65
Number	3,219	1,522	6,038

Table 40. Type of waters fished by resident anglers' fishing in the Black Hills in 2010 analyzed by the 3-group angler technology types.

Percent of Fishing in the Black Hills...	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Streams (95% C.I.)	23.0% (20.5 – 25.6)	27.2% (23.8 – 30.7)	24.8% (23.0 – 26.6)
Reservoirs/Ponds (95% C.I.)	77.0% (74.5 – 79.5)	72.8% (69.3 – 76.2)	75.2% (73.4 – 77.0)
Number	746	440	1,496

Table 41. South Dakota resident anglers' rating of the importance of fishing analyzed by the 3-group angler technology types.

Importance of Fishing (scale) ¹	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Not (0)	4.8%	8.7%	9.3%
Slightly (1)	14.1%	20.7%	21.6%
Moderately (2)	27.3%	32.7%	33.5%
Very (3)	37.3%	29.3%	27.0%
Most (4)	16.5%	8.6%	8.6%
Total	3,430	1,682	6,502
Mean	2.47	2.09	2.04
95% C.I.	2.43 – 2.50	2.03 – 2.14	2.01 – 2.07

¹No opinion responses removed from the analyses.

Table 42. Net Economic Value of Fishing: South Dakota resident anglers' net economic value of fishing analyzed by the 3-group angler technology types.

Value	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Median Net Economic Value	\$5,000	\$1,000	\$1,000
Net Economic Value	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
\$0	2.5%	4.7%	4.3%
\$1 – \$25	2.6%	3.9%	4.2%
\$26 – \$50	3.5%	5.9%	6.1%
\$51 – \$100	4.8%	7.6%	7.8%
\$101 – \$250	3.5%	7.7%	5.3%
\$251 – \$500	8.7%	13.8%	12.9%
\$501 – \$1,000	12.5%	11.7%	12.8%
\$1,001 – \$5,000	23.7%	20.5%	21.3%
\$5,001 – \$10,000	13.2%	10.1%	10.7%
\$10,001 – \$100,000	15.4%	9.1%	9.0%
\$100,001 or more	9.5%	5.1%	5.7%
Number	1,985	831	3,040

Table 43. South Dakota resident anglers' most important motivation for fishing analyzed by the 3-group angler technology types.

Most Important Motivation for Fishing	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Social	27.2%	25.6%	30.9%
Nature	21.2%	32.6%	26.1%
Excitement	20.8%	15.4%	15.1%
Relaxation	15.6%	15.4%	16.1%
Food	11.1%	10.0%	10.6%
Sport¹	4.2%	1.1%	1.2%
Total	3,465	1,718	6,729

¹Sport is a combination of three motivations: trophy, skills, and competition.

Table 44-A. Attitude towards Catching Fish: South Dakota resident anglers' agreement/disagreement with the statement, 'A fishing trip can be satisfying to me even if I don't catch any fish' analyzed by the 3-group angler technology types.

Attitude (scale)	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Strongly Disagree (-2)	5.7%	3.7%	3.1%
Disagree (-1)	13.8%	11.3%	10.5%
Neutral / No Opinion (0)	7.1%	9.9%	11.6%
Agree (+1)	39.8%	36.6%	39.9%
Strongly Agree (+2)	33.6%	38.4%	34.9%
Total	3,463	1,719	6,724
Mean	0.82	0.95	0.93
95% C.I.	0.78 – 0.86	0.89 – 1.00	0.90 – 0.96
SUMMARIZED RESULTS			
ATTITUDE	TECHNOCRATS	TRADITIONALISTS	NEUTRALS
DISAGREE	19.5%	15.1%	13.6%
NEUTRAL / NO OPINION	7.1%	9.9%	11.6%
AGREE	73.4%	75.0%	74.8%

Table 44-B. Attitude towards Catching Fish: South Dakota resident anglers' agreement/disagreement with the statement, 'The bigger the fish I catch, the better the fishing trip' analyzed by the 3-group angler technology types.

Attitude (scale)	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Strongly Disagree (-2)	11.5%	14.1%	10.2%
Disagree (-1)	17.4%	20.1%	16.0%
Neutral / No Opinion (0)	21.8%	27.4%	30.4%
Agree (+1)	36.3%	29.7%	34.1%
Strongly Agree (+2)	13.0%	8.7%	9.2%
Total	3,453	1,713	6,709
Mean	0.22	-0.01	0.16
95% C.I.	0.18 – 0.26	-0.07 – 0.04	0.13 – 0.19
SUMMARIZED RESULTS			
ATTITUDE	TECHNOCRATS	TRADITIONALISTS	NEUTRALS
DISAGREE	28.9%	34.2%	26.2%
NEUTRAL / NO OPINION	21.8%	27.4%	30.4%
AGREE	49.3%	38.4%	43.3%

Table 44-C. Attitude towards Catching Fish: South Dakota resident anglers' agreement/disagreement with the statement, 'Catching a limit of fish to take home is important to me' analyzed by the 3-group angler technology types.

Attitude (scale)	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Strongly Disagree (-2)	18.5%	24.9%	18.0%
Disagree (-1)	18.4%	21.5%	19.2%
Neutral / No Opinion (0)	24.8%	26.9%	31.5%
Agree (+1)	29.2%	20.1%	24.8%
Strongly Agree (+2)	9.2%	6.6%	6.4%
Total	3,456	1,714	6,710
Mean	-0.08	-0.38	-0.18
95% C.I.	-0.12 – -0.04	-0.44 – -0.32	-0.20 – -0.15
SUMMARIZED RESULTS			
ATTITUDE	TECHNOCRATS	TRADITIONALISTS	NEUTRALS
DISAGREE	36.9%	46.4%	37.2%
NEUTRAL / NO OPINION	24.8%	26.9%	31.5%
AGREE	38.4%	26.7%	31.3%

Table 44-D. Attitude towards Catching Fish: South Dakota resident anglers' agreement/disagreement with the statement, 'Catching fish is an important component of fishing' analyzed by the 3-group angler technology types.

Attitude (scale)	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Strongly Disagree (-2)	3.2%	6.1%	3.7%
Disagree (-1)	5.9%	8.5%	7.2%
Neutral / No Opinion (0)	10.7%	15.8%	18.7%
Agree (+1)	44.2%	43.0%	45.5%
Strongly Agree (+2)	35.9%	26.7%	24.9%
Total	3,456	1,718	6,707
Mean	1.04	0.76	0.81
95% C.I.	1.00 – 1.07	0.70 – 0.81	0.78 – 0.83
SUMMARIZED RESULTS			
ATTITUDE	TECHNOCRATS	TRADITIONALISTS	NEUTRALS
DISAGREE	9.2%	14.6%	10.9%
NEUTRAL / NO OPINION	10.7%	15.8%	18.7%
AGREE	80.1%	69.7%	70.4%

Table 45. Resident anglers' experience fishing tournaments analyzed by the 3-group angler technology types.

Percent of Resident Anglers that...	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Ever fished in a tournament	53.6%	34.5%	37.0%
Fished in a tournament in 2010	19.2%	6.8%	9.0%
Total Number of Cases	3,443	1,711	6,683

Table 46. Attitude towards Fishing Tournaments: South Dakota resident anglers' general attitude towards fishing tournaments analyzed by the 3-group angler technology types.

