

EAST PARK RESERVOIR



Introduction

East Park Reservoir is an intermediate-sized reservoir on the south slope of the eastern High Uintas. It is one of the more accessible reservoirs in the High Uintas, being about 8 miles from US-191 by paved forest road. It has a small, natural watershed and provides opportunities for summer recreation. East Park Reservoir

was created in 1919 by the construction of an earth-fill dam. The reservoir shoreline is owned by the Ashley National Forest, and public access is unrestricted. Reservoir water is used primarily for irrigation, with 50% of the reservoir's volume drained off before mid-summer for agricultural purposes, while the remainder is retained as

Characteristics and Morphometry

Lake elevation (meters / feet)	2,749 / 9,017
Surface area (hectares / acres)	53.44 / 132
Watershed area (hectares / acres)	2,042 / 5,046
Volume (m ³ / acre-feet)	
capacity	4,660,000 / 3,774
conservation pool	1,603,550 / 1,300
Annual inflow (m ³ / acre-feet)	not measured
Retention time (years)	not measured
Drawdown (m ³ / acre-feet)	not measured
Depth (meters / feet)	
maximum	6.71 / 22
mean	5.79 / 19
Length (km / miles)	1.83 / 1.14
Width (km / miles)	.488 / .3
Shoreline (km / miles)	4.76 / 2.95

Location

County	Uinta
Longitude / Latitude	109 32 53 / 40 47 12
USGS Map	East Park Reservoir, 1963
DeLorme's Utah Atlas & Gazetteer™	Page 56, B-3
Cataloging Unit	(14060002)

a conservation pool. Water use is not expected to change in the foreseeable future. Stored water flows down Little Brush Creek, becomes subterranean just above US-191, and later emerges as springs in the Big Brush Creek drainage.

Recreation

East Park Reservoir is about thirty miles north of

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Vernal, easily accessible from US-191. At milepost 220.7 on US-191 (about 22 miles north of Vernal and 15 miles south of the Flaming Gorge Jct (US-191 and U-44)) turn west on FS-018, a paved road, signed to East Park and Red Cloud Loop. Follow this road for about 7 miles, to a fork in the road, and take the right fork for the final mile to the reservoir.

Fishing, boating, swimming, camping, picnicking, and hiking are all popular. While there are no boat ramps, it is generally possible to get a boat on the reservoir.

Recreational facilities at the reservoir include East Park Campground, a USFS facility, which has recently been rebuilt with flush toilets, picnic areas, and campsites. It is said to be "a real nice campground" by Lew Vincent, one of the brothers that owns water rights to the reservoir.



Watershed Description

East Park Reservoir is located in the High Uintas. The watershed consists entirely of alpine meadows, coniferous forests and alpine tundra. Slopes surrounding the reservoir are not particularly steep (<20%). The reservoir is an impoundment of a meadow. In recent years much of the watershed has been turned into crop land for timber, with routine clear-cutting and replanting. Erosion from these operations does not currently appear to have impacted the reservoir.

The watershed high point, an unnamed peak two miles northwest of the reservoir, is 3,060 m (10,039 ft) above sea level, thereby developing a complex slope of 9.6% to the reservoir. The average stream gradient of Little Brush Creek is 3.9% (208 feet per mile). The inflow and outflow is Little Brush Creek. There are also two unnamed tributaries flowing into the reservoir.

The watershed is made up of high mountains and mountains meadows. The soil associations that compose the watershed are listed in Appendix III.

The vegetation communities consist of spruce-fir and aspen. The watershed receives 64 - 76 cm (25 - 30 inches) of precipitation annually. The frost-free season around the reservoir is 20 - 40 days per year.

Land use in the watershed is 100% multiple use, with grazing and logging being the primary uses. Much of the watershed has been clear-cut, but there are no active or proposed timber sales in the area.

