

## SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F21-R-46

**Name:** Bandit Pond

**County:** Meade

**Legal description:** Sec. 7, T 2N, R 9E

**Location from nearest town:** Inside Ellsworth Airforce Base.

**Dates of present survey:** June 18 & September 18, 2013

**Date last surveyed:** June 5-6, 2010.

**Management classification:** Warm-water permanent

Primary Species: (game and forage)

1. Redear Sunfish
2. Bluegill
3. Largemouth Bass

Secondary and other species:

1. Sunfish Hybrids
2. Green Sunfish
3. Black Crappie

### PHYSICAL CHARACTERISTICS

**Surface Area:** 2.8 acres

**Watershed:** NA

**Maximum depth:** NA

**Mean depth:** NA

**Lake elevation at survey (from known benchmark):** full

#### **Ownership of lake and adjacent lakeshore property:**

The dam structure and surrounding property lies within Ellsworth Airforce Base and is owned by the United States Airforce.

#### **Fishing Access**

Bandit Pond is located within the Ellsworth Airforce Base. There are paved roads going directly to or near the pond. Shoreline angling is possible around much of the pond. However, submergent vegetation may become an issue for shore anglers during the later summer months.

#### **Observations of Water Quality and Aquatic Vegetation**

Bandit Pond had submergent vegetation along the shorelines at the time of the survey. There was also emergent vegetation (mostly cattails) around a portion of the pond. No apparent water quality issues were observed at the time of the survey.

#### **Observations on conditions of structures (i.e. spillway, boat ramps and docks, roads, etc)**

No structural issues were observed at the time of the survey. Renovations of the dam and outlet structure were done in 2004 and 2005. Bandit was also dredged during the renovations.

### MANAGEMENT OBJECTIVES

**Objective 1.** To provide a unique fishery of Redear Sunfish.

**Objective 2.** Manage Bandit Pond as a panfish/Largemouth Bass fishery.

**Objective 3.** Maintain a Largemouth Bass population capable of controlling panfish populations.

## BIOLOGICAL DATA

### Sampling Effort and Catch

#### *Trap Net Survey*

A trap net survey consisting of two trap nets set overnight and then reset over a second night was used to evaluate the fish populations in Bandit Pond on June 18-20, 2013 (Figure 1). Trap nets were modified fyke nets consisting of a 1.3 X 1.5 m frame, 19.1 mm (0.75 in) mesh and a 1.2 X 23 m (3.9 X 75.5 ft) lead. During the trap net survey a total of 1,249 fish were collected (Table 1). These included Redear Sunfish, Bluegill, Green Sunfish, Black Crappie, and various combinations of sunfish hybrids (Table 1). The catch-per-unit-effort (CPUE) was highest for Bluegill followed by Green Sunfish at 186.3 and 93.5, respectively.

#### *Night Electrofishing Survey*

Nighttime boat electrofishing was conducted on September 18, 2013 to sample the Largemouth Bass population. Electrofishing was done using a boat mounted Smith-Root unit with pulsed-DC. Sampling consisted of three electrofishing stations, totaling 328 seconds. No other fish were targeted during this part of the survey so all further discussion is included with the Largemouth Bass section of this report.

