

Creel and Lake Information

Lake Information

Lake Name: Bitter
Lake Code: UBS-Lake-409-800
Surface Area: 7,601.03 Hectares
County: Day
Start Date: 1/2/2015
End Date: 12/28/2015
Months Included: January, February, March, May, June, July, August

Table 1. Percent of angling parties interviewed primarily targeting a species (or any species) by month and overall for Bitter during 2014 - 2015. Any Species (ANY), Black Crappie (BLC), Common Carp (COC), Northern Pike (NOP), Smallmouth Bass (SMB), Walleye (WAE), White Bass (WHB), Yellow Perch (YEP).

Year	Month	# of Interviews	Percent of Anglers Targeting							
			ANY	BLC	COC	NOP	SMB	WAE	WHB	YEP
2014	January	97	17.5	0.0	0.0	5.2	0.0	24.7	0.0	52.6
	February	52	17.3	0.0	0.0	1.9	0.0	15.4	0.0	65.4
	March	129	7.0	0.0	0.0	1.6	0.0	13.2	0.0	77.5
	May	93	2.2	0.0	0.0	0.0	0.0	97.8	0.0	0.0
	June	89	7.9	0.0	0.0	0.0	0.0	92.1	0.0	0.0
	July	46	2.2	0.0	0.0	0.0	0.0	97.8	0.0	0.0
	August	16	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
	December	73	19.2	0.0	0.0	9.6	0.0	35.6	0.0	35.6
	Overall	595	9.9	0.0	0.0	2.5	0.0	51.9	0.0	35.5
2015	January	141	7.1	0.0	0.0	2.8	0.0	24.1	0.0	66.0
	February	51	17.6	0.0	0.0	2.0	0.0	15.7	0.0	64.7
	March	42	9.5	0.0	0.0	2.4	0.0	4.8	0.0	83.3
	May	50	0.0	2.0	0.0	0.0	0.0	98.0	0.0	0.0
	June	125	4.0	0.0	0.0	0.8	0.0	91.2	4.0	0.0
	July	34	2.9	0.0	0.0	0.0	0.0	97.1	0.0	0.0
	August	33	6.1	0.0	0.0	0.0	0.0	93.9	0.0	0.0
	December	14	0.0	0.0	0.0	21.4	0.0	64.3	0.0	14.3
	Overall	490	6.3	0.2	0.0	2.0	0.0	57.1	1.0	33.3

Table 2. Monthly and overall number of interviews, angler hours, angler days, mean trip length, mean party size, percent of parties interviewed that were South Dakota residents, percent of angling activity from a boat or shack and percent of angling activity that occurred on weekends and holidays at Bitter (80% confidence interval).

Year	Month	# Interviews	Angler Hours	Angler Days	Trip Length (h)	Party Size	% SD Residents	% Boat or Shack	% Weekend/Holidays
2013-2014	January	97	9,714 (2,581)	1,222	7.95	2.17 (0.54)	53	93	32
	February	52	52,097 (2,489)	6,792	7.67	2.19 (0.29)	46	96	56
	March	129	25,232 (6,849)	3,104	8.13 (4.11)	1.95 (0.78)	29	74	81
	Overall	278	109,971 (12,502)	13,903	7.91 (1.28)	2.11 (0.32)	43	86	53
2014	May	93	30,403 (10,394)	5,251	5.79 (0.98)	2.33 (0.34)	65	95	43
	June	89	28,599 (14,068)	89	319.92	2.91 (0.61)	63	93	63
	July	46	8,700 (3,487)	1,839	4.73	2.71 (0.27)	57	96	76
	August	16	8,672 (5,362)	2,499	3.47	2.46 (0.31)	56	88	88
	Overall	244	76,375 (18,624)	937	81.55 (0.25)	2.60 (0.20)	62	94	59
2014-2015	January	141	5,680 (2,870)	531	10.69 (2.79)	2.01 (0.57)	43	89	50
	February	51	60,245 (18,214)	3,550	16.97 (11.62)	2.23 (0.90)	31	88	39
	March	42	26,119 (11,079)	4,339	6.02 (1.26)	2.31 (0.64)	50	45	69
	Overall	234	120,473 (35,146)	10,568	11.40 (4.13)	2.18 (0.42)	45	84	55
2015	May	50	15,307 (5,877)	2,612	5.86	2.17 (0.80)	44	60	78
	June	125	19,456 (6,564)	2,952	6.59	2.37 (0.59)	61	66	61
	July	34	4,201 (2,138)	794	5.29 (1.57)	2.69 (0.65)	56	62	32
	August	33	6,280 (665)	1,239	5.07	2.47 (0.94)	61	85	24
	Overall	242	45,245 (9,090)	7,938	5.70 (0.39)	2.42 (0.38)	57	67	55

Table 3. Estimated fishing pressure (angler hours) by month during the summer season 2015 daylight period on Bitter (80% confidence interval).

Lake	Month				Total
	April	May	June	July	
Bitter	15,307 (5,877)	19,456 (6,564)	4,201 (2,138)	6,280 (665)	45,245 (9,090)
Bitter Lake	0	0	0	0	45,245 (9,090)

Table 4. Estimated number of fish harvested, by species and month, for the summer season 2015 daylight period on Bitter (80% confidence interval).

Species	Month				Total
	May	June	July	August	
Black Crappie	0	5 (7)	0	11 (7)	5 (7)
Common Carp	0	0	0	0	0
Northern Pike	120 (133)	399 (196)	56 (56)	32 (22)	575 (386)
Smallmouth Bass	0	0	0	0	0
Walleye	4,302 (2,830)	2,747 (1,155)	1,109 (994)	1,655 (316)	8,158 (4,978)
White Bass	278 (55)	1,089 (1,441)	50 (85)	11 (7)	1,417 (1,581)
Yellow Perch	24 (41)	20 (14)	1	21 (15)	45 (55)
Total	4,723 (3,060)	4,260 (2,813)	1,216 (1,134)	1,730 (368)	10,199 (7,007)

Table 5a. Estimated monthly and overall angler catch rate per hour fished (C/h) for all anglers by species at Bitter (80% confidence interval). Abbreviations for species are as follows: Black Crappie (BLC), Common Carp (COC), Northern Pike (NOP), Smallmouth Bass (SMB), Walleye (WAE), White Bass (WHB), Yellow Perch (YEP) and other species (Other).

