

# SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F21-R-46

**Name:** Heritage Pond

**County:** Meade

**Legal description:** Sec 7, T 2N, R9E

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

**Dates of present survey:** June 17-18, 2013

**Date last surveyed:** Heritage Pond has not been surveyed before.

**Management classification:** Warmwater permanent

Primary Species: (game and forage)

1. Redear Sunfish
2. Rainbow Trout
3. Bluegill

Secondary and other species:

1. Sunfish hybrids
2. Green Sunfish
3. \_\_\_\_\_

## PHYSICAL CHARACTERISTICS

**Surface Area:** 3 acres

**Watershed:** NA acres

**Maximum depth:** NA feet

**Mean depth:** NA feet

**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 (EAFB) and is owned by the United States Airforce.

### Fishing Access

Heritage Pond is located within the Ellsworth Airforce Base. Therefore, limited use of the ponds is allowed to the general public. There are paved roads going directly to or near the pond. Shoreline angling is possible along the dam and in small area along the north end of the pond. Most of the pond is surrounded by dense stands of emergent vegetation (mostly cattails). There is a fishing pier near the southeast corner of Heritage.

### Observations of Water Quality and Aquatic Vegetation

Heritage Pond has dense stands of both emergent and submergent vegetation around much of the pond during the summer months. There were no obvious water quality issues identified by South Dakota Game, Fish, and Parks (SDGF&P) at the time of the survey. However, water quality parameters (e.g. dissolved oxygen) were not measured.

### 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 completed in 2006 and 2007. Heritage was also dredged during the renovations as well.

## MANAGEMENT OBJECTIVES

- Objective 1.** Provide the airforce personnel and the visiting public with recreational fishing opportunities in the form of a trout fishing pond.
- Objective 2.** Decrease the overabundant panfish population through stocking of Smallmouth Bass and/or Largemouth Bass.
- Objective 3.** Annually supplement the fishery with Rainbow Trout stockings.

## BIOLOGICAL DATA

### Sampling Effort and Catch

A fisheries survey was conducted on Heritage on June 17 and 18, 2013. The survey was conducted using three trap nets set overnight (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. A total of 4 species and various sunfish hybrids were collected.

The species found during the 2013 survey include Bluegill (N=1,234), Redear Sunfish (N=12), Rainbow Trout (N=4), Green Sunfish (N=6), and sunfish hybrids (N=11) (Table 1). The only fish species South Dakota Game, Fish, and Parks (SDGF&P) personnel have stocked in Heritage is Rainbow Trout. The other species likely either moved in during renovations of the ponds or were transferred by anglers from other ponds on the airforce base. Only total length measurements were taken during this survey. Wind conditions and the large numbers of fish made it too difficult to get accurate weight data.



Figure 1. Map of net locations on Heritage Pond in 2013.

Table 1. Total catch (N), catch per net night (CPUE), catch per net night of stock-length fish (CPUE-S; 80% CI in parentheses), and proportional stock-densities (PSD, PSD; 95% CI's in parentheses) for all fish species from three trap nets in Heritage Pond, June 17-18, 2013.

Species	N	CPUE	CPUE-S	PSD	PSD-P
Redear Sunfish	12	4 (3.3)	4 (3.3)	42 (32)	17 (24)
Bluegill	1,234	411.3 (297.4)	411.3 (297.4)	1 (1)	0
Sunfish Hybrid	11	3.7 (3.5)	--	--	--
Green Sunfish	6	2 (1.9)	2 (1.9)	17 (43)	0
Rainbow Trout	4	1.3 (1.3)	1.3 (1.3)	0	0

### Bluegill

Bluegills were the most abundant fish collected during the survey, comprising 97.4% of the sample. There was a large portion of the Bluegills between stock (80 mm; 3 in) and quality (150 mm; 6 in) length (Figure 2). Most of the Bluegills were under quality length with a proportional stock density (PSD) value of 1 (Table 1). Catch-per-unit-effort (CPUE) for Bluegills in Heritage was high at 411.3 (Table 1).

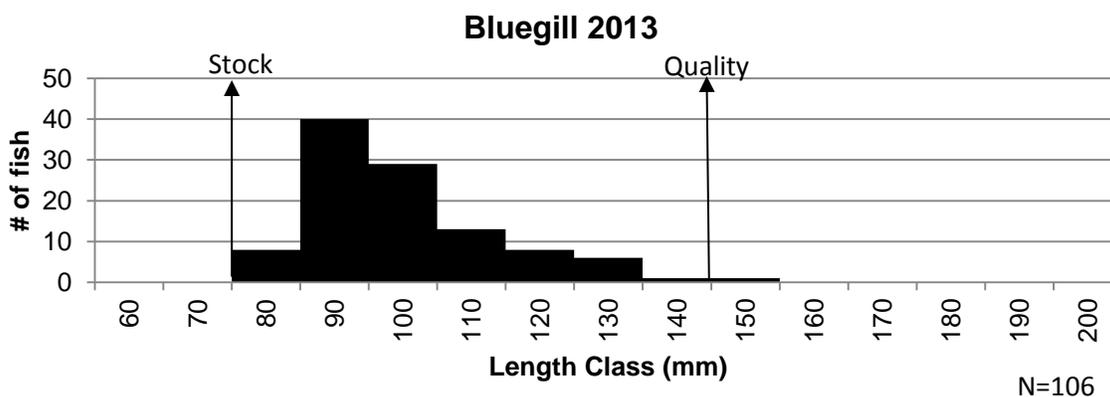


Figure 2. Length frequency histogram for Bluegills surveyed by trap nets in Heritage in 2013.

### Redear Sunfish

Redear Sunfish were originally stocked in Gateway and Bandit Ponds which are also ponds found in the EAFB. All of the ponds are on the same watershed, and the sunfishes likely moved in during renovations to the ponds and dam structures in 2006 and 2007. Redear Sunfish are in Heritage at a relatively low density with a CPUE of 4 (Table 1). All of the Redear Sunfish collected during the survey were over stock length and nearly half of those fish were over quality length with a PSD of 42 (Table 1). There was also Redear Sunfish over preferred length with proportional stock density of preferred length (PSD-P) fish of 17.

### Rainbow Trout

Rainbow Trout are stocked into Heritage multiple times annually. During the survey four Rainbow Trout were collected (Table 1). The Rainbow Trout ranged from 265 mm (10.4 in) to 364 mm (14.3 in) in length.

### Green Sunfish

Green Sunfish were collected during the survey. A total of six Green Sunfish were sampled during the survey (Table 1). They were found at a low density with a CPUE of 2 (Table 1). There were some Green Sunfish over quality length with a PSD of 17 (Table 1).

### Sunfish Hybrids

Various sunfish hybrids were also collected during the survey. A total of 11 hybrid sunfish were measured with a CPUE 3.7 (Table 1). They appeared to be various combinations of Bluegill, Green Sunfish, and Redear Sunfish.

## **MANAGEMENT RECOMMENDATIONS**

1. Continue to supplement the fishery with catchable Rainbow Trout.
2. Stock Smallmouth Bass and or Largemouth Bass in an effort to reduce the Bluegill density.
3. Continue to monitor Heritage as needed to evaluate the fishery and stocking success.

## **APPENDIX**

### Appendix A. Fish stocking record for Heritage Pond, Meade County, 2010-Present.

<u>Year</u>	<u>Species</u>	<u>Size</u>	<u># Stocked</u>
2010	Rainbow trout	Catchable (15 in)	25
2010	Rainbow trout	Catchable	500
2010	Rainbow trout	Catchable	500
2010	Rainbow trout	Catchable	500
2010	Rainbow trout	Catchable (15 in)	25
2012	Rainbow trout	Catchable (15 in)	25
2012	Rainbow trout	Catchable	300
2012	Rainbow trout	Catchable	300
2012	Rainbow trout	Catchable	300
2013	Rainbow trout	Catchable (15 in)	25
2013	Rainbow trout	Catchable	300
2013	Rainbow trout	Catchable	300