# U.S. Army Corps of Engineers

# Omaha District

# Monthly Drought Report


## July 2005

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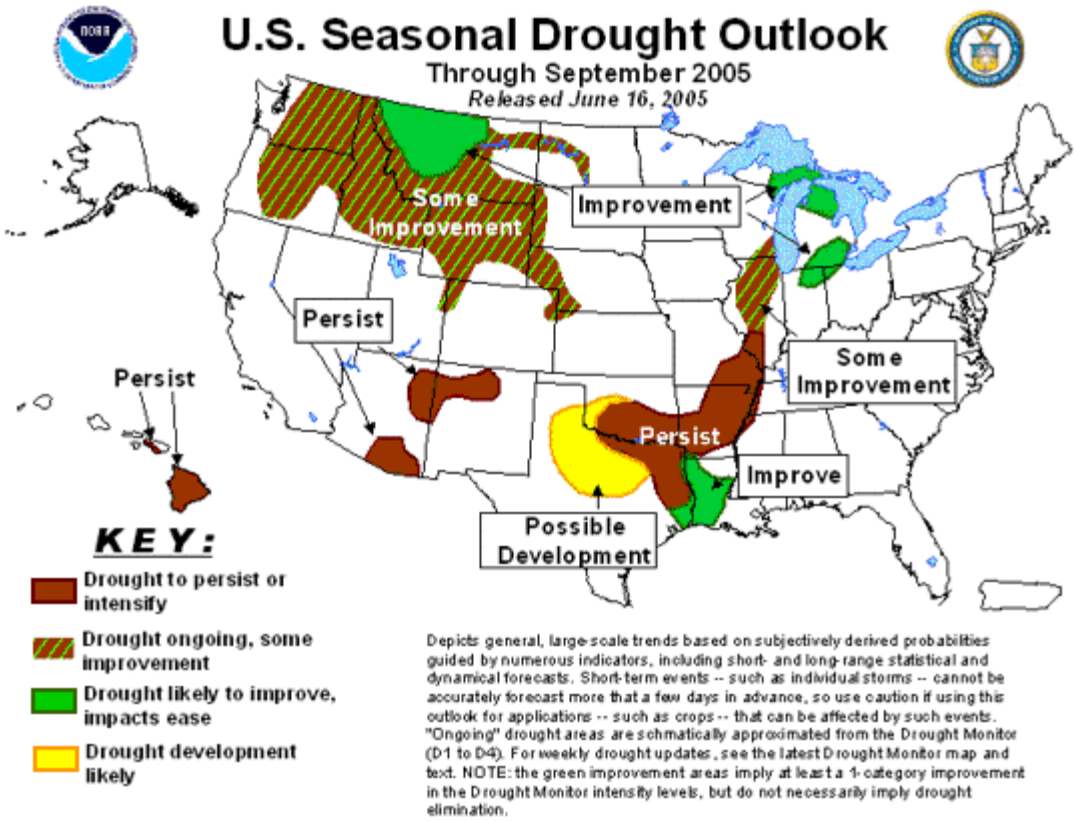
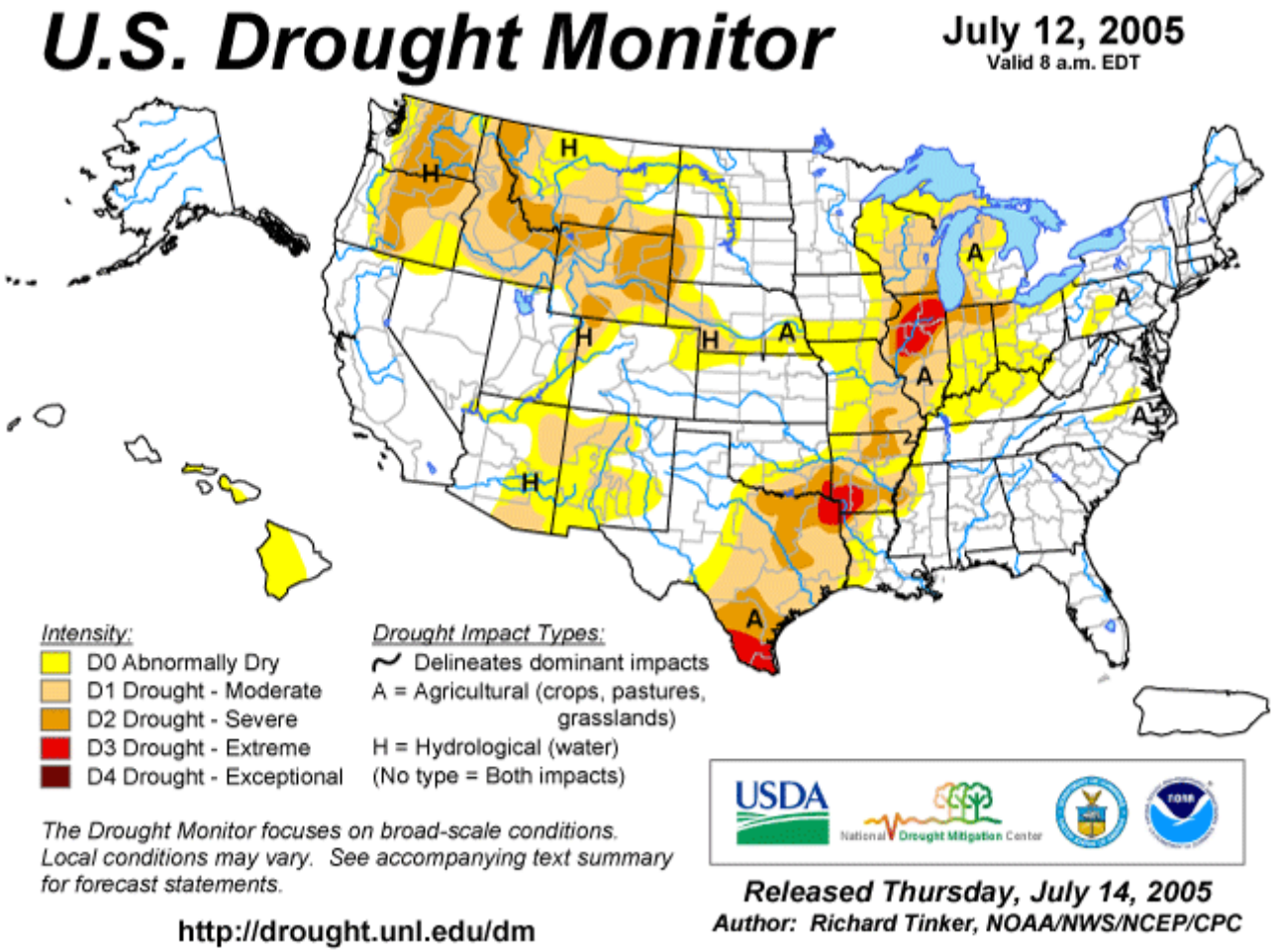