Year	Month	BLC	COC	NOP	SMB	WAE	WHB	YEP
		C/h	C/h	C/h	C/h	C/h	C/h	C/h
2013-2014	January	0.00	0.00	0.06	0.00	0.81	0.00	0.23
	February	0.01	0.00	0.01	0.00	0.26	0.00	0.28
	March	<0.01	0.00	0.08	0.00	0.80	0.00	0.42
	Overall	<0.01	0.00	0.03	0.00	0.38	0.00	0.25
2014	May	0.00	0.00	0.30 (0.20)	0.01 (<0.01)	1.00 (0.68)	0.20 (0.11)	0.01 (<0.01)
	June	0.00	0.00	0.07 (0.09)	<0.01	1.40 (1.58)	0.02 (0.02)	<0.01 (<0.01)
	July	0.00	0.00	0.13 (0.11)	0.00	2.35 (2.78)	0.04 (0.04)	0.01 (<0.01)
	August	0.00	0.00	0.09 (0.18)	0.00	1.62 (2.40)	<0.01 (<0.01)	0.02 (0.03)
	Overall	0.00	0.00	0.17 (0.09)	<0.01 (<0.01)	1.37 (0.76)	0.09 (0.03)	0.01 (<0.01)
2014-2015	January	<0.01	0.00	0.02	<0.01	0.34	0.00	0.13
	February	<0.01	0.00	0.02	0.00	0.19	0.00	0.12
	March	<0.01	0.00	0.02	0.00	0.14	0.00	0.54
	Overall	<0.01	0.00	0.02	<0.01	0.14	0.00	0.18
2015	May	0.00	<0.01 (<0.01)	0.09 (0.09)	0.01 (0.01)	2.00 (2.53)	0.04 (0.03)	<0.01 (<0.01)
	June	<0.01 (<0.01)	0.00	0.14 (0.11)	<0.01 (<0.01)	2.70 (2.11)	0.18 (0.13)	<0.01 (<0.01)
	July	0.00	0.00	0.12 (0.16)	0.00	2.07 (2.73)	0.03 (0.07)	<0.01
	August	<0.01 (<0.01)	0.00	0.08 (0.02)	0.00	2.43 (0.71)	0.02 (<0.01)	<0.01 (<0.01)
	Overall	<0.01 (<0.01)	<0.01 (<0.01)	0.12 (0.06)	<0.01 (<0.01)	2.37 (1.28)	0.10 (0.06)	<0.01 (<0.01)

Table 5b. Estimated monthly and overall angler harvest rate per hour fished (H/h) for all anglers by species at Bitter (80% confidence interval). Abbreviations for species are as follows: Black Crappie (BLC), Common Carp (COC), Northern Pike (NOP), Smallmouth Bass (SMB), Walleye (WAE), White Bass (WHB), Yellow Perch (YEP) and other species (Other).

Year	Month	BLC	COC	NOP	SMB	WAE	WHB	YEP
		H/h	H/h	H/h	H/h	H/h	H/h	H/h
2013-2014	January	0.00	0.00	0.03	0.00	0.03	0.00	0.17
	February	0.01	0.00	<0.01	0.00	0.01	0.00	0.25
	March	<0.01	0.00	0.01	0.00	0.02	0.00	0.30
	Overall	<0.01	0.00	0.01	0.00	0.01	0.00	0.20
2014	May	0.00	0.00	0.04 (0.03)	0.00	0.19 (0.14)	0.18 (0.09)	<0.01 (<0.01)
	June	0.00	0.00	0.01 (0.02)	0.00	0.10 (0.11)	0.01 (<0.01)	<0.01 (<0.01)
	July	0.00	0.00	0.02 (0.03)	0.00	0.12 (0.05)	0.00	<0.01 (<0.01)
	August	0.00	0.00	0.01 (0.01)	0.00	0.07 (0.13)	0.00	<0.01 (<0.01)
	Overall	0.00	0.00	0.02 (0.01)	0.00	0.14 (0.07)	0.07 (0.02)	<0.01 (<0.01)
2014-2015	January	<0.01	0.00	0.01	0.00	0.01	0.00	0.11
	February	<0.01	0.00	0.01	0.00	0.01	0.00	0.10
	March	<0.01	0.00	0.01	0.00	<0.01	0.00	0.44
	Overall	<0.01	0.00	0.01	0.00	0.01	0.00	0.15
2015	May	0.00	0.00	0.01 (0.01)	0.00	0.28 (0.28)	0.02 (<0.01)	<0.01 (<0.01)
	June	<0.01 (<0.01)	0.00	0.02 (0.02)	0.00	0.14 (0.11)	0.06 (0.08)	<0.01 (<0.01)
	July	0.00	0.00	0.01 (0.01)	0.00	0.26 (0.45)	0.01 (0.02)	<0.01
	August	<0.01 (<0.01)	0.00	0.01 (<0.01)	0.00	0.26 (0.07)	<0.01 (<0.01)	<0.01 (<0.01)
	Overall	<0.01 (<0.01)	0.00	0.01 (<0.01)	0.00	0.22 (0.11)	0.03 (0.03)	<0.01 (<0.01)

Table 6a. Estimated monthly and overall angler catch rate per hour fished (C/h) only for anglers primarily targeting a species at Bitter. (80% confidence interval). Abbreviations for species are as follows: Black Crappie (BLC), Common Carp (COC), Northern Pike (NOP), Smallmouth Bass (SMB), Walleye (WAE), White Bass (WHB), Yellow Perch (YEP) and Other Species (Other).

Year	Month	BLC	COC	NOP	SMB	WAE	WHB	YEP
		C/h	C/h	C/h	C/h	C/h	C/h	C/h
2013-2014	January	0.00	0.00	0.36 (0.46)	0.00	0.56 (0.80)	0.00	0.48(0.20)
	February	0.00	0.00	0.00	0.00	0.31	0.00	0.55(0.52)
	March	0.00	0.00	0.25	0.00	0.66 (0.12)	0.00	0.71(0.11)
	Overall	0.00	0.00	0.26 (0.23)	0.00	0.51 (0.28)	0.00	0.63(0.13)
2014	May	0.00	0.00	0.00	0.00	1.05 (0.46)	0.00	0.00
	June	0.00	0.00	0.00	0.00	2.05 (1.61)	0.00	0.00
	July	0.00	0.00	0.00	0.00	2.69 (1.73)	0.00	0.00
	August	0.00	0.00	0.00	0.00	1.21 (2.09)	0.00	0.00
	Overall	0.00	0.00	0.00	0.00	1.57 (0.63)	0.00	0.00
2014-2015	January	0.00	0.00	0.60 (1.13)	0.00	0.46 (0.28)	0.00	0.22(0.07)
	February	0.00	0.00	0.15	0.00	0.35 (0.57)	0.00	0.21(0.18)
	March	0.00	0.00	0.40	0.00	1.19	0.00	0.53(0.19)
	Overall	0.00	0.00	0.44 (0.60)	0.00	0.50 (0.26)	0.00	0.27(0.07)
2015	May	0.00	0.00	0.00	0.00	1.94 (2.24)	0.00	0.00
	June	0.00	0.00	0.00	0.00	2.96 (0.58)	0.10	0.00
	July	0.00	0.00	0.00	0.00	2.11 (0.47)	0.00	0.00
	August	0.00	0.00	0.00	0.00	2.61 (1.02)	0.00	0.00
	Overall	0.00	0.00	0.00	0.00	2.47 (0.49)	0.10	0.00

Table 6b. Estimated monthly and overall angler harvest rate per hour fished (H/h) only for anglers primarily targeting a species at Bitter. (80% confidence interval). Abbreviations for species are as follows: Black Crappie (BLC), Common Carp (COC), Northern Pike (NOP), Smallmouth Bass (SMB), Walleye (WAE), White Bass (WHB), Yellow Perch (YEP) and Other Species (Other).

