

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: 1/2/2016
End Date: 12/29/2016
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 2015 - 2016. Any Species (ANY), Black Crappie (BLC), Common Carp (COC), Northern Pike (NOP), Rock Bass (ROB), Walleye (WAE), White Bass (WHB), Yellow Perch (YEP).

Year	Month	# of Interviews	Percent of Anglers Targeting							
			ANY	BLC	COC	NOP	ROB	WAE	WHB	YEP
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
2016	January	198	16.2	0.0	0.0	0.5	0.0	61.6	0.0	21.7
	February	75	6.7	0.0	0.0	5.3	0.0	65.3	0.0	22.7
	March	9	22.2	0.0	0.0	0.0	0.0	33.3	0.0	44.4
	May	71	0.0	0.0	0.0	0.0	0.0	98.6	1.4	0.0
	June	100	3.0	0.0	0.0	0.0	0.0	94.0	3.0	0.0
	July	154	3.2	0.0	0.0	0.0	0.0	96.8	0.0	0.0
	August	50	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
	December	30	3.3	0.0	0.0	6.7	0.0	46.7	0.0	43.3
	Overall	687	7.0	0.0	0.0	1.0	0.0	80.2	0.6	11.2

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
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
2015-2016	January	198	7,082 (5,638)	821	8.63 (4.43)	1.98 (0.39)	48	94	60
	February	75	129,838 (69,790)	8,749	14.84 (1.03)	2.40 (0.22)	27	89	47
	March	9	76,711 (29,382)	11,930	6.43 (0.13)	1.89 (0.32)	22	78	0
	Overall	282	223,871 (76,234)	21,341	10.49 (1.74)	2.12 (0.19)	41	92	53
2016	May	71	24,380 (10,139)	5,358	4.55 (1.56)	2.28 (0.79)	56	79	38
	June	100	23,843 (4,279)	5,106	4.67 (0.65)	2.29 (0.40)	46	84	43
	July	154	46,010 (19,450)	9,526	4.83	2.58 (0.54)	47	99	41
	August	50	17,945 (2,434)	3,561	5.04	2.54	46	98	28
	Overall	375	112,178 (22,479)	23,517	4.77 (0.42)	2.42 (0.26)	49	91	39

Table 3. Estimated fishing pressure (angler hours) by month during the summer season 2016 daylight period on Bitter (80% confidence interval).

Lake	Month				Total
	April	May	June	July	
Bitter	24,380 (10,139)	23,843 (4,279)	46,010 (19,450)	17,945 (2,434)	112,178 (22,479)
Bitter Lake	0	0	0	0	112,178 (22,479)

Table 4. Estimated number of fish harvested, by species and month, for the summer season 2016 daylight period on Bitter (80% confidence interval).

Species	Month				Total
	May	June	July	August	
Black Crappie	0	0	0	17 (13)	0
Common Carp	0	0	0	0	0
Northern Pike	158 (127)	0	75 (60)	146 (26)	233 (187)
Rock Bass	0	0	19 (33)	112	19 (33)
Walleye	14,828 (7,389)	13,462 (3,829)	26,489 (12,654)	8,663 (791)	54,778 (23,872)
White Bass	361 (133)	24 (30)	75 (82)	34 (20)	459 (245)
Yellow Perch	126 (158)	206 (194)	288 (155)	73 (30)	620 (507)
Total	15,472 (7,807)	13,692 (4,054)	26,945 (12,984)	9,045 (879)	56,109 (24,844)

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), Rock Bass (ROB), Walleye (WAE), White Bass (WHB), Yellow Perch (YEP) and other species (Other).

Year	Month	BLC	COC	NOP	ROB	WAE	WHB	YEP
		C/h	C/h	C/h	C/h	C/h	C/h	C/h
2014-2015	January	<0.01	0.00	0.02	0.00	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	0.00	0.14	0.00	0.18
2015	May	0.00	<0.01 (<0.01)	0.09 (0.09)	0.00	2.00 (2.53)	0.04 (0.03)	<0.01 (<0.01)
	June	<0.01 (<0.01)	0.00	0.14 (0.11)	0.00	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)	0.00	2.37 (1.28)	0.10 (0.06)	<0.01 (<0.01)
2015-2016	January	<0.01	0.00	0.02	0.00	0.31	0.00	0.03
	February	<0.01	0.00	0.01	0.00	0.13	0.00	0.01
	March	0.00	0.00	<0.01	0.00	0.07	0.00	0.05
	Overall	<0.01	0.00	0.01	0.00	0.11	0.00	0.02
2016	May	0.00	0.00	0.07 (0.05)	0.00	1.06 (1.10)	0.05 (0.03)	0.01 (<0.01)
	June	<0.01 (<0.01)	<0.01 (<0.01)	0.05 (0.02)	0.00	1.76 (0.66)	0.01 (<0.01)	0.01 (<0.01)
	July	0.00	<0.01 (<0.01)	0.02 (0.02)	<0.01 (<0.01)	1.39 (1.30)	0.01 (0.01)	0.01 (<0.01)
	August	<0.01 (<0.01)	0.00	0.01 (<0.01)	0.01 (<0.01)	0.94 (0.21)	0.01 (<0.01)	0.01
	Overall	<0.01 (<0.01)	<0.01 (<0.01)	0.04 (0.01)	<0.01 (<0.01)	1.32 (0.60)	0.02 (<0.01)	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), Rock Bass (ROB), Walleye (WAE), White Bass (WHB), Yellow Perch (YEP) and other species (Other).

