

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F-21-R-46

Name: Trail City Dam **County:** Corson
Legal Description: T18N-R27W-Sec.35-36 **GPS:** 45°28'55.26"N 100°44'31.03"W
Location from nearest town: ½ mile west, ¾ mile north of Trail City

Date of present survey: May 28-30, 2013 (netting)
Date of last survey: June 20-22, 2011 (netting)
Most recent lake management plan: F-21-R-43 (January 1, 2011 to December 31, 2015)
Management classification: Warmwater Semi-Permanent

Primary Game Species	Secondary and Other Species
Northern Pike	Black Crappie
Yellow Perch	Black Bullhead
	Largemouth Bass

PHYSICAL DATA

Surface Area: 80 acres **Watershed:** 4,480 acres
Maximum Depth: 16 feet **Mean Depth:** 5 feet
Lake elevation at time of survey (field observations): 4-5 feet low
Contour map: No **Date:** NA

Ownership of lake and adjacent lakeshore properties:

Trail City Dam is an 80-acre impoundment located on the upper end of Snake Creek just northwest of Trail City in southeastern Corson County. Trail City is the common and accepted name; however there is conflicting information on the date and origin of the lake. The South Dakota Place Names, Part II, Lake Names, mentions that the lake was named after the town of Trail City and constructed by the Works Progress Administration (WPA) in around 1935, but other sources list the dam as being built by the railroad in about 1920. Ownership of the lake is 100% private. The South Dakota Department of Game, Fish and Parks applied for water rights on August 16, 1960 and were granted water rights to 234 acre-feet annually for public recreation. Fisheries management at Trail City Dam is completed by the South Dakota Department of Game, Fish and Parks.

Watershed condition with percentages of land use types:

The watershed for Trail City Dam is 4,480 acres or approximately 7 square miles. Land use in the watershed is 80% pasture, hay and grassland with the remaining 20% made up of cultivated agricultural land. The immediate shoreline is bordered by native grasses and is often overgrazed. Siltation from the watershed is evident in the upper portions of the lake.

Fishing access:

There is a boat ramp on the southeast corner of the lake providing access for a boat. There is also a little shore fishing opportunity around the ramp area and dam grade.

Condition of all structures (i.e. spillway, boat ramps, level regulators, etc.):

The boat ramp, spillway, and dam grade are all in fair to good condition. No other structures are found at Trail City Dam.

Field observations of aquatic vegetation condition:

Emergent vegetation consists of scattered groups of rushes and cattails in different locations around the lake. Submergent vegetation consists of several pondweed species. Dense mats are starting to form and are found in several locations around the lake.

CHEMICAL DATA**Field observations of water quality and pollution problems:**

No pollution problems were evident during this survey. Water clarity is good with a secchi disc reading of 6.5 feet. Other water quality characteristics were measured in the field on May 28, 2013, using a HACH water quality kit and a Hanna multiparameter meter. Results are found in Table 1.

Presence of a thermocline and depth from surface: No

Station for water chemistry located on attached map: Yes

Table 1. Water chemistry results from Trail City Dam, Corson County, May 28, 2013.

Station	Depth (ft)	Temp (F)	DO (ppm)	CO2 (ppm)	ALK (mg/L)	HRD (mg/L)	pH	Cond. (µS/cm)	TDS (ppm)	Sal.	ORP	Secchi (ft)
A	Surface	63.6	5.00	75.2	239	404	8.08	1391	696	0.71	--	6.5
A	12.6	64.0	2.70	75.6	291	391	7.79	1200	706	0.71	--	

BIOLOGICAL DATA**Methods:**

Trail City Dam was sampled on May 28-30, 2013, with ten overnight trap net sets. The trap nets have 3ft x 5ft frames, 60ft leads, and ¾ in. knotted mesh. Two experimental gill nets were also set. The gill nets are 150ft x 6ft with 25ft panels of ½, ¾, 1, 1-¼, 1-½, and 2 inch monofilament mesh. No electrofishing were used during this survey period. Fish indices and statistics were completed using Winfin.