Year	Month	BLC	COC	NOP	SMB	WAE	WHB	YEP
		H/h	H/h	H/h	H/h	H/h	H/h	H/h
2013-2014	January	0.00	0.00	0.36 (0.58)	0.00	0.03 (0.07)	0.00	0.35 (0.11)
	February	0.00	0.00	0.00	0.00	0.02	0.00	0.47 (0.39)
	March	0.00	0.00	0.25	0.00	0.01 (0.02)	0.00	0.47 (0.08)
	Overall	0.00	0.00	0.26 (0.30)	0.00	0.02 (0.03)	0.00	0.45 (0.10)
2014	May	0.00	0.00	0.00	0.00	0.20 (0.05)	0.00	0.00
	June	0.00	0.00	0.00	0.00	0.12 (0.06)	0.00	0.00
	July	0.00	0.00	0.00	0.00	0.11 (0.19)	0.00	0.00
	August	0.00	0.00	0.00	0.00	0.04 (0.05)	0.00	0.00
	Overall	0.00	0.00	0.00	0.00	0.14 (0.05)	0.00	0.00
2014-2015	January	0.00	0.00	0.41 (0.87)	0.00	0.02 (0.05)	0.00	0.18 (0.07)
	February	0.00	0.00	0.00	0.00	0.02 (0.03)	0.00	0.19 (0.16)
	March	0.00	0.00	0.40	0.00	0.00	0.00	0.46 (0.18)
	Overall	0.00	0.00	0.30 (0.47)	0.00	0.02 (0.03)	0.00	0.23 (0.07)
2015	May	0.00	0.00	0.00	0.00	0.29 (0.27)	0.00	0.00
	June	0.00	0.00	0.00	0.00	0.15 (0.03)	0.07	0.00
	July	0.00	0.00	0.00	0.00	0.34 (0.13)	0.00	0.00
	August	0.00	0.00	0.00	0.00	0.29 (0.11)	0.00	0.00
	Overall	0.00	0.00	0.00	0.00	0.25 (0.06)	0.07	0.00

Table 7a. Estimated monthly and overall angler catch (C) for all anglers by species at Bitter (80% confidence interval). Abbreviations for species are as follows: Black Crappie (BLC), Common Carp (COC), Northern Pike (NOP), Smallmouth Bass (SMB), Walleye (WAE), White Bass (WHB), Yellow Perch (YEP) and other species (Other).

Year	Month	BLC	COC	NOP	SMB	WAE	WHB	YEP
		C	C	C	C	C	C	C
2013-2014	January	0	0	587	0	7,898	0	2,254
	February	433	0	565	0	13,393	0	14,836
	March	6	0	1,908	0	20,169	0	10,661
	Overall	439	0	3,060	0	41,460	0	27,751
2014	May	0	0	9,220 (3,367)	168 (174)	30,312 (12,494)	6,108 (752)	168 (258)
	June	0	0	2,119 (1,542)	<1	40,170 (29,825)	678 (529)	116 (147)
	July	0	0	1,118 (513)	0	20,422 (12,879)	316 (281)	78 (63)
	August	0	0	746 (1,060)	0	14,035 (12,148)	36 (50)	182 (182)
	Overall	0	0	13,204 (3,886)	168 (174)	104,940 (36,865)	7,138 (962)	544 (354)
2014-2015	January	5	0	120	<1	1,944	0	718
	February	79	0	1,271	0	11,555	0	6,950
	March	28	0	617	0	3,585	0	14,039
	Overall	112	0	2,009	<1	17,084	0	21,707
2015	May	0	29 (42)	1,438 (923)	96 (165)	30,645 (25,455)	625 (246)	24 (41)
	June	10 (7)	0	2,786 (1,227)	21 (27)	52,605 (22,278)	3,478 (2,371)	40 (30)
	July	0	0	513 (277)	0	8,676 (5,078)	118 (134)	1
	August	11 (7)	0	490 (151)	0	15,260 (2,962)	109 (54)	21 (15)
	Overall	21 (10)	29 (42)	5,226 (1,568)	116 (167)	107,186 (34,334)	4,330 (2,388)	87 (53)

Table 7b. Estimated monthly and overall angler harvest (H) for all anglers by species at Bitter (80% confidence interval). Abbreviations for species are as follows: Black Crappie (BLC), Common Carp (COC), Northern Pike (NOP), Smallmouth Bass (SMB), Walleye (WAE), White Bass (WHB), Yellow Perch (YEP) and other species (Other).

Year	Month	BLC	COC	NOP	SMB	WAE	WHB	YEP
		H	H	H	H	H	H	H
2013-2014	January	0	0	269	0	302	0	1,618
	February	433	0	133	0	497	0	12,957
	March	6	0	373	0	519	0	7,532
	Overall	439	0	775	0	1,318	0	22,107
2014	May	0	0	1,350 (580)	0	5,913 (2,307)	5,403 (413)	34 (52)
	June	0	0	289 (358)	0	2,724 (1,882)	231 (255)	116 (147)
	July	0	0	150 (172)	0	1,076 (301)	0	39 (31)
	August	0	0	73 (100)	0	634 (674)	0	36 (59)
	Overall	0	0	1,863 (710)	0	10,348 (3,068)	5,635 (485)	225 (169)
2014-2015	January	5	0	45	0	66	0	631
	February	79	0	418	0	604	0	6,163
	March	28	0	299	0	76	0	11,569
	Overall	112	0	763	0	747	0	18,363
2015	May	0	0	120 (133)	0	4,302 (2,830)	278 (55)	24 (41)
	June	5 (7)	0	399 (196)	0	2,747 (1,155)	1,089 (1,441)	20 (14)
	July	0	0	56 (56)	0	1,109 (994)	50 (85)	1
	August	11 (7)	0	32 (22)	0	1,655 (316)	11 (7)	21 (15)
	Overall	16 (10)	0	607 (245)	0	9,813 (3,230)	1,427 (1,444)	66 (46)

Table 8. Estimated number and rate (number per hour) of Black Crappie (BLC), Common Carp (COC), Northern Pike (NOP), Smallmouth Bass (SMB), Walleye (WAE), White Bass (WHB), Yellow Perch (YEP) caught and harvested by anglers during the summer and winter fisheries on Bitter, (80% confidence interval).

Black Crappie

Season	Year	Catch	Harvest	Catch Rate	Harvest Rate
Summer	2007	17 (15)	17 (15)	<0.01 (<0.01)	<0.01 (<0.01)
Summer	2015	21 (10)	16 (10)	<0.01 (<0.01)	<0.01 (<0.01)
Winter	2011-2012	986	360	0.01	<0.01
Winter	2012-2013	87	87	<0.01	<0.01
Winter	2013-2014	439	439	<0.01	<0.01
Winter	2014-2015	112	112	<0.01	<0.01

Common Carp

Season	Year	Catch	Harvest	Catch Rate	Harvest Rate
Summer	2008	6 (8)	0	<0.01 (<0.01)	0.00
Summer	2015	29 (42)	0	<0.01 (<0.01)	0.00

Northern Pike

Season	Year	Catch	Harvest	Catch Rate	Harvest Rate
Summer	2006	3,911 (1,334)	1,325 (535)	0.13 (0.07)	0.04 (0.02)
Summer	2007	1,119 (544)	490 (257)	0.03 (0.02)	0.01 (<0.01)
Summer	2008	1,395 (413)	419 (168)	0.03 (0.01)	0.01 (<0.01)
Summer	2009	392 (201)	79 (60)	0.01 (<0.01)	<0.01 (<0.01)
Summer	2010	2,585 (1,259)	279 (264)	0.11 (0.07)	0.01 (0.01)
Summer	2012	23,879 (5,626)	3,528 (844)	0.17 (0.06)	0.03 (<0.01)
Summer	2013	24,009 (13,880)	1,188 (873)	0.23 (0.22)	0.01 (0.01)
Summer	2014	13,204 (3,886)	1,863 (710)	0.17 (0.09)	0.02 (0.01)
Summer	2015	5,226 (1,568)	607 (245)	0.12 (0.06)	0.01 (<0.01)
Winter	2005-2006	753	741	0.05	0.05
Winter	2006-2007	641	578	0.07	0.07
Winter	2007-2008	510	392	0.04	0.03
Winter	2008-2009	24	23	<0.01	<0.01
Winter	2009-2010	14	12	<0.01	<0.01
Winter	2010-2011	218	172	0.02	0.02
Winter	2011-2012	1,137	716	0.01	0.01
Winter	2012-2013	4,055	2,443	0.04	0.03
Winter	2013-2014	3,060	775	0.03	0.01
Winter	2014-2015	2,009	763	0.02	0.01