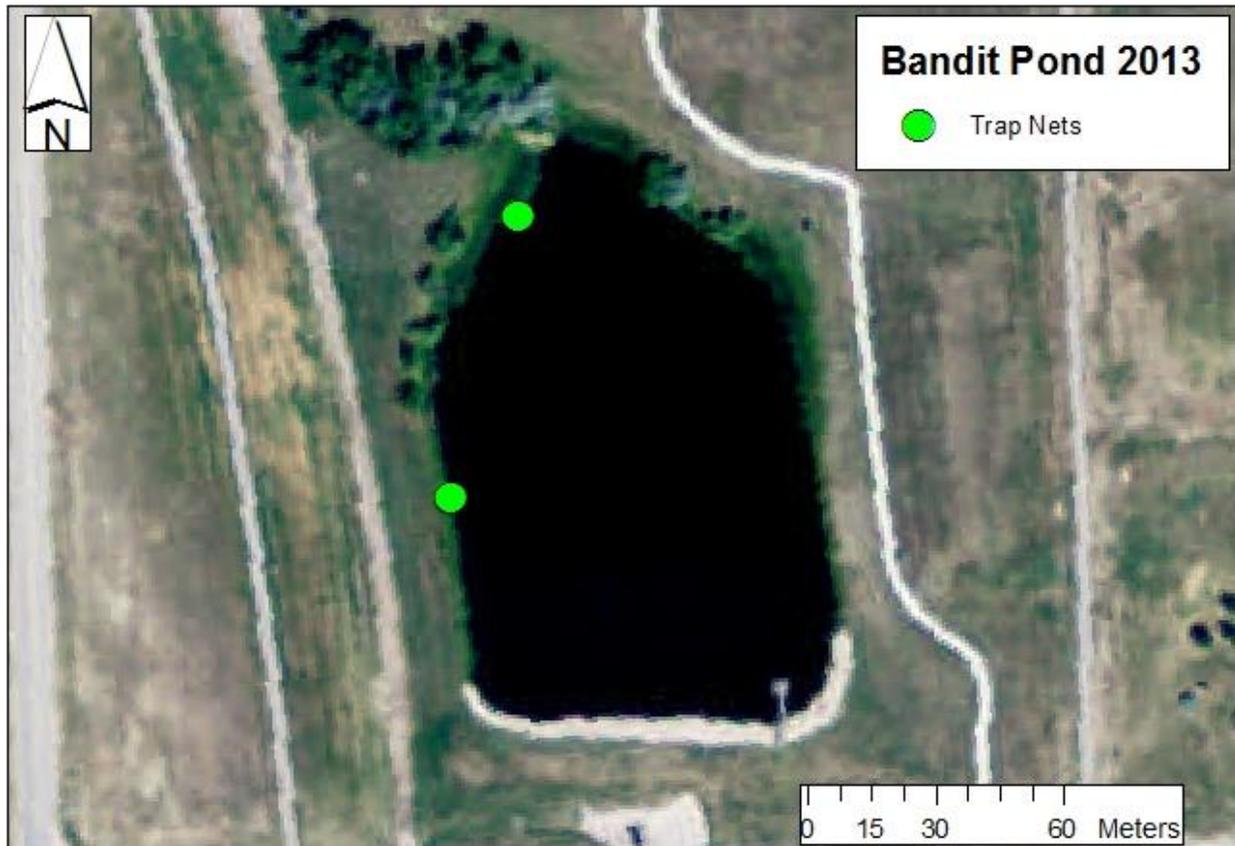


Figure 1. Map of Bandit Pond and trap net locations in 2013.

Table 1. Catch data from all species collected in two trap nets set over two nights in Bandit Pond, Meade County, June 18, 2013. CPUE's with 80% confidence intervals in parentheses. PSD, PSD-P and  $Wr$  with 95% confidence intervals in parentheses.

Species	N	CPUE (80%)	CPUE-S (80%)	PSD (95%)	PSD-P (95%)	$Wr \geq S$ (95%)
Redear Sunfish	57	14.3 (14.4)	12.3 (15.2)	27 (12)	8 (8)	102.2 (0.6)
Bluegill	745	186.3 (99.8)	184.5 (98.2)	5 (2)	2 (1)	89.7 (4.1)
Sunfish Hybrid	72	18.0 (8.8)	--	--	--	--
Green Sunfish	374	93.5 (64.3)	93.5 (64.3)	55 (5)	1 (1)	115.9 (3.7)
Black Crappie	1	0.3 (0.4)	0.3 (0.4)	100	100	--

Historically, Bandit Pond was managed as a put-and-take Rainbow Trout fishery. After renovation of the pond in 2004-2005, catchable Rainbow Trout were stocked until 2007 when management changed focus towards a bass/panfish fishery. Redear Sunfish and Bluegill were transferred into the pond from nearby Gateway Pond in 2007 and adult Largemouth Bass were stocked in Fall 2013.