Year	Month	BLC	COC	NOP	ROB	WAE	WHB	YEP
		H/h	H/h	H/h	H/h	H/h	H/h	H/h
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)
2015-2016	January	<0.01	0.00	0.01	0.00	0.14	0.00	0.03
	February	<0.01	0.00	0.01	0.00	0.06	0.00	0.01
	March	0.00	0.00	0.00	0.00	0.04	0.00	0.01
	Overall	<0.01	0.00	<0.01	0.00	0.05	0.00	0.01
2016	May	0.00	0.00	0.01 (<0.01)	0.00	0.61 (0.58)	0.01 (<0.01)	0.01 (<0.01)
	June	0.00	0.00	0.00	0.00	0.56 (0.24)	<0.01 (<0.01)	0.01 (<0.01)
	July	0.00	0.00	<0.01 (<0.01)	<0.01 (<0.01)	0.58 (0.54)	<0.01 (<0.01)	0.01 (<0.01)
	August	<0.01 (<0.01)	0.00	0.01 (<0.01)	0.01 (<0.01)	0.48 (0.11)	<0.01 (<0.01)	<0.01
	Overall	<0.01 (<0.01)	0.00	<0.01 (<0.01)	<0.01 (<0.01)	0.57 (0.26)	<0.01 (<0.01)	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), Rock Bass (ROB), Walleye (WAE), White Bass (WHB), Yellow Perch (YEP) and Other Species (Other).

Year	Month	BLC	COC	NOP	ROB	WAE	WHB	YEP
		C/h	C/h	C/h	C/h	C/h	C/h	C/h
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
2015-2016	January	0.00	0.00	0.00	0.00	0.36 (0.30)	0.00	0.09(0.04)
	February	0.00	0.00	0.19	0.00	0.15 (0.14)	0.00	0.04(0.09)
	March	0.00	0.00	0.00	0.00	0.14	0.00	0.39
	Overall	0.00	0.00	0.15	0.00	0.25 (0.15)	0.00	0.13(0.04)
2016	May	0.00	0.00	0.00	0.00	1.11 (0.54)	0.00	0.00
	June	0.00	0.00	0.00	0.00	1.64 (0.44)	0.09	0.00
	July	0.00	0.00	0.00	0.00	1.41 (0.50)	0.00	0.00
	August	0.00	0.00	0.00	0.00	0.80 (0.37)	0.00	0.00
	Overall	0.00	0.00	0.00	0.00	1.31 (0.26)	0.04	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), Rock Bass (ROB), Walleye (WAE), White Bass (WHB), Yellow Perch (YEP) and Other Species (Other).

Year	Month	BLC	COC	NOP	ROB	WAE	WHB	YEP
		H/h	H/h	H/h	H/h	H/h	H/h	H/h
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
2015-2016	January	0.00	0.00	0.00	0.00	0.17 (0.07)	0.00	0.07 (0.03)
	February	0.00	0.00	0.19	0.00	0.07 (0.07)	0.00	0.02 (<0.01)
	March	0.00	0.00	0.00	0.00	0.10	0.00	0.05
	Overall	0.00	0.00	0.15	0.00	0.12 (0.04)	0.00	0.05 (0.02)
2016	May	0.00	0.00	0.00	0.00	0.62 (0.16)	0.00	0.00
	June	0.00	0.00	0.00	0.00	0.60 (0.15)	0.09	0.00
	July	0.00	0.00	0.00	0.00	0.58 (0.33)	0.00	0.00
	August	0.00	0.00	0.00	0.00	0.41 (0.08)	0.00	0.00
	Overall	0.00	0.00	0.00	0.00	0.57 (0.09)	0.04	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), Rock Bass (ROB), Walleye (WAE), White Bass (WHB), Yellow Perch (YEP) and other species (Other).