Smallmouth Bass

Season	Year	Catch	Harvest	Catch Rate	Harvest Rate
Summer	2009	49 (63)	0	<0.01 (<0.01)	0.00
Summer	2012	58 (90)	0	<0.01 (<0.01)	0.00
Summer	2013	45 (54)	0	<0.01 (<0.01)	0.00
Summer	2014	168 (174)	0	<0.01 (<0.01)	0.00
Summer	2015	116 (167)	0	<0.01 (<0.01)	0.00
Winter	2014-2015	<1	0	<0.01	0.00

Walleye

Season	Year	Catch	Harvest	Catch Rate	Harvest Rate
Summer	2006	9,503 (3,043)	5,971 (2,062)	0.31 (0.16)	0.19 (0.11)
Summer	2007	31,345 (7,612)	6,412 (1,407)	0.94 (0.42)	0.19 (0.08)
Summer	2008	32,307 (8,358)	21,164 (5,116)	0.62 (0.30)	0.40 (0.19)
Summer	2009	10,930 (2,805)	6,320 (1,826)	0.27 (0.14)	0.16 (0.08)
Summer	2010	6,782 (2,551)	3,579 (1,437)	0.29 (0.16)	0.16 (0.09)
Summer	2012	140,773 (25,439)	60,235 (11,062)	1.03 (0.36)	0.44 (0.16)
Summer	2013	134,718 (69,010)	26,861 (13,404)	1.29 (0.99)	0.26 (0.20)
Summer	2014	104,940 (36,865)	10,348 (3,068)	1.37 (0.76)	0.14 (0.07)
Summer	2015	107,186 (34,334)	9,813 (3,230)	2.37 (1.28)	0.22 (0.11)
Winter	2005-2006	236	95	0.02	0.01
Winter	2006-2007	75	24	0.01	<0.01
Winter	2007-2008	1,033	368	0.08	0.03
Winter	2008-2009	682	436	0.10	0.07
Winter	2009-2010	117	16	0.02	<0.01
Winter	2010-2011	406	74	0.04	0.01
Winter	2011-2012	15,711	1,078	0.17	0.01
Winter	2012-2013	43,130	684	0.47	0.01
Winter	2013-2014	41,460	1,318	0.38	0.01
Winter	2014-2015	17,084	747	0.14	0.01

White Bass

Season	Year	Catch	Harvest	Catch Rate	Harvest Rate
Summer	2006	107 (65)	21 (22)	<0.01 (<0.01)	<0.01 (<0.01)
Summer	2007	234 (113)	0	0.01 (<0.01)	0.00
Summer	2008	772 (227)	129 (62)	0.01 (<0.01)	<0.01 (<0.01)
Summer	2009	402 (213)	16 (21)	0.01 (<0.01)	<0.01 (<0.01)
Summer	2010	188 (266)	0	0.01 (0.01)	0.00
Summer	2012	6,565 (3,025)	657 (880)	0.05 (0.03)	<0.01 (<0.01)
Summer	2013	4,600 (2,115)	98	0.04 (0.02)	<0.01 (<0.01)
Summer	2014	7,138 (962)	5,635 (485)	0.09 (0.03)	0.07 (0.02)
Summer	2015	4,330 (2,388)	1,427 (1,444)	0.10 (0.06)	0.03 (0.03)
Winter	2011-2012	209	209	<0.01	<0.01

Yellow Perch

Season	Year	Catch	Harvest	Catch Rate	Harvest Rate
Summer	2006	54 (37)	44 (36)	<0.01 (<0.01)	<0.01 (<0.01)
Summer	2007	35 (23)	23 (18)	<0.01 (<0.01)	<0.01 (<0.01)
Summer	2010	222 (172)	191 (172)	0.01 (<0.01)	0.01 (<0.01)
Summer	2012	17,228 (4,985)	13,035 (3,595)	0.13 (0.05)	0.10 (0.04)
Summer	2013	1,782 (836)	1,310 (680)	0.02 (0.01)	0.01 (<0.01)
Summer	2014	544 (354)	225 (169)	0.01 (<0.01)	<0.01 (<0.01)
Summer	2015	87 (53)	66 (46)	<0.01 (<0.01)	<0.01 (<0.01)
Winter	2005-2006	1,064	980	0.07	0.07
Winter	2006-2007	893	791	0.10	0.09
Winter	2007-2008	1,144	936	0.09	0.07
Winter	2008-2009	5	5	<0.01	<0.01
Winter	2009-2010	225	147	0.04	0.02
Winter	2010-2011	8,737	4,853	0.97	0.54
Winter	2011-2012	45,343	38,069	0.48	0.40
Winter	2012-2013	37,365	24,945	0.41	0.27
Winter	2013-2014	27,751	22,107	0.25	0.20
Winter	2014-2015	21,707	18,363	0.18	0.15

Table 9. The number of fish harvested with each species by length group (mm) for the winter and summer fisheries at Bitter. Abbreviations for species are as follows: Black Crappie (BLC), Common Carp (COC), Northern Pike (NOP), Smallmouth Bass (SMB), Walleye (WAE), White Bass (WHB), Yellow Perch (YEP).

Winter 2013-2014							
Length Group (mm)	BLC (N=5)	COC (N=0)	NOP (N=48)	SMB (N=0)	WAE (N=36)	WHB (N=0)	YEP (N=220)
210							1
220							2
230							8
240							10
250							18
260							16
270							16
280	4						34
290	1						43
300							34
310							24
320							11
330							
340							1
350					1		2
360							
370							
380					2		
390					2		
400					1		
410							
420					2		
430							
440					3		
450					3		
460					2		
470					4		
480					2		
490					4		
500					1		
510							
520					1		
530			1		2		
540			3		1		
550							
560			1				
570			2		1		
580							
590			1				
600			4		1		
610			2		1		
620			4				
630			4		1		
640			1				
650			3				
660			1				
670							
680			3				
690			2		1		
700			4				
710			1				
720			1				
730							
740							
750							
760			1				
770							
780			1				
790							
800			1				
810			1				
820							
830							
840			1				
850							
860							
870							

880	
890	
900	
910	3
920	
930	1
940	
950	1

Summer 2014

Length Group (mm)	BLC (N=0)	COC (N=0)	NOP (N=50)	SMB (N=0)	WAE (N=477)	WHB (N=19)	YEP (N=11)
250					1		1
260							1
270							1
280							1
290					1		2
300							2
310							1
320							
330					1	4	2
340						2	
350					2	2	
360					4	1	
370					8	2	
380					51	2	
390					30	3	
400					21	1	
410			1		15	1	
420			1		15	1	
430					30		
440					18		
450					34		
460					34		
470					34		
480					28		
490					25		
500					32		
510					19		
520			1		21		
530					12		
540					12		
550					8		
560					3		
570			2		5		
580			3		6		
590			1				
600			7		2		
610			2		1		
620			2				
630			3				
640			6		1		
650			1		1		
660							
670			2				
680			4				
690			1		1		
700							
710			3				
720							
730							
740			1				
750							
760			3				
770			1				
780			2		1		
790			2				
800							
810							
820							
830							
840							
850							
860							
870							
880							
890			1				