### Redear Sunfish

Redear Sunfish are now established in Bandit Pond with the total survey catch increasing from 20 in 2010 to 57 in 2013 with CPUE's of 10.0 and 14.3, respectively (Table 2). The majority of fish collected in 2010 were over quality length (180 mm or 7 in) while most collected during the 2013 survey were slightly under quality length (Figures 2 and 3). The size structure of the Redear Sunfish population decreased from 2010 to 2013 shown by proportional stock density (PSD) values of 95 in 2010 and 27 during 2013 (Table 2). The Redear Sunfish continue to exhibit excellent condition with a mean relative weight for fish greater than or equal to stock length ( $Wr \geq S$ ) of 108 in 2010 and 102 in 2013. The Redear Sunfish that were aged ranged from age-4 through age-7 with the majority of the fish being age-5 (Table 3). There is a large year class of age-5 Redear Sunfish that range from 150 mm to 200 mm (Figure 3). Few young fish were collected during the survey.

Table 2. Composite listing of catch data for Redear Sunfish collected from trap nets in Bandit Pond, Meade County, in 2010 and 2013. CPUE's, PSD, PSD-P and  $Wr$  are listed with confidence intervals in parentheses.

Year	N	CPUE (80%)	CPUE-S (80%)	PSD (95%)	PSD-P (95%)	$Wr \geq S$ (95%)
2010	20	10.0 (24.6)	10 (24.6)	95 (5)	5 (10)	108.0 (2.4)
2013	57	14.3 (14.4)	12.3 (15.2)	27 (12)	8 (8)	102.2 (0.6)

Table 3. Estimated age, minimum, maximum, and mean lengths (mm) at capture for Redear Sunfish determined from scales from the 2013 trap net survey.

Age	N	Min. Length @ Capture	Mean Length @ Capture	Max. Length @ Capture
4	4	120	132	143
5	36	157	174	192
6	3	225	233	240
7	2	232	235	237

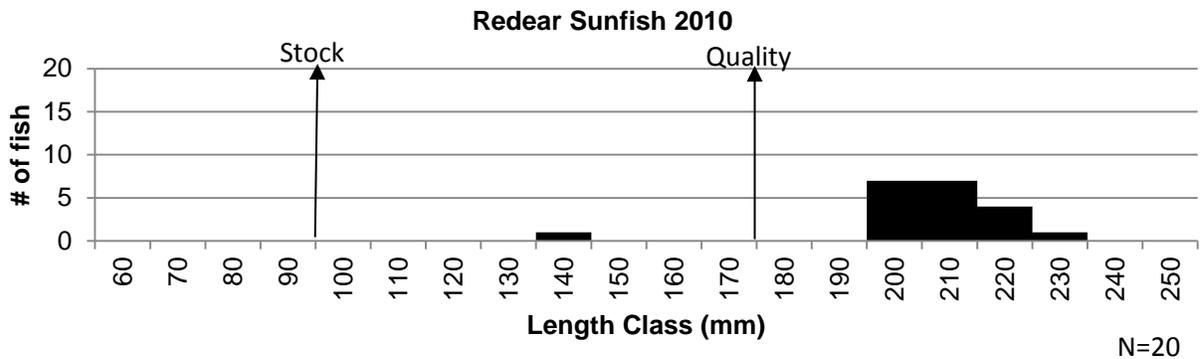


Figure 2. Length frequency histogram for Redear Sunfish collected at Bandit Pond in trap nets in 2010.

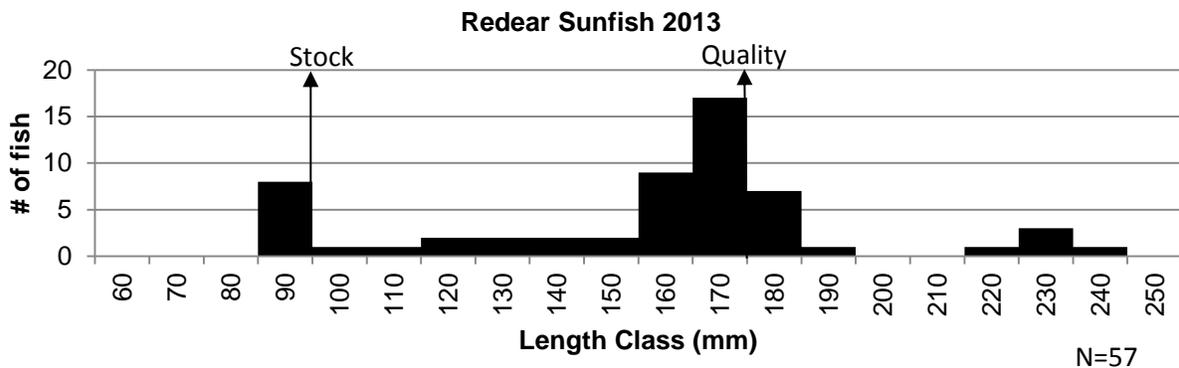


Figure 3. Length frequency histogram for Redear Sunfish collected at Bandit Pond in trap nets in 2013.

### Bluegill

Bluegills were found at a very high density during the 2013 survey of Bandit Pond with a total sample of 745 and a mean CPUE of 186.3. Most of the Bluegills sampled were between 80 and 130 mm (3 and 5 in) in length with a few over 200 mm (8 in) and some reaching 250 mm (10 in) (Figure 4). Size structure was rather poor with values of PSD and PSD-P at 5 and 2, respectively (Table 1). Condition was just below average with mean *Wr* for Bluegill over stock length at 89.7 (Table 1).

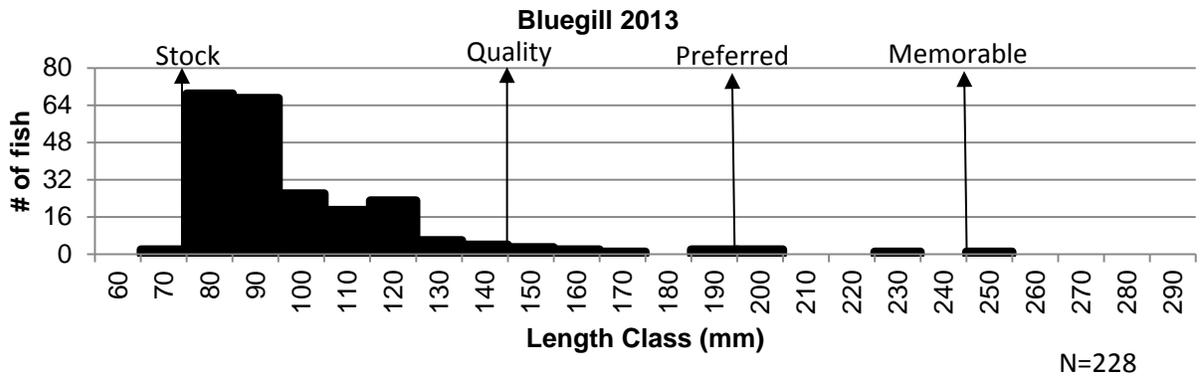


Figure 4. Length frequency histogram for Bluegill collected at Bandit Pond in trap nets in 2013.

Green Sunfish

Green Sunfish were the second most abundant species collected in the trap net survey with 374 fish collected (Table 1). Green Sunfish ranged from 80 mm (stock length; 3 in) to just over 200 mm (preferred length; 8 in) (Figure 5) with a PSD and PSD-P of 55 and 1, respectively (Table 1). They exhibited the highest condition for adult fish ( $Wr_{\geq S} = 115.7$ ) of all of the sunfish species (Table 1).

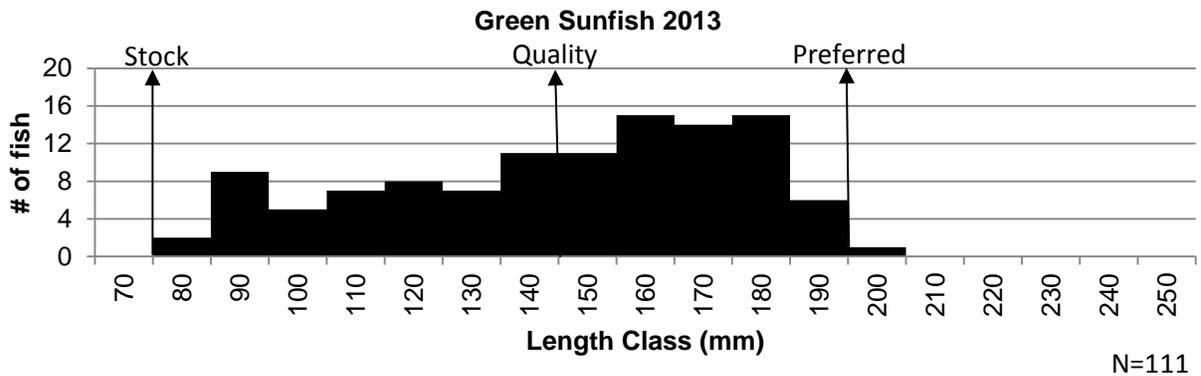


Figure 5. Length frequency histogram for Green Sunfish collected at Bandit Pond in trap nets in 2013.

Sunfish Hybrids

There were varying forms of sunfish hybrids collected during the trap net survey. Most of the fish appeared to be Bluegill X Green Sunfish or Bluegill X Redear Sunfish. However, South Dakota Game, Fish, and Parks (SDGF&P) personnel were not certain of the hybrid combinations, and they were therefore lumped into one category. The total number of sunfish hybrids collected was 72 with a mean CPUE of 18 (Table 1).

Largemouth Bass

The electrofishing survey was conducted shortly after 103 marked (pelvic fin clip) adult Largemouth Bass were stocked into the pond in an effort to estimate the population using the mark-recapture Petersen single census population estimate. During the survey 19 Largemouth

Bass were collected of which 18 were clipped, resulting in a population estimate of 108 (Table 4). Given that 103 adult Largemouth Bass were stocked there was an estimated 5 Largemouth Bass in the pond prior to the stocking. The mean CPUE and CPUE-S (per hour) for Largemouth Bass collected by electrofishing was 223.1 (90.2/hr) (Table 4). Almost the entire sample was the stocked fish which are likely age-2 Largemouth Bass collected from the Grand River National Grasslands. The fish condition was good with a mean  $Wr_{\geq S}$  of 98.8 (1.9) (Table 4).

Table 4. Composite listing of catch data for Largemouth Bass collected by night electrofishing in Bandit Pond, Meade County, on September 18, 2013. CPUE's, PSD, PSD-P,  $Wr$  and population estimate have confidence intervals in parentheses.

N	CPUE (80%)	CPUE-S (80%)	PSD (95%)	PSD-P (95%)	$Wr_{\geq S}$ (95%)	Pop. Est. (80%)
19	223.1 (90.2)	223.1 (90.2)	5 (9)	5 (9)	98.8 (1.9)	108 (102-115)

### MANAGEMENT RECOMMENDATIONS

1. Conduct an electrofishing survey within the next couple of years to evaluate if the Largemouth Bass population has established since the last stocking.
2. Conduct a standard population check on the panfish every five years or as needed for management decisions.
3. Stock more adult Largemouth Bass if their density continues to be low and the panfish density continues to be high.
4. Find another pond void of other panfish species to establish as a source for Redear Sunfish

### APPENDIX

Appendix A. Bandit Pond fish stocking record from 2001 to 2013.

Year	Species	Size	# Stocked
2001	Rainbow Trout	Catchable	100
2001	Rainbow Trout	Catchable	100
2001	Rainbow Trout	Catchable	100
2002	Rainbow Trout	Catchable	250
2002	Rainbow Trout	Catchable	200
2003	Rainbow Trout	Catchable	200
2005	Rainbow Trout	Catchable	500
2006	Rainbow Trout	Catchable	700
2007	Bluegill	Adult	35
2007	Redear Sunfish	Adult	108
2013	Largemouth Bass	Adult	103