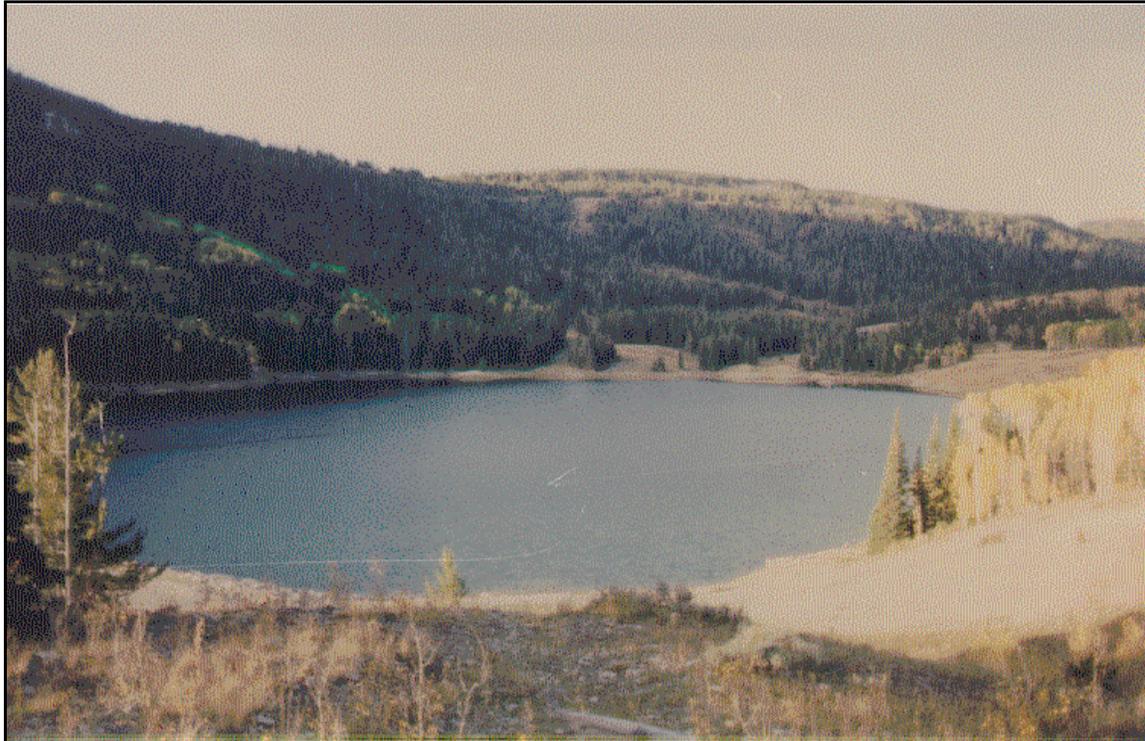


DUCK FORK RESERVOIR



Introduction

Duck Fork Reservoir is an intermediate-sized artificial lake owned by the DWR. It is located in a meadow near the head of a glacial valley in Ferron Canyon, high on the east side of the Wasatch Plateau. It is used as habitat for Bonneville Cutthroat Trout, an endangered species that

has been transplanted from the Deep Creek Mountains. It receives little recreational use but is noteworthy for its scenic beauty. The reservoir was created in 1953 by the

Characteristics and Morphometry	
Lake elevation (meters / feet)	2,837 / 9,305
Surface area (hectares / acres)	19.1 / 46.9
Watershed area (hectares / acres)	773 / 1,910
Volume (m ³ / acre-feet)	
capacity	907,000 / 734.6
conservation pool	907,000 / 734.6
Annual inflow (m ³ / acre-feet)	not measured
Retention time (years)	unknown
Drawdown (m ³ / acre-feet)	0 / 0
Depth (meters / feet)	
maximum	10.7 / 35
mean	5.3 / 17.5
Length (meters / feet)	680 / 2,250
Width (meters / feet)	430 / 1,400
Shoreline (km / miles)	2.0 / 1.3

Location	
County	Sanpete
Longitude / Latitude	111 26 57 / 39 10 11
USGS Map	Ferron Reservoir 1966
DeLorme's Atlas and Gazetteer™	Page 38, B-1
Cataloging Unit	San Rafael (14060009)

construction of an earth-fill dam. It was purchased in 1977 by DWR to provide recreational fishing. The shoreline is owned by the Manti-La Sal National Forest with unrestricted public access. Water is used for recreation and coldwater aquatic habitat, but is not stored for irrigation. (Water that flows through the lake is later used for irrigation). no changes in water use are anticipated.

Recreation

Duck Fork Reservoir is accessible on a dirt road from

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Ferron Reservoir. Ferron Reservoir is on the road between Ferron and Mayfield. This road is improved gravel and crosses some of the most rugged terrain on the Wasatch Plateau.

From Ferron, travel east past Millsite Reservoir, and continue on the gravel road as it ascends Ferron Canyon, enters a narrow side canyon and climbs to a high bench area. Ferron Reservoir is 25 miles west of Ferron City. From Mayfield, travel up the canyon, crossing the plateau on Skyline Drive at 10,500', and descend into Ferron Canyon. Ferron Reservoir is 23 miles east of Mayfield. The Ferron Canyon route is likely to be the better maintained road.

From Ferron Reservoir, turn north, below the dam, and follow this road for 5 miles as it goes northeast and then west to Duck Fork Reservoir.

The area around the reservoir receives light recreational usage. Fishing and camping are the primary activities available at Duck Fork Reservoir.

Recreational facilities at the reservoir are limited and primitive. Primitive camping is permitted in the area, and there are latrines at the reservoir. Small boats can be launched from the dam.