Winter 2014-2015

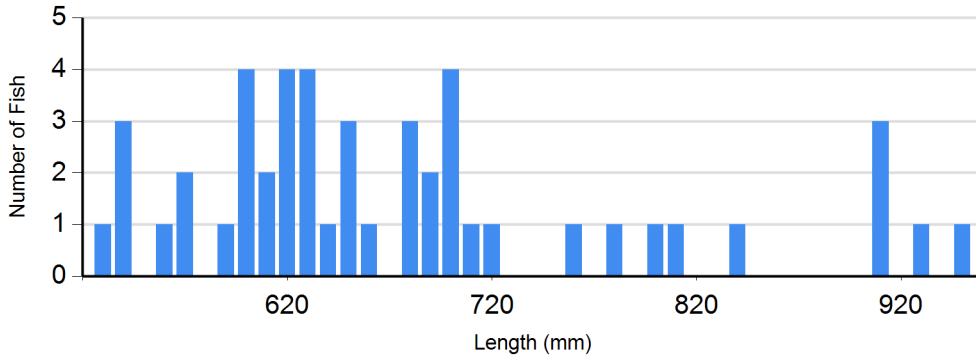
Length Group (mm)	BLC (N=0)	COC (N=0)	NOP (N=18)	SMB (N=0)	WAE (N=27)	WHB (N=0)	YEP (N=213)
200							2
210							

220			7
230			9
240			12
250			21
260			31
270			14
280			22
290			35
300		1	21
310			18
320			8
330		1	8
340		1	4
350			
360		1	1
370		1	
380		7	
390		3	
400		1	
410			
420			
430			
440		1	
450			
460			
470			
480		2	
490			
500		1	
510		2	
520			
530			
540		2	
550			
560			
570		1	
580			
590			
600			
610			
620			
630	2		
640		2	
650	2		
660			
670	1		
680			
690			
700			
710	1		
720	1		
730			
740			
750			
760			
770	1		
780			
790	2		
800	2		
810			
820			
830			
840	2		
850	1		
860			
870			
880			
890			
900			
910			
920	1		
930			
940	2		

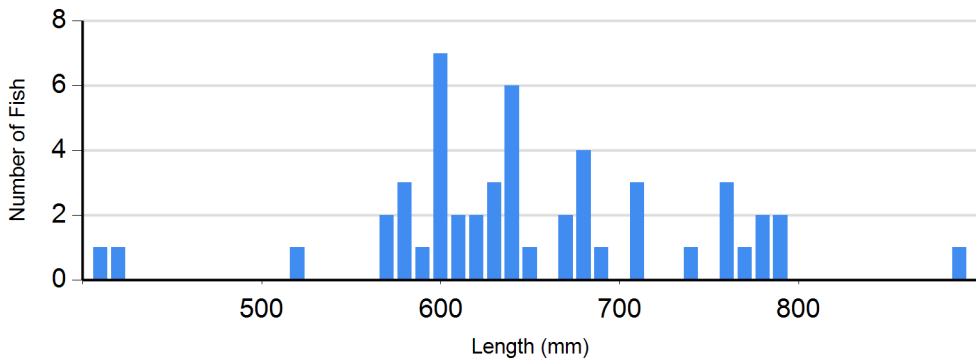
Summer 2015

Length Group (mm)	BLC (N=2)	COC (N=0)	NOP (N=21)	SMB (N=0)	WAE (N=584)	WHB (N=21)	YEP (N=8)
250						1	
260							1
270							
280	1						1
290							
300	1						2
310							4
320							
330						1	
340					1	1	
350					5		
360					8		
370					50		
380					182	5	
390					119	4	
400					56	2	
410					34	2	
420					9	1	
430					13	2	
440					12		
450					14	1	
460					9		
470					19	1	
480					8		
490					4		
500					4		
510					5		
520					9		
530					4		
540			1				
550			1		3		
560			1		2		
570			1		2		
580					4		
590					2		
600			1				
610			1		1		
620			1		1		
630			1				
640							
650			1		2		
660							
670			1				
680							
690			1		2		
700			2				
710			1				
720							
730			1				
740			1				
750							
760			1				
770							
780							
790							
800							
810			1				
820							
830			1				
840							
850							
860							
870							
880							
890							
900			2				

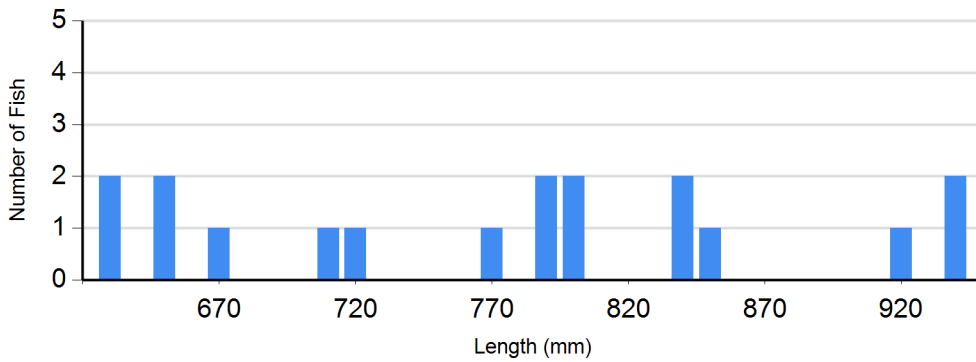
Length frequency of angler-harvested Northern Pike measured by the creel clerk during creel surveys on Bitter.



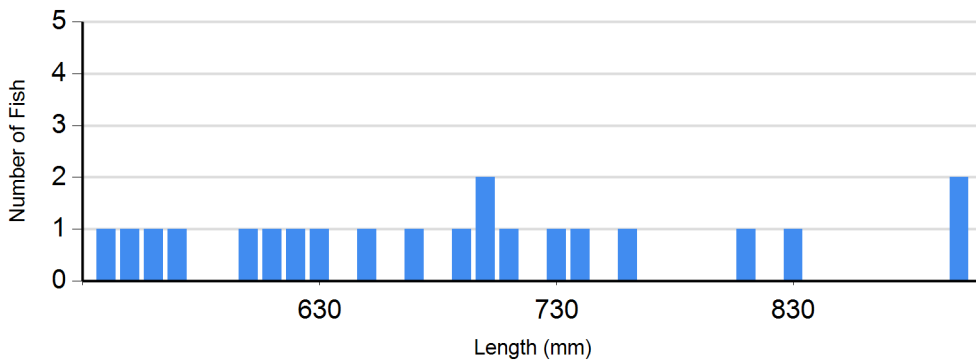
Winter 2013-2014
 N = 48
 Mean TL = 678 mm