U.S. Seasonal Drought Outlook

**Latest Seasonal Assessment -** The Seasonal Drought Outlook was updated to reflect the heavy rains expected from the remains of Hurricane Dennis over Illinois, Missouri, and Arkansas. If the forecasts for the storm's path pan out, the rains could bring substantial improvement to the drought-afflicted region extending from central Illinois into Arkansas around July 11-13, with more limited relief farther north and west. It should be noted, however, that the location of the rains depends on the track of the storm, and accurately forecasting the tracks of hurricanes and their remains days ahead of time is very difficult. For the period extending into September, drought in interior Texas should largely remain intact, with a better chance for improvement in coastal areas. In the Southwest, summer monsoon rains are not expected to substantially affect lingering drought areas in Arizona and New Mexico. To the north, given this period is typically the driest time of the year, little headway in drought improvement is anticipated in the Pacific Northwest. In the northern Rockies, with the official July-September outlook calling for a slight tilt of the odds toward above-normal rainfall, some drought improvement is expected. In Hawaii, recent rains have ended drought, and re-development is not expected, although some dry areas persist. No large-scale development of new drought is foreseen during the forecast period.




US Drought Monitor, July 12, 2005

## National Drought Summary -- July 12, 2005

**The East:** Most of last week's D0A and D1A areas in the lower Northeast, mid-Atlantic, and central Appalachians received at least 1 inch of rain, primarily in association with the remnants of Tropical Storm Cindy. The largest amounts (4 to 6 inches) fell on a swath from west-central Virginia northeastward through northern Virginia, west-central Maryland, and southeast Pennsylvania.

These rains eradicated most of the region's former dryness, with a couple of exceptions. D0A persisted in part of western Pennsylvania, where precipitation was relatively light and many locations were still more than 4 inches below normal for the last 90 days. Farther south, relatively light precipitation (0.5 to 2.0 inches) and spotty 6-month precipitation deficits exceeding 4 inches led to D0A persistence in part of south-central Virginia and adjacent North Carolina.

**The Plains, Mississippi Valley, and Great Lakes Region:** Moderate to heavy rains from the remnants of Hurricane Dennis improved dryness and drought along and near the Mississippi River from about St. Louis, MO southward through eastern Arkansas and western Tennessee, with the largest amounts (3 to 5 inches) reported in a band from far southwestern Illinois southward through southeastern Missouri, northeastern Arkansas, and adjacent sections of western Kentucky and Tennessee. In addition, organized thunderstorm activity abetted weekly rainfall totals of 1 to locally 4 inches across west-central and north-central Texas, central Arkansas, portions of eastern Texas and Louisiana, and parts of southern Arkansas. Elsewhere, isolated to scattered rainfall totals of 1 to 2 inches were recorded in central Texas, southeastern Illinois, southern Indiana, central Kentucky, eastern Ohio, and far southeastern Michigan.

These rains led to several areas of improvement, with the most dramatic changes made in former D2A and D3A areas that received the heaviest rains from organized thunderstorm activity (central Arkansas) or from the remnants of Hurricane Dennis (southeastern Missouri and adjacent Arkansas). D3A conditions were eliminated in the latter region, replaced by D1A near the Mississippi River and D2A farther west. Farther south, D2A conditions in central Arkansas improved to D0A because of the week's heavy rainfall. Elsewhere, former D0A to D3A conditions improved by 1 category in north-central and southeastern most Texas, central and northeastern Louisiana, parts of south-central and southeastern Arkansas, southwestern Illinois, western sections of Kentucky and Tennessee, eastern Ohio, and parts of northwestern Mississippi. However, despite the wet week, 90-day rainfall totals remained at least an inch below normal through all of regions still assessed as D0A or drier, with amounts 6 to 10 inches below normal reported in eastern Texas, western Louisiana, southwestern Arkansas, southeastern Oklahoma, and northwestern Mississippi.

In contrast, rainfall was light and scattered at best in southern Texas, and in the D0A to D3A areas north of St. Louis across the Mississippi Valley and Great Lakes regions, resulting in dryness and drought persistence or intensification. D2A and D3A continued to push northward in central and southern Texas while D0A conditions expanded westward into western Wisconsin, eastern and southern Iowa, and northwestern Missouri. Meanwhile, D1A and D2A conditions spread into parts of northern lower Michigan, southwestern Michigan and adjacent sections of Indiana and Ohio, northern Illinois, most of central and eastern Wisconsin. Most of the aforementioned areas from the southern Great Lakes region southward were at least 4 inches below normal rainfall during the last 90 days, with some of the D3A area in north-central Illinois more than 7 inches below normal for the period.

The dryness and drought across the nation's midsection continued to impact crop quality. Illinois appears to be most seriously affected from an agricultural standpoint, with 52 percent of its corn, 45 percent of its sorghum, and 41 percent of its soybeans reported in poor or very poor condition, according to the National Agricultural Statistics Service. In other states, 28 percent of Texas corn, 27 percent of Indiana corn, 32 percent of Arkansas soybeans, 25 percent of Arkansas sorghum, and 31 percent of Texas oats were also in poor or very poor condition. For the 18 primary corn producing states as a whole, more

than twice as much of the crop is in poor or very poor condition this year compared to the same time last year (17 percent in 2005, as opposed to 7 percent in 2004). Similarly, the 18 primary soybean producing states report 16 percent of the crop in poor or very poor condition, compared to only 8 percent last year.