Cottage rental and USFS camping are available at Ferron Reservoir.

Watershed Description

The watershed lies in the Manti-La Sal National Forest. The area consists of land extending down from various peaks around the reservoir. It lies on the eastward slope. The land is wooded and very mountainous.

The watershed high point is 3324 meters (10,904 ft.) above sea level, thereby developing a complex slope of 15.1% to the reservoir. The average stream gradient above the reservoir is 9.9% (523 ft. per mile).

Landforms composing the watershed are high plateaus, a valley, and steep escarpments is between. Soil is derived entirely from limestone formations. The soil associations that compose the watershed are found in appendix III.

The vegetation communities are comprised of pine, aspen, spruce-fir, oak and maple. The watershed receives 64 - 76 cm (25 - 30 inches) of precipitation annually with a frost-free season of 20 - 60 days at the reservoir.

Land use in the reservoir is 100% multiple use forest lands, used by humans for hunting, recreation and livestock grazing.

Limnological Assessment

The water quality of Duck Fork Reservoir is excellent. It is considered to be hard with a hardness concentration value of approximately 242 mg/L (CaCO₃). Data obtained in 1992 indicates that no parameters exceeded State

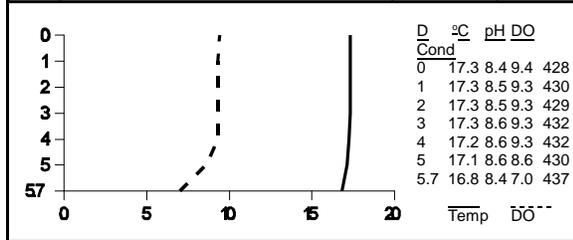
water quality standards for defined beneficial uses. The average concentration of total phosphorus in the water column in 1992 was 11.2 ug/L which is well under the recommended pollution indicator for phosphorus of 25 ug/L. The 1989-91 data suggest that the reservoir is currently a nitrogen limited system despite the fact that nutrient levels are relatively low. A review of the August, 1992 profile indicates that no conditions exist that would impair the defined beneficial uses of the reservoir. The dissolved oxygen concentration is over 9 mg/L for the majority of the water column and only drops to a low of 7 at the bottom. The reservoir was not stratified during a late summer monitoring trip on August 20, 1992. As mentioned earlier the reservoir is managed by DWR to maintain a population of endangered cutthroat trout (*Oncorhynchus clarki utah*). In addition rainbow trout (*Oncorhynchus mykiss*) can be found in the reservoir.

Limnological Data	
Data sampled from STORET site: 593186	
Surface Data	<u>1992</u>
Trophic Status	O
Chlorophyll TSI	38.77
Secchi Depth TSI	38.81
Phosphorous TSI	41.68
Average TSI	39.75
Chlorophyll <i>a</i> (ug/L)	2.3
Transparency (m)	4.35
Total Phosphorous (ug/L)	14
pH	8.5
Total Susp. Solids (mg/L)	1.5
Total Volatile Solids (mg/L)	1
Total Residual Solids (mg/L)	<3
Temperature (°C / °f)	15/59
Conductivity (umhos.cm)	433
Water Column Data	
Ammonia (mg/L)	0.03
Nitrate/Nitrite (mg/L)	0.05
Hardness (mg/L)	242
Alkalinity (mg/L)	206
Silica (mg/L)	5.1
Total Phosphorus (ug/L)	11
Miscellaneous Data	
DO (Mg/l) at 75% depth	9.1
Stratification (m)	NO
Limiting Nutrient	N
Depth at Deepest Site (m)	5.7

Transparency readings (secchi depth) were at the bottom of the reservoir in August, so the water is clearer than the data indicates.

LAKE REPORTS

The lake has not been treated for rough fish competition, so native fishes may still be present.



Phytoplankton in the euphotic zone include the following taxa (in order of dominance).

Species	Cell Volume (mm ³ /liter)	% Density By Volume
<i>Sphaerocystis schroeteri</i>	34.333	97.95
<i>Gloeocystis sp.</i>	0.334	0.95
Pennate diatoms	0.156	0.44
<i>Cosmarium sp.</i>	0.078	0.22
<i>Dinobryon divergens</i>	0.061	0.17
Centric diatoms	0.053	0.15
<i>Ankistrodesmus falcatus</i>	0.017	0.05
<i>Oocystis sp.</i>	0.013	0.04
<i>Wislouchiella planktonica</i>	0.000	0.00
Total	35.052	
Shannon-Weaver [H']	0.13	
Species Evenness	0.06	
Species Richness [d]	0.33	

Duck Fork reservoir is a fairly low productive system. The algal community is dominated by green algae indicative of high water quality and low production.

Information	
Management Agencies	
Manti-La Sal National Forest	637-2817
Ferron Ranger District	384-2372
Six County Commissioners Organization	896-9222
Division of Wildlife Resources	538-4700
Division of Water Quality	538-6146
Recreation	
Skyhaven Resort (at Ferron Reservoir)	
Castle Dale Chamber of Commerce	381-2547
Panoramaland Travel Region (Richfield)	896-9222
Reservoir Administrators	
Division of Wildlife Resources	538-4700

Pollution Assessment

Nonpoint pollution sources include grazing by domestic livestock and recreation. About 1,000 sheep

graze in the immediate vicinity of the reservoir for two weeks each year. Cattle also graze the area. No mining or logging takes place in the region.

There are no point pollution sources in the watershed.

Beneficial Use Classification

The state beneficial use classification for the waters of Cleveland Reservoir include: boating and similar recreation (excluding swimming) (2B), cold water game fish and organisms in their food chain (3A) and agricultural uses (4).