Year	Month	BLC	COC	NOP	ROB	WAE	WHB	YEP
		C	C	C	C	C	C	C
2014-2015	January	5	0	120	0	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	0	17,084	0	21,707
2015	May	0	29 (42)	1,438 (923)	0	30,645 (25,455)	625 (246)	24 (41)
	June	10 (7)	0	2,786 (1,227)	0	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)	0	107,186 (34,334)	4,330 (2,388)	87 (53)
2015-2016	January	3	0	116	0	2,178	0	242
	February	59	0	1,227	0	16,605	0	1,359
	March	0	0	289	0	5,119	0	3,611
	Overall	62	0	1,632	0	23,902	0	5,212
2016	May	0	0	1,629 (856)	0	25,761 (15,037)	1,175 (465)	153 (198)
	June	39 (48)	39 (60)	1,264 (320)	0	41,921 (10,917)	261 (174)	206 (194)
	July	0	83 (85)	849 (392)	47 (47)	63,758 (30,604)	374 (250)	372 (173)
	August	17 (13)	0	197 (37)	129 (13)	16,788 (2,085)	191 (53)	146 (26)
	Overall	56 (50)	122 (104)	3,939 (995)	176 (49)	148,229 (35,864)	2,001 (558)	877 (328)

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), Rock Bass (ROB), Walleye (WAE), White Bass (WHB), Yellow Perch (YEP) and other species (Other).

Year	Month	BLC	COC	NOP	ROB	WAE	WHB	YEP
		H	H	H	H	H	H	H
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)
2015-2016	January	3	0	49	0	976	0	202
	February	59	0	838	0	7,691	0	712
	March	0	0	0	0	3,097	0	433
	Overall	62	0	888	0	11,764	0	1,347
2016	May	0	0	158 (127)	0	14,828 (7,389)	361 (133)	126 (158)
	June	0	0	0	0	13,462 (3,829)	24 (30)	206 (194)
	July	0	0	75 (60)	19 (33)	26,489 (12,654)	75 (82)	288 (155)
	August	17 (13)	0	146 (26)	112	8,663 (791)	34 (20)	73 (30)
	Overall	17 (13)	0	379 (143)	131 (33)	63,441 (15,166)	492 (160)	693 (296)

Table 8. Estimated number and rate (number per hour) of Black Crappie (BLC), Common Carp (COC), Northern Pike (NOP), Rock Bass (ROB), 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)
Summer	2016	56 (50)	17 (13)	<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
Winter	2015-2016	62	62	<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
Summer	2016	122 (104)	0	<0.01 (<0.01)	0.00

Northern Pike

Season	Year	Catch	Harvest	Catch Rate	Harvest Rate
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)
Summer	2016	3,939 (995)	379 (143)	0.04 (0.01)	<0.01 (<0.01)
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
Winter	2015-2016	1,632	888	0.01	<0.01

Rock Bass

Season	Year	Catch	Harvest	Catch Rate	Harvest Rate
Summer	2016	176 (49)	131 (33)	<0.01 (<0.01)	<0.01 (<0.01)

Walleye

Season	Year	Catch	Harvest	Catch Rate	Harvest Rate
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)
Summer	2016	148,229 (35,864)	63,441 (15,166)	1.32 (0.60)	0.57 (0.26)
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
Winter	2015-2016	23,902	11,764	0.11	0.05

White Bass

Season	Year	Catch	Harvest	Catch Rate	Harvest Rate
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)
Summer	2016	2,001 (558)	492 (160)	0.02 (<0.01)	<0.01 (<0.01)
Winter	2011-2012	209	209	<0.01	<0.01

Yellow Perch

Season	Year	Catch	Harvest	Catch Rate	Harvest Rate
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)
Summer	2016	877 (328)	693 (296)	0.01 (<0.01)	0.01 (<0.01)
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
Winter	2015-2016	5,212	1,347	0.02	0.01

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), Rock Bass (ROB), Walleye (WAE), White Bass (WHB), Yellow Perch (YEP).

Winter 2014-2015							
Length Group (mm)	BLC (N=0)	COC (N=0)	NOP (N=18)	ROB (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
930
940

1

2

Summer 2015

Length Group (mm)	BLC (N=2)	COC (N=0)	NOP (N=21)	ROB (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				

Winter 2015-2016

Length Group (mm)	BLC (N=4)	COC (N=0)	NOP (N=11)	ROB (N=0)	WAE (N=219)	WHB (N=0)	YEP (N=48)
200							2

210			
220			2
230			4
240			2
250			5
260			4
270			1
280			5
290			2
300	1		8
310	3		4
320			5
330			2
340			2
350			11
360			24
370			37
380			38
390			37
400			28
410			7
420			6
430			5
440			3
450			1
460			1
470			
480			
490			
500			
510			
520			
530			1
540		1	
550		2	
560			
570			
580		2	
590		1	
600			
610			
620		1	
630			
640			
650			
660			
670		1	
680		1	
690			
700			
710			
720			
730			
740			
750			
760			
770		1	
780			
790			
800			
810			
820			
830			
840			
850			
860			
870			
880			
890			
900			
910			
920			
930			
940			