**The West:** Light to locally moderate precipitation was restricted to approximately the northern one-third of this region, with little or none measured farther south west of the High Plains. Between 2 and 6 inches doused far western Washington, resulting in some D0H and D1H reduction. Farther east, northeastern most Washington and adjacent Idaho reported fairly widespread precipitation totals exceeding 1 inch, abetting localized improvements to D0H and D1H. Moderate rains were relatively scattered across the High Plains, but were enough to pull back D0H from part of north-central South Dakota as well as east-central New Mexico.

In Montana, precipitation totals were not exceptional last week, but a reassessment of conditions indicated that D0H would be a more appropriate designation than the prior D1H in much of central and northeastern Montana, where precipitation has been consistently above normal for the last couple of months.

In contrast, recent heat and seasonable dryness have kept surface moisture steadily on the decline across Wyoming, leading to deteriorating conditions in west-central Wyoming (to D1H) and southeastern Wyoming (to D0H).

Although no Drought Monitor adjustments appear warranted at this time, it should be noted that monsoonal rains are unseasonably late in developing across the southwestern quarter of the country. The Drought Monitor will continue to monitor this situation, and changes may be made soon if the region continues to be drier than normal.

**Alaska:** Moderate precipitation fell on last week's D0 region, eliminating surface moisture shortages and reducing the wildfire threat.

**Hawaii:** Rainfall was light and spotty last week, keeping D0 conditions intact across most of the central and southeastern portions of the state.

**Looking Ahead:** Moderate to heavy rains (over 1 inch) are expected in areas of dryness and drought from northeastern central Michigan and northeastern Illinois southward through the Ohio Valley, the Mississippi Valley from the Ohio River confluence through central Louisiana, the ArkLaTex region, western Pennsylvania, southern Virginia, and northern North Carolina during July 13 – 18, 2005. Between 3 and 6 inches are anticipated across Indiana, Ohio, northern Kentucky, West Virginia, and southwestern Pennsylvania. Elsewhere, 0.5 to 1.0 inch of precipitation is forecast across northern Wisconsin, northeastern Texas, most of Arkansas, southeastern Missouri, central Illinois, and the central and southwestern Great Lakes region. In contrast, only a few tenths of an inch at best are forecast across the central and northern Great Plains, western and southern Texas, and from the High Plains westward to the Pacific Ocean. Daily high temperatures are expected to average at least a few degrees above normal from the desert

Southwest and Great Basin northeastward through the southern and central Rockies, the central and northern Plains, and the Great Lakes region.

For the ensuing 5 days (July 19 – 23, 2005), the odds favor above-normal precipitation from the Ohio Valley northwestward through southern Wisconsin, Iowa, and the east-central Great Plains. Farther south, wetter-than-normal weather is also expected across central and southern Texas, southern and western New Mexico, and the eastern half of Arizona. In addition, far western Washington should receive above-normal rainfall. Meanwhile, drier-than-normal conditions appear more likely from the central High Plains and northern Rockies westward through Oregon and most of Washington. Finally, temperatures should average above normal across all current areas of dryness and drought in the lower 48 states.

**Author:** Richard Tinker, NOAA Climate Prediction Center

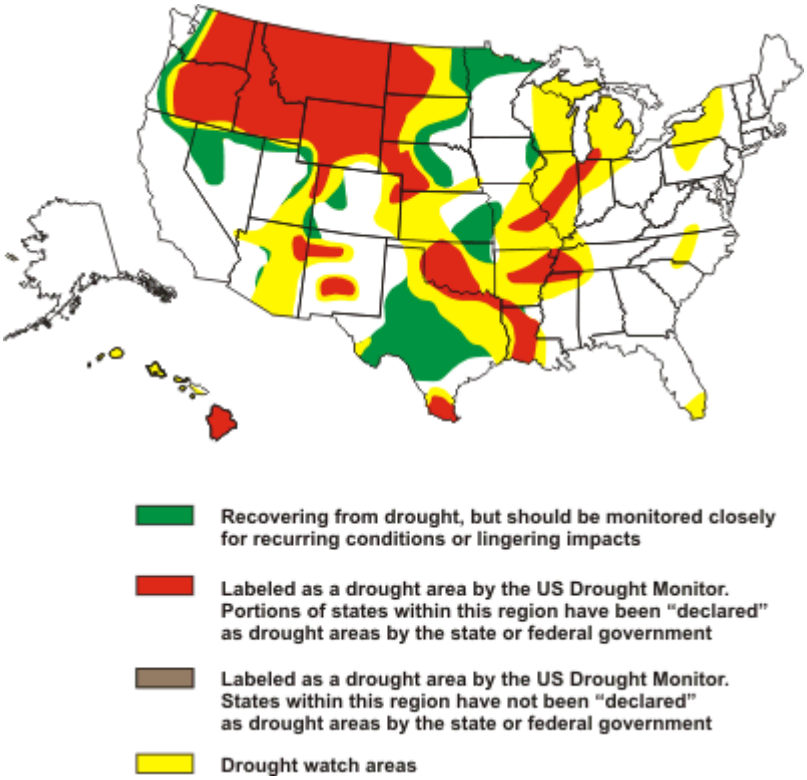
**Dryness Categories**

D0 ... Abnormally Dry ... used for areas showing dryness but not yet in drought, or for areas recovering from drought.