Results and Discussion:

Trap Net Catch

Table 2. Total catch of ten, overnight ¾-inch frame nets at Trail City Dam, Corson County, May 28-30, 2013.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Northern Pike	54	100	5.4	± 1.7	3.1	72	0	73

* Five year mean (1997, 1999, 2002, 2009, 2011)

Gill Net Catch

Table 3. Total catch of two, 150ft experimental gill nets at Trail City Dam, Corson County, May 28-30, 2013.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Northern Pike	31	93.9	15.5	± 4.6	5.1	73	0	78
Yellow Perch	2	6.1	1.0	± 3.1	10.5	--	--	108

* Five year mean (1997, 1999, 2002, 2009, 2011)

Fish Population

Northern pike are by far the dominant species present in Trail City Dam. The gill net CPUE of 15.5 is up from the 15.5 from the 2011 survey (Table 5) as well as the five year mean of 5.1 (Table 3). The trap net CPUE of 5.4 is also above the 2.9 from the 2011 survey (Table 5) and the 3.1 five year mean. Condition is fair with a mean Wr of 76. Figures 1 and 2 illustrate the length frequency histograms for the last two surveys. They show that the size structure has increased. This can also be seen with the PSD of 72 and an RSD-P of 0 compared to the 7 and 0, respectively, from the 2011 survey. Another year or two and Trail City Dam should contain some big northern pike. Another species will need to be added to provide a food source to keep growth rates up.

Yellow perch numbers in Trail City Dam have taken a dive. No fish were sampled in the trap nets and only 2 were sampled in the gill nets. The CPUE was 4.5 for gill nets from the 2011 survey (Table 5). Hopefully this population will take off to provide a food source for the northern pike as well as a good panfish species for anglers. There may be too high of a density northern pike population already to let this perch population reach desired levels.

No other species were sampled this survey period. Black bullhead, black crappie, largemouth bass, channel catfish and bluegill were the species not sampled this survey that had been in surveys past (Table 5).

Figure 1. Length frequency histogram for northern pike sampled from Trail City Dam, Corson County, 2013.

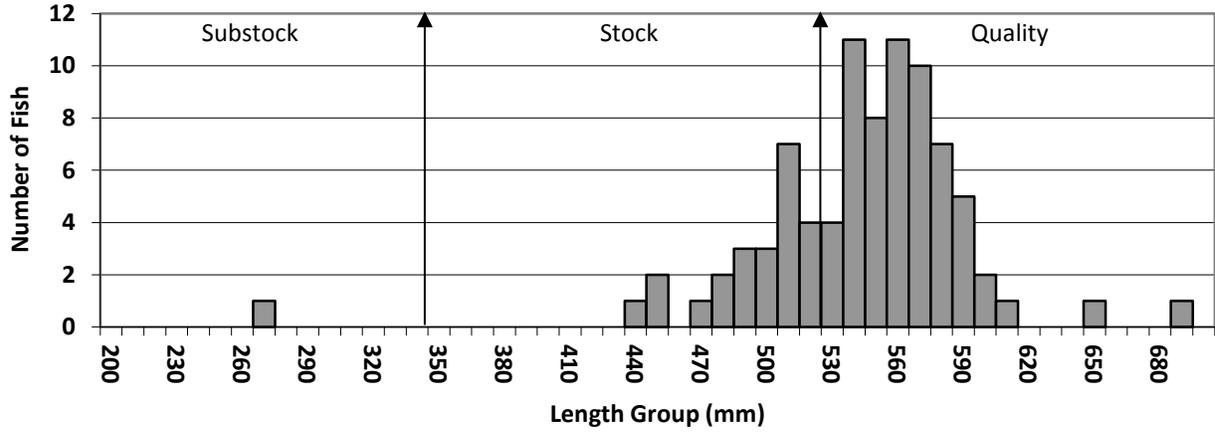
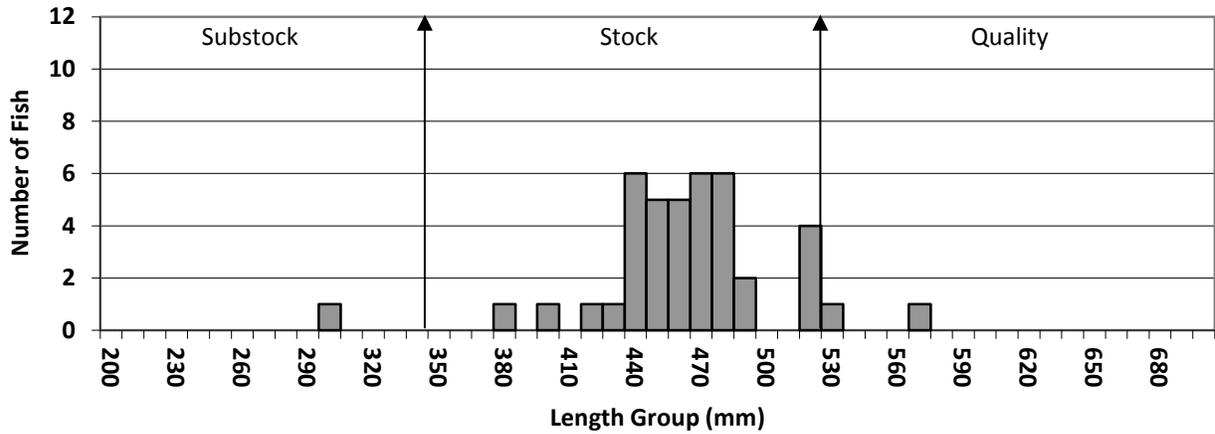