Summer 2014
 N = 50
 Mean TL = 651 mm

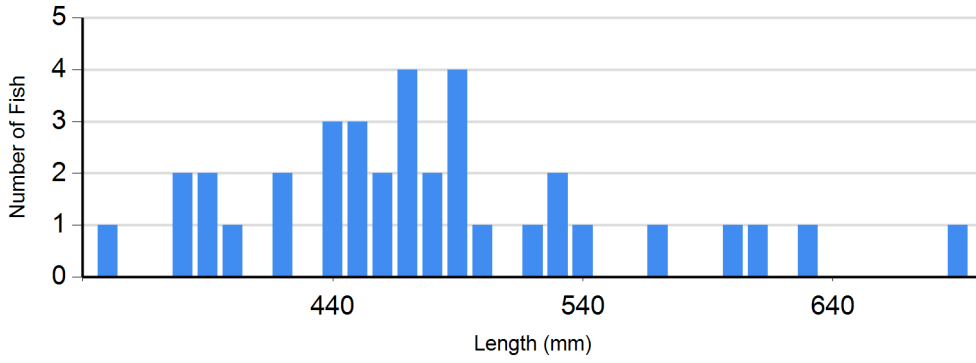


Winter 2014-2015
 N = 18
 Mean TL = 774 mm

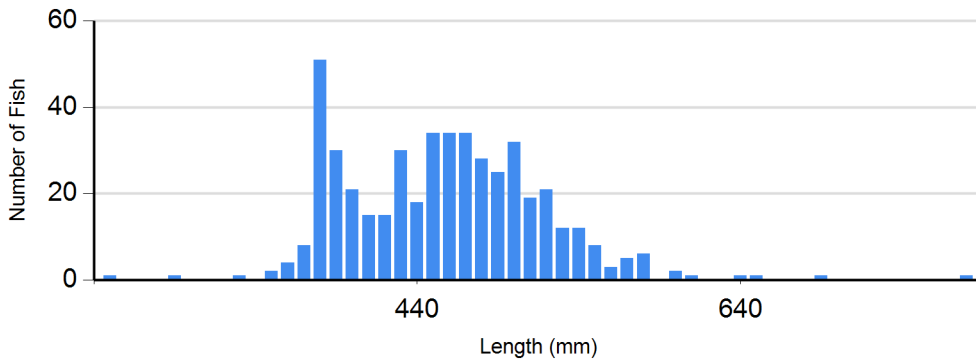


Summer 2015
 N = 21
 Mean TL = 689 mm

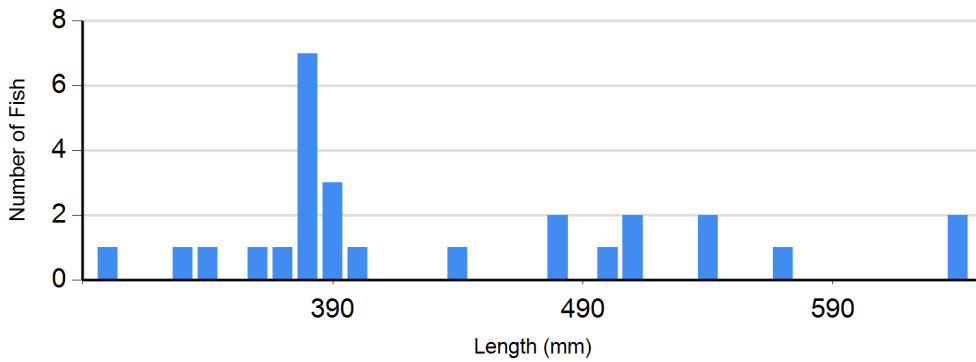
Length frequency of angler-harvested Walleye measured by the creel clerk during creel surveys on Bitter.



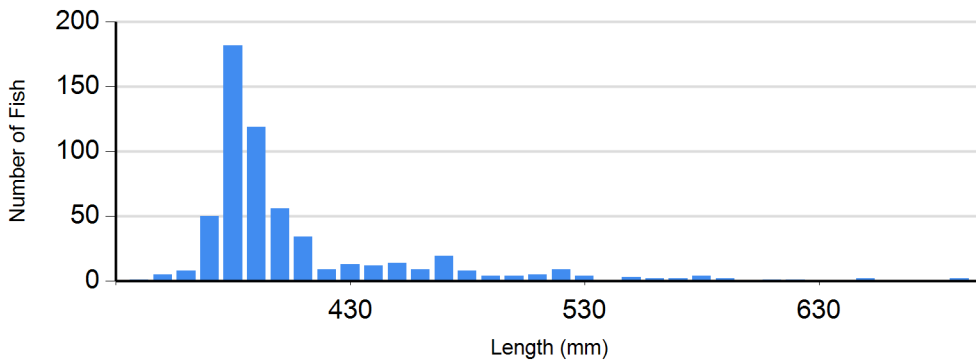
Winter 2013-2014
 N = 36
 Mean TL = 478 mm



Summer 2014
 N = 477
 Mean TL = 456 mm

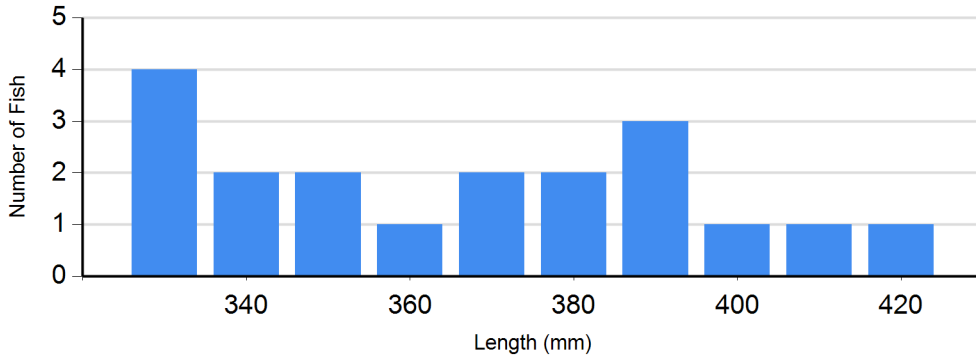


Winter 2014-2015
 N = 27
 Mean TL = 436 mm

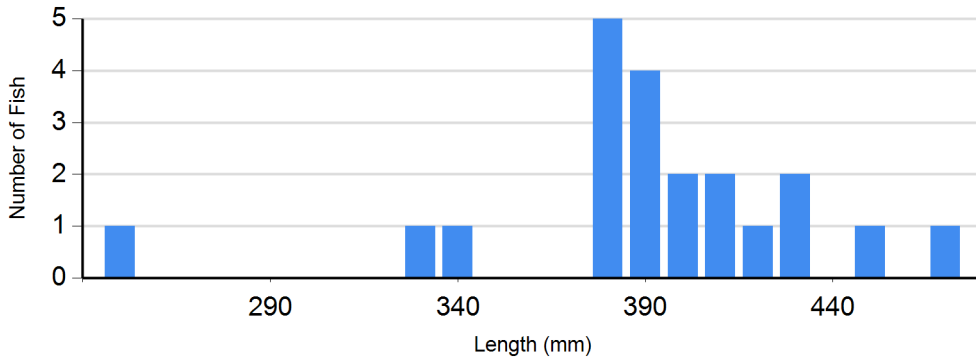


Summer 2015
 N = 584
 Mean TL = 407 mm

Length frequency of angler-harvested White Bass measured by the creel clerk during creel surveys on Bitter.

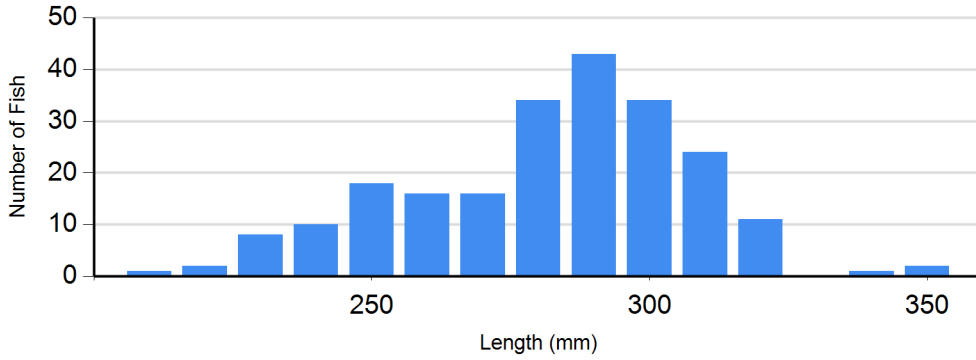


Summer 2014
N = 19
Mean TL = 366 mm

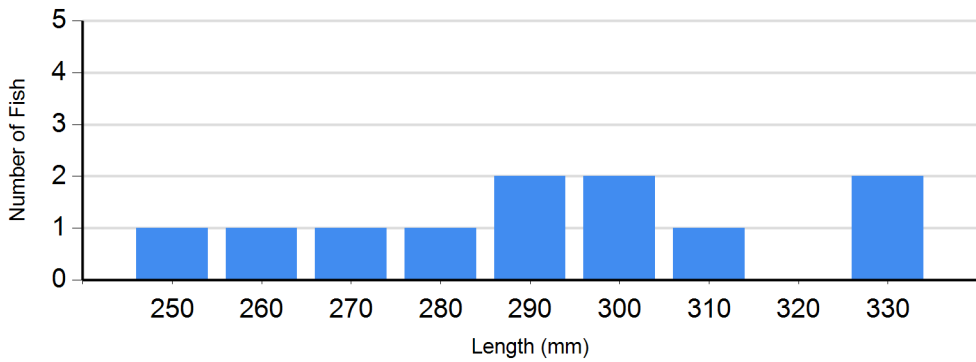


Summer 2015
N = 21
Mean TL = 390 mm

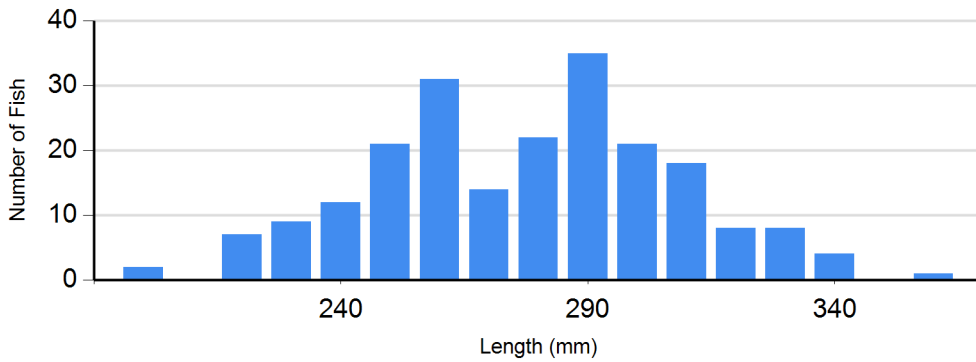
Length frequency of angler-harvested Yellow Perch measured by the creel clerk during creel surveys on Bitter.



Winter 2013-2014
N = 220
Mean TL = 282 mm



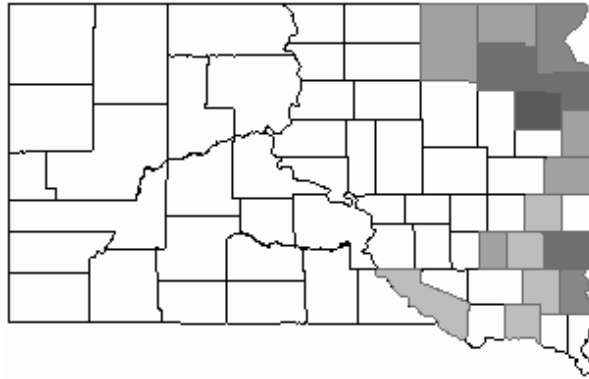
Summer 2014
N = 11
Mean TL = 291 mm



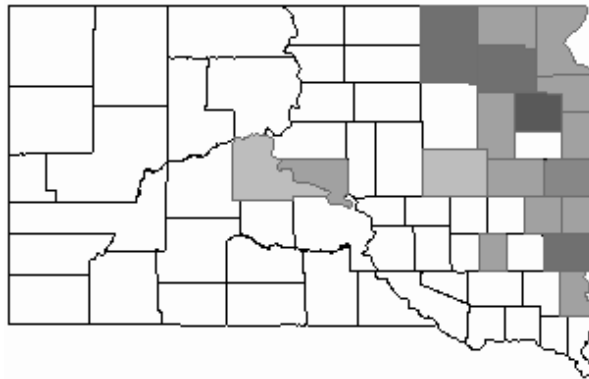
Winter 2014-2015
N = 213
Mean TL = 277 mm

South Dakota county of residence for winter and summer resident anglers fishing Bitter, South Dakota between January 2014 and December 2015.

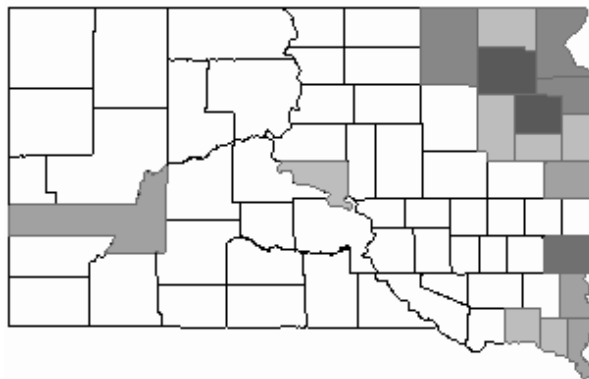
Winter 2013-2014



Summer 2014



Winter 2014-2015



Summer 2015

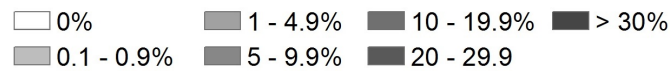
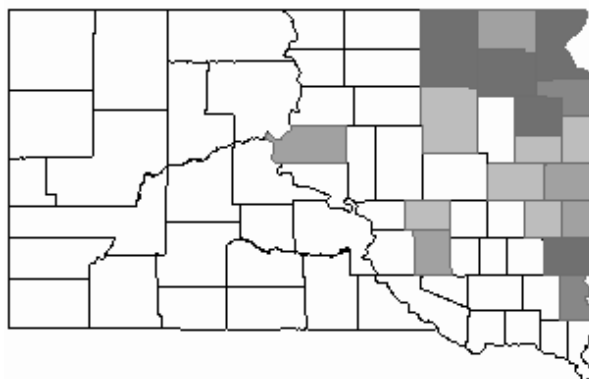


Table 10. Number of parties or anglers interviewed that harvested (or caught) a specified number of fish total over selected strata for a species.

Angler Harvest	Count						
	BLC (n=0)	COC (n=0)	NOP (n=72)	SMB (n=1286)	WAE (n=1286)	WHB (n=7)	YEP (n=1908)
0.00	0	0	0	0	0	0	0
0.17	0	0	0	0	1	0	0
0.25	0	0	0	0	5	0	0
0.33	0	0	0	0	8	0	0
0.43	0	0	0	0	3	0	0
0.50	0	0	0	0	16	0	0
0.57	0	0	0	0	4	0	0
0.67	0	0	0	0	24	0	0
0.75	0	0	0	0	18	0	0
0.83	0	0	0	0	5	0	0
1.00	0	0	0	0	71	0	0
1.25	0	0	0	0	25	0	0
1.33	0	0	0	0	16	0	0
1.50	0	0	0	0	27	0	0
1.60	0	0	0	0	8	0	0
1.67	0	0	0	0	25	0	0
1.75	0	0	0	0	7	0	0
2.00	0	0	0	0	44	0	0
2.33	0	0	0	0	7	0	0
2.50	0	0	0	0	30	0	0
2.67	0	0	0	0	16	0	0
3.00	0	0	0	0	33	0	0
3.33	0	0	0	0	30	0	0
3.50	0	0	0	0	28	0	0
4.00	0	0	0	0	100	0	0

Angler Harvest	Count						
	BLC (n=0)	COC (n=0)	NOP (n=72)	SMB (n=1286)	WAE (n=1286)	WHB (n=7)	YEP (n=1908)
0.00	0	0	0	0	0	0	0
0.20	0	0	0	0	2	0	0
0.33	0	0	0	0	9	0	0
0.50	0	0	0	0	21	1	0
0.67	0	0	0	0	12	0	0
0.75	0	0	0	0	3	0	0
1.00	0	0	0	0	72	0	0
1.25	0	0	0	0	5	0	0
1.33	0	0	0	0	20	0	0
1.40	0	0	0	0	7	0	0
1.50	0	0	0	0	21	0	0
1.67	0	0	0	0	15	0	0
1.75	0	0	0	0	7	0	0
2.00	0	0	0	0	52	0	0
2.20	0	0	0	0	11	0	0
2.25	0	0	0	0	9	0	0
2.33	0	0	0	0	7	0	0
2.50	0	0	0	0	35	0	0
2.67	0	0	0	0	8	0	0
2.75	0	0	0	0	11	0	0
2.80	0	0	0	0	14	0	0
3.00	0	0	0	0	51	6	0
3.25	0	0	0	0	26	0	0
3.33	0	0	0	0	10	0	0
3.50	0	0	0	0	42	0	0
3.60	0	0	0	0	18	0	0
3.67	0	0	0	0	11	0	0
4.00	0	0	0	0	144	0	0

Winter 2013-2014

Count

Angler Harvest	BLC (n=0)	COC (n=0)	NOP (n=72)	SMB (n=1286)	WAE (n=1286)	WHB (n=7)	YEP (n=1908)
0.00	0	0	0	0	0	0	0
0.25	0	0	0	0	2	0	1
0.33	0	0	1	0	2	0	3
0.50	0	0	2	0	8	0	7
0.67	0	0	0	0	6	0	6
0.75	0	0	0	0	0	0	3
1.00	0	0	2	0	10	0	45
1.33	0	0	0	0	0	0	8
1.40	0	0	0	0	0	0	7
1.50	0	0	3	0	6	0	21
1.60	0	0	0	0	0	0	8
1.67	0	0	0	0	0	0	15
2.00	0	0	4	0	12	0	46
2.50	0	0	5	0	0	0	15
2.67	0	0	0	0	0	0	16
3.00	0	0	12	0	0	0	54
3.33	0	0	0	0	10	0	10
3.50	0	0	0	0	0	0	56
3.67	0	0	0	0	0	0	11
3.75	0	0	0	0	0	0	15
4.00	0	0	0	0	0	0	76
4.17	0	0	0	0	0	0	25
4.50	0	0	0	0	0	0	9
5.00	0	0	15	0	0	0	60
6.00	0	0	0	0	0	0	72
7.00	0	0	0	0	0	0	28
7.50	0	0	0	0	0	0	15
8.50	0	0	0	0	0	0	51
9.00	0	0	0	0	0	0	63
10.00	0	0	0	0	0	0	70
10.50	0	0	0	0	0	0	21
11.00	0	0	0	0	0	0	33
11.50	0	0	0	0	0	0	23
11.67	0	0	0	0	0	0	35
12.00	0	0	0	0	0	0	36
13.00	0	0	0	0	0	0	39
14.00	0	0	0	0	0	0	14
15.00	0	0	0	0	0	0	90
28.00	0	0	0	0	0	0	28

Winter 2014-2015

Count

Angler Harvest	BLC (n=0)	COC (n=0)	NOP (n=72)	SMB (n=1286)	WAE (n=1286)	WHB (n=7)	YEP (n=1908)
0.00	0	0	0	0	0	0	0
0.25	0	0	0	0	1	0	0
0.33	0	0	0	0	1	0	3
0.50	0	0	1	0	7	0	13
0.60	0	0	0	0	0	0	3
0.67	0	0	0	0	4	0	2
0.75	0	0	0	0	3	0	0
0.80	0	0	0	0	4	0	0
1.00	0	0	0	0	7	0	27
1.20	0	0	0	0	6	0	0
1.33	0	0	0	0	0	0	8
1.50	0	0	9	0	3	0	9
1.67	0	0	0	0	0	0	5
2.00	0	0	2	0	0	0	24
2.33	0	0	0	0	0	0	7
2.50	0	0	0	0	0	0	40
2.75	0	0	0	0	0	0	11
3.00	0	0	0	0	0	0	30
3.67	0	0	0	0	0	0	11
4.00	0	0	16	0	0	0	28
4.50	0	0	0	0	0	0	18
5.00	0	0	0	0	0	0	60
6.00	0	0	0	0	0	0	54
6.67	0	0	0	0	0	0	40
7.50	0	0	0	0	0	0	45
8.00	0	0	0	0	0	0	24
9.00	0	0	0	0	0	0	18
10.00	0	0	0	0	0	0	10
11.00	0	0	0	0	0	0	11
12.50	0	0	0	0	0	0	75
13.50	0	0	0	0	0	0	27
14.00	0	0	0	0	0	0	42
15.00	0	0	0	0	0	0	60
18.00	0	0	0	0	0	0	18
25.00	0	0	0	0	0	0	50

Table 11 The number (N) and percent of total interviews in supplemental-response categories by question asked during interviews at Bitter.

Question: Considering all factors, how satisfied are you with you fishing trip today?

Response	Winter 2014-2015 (n = 291)
Being with Friends/Slightly Dissatisfied <input type="checkbox"/>	11%
Catching Fish/Neutral <input type="checkbox"/>	15%
Harvesting Fish/Moderately satisfied <input type="checkbox"/>	22%
Other/Moderately Dissatisfied <input type="checkbox"/>	9%
Participating/Slightly Satisfied <input type="checkbox"/>	9%
Relaxation/Very Satisfied <input type="checkbox"/>	30%
Very Dissatisfied <input type="checkbox"/>	4%

Question: Considering all factors, how satisfied are you with your fishing trip today?

Response	Summer 2015 (n = 241)
Being with Friends/Slightly Dissatisfied <input type="checkbox"/>	7%
Catching Fish/Neutral <input type="checkbox"/>	10%
Harvesting Fish/Moderately Satisfied <input type="checkbox"/>	19%
Moderately Dissatisfied <input type="checkbox"/>	5%
Participating/Slightly Satisfied <input type="checkbox"/>	14%
Relaxation/Very Satisfied <input type="checkbox"/>	42%
Very Dissatisfied <input type="checkbox"/>	3%

Question: What is the most important factor to you in defining a successful fishing trip?

Response	Summer 2015 (n = 241)
Being with Friends/Slightly Dissatisfied <input type="checkbox"/>	22%
Catching Fish/Neutral <input type="checkbox"/>	29%
Harvesting Fish/Moderately Satisfied <input type="checkbox"/>	7%
Moderately Dissatisfied <input type="checkbox"/>	10%
Participating/Slightly Satisfied <input type="checkbox"/>	7%
Relaxation/Very Satisfied <input type="checkbox"/>	24%