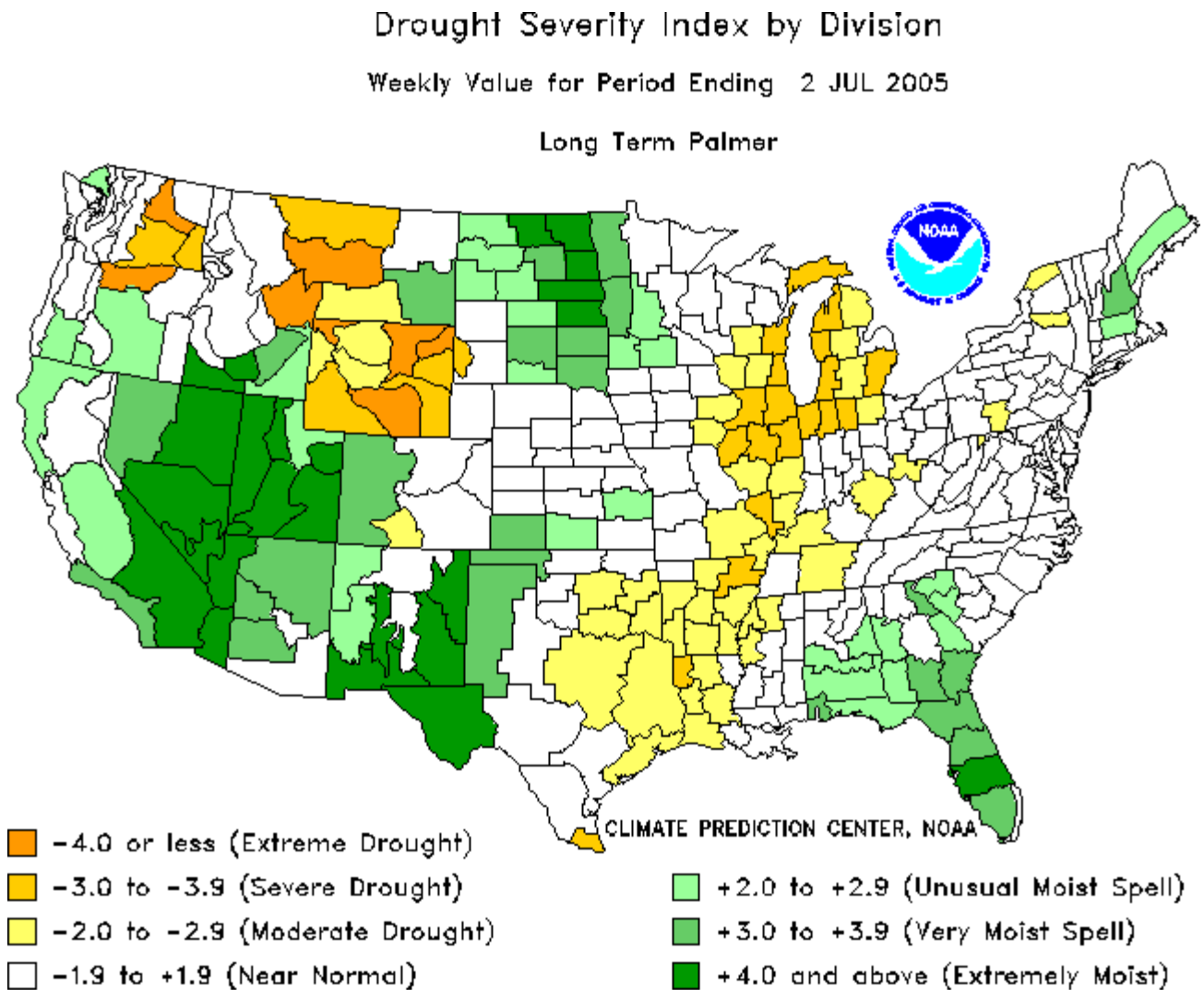
**Drought Intensity Categories**
D1 ... Moderate Drought
D2 ... Severe Drought
D3 ... Extreme Drought
D4 ... Exceptional Drought

**Drought or Dryness Types** *(used only when impacts differ)*
A ... Agricultural
H ... Hydrological

Updated July 13, 2005




Current Drought Impacts in the United States




Weekly Palmer Drought Severity Index

**Mainstem Reservoir Information**

June proved to be a very good month concerning runoff entering the Missouri River system. Overall, the system received approximately 106% of the normal runoff for the month of June. The navigation season, while still shortened, has been revised to include an additional 13 days (shorten season 48 days in lieu of 61 days). Extremely high runoff volumes below Oahe Dam provided the opportunity to slow releases from the upper three reservoirs, thus providing additional conservation while still meeting the Congressional mandates with respect to reservoir regulations. Water intakes on the reservoirs appear to be safe for this year thanks to the recent runoff; and access to the reservoirs, while still limited, appears to be usable through the summer months.

The upper three reservoirs (Ft. Peck, Garrison, and Oahe) are at or slightly above their levels at this time last year. Therefore, as is apparent on the Drought Monitor, these areas are still defined as "drought-stricken" since one of the definitions of drought concerns reservoir elevations. However, the reservoirs are on their way up and should end up above last year's levels. Additional, specific information about the reservoirs can be found on the following pages.

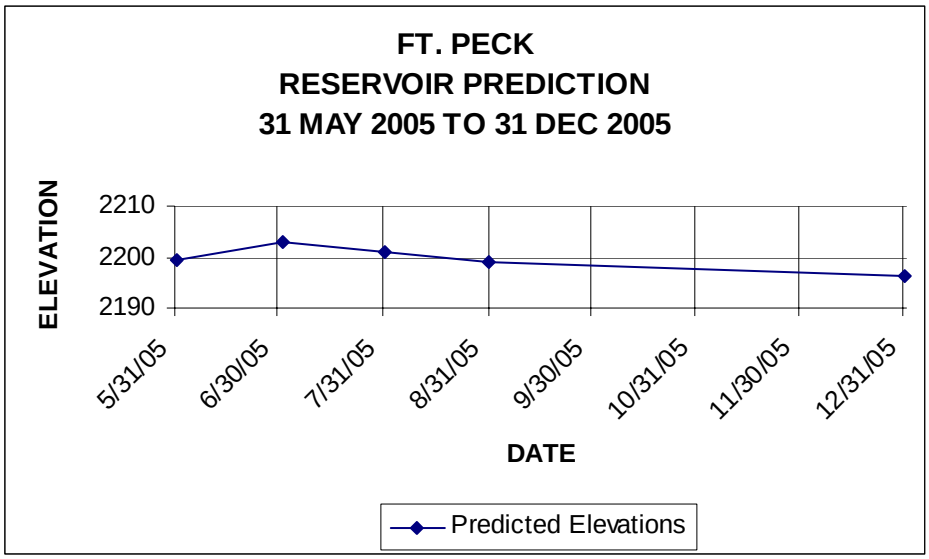
**Fort Peck, Montana**

**Reservoir Elevation Overview**

| Lake Elevation 5/31/2005 (ft. msl) | Current Lake Elevation 7/1/2005 (ft. msl) | 30-Day Projected Elevation (7/31/2005) (ft. msl) | 60-Day Projected Elevation (8/31/2005) (ft. msl) | 180-Day Projected Elevation (12/31/2005) (ft. msl) |
|---|---|---|---|---|
| 2199.6 | 2203.0 | 2201.0 | 2198.9 | 2196.2 |

