SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F-21-R-39

Name: Alkali North Dam **County(ies):** Stanley
Legal Description: T109N-R78W-Sec. 28 & 29 **GPS(UTM):** 14 402110 E 4896503 N
Location from nearest town: 9 S, 5-1/2 E, ½ N, ½ E of Ft Pierre, South Dakota

Date of present survey: June 22-24, 2009 (netting)
Date of last survey: None known
Most recent lake management plan: None done
Management classification: Unknown

Primary Game Species	Secondary and Other Species
Yellow Perch	
Largemouth Bass	

PHYSICAL DATA

Alkali North Dam is located in Stanley County, South Dakota. The surrounding land and the dam grade are owned and managed by the United States Department of Agriculture, Forest Service and is part of the Fort Pierre National Grasslands. Alkali North Dam is a 1.8 hectare (4.5 acre) pond that had maximum depth at the time of survey in 2009 of about 3.7 m (12 feet). Water levels appeared to be near or slightly below normal and levels seemed to be 0.2 m (8 inches) lower than the outflow structure.

Heavy use of the pond by cattle has disturbed the shoreline and uprooted vegetation. Limited emergent vegetation was found at time of survey, but in the upper end bulrush was found. Alkali North Dam contained several species of submergent vegetation at the time of survey including: white water crowfoot, sago pondweed, clasping leaf pondweed, and long leafed pondweed. There is very limited boat access and would be limited to a canoe or small duck boat that can be loaded and unloaded by hand. Good ice fishing opportunities do exist. No contour map or depth contour as ever been done.

CHEMICAL DATA

Dissolved oxygen and temperature readings were taken at the surface and various depths throughout the water column and are listed in Table 1. No established thermocline was found. The dissolved oxygen levels were adequate to support fish. A secci disk depth reading of 102 cm (40 inches) provided good water clarity within the pond.

Table 1. Dissolved oxygen and water temperature recordings from Alkali North Dam, Stanley County, at 9:15 AM during June 22, 2009.

Depth (m)	Temp (C)	Oxygen (ppm)
Subsurface	22.9	5.76
1.8	21.4	5.70
2.7	17.3	7.70
3.4	15.9	6.50

BIOLOGICAL DATA

Methods:

Alkali North Dam was sampled on June 22-24, 2009, with eight overnight trap net sets, 4 each day. The frame nets have 0.9 m x 1.5 m frames, 18 m leads, and 1.9 cm knotted mesh. No experimental gill nets set or electrofishing done during this survey season. Fish indices and statistics were completed using WinFin. No age structures were collected due to the limited number of fish collected and no age analysis was conducted.

Results and Discussion:

Trap Net Catch

Table 2. Total catch of eight, overnight 1.9 cm frame nets at Alkali North Dam, Stanley County, June 22-24, 2009.

Species	N	%	CPUE	SE	Mean CPUE*	PSD	RSD-P	Mean Wr
Largemouth bass	3	18	0.7	0.3	--	0	0	--
Yellow perch	14	82	1.8	0.9	--	33	17	89

* First year of recorded survey

Largemouth Bass

Largemouth bass were collected during the frame net survey but were very limited, only three were collected for a CPUE of 0.7 fish/net-night (Table 2). With water clarity good, largemouth bass did not net well during the survey. Additional largemouth bass were visually seen during the survey as well. To properly sample the largemouth bass population, electrofishing is the best option, but would be difficult to do due to boat access issues. During 2009, 115 juvenile largemouth bass were stocked into Alkali North Dam.

Yellow Perch

Yellow perch were collected and seen at a low density within Alkali North Dam with a CPUE of 1.8 fish/net-night (Table 2). The size quality was fair and shown with a PSD of 33 and RSD-P of 17 (Table 2) and illustrated by Figure 1.

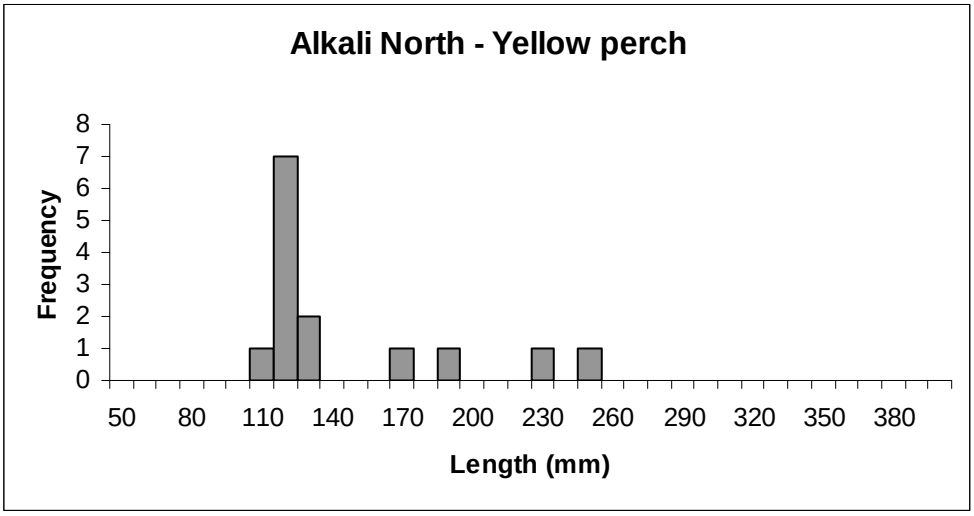

Figure 1. Length frequency histogram for yellow perch sampled from Alkali North Dam, Stanley County, 2009.

Table 3. Fish stocking and removal record for Alkali North Dam, Stanley County, South Dakota.

Year	Number	Species	Size	Direction
2009	115	Largemouth Bass	Juvenile	Stocked

RECOMMENDATIONS

1. Resurvey, when time allows, to further monitor the fish populations and to continually collect trend data on the pond.

2. Resurvey the pond with by electrofishing to adequately sample the largemouth bass population within the pond.

3. Provide a refuge area from cattle grazing, fencing a portion of the pond, to allow natural vegetation (shoreline and aquatic) to begin to grow. This would improve fish and wildlife habitat within and around the pond.