

# Harney Lake

## Harney County

### Malheur Lake Basin

#### Location

<b>Area</b>	26,400 acres (10,684.1 hect)	<b>Elevation</b>	4,084 ft (1,244.8 m)
<b>Type</b>	natural lake, diked	<b>Use</b>	wildlife habitat
<b>Location</b>	20 miles south from Burns in Malheur National Wildlife Refuge		
<b>Access</b>	gravel and dirt road west from Ore Hwy 205		
<b>USGS Quad</b>	Northeast Harney Lake (24K), Harney Lake (100K)		
<b>Coordinates</b>	43° 13' 38" N, 119° 07' 22" W		
<b>USPLSS</b>	township 27S, range 30E, section 09		

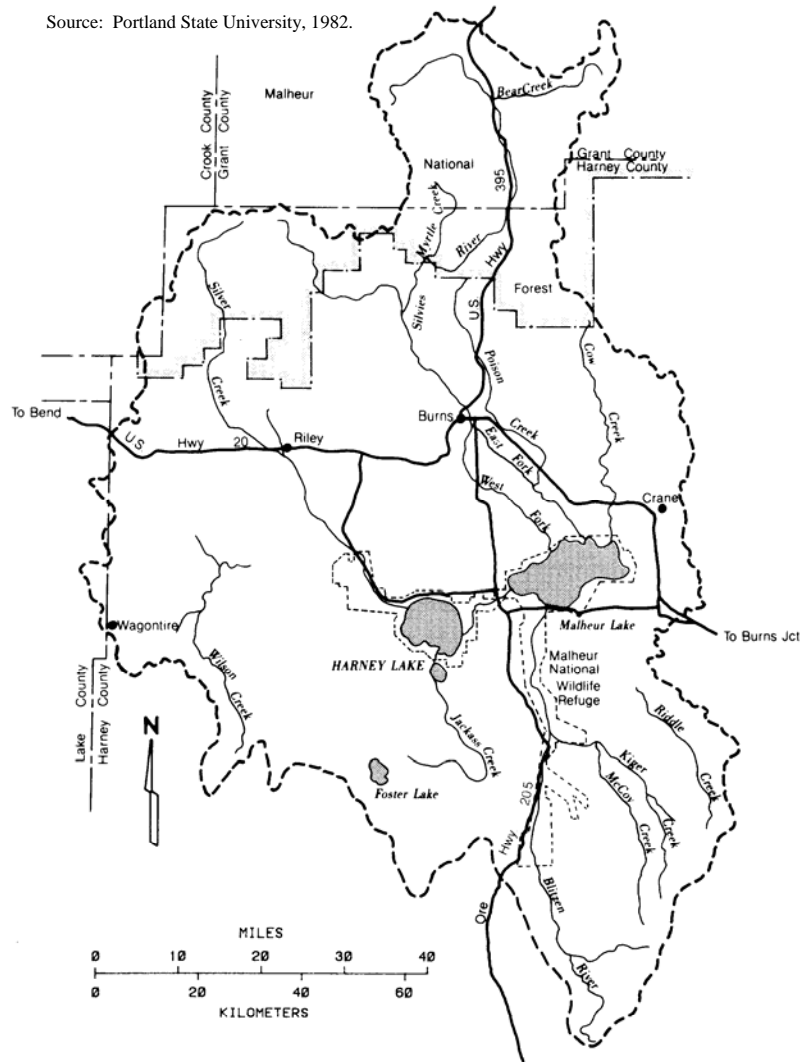
Harney Lake is the lowest point in the Malheur/Harney Lake Basin, a large naturally closed basin in southeast Oregon. Before being blocked by a geologically recent lava flow, the basin drained to the Pacific Ocean by way of the Malheur, Snake, and Columbia Rivers. Thus, it is different from most of the other closed basins of eastern Oregon in the sense that the interior drainage is due to obstruction by a lava flow rather than to the faulting typical of the Great Basin area. In very wet years the lake receives overflow from Malheur Lake to the east through a channel called The Narrows. The two lakes were first seen by non-native people on Peter Skene Ogden's third Snake River expedition in 1826, and the name Harney was bestowed in 1859 in honor of Brigadier-General W. S. Harney, then in charge of the Army Department of Oregon.

During most of historical time Harney Lake has, in fact, been dry. It last dried up in 1963 and the basin remained a salt flat until the early 1980s when a series of wet years brought the water to its highest level in modern history. Several adjacent cattle ranches as well as the main north-south highway (Oregon Highway 205) were flooded. Between climatic wet spells, the lake water is gradually evaporated, and because of the evaporation and the dissolution of salt deposited in the sediment from previous drying cycles, it is very salty when it does contain water. It becomes progressively brinier as it again dries up, eventually leaving a residue of salty mud sediment. In its present condition (1983) the lake is about one tenth as salty as sea water. Of the lakes included in this survey, only Lake Abert and Summer Lake are more saline.

During the sampling of 7/2/82, it was noted that suspended sediment and planktonic algae severely limited water transparency. The concentration of phosphorus was very high and considerably in excess of the amount necessary to stimulate the growth of planktonic algae. According to conventional criteria, Harney Lake is clearly very eutrophic. Its ecological character, however, is primarily a consequence of the high salinity and wet/dry cycles which result from its position as the lowest basin in an area of inland drainage, rather than a consequence of nutrient supply.



Source: Portland State University, 1982.



#### DRAINAGE BASIN

--- Basin Boundary

#### Drainage Basin Characteristics

<b>Area</b>	5,125.0 sq mi (13,273.8 sq km)		<b>Relief</b>	low	<b>Precip</b>	10-40 in (25-102 cm)	
<b>Land Use %</b>	<b>Forest</b>	<b>Range</b>	<b>Water</b>	<b>Agriculture</b>	<b>Irrig</b>	<b>Non Irrig</b>	<b>Urban</b>
	23.3	67.2	2.3	6.8	-	-	0.4
<b>Notes</b>	-						

#### Lake Morphometry

<b>Area</b>	26,400.0 acres (10,684.1 hect)		<b>Depth</b>	##	<b>Maximum</b>	##	<b>Average</b>	##
<b>Ave/Max Depth Ratio</b>	-		<b>Volume</b>	##	<b>Shape factor</b>	1.23		
<b>Shoal area</b>	100%		<b>Retention time</b>	indet.				
<b>Length of Shoreline</b>	28. mi (45.1 km)		<b>Notes</b> -					

#### Water Quality

<b>Trophic status</b>	eutrophic, very high salinity						
<b>Sample date</b>	07/02/82		<b>Temp</b>	-	<b>Diss. Oxygen (mg/l)</b>	-	
<b>Transparency</b>	0.7 ft (0.2 m)		<b>Phosp (mg/l)</b>	1.140	<b>Chlorophyll a (mg/l)</b>	5.2	
<b>Alkalinity</b>	1011		<b>Conductivity (umhos/cm)</b>	1275			
<b>Major Ions</b>	<b>Na</b>	<b>K</b>	<b>Ca</b>	<b>Mg</b>	<b>Cl</b>	<b>SO4</b>	<b>pH</b>
	1044.5	57.0	9.8	6.9	2205.3	173.0	9.5
<b>Notes</b>	-						