**Comments:**

1. Current reservoir elevation is 43.0-feet below the top of conservation pool (elevation 2246.0 ft. msl).
2. Projections provided are based upon the Lower Basic Simulation prepared by the Reservoir Control Center.
3. June runoff was 106% of average across the basin. This large runoff is attributed to exceptional rainfall amounts.
4. Recent rains have significantly contributed to the 3.4-feet rise in reservoir elevation since May 31, 2005.



**Water Intake Overview**

| Intake | Comments |
|---|---|
| Hell Creek State Park | No issues.<br>Well completed 22 NOV 2004 |

**Access Overview**

1. 1,800 cubic yards of stockpiled for extension of boat ramps in FY 05.
2. Ramp to Rock Creek Marina has been installed to ensure access to the reservoir (UPDATED 5/30/05).
3. 9 temporary ramps in service; 3 ramps unusable. No permanent ramps operational.
4. Remaining concessionaires marginal.

**Noxious Weeds Overview**

1. As the reservoir elevation dropped, the noxious weeds spread along the shoreline. The project has $40,000 available in FY 05 for weed control.

**Cultural Resources Overview**

1. No issues to date.

**FY 05 Action Items**

1. Relocate Hell Creek site for next season.
2. Chasing water at other sites.

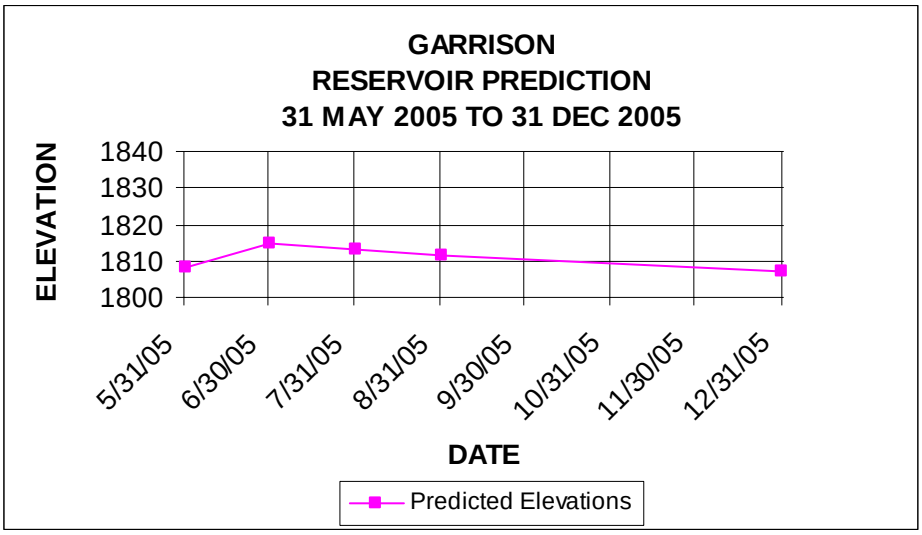
**Garrison, North Dakota**

**Reservoir Elevation Overview**

| Lake Elevation 5/31/2005 (ft. msl) | Current Lake Elevation (7/1/2005) (ft. msl) | 30-Day Projected Elevation (7/31/2005) (ft. msl) | 60-Day Projected Elevation (8/31/2005) (ft. msl) | 180-Day Projected Elevation (12/31/2005) (ft. msl) |
|---|---|---|---|---|
| 1808.08 | 1814.8 | 1813.1 | 1811.6 | 1807.1 |

**Comments:**

1. Current reservoir elevation is 35.2-feet below the top of conservation pool (elevation 1850.0 ft. msl).
2. Projections provided are based upon the Lower Basic Simulation prepared by the Reservoir Control Center.
3. Consistent rainfall in early- to mid-June has caused flooding in 10 North Dakota counties including Sioux County and McLean County, which lie adjacent to the Missouri River.
4. June runoff was 106% of average across the basin. This large runoff is attributed to exceptional rainfall amounts.
5. Recent rains have significantly contributed to the 6.72-feet rise in reservoir elevation since May 31, 2005.



## Water Intake Overview

| Intake | Status | Current Reservoir Elev. | Top of Screen Elev. | Operational Concern Elev. | Shutdown Elev. | | Population Supported | Contingency Plan? (Y/N) | Resp. Agency |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Summer | Winter | | | |
| Whiteshield | Operational | 1814.8 | 1787 | 1805 | 1787 | 1792 | 720 | N | TAT/BOR |

Comments:

1. The intake screen has been raised approximately 4-feet.
2. Rock from the adjacent shoreline was used to stabilize the shoreline near the intake.
3. An additional 375 cubic yards of rock was hauled in by the operator to stabilize the shoreline from the water's edge to the high water line.

Future Plans:

1. Ft. Berthold Rural Water System is seeking funding through USDA Emergency Community Water Assistance Grant Program for:
    a. Exploration and mapping of the intake area.
    b. Extending approximately 400 to 500 feet from the current intake screen with 8" to 12" casing pipe. The new intake screen elevation would be approximately 1780 (or lower).
    c. Estimated cost: $1.16 million.
    d. Estimated time of completion: Late 2005/Early 2006.

| Intake | Status | Current Reservoir Elev. | Top of Screen Elev. | Operational Concern Elev. | Shutdown Elev. | | Population Supported | Contingency Plan? (Y/N) | Resp. Agency |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Summer | Winter | | | |
| Twin Buttes | Operational | 1814.8 | 1784.4 | 1805 | 1788 | 1790 | 425 | N | TAT/BOR |

Comments:

1. The current intake line consists of 2-8" lines. One line tees into the other.
2. Two submersible pumps are located in the lines. One pump is inoperable and is being repaired.