Attitude (scale)	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Strongly Dislike (-3)	5.7%	18.1%	6.4%
Moderately Dislike (-2)	7.0%	13.9%	6.9%
Slightly Dislike (-1)	7.1%	12.5%	8.8%
Neutral / No Opinion (0)	40.9%	41.4%	55.5%
Slightly Like (+1)	8.9%	5.9%	7.9%
Moderately Like (+2)	16.4%	5.7%	10.3%
Strongly Like (+3)	14.1%	2.4%	4.2%
Total	3,444	1,709	6,663
Mean	0.46	-0.70	-0.01
95% C.I.	0.40 – 0.51	-0.77 – -0.63	-0.04 – 0.02
SUMMARIZED RESULTS			
ATTITUDE	TECHNOCRATS	TRADITIONALISTS	NEUTRALS
DISLIKE	19.8%	44.5%	22.1%
NEUTRAL / NO OPINION	40.9%	41.4%	55.5%
LIKE	39.3%	14.0%	22.4%

Table 47. South Dakota resident anglers' use of live fish as bait analyzed by the 3-group angler technology types.

Do you use live fish as bait?	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
NO	12.3%	22.0%	19.8%
YES	87.7%	78.0%	80.2%
Total	3,409	1,685	6,600

Table 48. Resident anglers' fishing for musky analyzed by the 3-group angler technology types.

Percent of Resident Anglers that ...	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
ever fished (anywhere) for musky	24.4%	19.5%	18.2%
Total Number of Cases	3,445	1,700	6,656
If yes, percent that...	Technocrats	Traditionalists	Neutrals
Ever fished for musky in SD	39.9%	40.4%	38.0%
Total Number of Cases	838	339	1,229

Table 49. South Dakota resident anglers' rating of the importance of having some opportunities for musky fishing in South Dakota analyzed by the 3-group angler technology types.

Importance of Musky Fishing opportunities (scale)	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Not (0)	34.4%	41.3%	35.4%
Slightly (1)	19.1%	18.0%	16.8%
Moderately (2)	21.3%	15.4%	16.3%
Very (3)	10.3%	6.2%	5.8%
No Opinion (missing)	14.9%	19.2%	25.7%
Total	3,436	1,701	6,659
Mean	1.09	0.83	0.90
95% C.I.	1.05 – 1.13	0.78 – 0.89	0.87 – 0.93

Table 50. Resident anglers' fishing with a spear-gun analyzed by the 3-group angler technology types.

Percent of Resident Anglers that ...	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
ever used a spear-gun to take fish	5.8%	3.6%	3.8%
Total Number of Cases	3,431	1,698	6,638
If Yes, percent that...	Technocrats	Traditionalists	Neutrals
used a spear-gun to take fish in SD	74.0%	62.5%	69.1%
Total Number of Cases	204	64	269

Table 51. Attitude towards Spear-Gun Fishing: South Dakota resident anglers’ general attitude towards use of spear-guns for taking fish analyzed by the 3-group angler technology types.

Attitude (scale)	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Strongly Dislike (-3)	7.6%	11.9%	6.2%
Moderately Dislike (-2)	4.9%	7.9%	4.6%
Slightly Dislike (-1)	5.0%	7.8%	5.3%
Neutral / No Opinion (0)	62.3%	61.2%	60.0%
Slightly Like (+1)	5.9%	3.4%	4.6%
Moderately Like (+2)	8.1%	5.5%	5.8%
Strongly Like (+3)	6.1%	2.3%	2.3%
Total	3,243	1,641	6,395
Mean	0.03	-0.38	-0.10
95% C.I.	-0.02 – 0.07	-0.44 – -0.32	-0.13 – -0.07
SUMMARIZED RESULTS			
ATTITUDE	TECHNOCRATS	TRADITIONALISTS	NEUTRALS
DISLIKE	17.6%	27.6%	16.2%
NEUTRAL / NO OPINION	62.3%	61.2%	60.0%
LIKE	20.1%	11.2%	12.7%

Table 52. Resident anglers’ fishing with archery gear analyzed by the 3-group angler technology types.