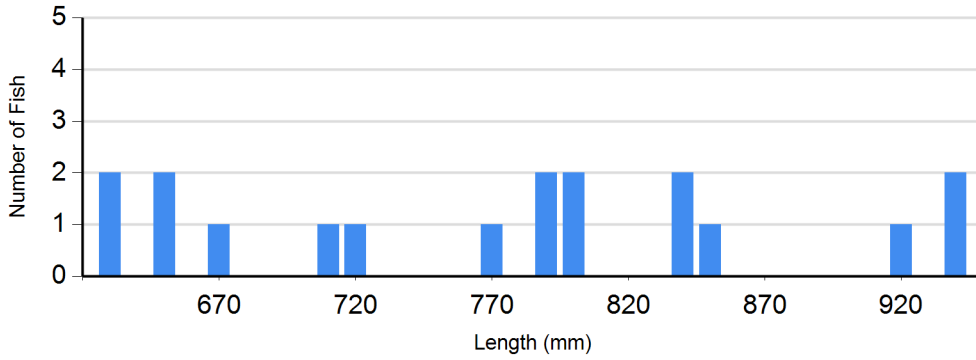
950
 960
 970
 980
 990
 1000
 1010

1

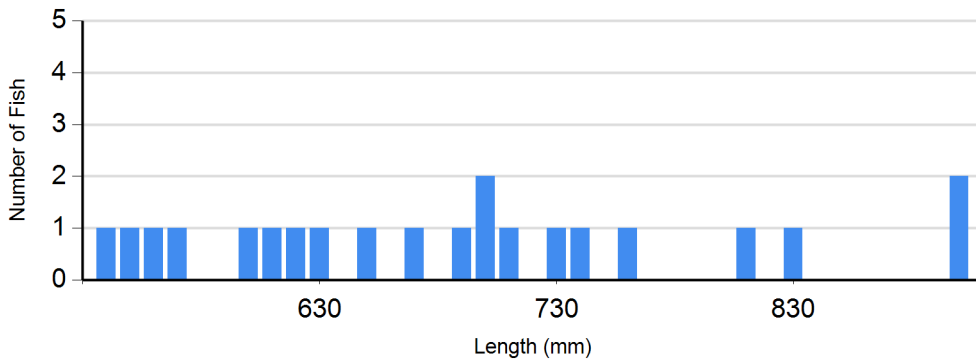
Summer 2016

Length Group (mm)	BLC (N=1)	COC (N=0)	NOP (N=11)	ROB (N=3)	WAE (N=1783)	WHB (N=15)	YEP (N=22)
230				1			
240						1	1
250							1
260				1			
270				1			1
280					3		2
290					1		3
300					4		3
310	1				9		4
320					28	1	2
330					56		3
340					120		2
350					194		
360			1		324	2	
370					318	2	
380					272	3	
390					159	2	
400					112	2	
410					68	1	
420					37		
430					19	1	
440					16		
450					5		
460					4		
470					2		
480					5		
490					5		
500					1		
510							
520					2		
530					3		
540					2		
550			1				
560					3		
570							
580					5		
590			2		1		
600			2		1		
610			1		1		
620							
630			1				
640							
650							
660			1				
670							
680					2		
690							
700							
710			1				
720			1		1		

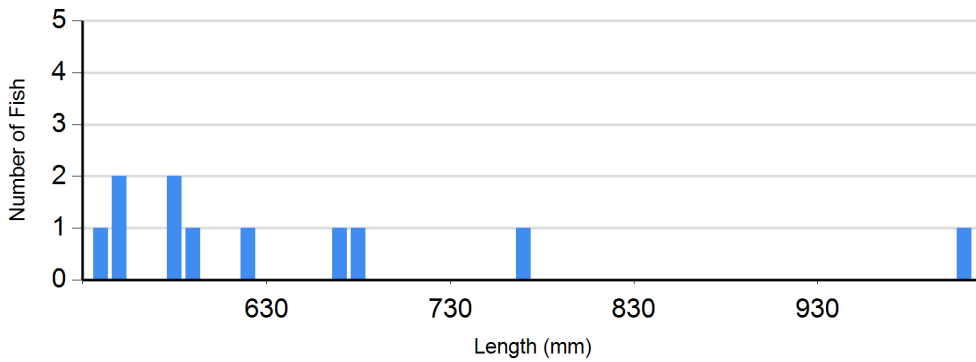
Length frequency of angler-harvested Northern Pike measured by the creel clerk during creel surveys on Bitter.



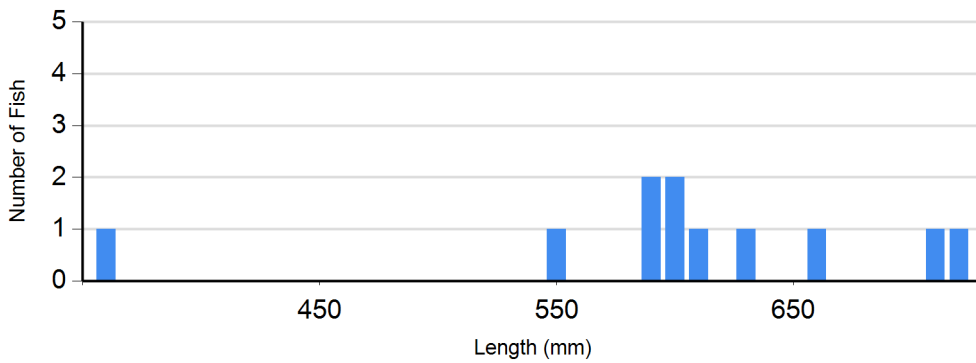
Winter 2014-2015
 N = 18
 Mean TL = 774 mm



Summer 2015
 N = 21
 Mean TL = 689 mm

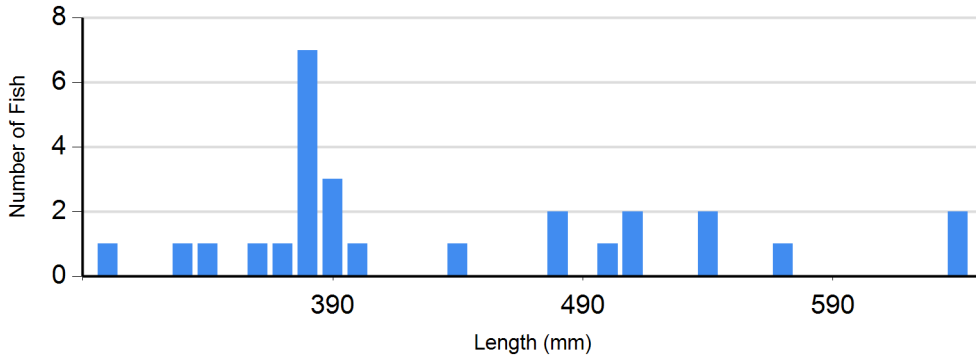


Winter 2015-2016
 N = 11
 Mean TL = 649 mm

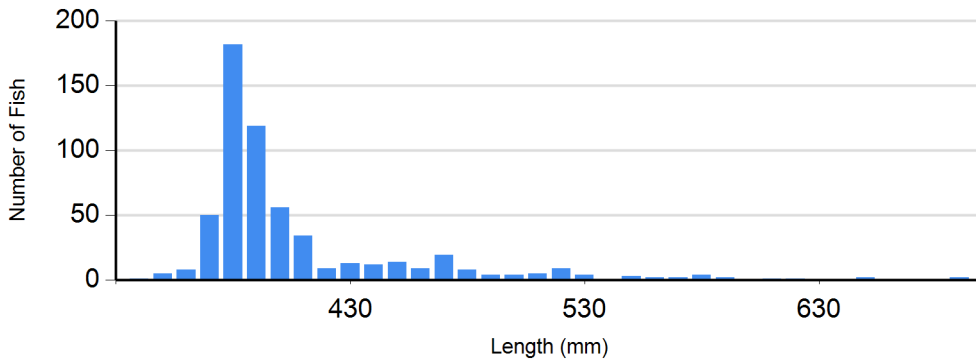


Summer 2016
 N = 11
 Mean TL = 601 mm

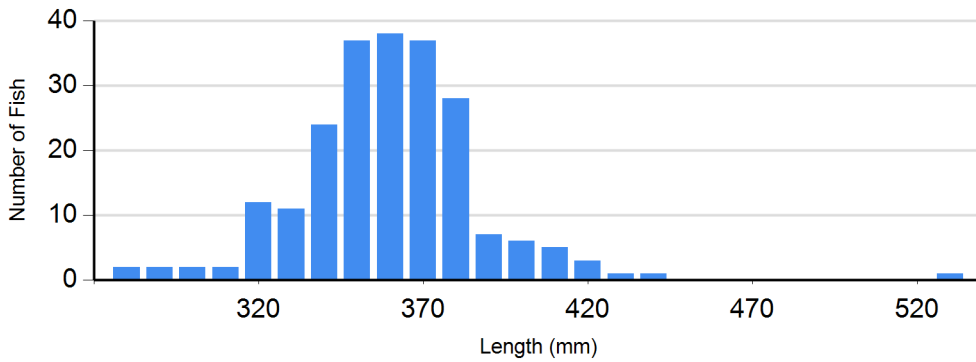
Length frequency of angler-harvested Walleye measured by the creel clerk during creel surveys on Bitter.



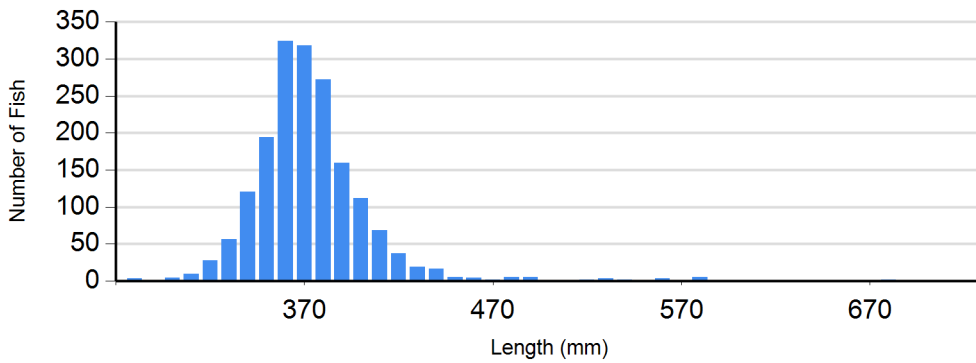
Winter 2014-2015
 N = 27
 Mean TL = 436 mm



Summer 2015
 N = 584
 Mean TL = 407 mm

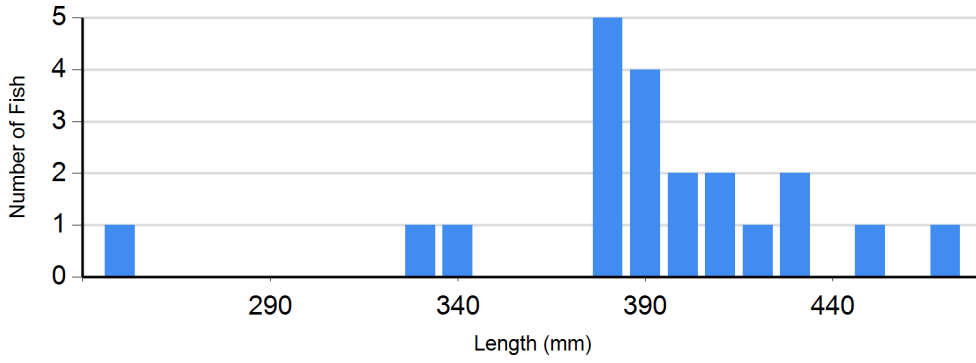


Winter 2015-2016
 N = 219
 Mean TL = 359 mm

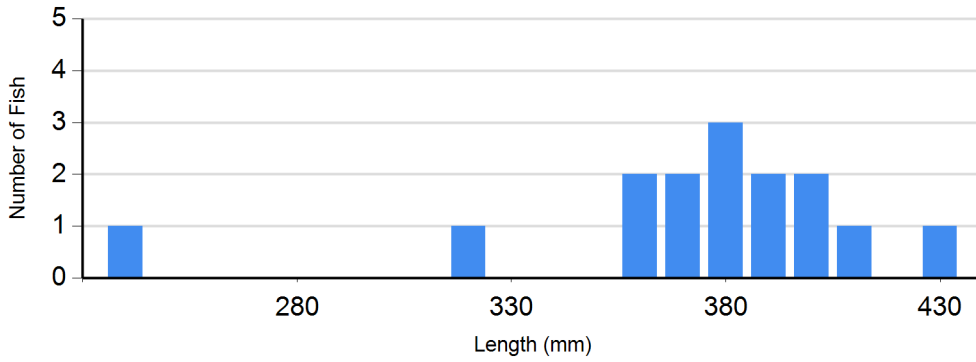


Summer 2016
 N = 1783
 Mean TL = 374 mm

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

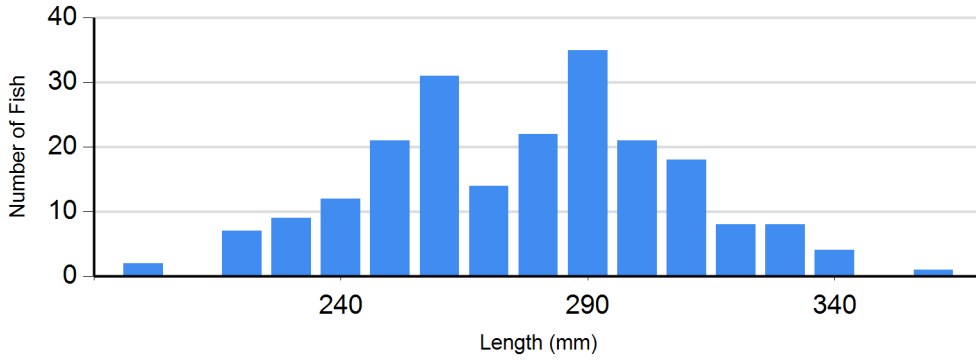


Summer 2015
N = 21
Mean TL = 390 mm

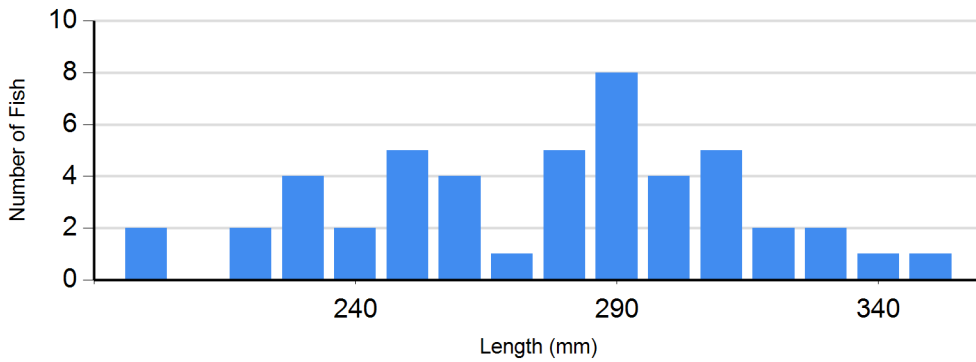


Summer 2016
N = 15
Mean TL = 372 mm

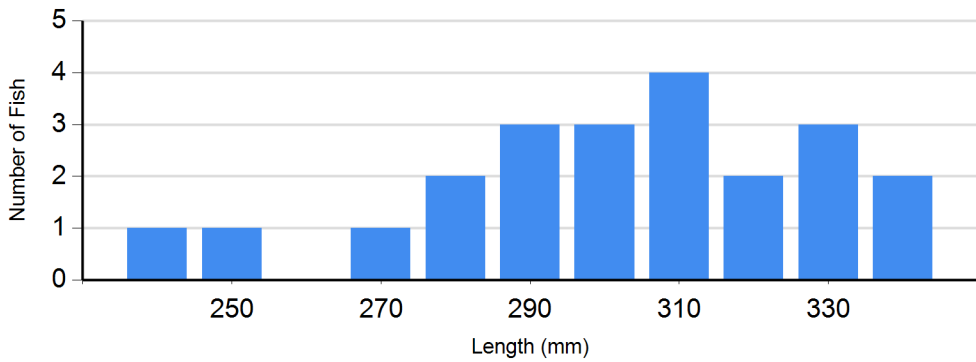
Length frequency of angler-harvested Yellow Perch measured by the creel clerk during creel surveys on Bitter.



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