Future Plans:

1. Ft. Berthold Rural Water System is seeking funding through USDA Emergency Community Water Assistance Grant Program to extend and lower the existing intake line and screen. Their plans are to:
    a. Install a new casing approximately 450-feet into the lake.
    b. Install a new 10" to 12" supply line, approximately 300- to 400-feet beyond the current location to approximate elevation 1780.0.
    c. Provide bank stabilization and erosion control over the new line.
2. The Corps is currently staffing a request from FBRWS to amend the existing water line right-of-way.

| Intake | Status | Current Reservoir Elev. | Top of Screen Elev. | Operational Concern Elev. | Shutdown Elev. | | Population Supported | Contingency Plan? (Y/N) | Resp. Agency |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Summer | Winter | | | |
| Mandaree | Operational | 1814.8 | 1795.4 | 1805 | 1798 | 1800 | 780 | N | TAT/BOR |

Comments:

1. Bartlett and West has awarded a contract to install a new intake at Mandaree.
2. The new intake will lower the screen to elevation 1786.
3. The work should be complete in July 2005.
4. The project will include directional drilling.
5. Grant monies for the project were secured from USDA Rural Utilities Service and Indian Health Services.

| Intake | Status | Current Reservoir Elev. | Top of Screen Elev. | Operational Concern Elev. | Shutdown Elev. | | Population Supported | Contingency Plan? (Y/N) | Resp. Agency |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Summer | Winter | | | |
| Four Bears | Operational | 1814.8 | 1789.9 | 1801.5 | 1792 | 1794 | 900 | N | TAT/BOR |

Comments:

1. The intake has been previously been extended. The screen has been checked by divers and it was confirmed that approximately 20-feet of water is over the intake.

Future Plans:

1. Ft. Berthold Rural Water System is seeking funding through USDA Emergency Community Water Assistance Grant Program for the following:
    a. Exploration and mapping of the intake area.
    b. Replacement/extension approximately 200- to 250-feet from the current intake screen with 8” to 12” casing pipe. The new intake screen would be at approximate elevation 1780 (or lower).
    c. Estimated cost: $942,500
    d. Estimated time of completion: Late 2005/early 2006.

| Intake | Status | Current Reservoir Elev. | Top of Screen Elev. | Operational Concern Elev. | Shutdown Elev. | | Population Supported | Contingency Plan? (Y/N) | Resp. Agency |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Summer | Winter | | | |
| Parshall | Inoperable* | 1814.8 | 1795.3 | 1808 | 1797.5 | 1801.5 | 1000 | N | Parshall |

*Currently using the City well. Turbidity is currently causing problems/issues with the intake.

Comments:

1. The City had a telescoping riser attached to the intake by 30 July 2005. The riser extended the intake to within 3- to 4-feet of the water's surface.
2. The City attempted to go back on the reservoir intake 6/30/05. The intake was used until approximately 5:00 pm 7/01/05 when they returned to well water due to high turbidity.
3. Majority of the residents are purchasing bottled water.

| Intake | Status | Current Reservoir Elev. | Top of Screen Elev. | Operational Concern Elev. | Shutdown Elev. | | Population Supported | Contingency Plan? (Y/N) | Resp. Agency |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Summer | Winter | | | |
| Pick City | Operational | 1814.8 | 1795 | 1800 | 1796 | 1800 | | | Pick City |

Comments:

1. At least 5-feet of water is necessary to operate this intake. If continued usage is planned, the intake will have to be lowered.

Future Plans:

1. The City has voted to join the rural water system. The intake will be abandoned in the near future.

| Intake | Status | Current Reservoir Elev. | Top of Screen Elev. | Operational Concern Elev. | Shutdown Elev. | | Population Supported | Contingency Plan? (Y/N) | Resp. Agency |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Summer | Winter | | | |
| Garrison | Operational | 1814.8 | 1787.2 | 1810 | 1795 | 1793 | 1830 | N | Garrison |

Comments:

1. The City plans to extend the existing intake during the Fall of 2005.
2. The existing line has been exposed as water levels have dropped. A portion of the line was covered with soil and the pumps cycled last December (2004) to prevent freezing. Continuation of this practice is not a feasible alternative.
3. Directional boring will be used to extend the water line.

**Access Overview**

1. Project personnel estimate that 14 to 19 access sites will have usable boat ramps throughout the summer.
2. A $625,000 Congressional add fro boat ramps is being utilized to extend low water ramps.
3. Project personnel would like to establish a plan for continuing boat ramp extensions, including expected costs for FY 06 budget considerations.
4. Project personnel are working with partners to establish shoreline access for day-use activities.
5. Lake Sakakawea State Park/Kit's Marina has been modified for low water operation by the vendor. The marina will be usable to approximate elevation 1802. Project personnel have established a low water ramp in the state park. Unfortunately, if it becomes necessary to use the low water ramp, the marina will be inoperable.
6. Ft. Stevenson State Park continues to operate their low water ramp. A meeting was held between the State of North Dakota and the Corps of Engineers 7 July 2005 to discuss the current design of the new marina. The State requested that the design be modified to a target elevation of 1790 in lieu of the Corps' proposed elevation of 1780. It was explained by the Corps that a more "usable" project over the long term life of the project will be achieved with the lower design elevation. Several other minor design changes were requested at the meeting (i.e. retaining walls instead of riprap, etc.). The Corps will incorporate these changes and prepare an updated concept design and construction cost by 29 July 2005. The updated design will be presented to the State for final review shortly following completion.
7. Remaining 6 marinas on the reservoir will not be operable in 2005.
8. A $900,000 Congressional add for boat ramp extensions was proposed by Senator Dorgan for FY 06. The add is for non-Corps owned facilities, but will be administered through the project office.