Percent of Resident Anglers that ...	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
ever used archery to take fish	28.9%	23.4%	22.4%
Total Number of Cases	3,429	1,702	6,637
If Yes, percent that...	Technocrats	Traditionalists	Neutrals
used a archery to take fish in SD	85.2%	84.8%	84.6%
Total Number of Cases	991	401	1,503

Table 53. Attitude towards Archery Fishing: South Dakota resident anglers’ general attitude towards use of archery gear for taking fish analyzed by the 3-group angler technology types.

Attitude (scale)	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Strongly Dislike (-3)	3.0%	6.9%	3.0%
Moderately Dislike (-2)	2.2%	4.7%	2.7%
Slightly Dislike (-1)	2.9%	5.1%	3.4%
Neutral / No Opinion (0)	57.6%	59.3%	65.9%
Slightly Like (+1)	8.9%	8.7%	9.2%
Moderately Like (+2)	14.3%	10.7%	10.6%
Strongly Like (+3)	11.1%	4.6%	5.2%
Total	2,447	1,305	5,151
Mean	0.54	0.09	0.28
95% C.I.	0.49 – 0.60	0.02 – 0.16	0.25 – 0.31
SUMMARIZED RESULTS			
ATTITUDE	TECHNOCRATS	TRADITIONALISTS	NEUTRALS
DISLIKE	8.1%	16.6%	9.1%
NEUTRAL / NO OPINION	57.6%	59.3%	65.9%
LIKE	34.2%	24.1%	25.0%

Table 54. Percent of resident anglers owning a boat and use of boat in the past year (2010) analyzed by the 3-group angler technology types.

Percent of Resident Anglers that ...	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Own a boat	63.2%	48.6%	48.8%
Total Number of Cases	3,427	1,702	6,638
If Yes, percent that...			
used their boat in 2010	89.9%	80.8%	83.3%
Total Number of Cases	2,169	830	3,242

Table 54. South Dakota resident anglers' gender and age analyzed by the 3-group angler technology types.

Gender	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Female	9.0%	11.6%	15.5%
Male	91.0%	88.4%	84.5%
Total	3,416	1,689	6,597

Age	3-Group Angler Technology Types		
	Technocrats	Traditionalists	Neutrals
Mean	45.6	49.8	46.2
95% C.I.	45.1 – 46.0	49.1 – 50.4	45.9 – 46.6
Total Number	3,418	1,695	6,586

Table 55. The 3-group angler technology types analyzed by residence and license types.

3-Group Angler Technology Types	Resident Anglers		Nonresident Anglers	
	Number	Percent	Number	Percent
Technocrats	3,468	29.1%	1,911	36.1%
Traditionalists	1,722	14.4%	1,247	23.6%
Neutrals	6,738	56.5%	2,134	40.3%
Total	11,928	100%	5,292	100%

3-Group Angler Tech-Types	Resident License Type			
	Combination	Annual	Senior	Jr. Combination
Technocrats	31.5%	26.9%	22.9%	19.4%
Traditionalists	13.2%	15.4%	19.7%	14.4%
Neutrals	55.3%	57.7%	57.4%	66.2%
Total	7,200	3,261	1,106	361

3-Group Angler Tech-Types	Nonresident License Type			
	Annual	Family	Three-Day	One-Day
Technocrats	40.0%	33.3%	35.6%	31.5%
Traditionalists	21.6%	29.7%	15.6%	34.9%
Neutrals	38.3%	37.0%	48.9%	33.6%
Total	1,899	1,255	1,465	673

Table 56. Nonresident survey response mode analyzed by angler technology type.

Nonresident Survey Response Mode	Nonresident 3-Group Angler Technology Types					
	Technocrats		Traditionalists		Neutrals	
	Number	Percent	Number	Percent	Number	Percent
Internet	1,770	92.6%	1,079	86.5%	1,879	88.1%
Mail	141	7.4%	168	13.5%	255	11.9%
Total	1,911	100%	1,247	100%	2,134	100%
Chi-square: $X^2=35.698$; $df=2$; $p<0.001$ Cramer's V = 0.082						