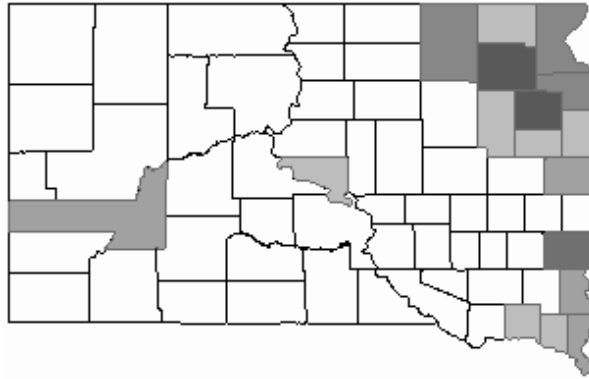
Winter 2015-2016
N = 48
Mean TL = 276 mm



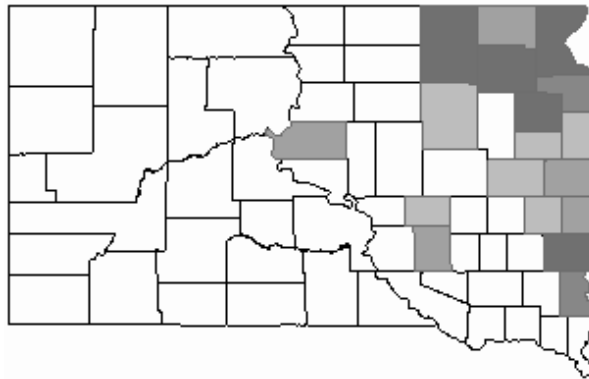
Summer 2016
N = 22
Mean TL = 301 mm

South Dakota county of residence for winter and summer resident anglers fishing Bitter, South Dakota between January 2015 and December 2016.

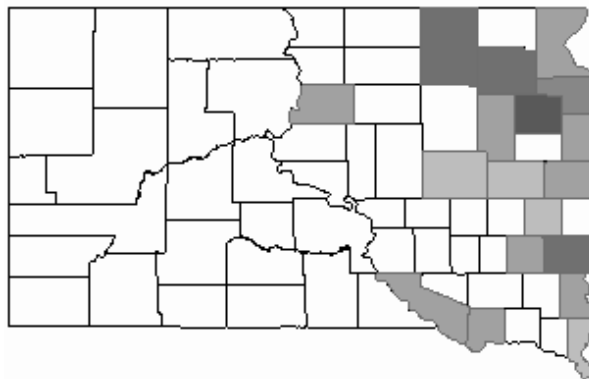
Winter 2014-2015



Summer 2015



Winter 2015-2016



Summer 2016

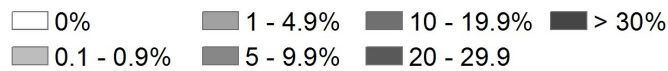
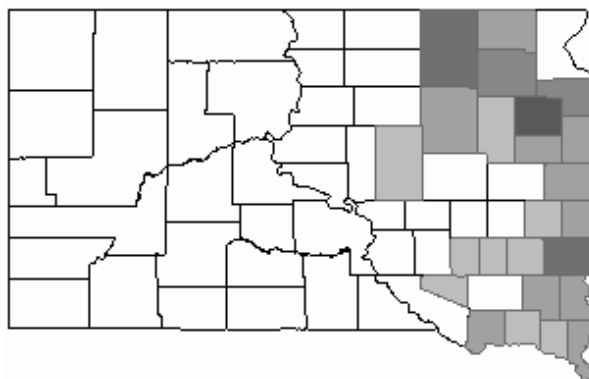


Table 10. Number of parties or anglers interviewed that harvested (or caught) a specified number of fish total over selected strata for a species.

Angler Harvest	Count						
	BLC (n=0)	COC (n=0)	NOP (n=32)	ROB (n=3409)	WAE (n=3409)	WHB (n=12)	YEP (n=873)
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

Angler Harvest	Count						
	BLC (n=0)	COC (n=0)	NOP (n=32)	ROB (n=3409)	WAE (n=3409)	WHB (n=12)	YEP (n=873)
0.00	0	0	0	0	0	0	0
0.20	0	0	0	0	1	1	0
0.25	0	0	0	0	1	0	0
0.33	0	0	0	0	4	0	0
0.50	0	0	0	0	12	0	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	27	0	0
1.17	0	0	0	0	7	0	0
1.20	0	0	0	0	6	0	0
1.25	0	0	0	0	15	0	0
1.33	0	0	0	0	8	0	0
1.50	0	0	0	0	39	0	0
1.67	0	0	0	0	20	0	0
1.80	0	0	0	0	9	0	0
2.00	0	0	0	0	68	4	0
2.33	0	0	0	0	42	0	0
2.40	0	0	0	0	24	0	0
2.50	0	0	0	0	65	0	0
2.60	0	0	0	0	13	0	0
2.67	0	0	0	0	64	0	0
2.75	0	0	0	0	11	0	0
3.00	0	0	0	0	216	0	0
3.20	0	0	0	0	16	0	0
3.33	0	0	0	0	30	0	0
3.50	0	0	0	0	77	0	0
3.67	0	0	0	0	33	0	0
4.00	0	0	0	0	1432	0	0

Winter 2014-2015

Count

Angler Harvest	BLC (n=0)	COC (n=0)	NOP (n=32)	ROB (n=3409)	WAE (n=3409)	WHB (n=12)	YEP (n=873)
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

Winter 2015-2016

Count

Angler Harvest	BLC (n=0)	COC (n=0)	NOP (n=32)	ROB (n=3409)	WAE (n=3409)	WHB (n=12)	YEP (n=873)
0.00	0	0	0	0	0	0	0
0.25	0	0	0	0	2	0	0
0.33	0	0	0	0	3	0	3
0.50	0	0	1	0	12	0	6
0.67	0	0	0	0	4	0	2
0.75	0	0	0	0	0	0	3
1.00	0	0	3	0	18	0	9
1.17	0	0	0	0	7	0	0
1.25	0	0	0	0	10	0	0
1.33	0	0	0	0	4	0	8
1.50	0	0	0	0	21	0	15
1.67	0	0	0	0	5	0	0
1.75	0	0	0	0	7	0	0
2.00	0	0	0	0	44	0	2
2.25	0	0	0	0	9	0	0
2.33	0	0	0	0	0	0	7
2.50	0	0	0	0	35	0	5
2.67	0	0	0	0	32	0	0
3.00	0	0	0	0	63	0	3
3.50	0	0	0	0	21	0	0
4.00	0	0	0	0	136	0	0
5.00	0	0	0	0	0	0	5
6.00	0	0	0	0	18	0	0
8.00	0	0	0	0	24	0	0
9.00	0	0	0	0	0	0	9
11.50	0	0	0	0	0	0	23

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 2015-2016 (n = 280)
Being with Friends/Slightly Dissatisfied <input type="checkbox"/>	8%
Catching Fish/Neutral <input type="checkbox"/>	13%
Harvesting Fish/Moderately satisfied <input type="checkbox"/>	18%
Other/Moderately Dissatisfied <input type="checkbox"/>	10%
Participating/Slightly Satisfied <input type="checkbox"/>	6%
Relaxation/Very Satisfied <input type="checkbox"/>	39%
Very Dissatisfied <input type="checkbox"/>	6%

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

Response	Summer 2016 (n = 374)
Being with Friends/Slightly Dissatisfied <input type="checkbox"/>	7%
Catching Fish/Neutral <input type="checkbox"/>	6%
Harvesting Fish/Moderately Satisfied <input type="checkbox"/>	21%
Moderately Dissatisfied <input type="checkbox"/>	2%
Participating/Slightly Satisfied <input type="checkbox"/>	13%
Relaxation/Very Satisfied <input type="checkbox"/>	48%
Very Dissatisfied <input type="checkbox"/>	3%

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

Response	Summer 2016 (n = 372)
Being with Friends/Slightly Dissatisfied <input type="checkbox"/>	19%
Catching Fish/Neutral <input type="checkbox"/>	28%
Harvesting Fish/Moderately Satisfied <input type="checkbox"/>	5%
Moderately Dissatisfied <input type="checkbox"/>	8%
Participating/Slightly Satisfied <input type="checkbox"/>	13%
Relaxation/Very Satisfied <input type="checkbox"/>	27%