**Updated 7/12/2005**

**Reservoir Elevation 7/12/05 - 1817.1**

| Location | Type | Top Elevation | Bottom Elevation | Comments | Managing Agency | Contact Person | Phone |
|---|---|---|---|---|---|---|---|
| **Beaver Bay (low-water-COE)** | poured concrete | 1829 | 1808 | **Usable** | Corps of Engineers | Linda Phelps | 654-7411 |
| **Beulah Bay** | poured concrete | 1852.4 | 1799 | **Usable** | Beulah Park Board | Greg Logan | 870-5852 |
| **Charging Eagle Bay (2nd low water)** | poured concrete, planks | 1816 | 1806 | **Usable** | Three Affiliated Tribes | Jim Mossett | 880-1203 |
| **Charging Eagle Bay (1st low water)** | poured concrete | 1835 | 1810.6 | **Usable** | Three Affiliated Tribes | Jim Mossett | 880-1203 |
| **Dakota Waters Resort (low-water)** | poured concrete, planks | 1853.1 | 1797 | **Usable** | Beulah Park Board | Kelvin Heinsen | 873-5800 |
| **Deepwater Creek (2nd low water)** | poured concrete, planks | 1818 | 1802 | **Usable** | Corps of Engineers | Linda Phelps | 654-7411 |
| **Deepwater Creek (1st low water)** | poured concrete | 1838 | 1809 | **Usable** | Corps of Engineers | Linda Phelps | 654-7411 |
| **Douglas Creek (low water)** | poured concrete, planks | 1828 | 1801 | **Usable** | Corps of Engineers | Linda Phelps | 654-7411 |
| **Fort Stevenson State Park (low water)** | poured concrete | 1851 | 1797 | **Usable** | ND Parks & Rec | Dick Messerly | 337-5576 |
| **Four Bears Park (south low water)** | concrete planks | 1824 | 1803 | **Usable** | Three Affiliated Tribes | Alan Chase | 627-4018 |
| **Garrison Creek Cabin Site** | poured concrete | 1849.2 | 1802 | **Usable** | Garrison Cabin Assc. | | |
| **Government Bay (low water)** | slide-in metal sections | 1812 | 1803 | **Unusable** | Corps of Engineers | Linda Phelps | 654-7411 |
| **Government Bay (main ramp)** | poured concrete | 1857 | 1810 | **Usable** | Corps of Engineers | Linda Phelps | 654-7411 |
| **Hazen Bay (2nd low water)** | poured concrete | 1829 | 1810 | **Usable** | Hazen Park Board | Hazen City Hall | 748-2550 |
| **Indian Hills (3rd low water)** | slide-in metal sections | 1810 | 1801 | **Unusable** | Parks & Rec/Tribes | Kelly Sorge | 743-4122 |
| **Indian Hills (2nd low water)** | concrete planks | 1818.3 | 1807 | **Usable** | Parks & Rec/Tribes | Kelly Sorge | 743-4122 |
| **Indian Hills (1st low water)** | concrete planks | 1826.4 | 1811.8 | **Usable** | Parks & Rec/Tribes | Kelly Sorge | 743-4122 |
| **McKenzie Bay (east ramp)** | poured concrete | 1855 | 1796 | **Usable** | McKenzie Marine Club | Rhonda Logan | 579-3366 |
| **Parshall Bay (3rd low-water)** | slide-in metal sections | 1818.4 | 1808.5 | **Usable** | Mountrail County Park Board | | 628-2145 |

| Location | Type | Top Elevation | Bottom Elevation | Comments | Managing Agency | Contact Person | Phone |
|---|---|---|---|---|---|---|---|
| **Pouch Point (3rd low-water)** | slide-in metal sections | 1820 | 1809 | **Usable** | Three Affiliated Tribes | Royce Wolf | 627-3553 |
| **Pouch Point (2nd low-water)** | poured concrete | 1829 | 1813 | **Marginal** | Three Affiliated Tribes | Royce Wolf | 627-3553 |
| **Reunion Bay (2nd low water)** | concrete planks | 1825.8 | 1808 | **Usable** | Corps of Engineers | Linda Phelps | 654-7411 |
| **Sakakawea State Park (main)** | poured concrete | 1850 | 1800 | **Usable** | ND Parks & Rec | John Tunge | 487-3315 |
| **Sanish Bay (Aftem) (low water)** | poured concrete | 1831.1 | 1807.4 | **Usable** | Aftem Lake Development | Gerald Aftem | 852-2779 |
| **Skunk Creek Recreation Area (main)** | poured concrete | 1850 | 1806.5 | **Usable** | Three Affiliated Tribes | Ken Danks | 290-2841 |
| **Sportsmen's Centennial Park** | poured concrete | 1831.2 | 1808.5 | **Usable** | McLean County | Marlin Hvinden | 462-8541 |
| **Van Hook (Gull Island south low-water)** | metal bridge deck sections | 1823 | 1805 | **Usable** | Mountrail County Park Board | Clarence Weltz | 627-3377 |
| **Van Hook (Gull Island north low-water)** | metal bridge deck sections | 1823.1 | 1805 | **Usable** | Mountrail County Park Board | Clarence Weltz | 627-3377 |
| **Van Hook (lst low water)** | poured concrete | 1822 | 1807 | **Usable** | Mountrail County Park Board | Clarence Weltz | 627-3377 |
| **White Earth Bay (low-water)** | concrete plank & PSP | 1833 | 1801 | **Usable** | Mountrail County Park Board | Greg Gunderson | 755-3277 |
| **Wolf Creek Recreation Area (2nd low water)** | concrete planks & metal sec | 1830 | 1802.5 | **Usable** | Corps of Engineers | Linda Phelps | 654-7411 |

**Noxious Weeds Overview**

1. Project personnel continue to battle noxious weeds and invasive species as the reservoir declines. The major difficulty is trying to control/eradicate saltcedar.
2. $560,000 allocated for noxious weed control in FY 05.

**Cultural Resources Overview**

1. Project personnel continue to monitor the shoreline for the protection of cultural resources. As the reservoir elevation falls, more opportunities are uncovered for looters, which collect artifacts and sell them on the open market.

