



LAKE RED ROCK DES MOINES RIVER



US Army Corps
of Engineers®
Rock Island District

RESERVOIR OPERATIONS — Lake Red Rock, built and maintained by the U.S. Army Corps of Engineers, Rock Island District, is operated as a multi-purpose reservoir. The primary purpose authorized by Congress (Public Law 75-761) is flood risk management for areas below the lake. Other purposes include low flow augmentation, fish and wildlife management, and recreation (PL 78-534, PL 94-587). Lake Red Rock maintains a permanent conservation pool to augment low flows during drought and implements a fall pool raise to accommodate migrating bird species. Recreation is an important and highly visible activity at Saylorville Lake. While access and facilities are provided for recreation, water is not controlled for this purpose.

Lake Red Rock is regulated to conform to a strict water control plan that is coordinated by the Corps of Engineers with local, state and federal agencies with water resources responsibilities. The water control plan includes regulation of releases during flood and drought periods. A summary of the water control plan for Lake Red Rock is shown on the back of this page.

Maximum season release rates were determined in coordination with downstream stakeholders. For the reach of the Des Moines River downstream of Lake Red Rock, the channel capacity varies from approximately 18,000 cfs, just downstream of the project, to more than 24,000 cfs with 3 feet of freeboard near Ottumwa and Keosauqua. During the non-growing season larger discharges can be tolerated without causing excessive damage.

STORAGE ALLOCATION — Storage within the reservoir is allocated as follows:

- Conservation Storage – 185,450 acre-ft (11.2% of total storage)
- Flood Risk Management Storage – 1,463,250 acre-ft (88.8% of total storage)

The storage below the permanent conservation pool elevation of 742 feet (NGVD) includes storage for low-flow augmentation (during periods of drought) as well as capacity to accommodate 100 years of anticipated sedimentation. As sedimentation continues, the Corps will periodically assess remaining storage capacity and the need for operational changes necessary to ensure the reservoir continues to meet its authorized purposes.

In the past, such operational changes have included raises in the conservation pool elevation. The most recent raise (to 742 feet) occurred in 1992 and represents the ultimate, 100-year conservation pool level. The decision to enact an immediate raise to 742 (in lieu of a series of step raises) was made in response to public comments and input from the State of Iowa.

Periodically, requests have been received to vacate conservation storage prior to spring snowmelt in order to increase the amount of flood risk management storage available in the reservoir. Implementation of such a drawdown would have the following impacts to other authorized project purposes, natural resources, and the public:

- loss of conservation storage for low-flow augmentation should we experience drought conditions
- need to maintain water supply storage would prevent a complete drawdown at Saylorville
- mortality of exposed mussels
- interruption of spring fish spawning
- potential for fish kills in areas that become isolated by the drawdown
- reduction in habitat for migratory birds
- potential bank instability
- current infrastructure not constructed for reduced lake levels leading to interruption in other uses of the reservoir (boating, fishing, other recreation). Reduction in regional economic activity related to these uses.
- impact to future hydropower operations at Red Rock

WATER CONTROL PLAN — The full Water Control Plan for Lake Red Rock can be viewed at:

<http://www.mvr.usace.army.mil/About/Offices/Programs-and-Project-Management/Des-Moines-River-Water-Control-Plan-Update/>

Lake Red Rock Flood Control Regulation Schedule

Conservation Pool Schedule

Date
December - Fall
Fall - December

Elevation (feet)
Hold 742
742 - 744

(Fall Pool Raise)

Normal Flood Control Operation: Pool elevation at or forecast between 742 and 775 feet

15 December - 30 April
 Stage at, above, or forecast to exceed:
 Ottumwa: 10.8 feet (or 30,000 cfs release)
 Keosauqua: 19.6 feet
 Mississippi River at Burlington: 18.5 feet
 Mississippi River at Quincy: 20.0 feet

 Maximum Release: 30,000 cfs
 Minimum Release: 5,000 cfs

1 May - 15 December
 If lake elevation is below 760 feet:
 Stage at, above, or forecast to exceed:
 Ottumwa: 7.5 feet (or 18,000 cfs release)
 Keosauqua: 17.6 feet

 If lake elevation is above 760 feet:
 Stage at, above, or forecast to exceed:
 Ottumwa: 8.7 feet (or 22,000 cfs release)
 Keosauqua: 18.4 feet

 Mississippi River at Burlington: 18.5 feet
 Mississippi River at Quincy: 20.0 feet

 Max Release if lake above 760 feet: 22,000 cfs
 Max Release if lake below 760 feet: 18,000 cfs
 Minimum Release: 5,000 cfs

**Large Magnitude Flood Operation:
 Pool elevation at, above, or forecast to
 exceed 775 feet:**

Any Date

Elevation (feet)	Release (cfs)
775	30,000
776	35,000
777	40,000
778	45,000
779	50,000
780	60,000
780.5	80,000
781	100,000
781.5	115,000
782	130,000
783	130,000
784	130,000
785	Open spillway gates as necessary to maintain lake elevation 785 until uncontrolled spillway and outlet conduit release prevails.