Camels Hump Dam
(46.9456 N, -103.8134 W)

Golden Valley County

- Camels Hump Dam is a small reservoir in western North Dakota (Figure 1). See map at [https://gf.nd.gov/gnf/maps/fishing/lakecontours/camelshump2004.pdf](https://gf.nd.gov/gnf/maps/fishing/lakecontours/camelshump2004.pdf)
- There is one paved, public boat ramp on the north side of Camels Hump Dam.
- The Camels Hump Dam watershed is about 3,900 acres of mostly grassland/pasture and agricultural land. The most common crops grown are spring wheat, durum wheat and non-alfalfa hay (Table 1).
- Camels Hump Dam is a Class I fishery, which are "capable of supporting growth of cold water fish species (e.g., salmonids) and associated aquatic biota."
- Camels Hump Dam is managed for bluegill, rainbow trout and brown trout, with catchables of the latter two stocked annually. Bluegill and largemouth bass were captured during the last ND Game and Fish sampling event.
- Camels Hump Dam was previously assessed in 2005-2006.

Temperature and Dissolved Oxygen

- Camels Hump Dam commonly stratifies in the summer, with warm, well-oxygenated water at the top of the water column, and cold, low-oxygen water near the bottom.
- There was thermal stratification recorded in May and July 2014. Temperature change in the water column was 4.65 degrees Celsius (°C), 12.34°C and 0.01°C in May, July and October, respectively.
- All samples showed most of the lake as well-oxygenated, but did have sharp decreases with thermal stratification.

Table 1. Percentage of land cover in the watershed and near the lake (NASS, 2013). Value listed of crop type represents percentage of total production.

<table>
<thead>
<tr>
<th>Land Cover Type</th>
<th>% in Watershed</th>
<th>% within 500 meters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grassland/Pasture</td>
<td>67.8%</td>
<td>65.8%</td>
</tr>
<tr>
<td>Agriculture</td>
<td>21.9%</td>
<td>9.9%</td>
</tr>
<tr>
<td>Other Hay/Non-Alfalfa</td>
<td>49.7%</td>
<td>65.3%</td>
</tr>
<tr>
<td>Spring Wheat</td>
<td>29.5%</td>
<td>NA</td>
</tr>
<tr>
<td>Durum Wheat</td>
<td>12.7%</td>
<td>NA</td>
</tr>
<tr>
<td>Developed</td>
<td>6.0%</td>
<td>19.4%</td>
</tr>
<tr>
<td>Shrubland</td>
<td>2.2%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Forest</td>
<td>1.1%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Open Water</td>
<td>0.9%</td>
<td>1.4%</td>
</tr>
<tr>
<td>Wetlands</td>
<td>0.3%</td>
<td>0.7%</td>
</tr>
</tbody>
</table>

Figure 1. Location of Camels Hump Dam within the state

Figure 2. 2014 profiles of temperature (left) and dissolved oxygen (right) in milligrams per liter (mg L⁻¹)
Trophic state is a measure used by scientists to assess the condition (where lower scores indicate better water quality) of a lake using three common measures: total phosphorus (TP), Secchi disk transparency and chlorophyll-α concentration.

Camels Hump Dam is a eutrophic lake (Figure 3) that has moderate nutrient concentrations and moderate algal growth.

Current trophic state has declined compared to historical indices.

There have been confirmed harmful algal (cyanobacteria) blooms at Camels Hump Dam, with the last bloom in 2018.

Nutrients

Median concentration of total nitrogen (TN) in 2014 was greater than the historical median and less than the median for the Missouri Plateau Level IV Ecoregion (hereafter, Missouri Plateau) where Camels Hump Dam is located (Figure 4).

Median concentration of dissolved TN was slightly less than TN.

Median TP concentration in 2014 was greater than the historical median but less than the median for the Missouri Plateau (Figure 4).

Median concentration of dissolved phosphorus was slightly less than TP.

Ammonia was detected twice at moderate concentrations in Camels Hump Dam in 2014, while there were no detections of nitrate plus nitrite.

Water Chemistry

Sulfate is the dominant anion in Camels Hump Dam, while sodium is the dominant cation (Figure 5).

Median concentrations of most cations and anions are similar to the historical median for the lake and similar to the median for the Missouri Plateau.