Limnological Assessment

The water quality of East Park Reservoir is very good. It is considered to be very soft a hardness concentration range from 12-15 mg/L (CaCO₃). Currently no parameters that have been sampled have exceeded State water quality standards for defined beneficial. The average concentration of total phosphorus in the water column in 1981 and 1991 was 20 and 19 ug/L which is under the recommended pollution indicator for phosphorus of 25 ug/L. In 1991 the reservoir was characterized as a nitrogen limited system. Although TSI values indicate the reservoir is mesotrophic, it does not appear that there

Limnological Data

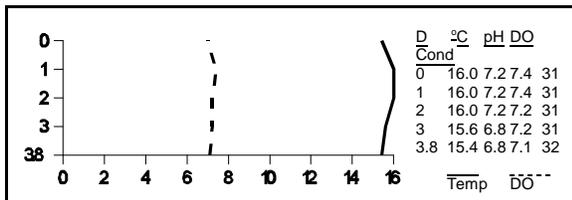
Data sampled from STORET site: 593775

Surface Data	<u>1981</u>	<u>1991</u>
Trophic Status	M	M
Chlorophyll TSI	-	45.99
Secchi Depth TSI	50.01	52.07
Phosphorous TSI	46.61	46.98
Average TSI	48.31	48.35
Chlorophyll <i>a</i> (ug/L)	-	4.8
Transparency (m)	2.0	1.83
Total Phosphorous (mg/L)	20	20
pH	6.6	7.5
Total Susp. Solids (mg/L)	-	8.5
Total Volatile Solids (mg/L)	-	8
Total Residual Solids (mg/L)	-	6
Temperature (°C / °f)	13/55	15/59
Conductivity (umhos.cm)	24	30
Water Column Data		
Ammonia (mg/L)	0.05	0.03
Nitrate/Nitrite (mg/L)	0.18	0.01
Hardness (mg/L)	15	12
Alkalinity (mg/L)	8	11
Silica (mg/L)	-	2.8
Total Phosphorous (ug/L)	20	19
Miscellaneous Data		
DO (Mg/l) at 75% depth	6.8	7.2
Stratification (m)	NO	NO
Limiting Nutrient	N	N
Depth at Deepest Site (m)	8.1	3.8

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has been a significant rise in the concentrations of nutrients in the lake since it was originally surveyed in 1981. In fact the concentration may have declined specifically the nitrogen sp.. The reservoir has not stratified during the summer. This may be due to the limited depth of the lake. A review of the 1981 and September 9, 1991 profiles indicates that there is no thermocline present and that there is sufficient dissolved oxygen throughout the water column and water temperatures do support the criteria for a cold water fishery. It should be noted that in a review of profile data obtained in 1969 that dissolved oxygen depletion was a problem both in February and in August. Although there appear to be no problems association with dissolved oxygen it would be appropriate to determine oxygen concentrations during the winter period to determine if they approach or reach a critical level for fish survival. According to DWR there have been no reported fish kills in the reservoir.

The DWR stocks the reservoir annually with 4,000 catchable Rainbow Trout and 7,000 fingerling Brook Trout. The reservoir has not been chemically treated by the DWR, so populations of native fishes may be present in the lake.



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

Sp.	Cell Volume (mm ³ /liter)	%Density By Volume
<i>Botryococcus braunii</i>	20.016	78.31
<i>Sphaerocystis Schroeteri</i>	5.282	20.66
<i>Gomphosphaeria lacustris</i>	0.222	0.87
Pennate diatoms	0.023	0.09
<i>Oocystis sp.</i>	0.017	0.07
Total	25.560	
Shannon-Weaver [H']	0.57	
Species Evenness	0.35	
Species Richness [d]	0.17	

As observed the phytoplankton community is dominated by green algae indicative of good water quality with low to moderate production.

Pollution Assessment

Nonpoint pollution sources include the following: Sedimentation and nutrient loading from grazing. Litter, human waste and chemicals from recreation. Sedimentation and increased runoff from logging.

Information	
Management Agencies	
Uinta Basin Association of Governments	722-4518
Division of Wildlife Resources	538-4700
Division of Water Quality	538-6146
Ashley National Forest	789-1181
Vernal Ranger District	789-1181
Recreation	
Dinosaurland Travel Region (Vernal)	789-6932
Vernal Chamber of Commerce	789-1352
Reservoir Administrators	
Division of Wildlife Resources	538-4700

Grazing takes place throughout the watershed and in the vicinity of the reservoir.

Much of the watershed has been clearcut in fairly recent history, and logging is expected to continue in perpetuity. There are no apparent impacts to reservoir water quality, although long-term changes in vegetation, from a climax community to a community of young trees, may occur.

There are no point sources of pollution in the watershed.

Beneficial Use Classification

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