**Other Areas of Interest/Concern**

1. Garrison National Fish Hatchery – Three issues exist and are of concern to the State of North Dakota and the U.S. Fish and Wildlife Service.
    a. Addition of a fifth boiler and necessary power for operation.
    b. Ability to fill 40 rearing ponds.
    c. Adequacy of the existing 20-inch water supply line from the penstocks.
2. Fact sheets for the hatchery issues exist. OP-TM is preparing a response to the U.S. Fish and Wildlife Service.
3. Garrison Cold Water Fishery – The modification to the trashracks of intakes 2 and 3, originally scheduled to begin 27 June 2005, began 11 July 2005. The reason for the delay was difficulty acquiring specialized materials and the commissioning of a power generation unit. However, an off week was scheduled between the work on the two intakes, so the completion date will remain 22 July 2005.
    a. Work on the first unit went extremely well and the replacement of the trashracks was underway 13 July 2005.

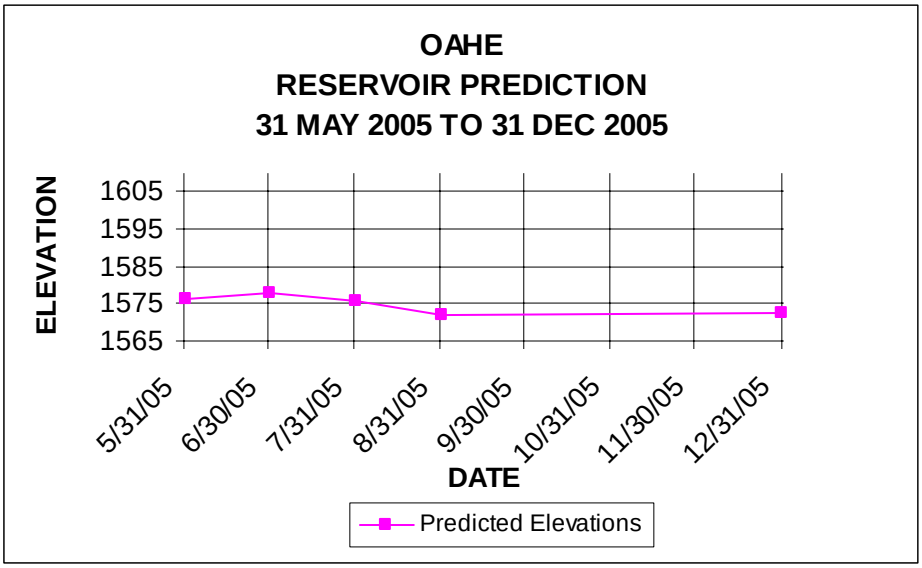
**Oahe, South Dakota**

**Reservoir Elevation Overview**

| Lake Elevation 5/31/2005 (ft. msl) | Current Lake Elevation (7/1/2005) (ft. msl) | 30-Day Projected Elevation (7/31/2005) (ft. msl) | 60-Day Projected Elevation (8/31/2005) (ft. msl) | 180-Day Projected Elevation (12/31/2005) (ft. msl) |
|---|---|---|---|---|
| 1576.5 | 1577.6 | 1575.7 | 1571.9 | 1572.5 |

**Comments:**

1. Current reservoir elevation is 39.4-feet below the top of conservation pool (elevation 1617.0 ft. msl).
2. Projections provided are based upon the Lower Basic Simulation prepared by the Reservoir Control Center.
3. June runoff was 106% of average across the basin. This large runoff is attributed to exceptional rainfall amounts.
4. Recent rains have significantly contributed to the 1.1-feet rise in reservoir elevation since May 31, 2005.



**Water Intake Overview**

| Intake | Status | Current Reservoir Elev. | Top of Screen Elev. | Operational Concern Elev. | Shutdown Elev. | | Population Supported | Contingency Plan? (Y/N) | Resp. Agency |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Summer | Winter | | | |
| Ft. Yates | Operational | 1577.6 | 1571.2 | 1573 | 1572.2 | 1575.2 | 3,400 | Y | SRST/BOR |

Comments:

1. A backup well has been drilled and tested.
2. A Contingency Action Plan has been completed by the Corps.
3. A Table Top Exercise for the Contingency Action Plan is being coordinated by the State of North Dakota. The date of the exercise has been scheduled for 31 August 2005.

Future Plans:

1. Connection of new well to existing water distribution system.

| Intake | Status | Current Reservoir Elev. | Top of Screen Elev. | Operational Concern Elev. | Shutdown Elev. | | Population Supported | Contingency Plan? (Y/N) | Resp. Agency |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Summer | Winter | | | |
| Wakpala | Operational | 1577.6 | 1561 | 1563 | 1561 | 1564 | >500 | N | SRST/BOR |

| Intake | Status | Current Reservoir Elev. | Top of Screen Elev. | Operational Concern Elev. | Shutdown Elev. | | Population Supported | Contingency Plan? (Y/N) | Resp. Agency |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Summer | Winter | | | |
| Mni Wasté | Operational | 1577.6 | 1555.4 | 1580 | 1561.9 | 1560.4 | 14,000 | Y(DRAFT) | CRST |

Comments:

1. "Option 2", Phase 1 – Design, moving forward.
2. Trigger Points for the implementation of construction are being closely monitored.
3. Work is to begin soon on survey effort, construction of hard surface road, and routing of power to the selected site.
    a. Current forecasts indicate that shutdown will occur in August, 2006.
    b. Current schedule uses August, 2006 as having the new system "on-line" and works backwards to determine design and construction schedule.
4. CRST is continuing effort to acquire grant money to cover funding gap between Corps' assistance and project budget.
5. A cooperative agreement between the Corps and the CRST has been sent to the tribe for review.

**Access Overview**

1. The State of South Dakota is responsible for maintaining recreational areas and access to the reservoir.
2. The State has committed to keeping at least four boat ramps accessible through 2005.

**Noxious Weeds Overview**

1. Project personnel continue to battle the noxious weeds as the reservoir declines.

**Cultural Resources Overview**

1. Project personnel continue to monitor the shoreline for the protection of cultural resources. As the reservoir elevation falls, more opportunities are uncovered for looters, which collect artifacts and sell them on the open market.

## Mainstem Reservoir Information Monthly Comparison

| 21 JUNE 2005 | