

Warm Springs Reservoir

Harney County

Malheur River Basin

Location								
Area	4,195 acres (1,697.7 hec	t)	Elevation	3,406 ft (1,038.1 m)				
Туре	reservoir	Use	irrigation, recreation					
Location	14 miles southw est of Juntura							
Access	southw est on gravel road from US Hw y 20 at Juntura							
USGS Quad	Warm Springs Reservoir (24K), Stinking Water Mountains (100K)							
Coordinates	43° 35' 10" N, 118° 12' 17	" W						
USPLSS	tow nship 23S, range 37E, section 08							

Warm Springs Reservoir is a large irrigation impoundment in the semi—arid region of southeastern Oregon. It was formed by the construction of Warm springs Dam, a 106—foot high concrete arch dam, on the Middle Fork of the Malheur River just above its junction with the mainstem Malheur River. The dam was built by the Warm Springs Irrigation District and storage began in 1919. In 1926, one—half of the storage in the reservoir was purchased for use on the Bureau of Reclamation's Vale Project, which furnishes irrigation water to about 35,000 acres of land near the town of Vale. The project also includes Agency Valley Dam and Beulah Reservoir, Bully Creek Dam and Reservoir, Harper Diversion Dam, The Vale Main Canal, and a distribution and drainage system.

The reservoir lies against steep hills on the eastern side of a broad valley which, prior to reservoir construction, was irrigated by ditches from the Malheur River. It receives drainage from an area of about 1100 square miles, a mountainous region of folded and faulted volcanic and sedimentary rocks. Most of the semi—arid landscape is used for grazing, while the upper portion of the drainage basin is in the Malheur National Forest. Lower reaches are mostly lands administered by the Bureau of Land Management. There are no recreational facilities at the reservoir, and road access is difficult. Therefore, its potential as a recreation site is unrealized. Primary use is for fishing, and it is managed for both rainbow trout and for warm—water game fish. It is also reported to be one of the few havens for channel catfish in the state. Migrating waterfowl also use the reservoir.

Warm Springs Reservoir is about 4500 acres in surface area when full, but because it is used for irrigation it generally is very low by late summer, with surface area reduced dramatically. Like most other reservoirs in southeast Oregon its water quality is influenced by inflowing water that contains high concentrations of major ions (conductivity 160 umho/cm), phosphorus (.069 mgP/1), and sediment. This reservoir, however, has a lower trophic state than others in the region due to its greater depth (average depth is 68 feet). In 1982 the reservoir was stratified as early as June 22, with the thermocline between 13 to 20 feet (4 to 6 meters). Even so, the reservoir is eutrophic. The abundant phytoplankton, in conjunction with high concentrations of suspended sediment, reduce the transparency to only 3 feet (1 meter). There are a few macrophytes found in shallow bays, but the greatly fluctuating water level and limited water transparency prevent extensive development of the macrophytes.



Source: U.S. Bureau of Reclamation, 1970. View looking north.

	Dra	ainage	Basin	Charac	teristio	s					
Area	1,10	0.0 sq m	ni (2,84	49.0 sq k	m) Relie	mode	erate	Preci	p 13-30	in (33-76 cm)
							culture				
Land		Fores	t F	Range	Wat	er	Irrig	Non	Irrig	Urban	Other
Use	%	28.8		61.2	0.	7	5.7	-		-	3.6
Not	es	Other - L	.ava fi	elds							
	Lake Morphometry					Maximum				Average	
Area	4,19	5.0 acre	s (1,6	97.7 hec	t)	Depth	1 40	ft (42.7 r	n) 6	8ft (20.7 M)	
Ave	/Max	Depth	Ratio	0.490	V	olume	285,2	260 acre f	ft (352.38	Bcuhm)	
Shoa	ıl are	a 8%		Volume	factor	1.46	5	Shape fa	ctor 4.	02	
Len	gth	of Shor	eline	34.5 mi	(55.5 kr	1)		Retenti	on tim e	2.2 yr	
Note	s										
	Wa	ater Qu	ality								
Troph	nic s	tatus e	eutroph	nic, suspe	ended s	ediment	and ab	undance	of phyto	plankton	
San	n ple	date (06/22/8	32	Te	mp	-	0	Diss. Oxy	/gen (mg/l)	-
Tran	spai	ency	3.3 ft ((1.0 m)	Ph	osp (n	n g/l) 0	.069 CI	holorop	hyl a (mg/l)	3.7

oumpic dut	• • • • • • •	-	remp		D100.	ex, gen	(
Transparenc	y 3.3 ft (1.0 m)	Phosp (mg	g/l) 0.069	Cholo	rophyl a	(m g/l)	3.7
Alkalinit	y 69	Conduct	ivity (umho	s/cm) 160			pН	8.1
Major N	Na	к	Ca	Mg	CI	SO4		
lons 1	3.7	3.2	12.9	6.1	2.7	11.4		
Notes -								