Figure 2. Length frequency histogram for northern pike sampled from Trail City Dam, Corson County, 2011.



RECOMMENDATIONS

1. Resurvey in 2016 to monitor the fish populations.
2. Continue to stock yellow perch to build the population so that management goals can be obtained.

Table 4. Stocking records from the winterkill in 1996/97 to the present for Trail City Dam, Corson County.

Year	Number	Species	Size
1997	213	Black Crappie	Adult
1997	8,000	Largemouth Bass	Fingerling
1997	97	Northern Pike	Adult
1997	40,000	Northern Pike	Fry
1997	1,600	Yellow Perch	Adult
2001	40	Black Crappie	Adult
2001	9,450	Largemouth Bass	Fingerling
2002	8,000	Largemouth Bass	Fingerling
2002	254	Black Crappie	Adult
2008	23	Northern Pike	Adult
2009	200	Yellow Perch	Adult
2012	400	Yellow Perch	Adult

Table 5. Gill net (GN), trap net (TN), and electrofishing (EF) CPUE for all fish species sampled from Trail City Dam.

Species	1982	1989	1993	1994	1997	1999	2002	2009	2011	2013
BLB (GN)	--	--	79.0	101.0	4.0	25.0	96.0	--	--	--
BLB (TN)	--	20.3	468.0	371.4	154.0	170.7	105.3	--	--	--
BLC (GN)	2.0	--	--	--	1.0	--	--	--	--	--
BLC (TN)	2.0	3.4	0.3	2.3	0.5	0.1	7.4	--	--	--
YEP (EF)	--	--	--	--	--	34.6	--	--	--	--
YEP (GN)	--	--	12.0	14.0	21.0	21.0	6.0	--	4.5	1.0
YEP (TN)	0.1	3.0	0.3	1.0	4.3	0.4	4.2	0.2	--	--
LMB (EF)	--	--	--	--	--	2.3	--	--	--	--
LMB (GN)	--	--	--	--	--	--	--	--	--	--
LMB (TN)	--	--	--	--	--	--	--	--	--	--
NOP (GN)	1.0	--	1.0	13.0	2.0	13.0	4.5	--	6.0	15.5
NOP (TN)	0.8	3.4	0.3	2.3	3.0	3.9	4.9	0.9	2.9	5.4
CCF (GN)	--	--	--	--	--	--	--	--	--	--
CCF (TN)	0.1	--	--	--	--	--	--	--	--	--
BLG (GN)	--	--	--	--	--	--	--	--	--	--
BLG (TN)	--	0.6	--	--	--	--	0.1	--	--	--

BLB – Black bullhead, BLC – Black crappie, YEP – Yellow perch, LMB – Largemouth bass, NOP – Northern pike, CCF – Channel catfish, BLG – Bluegill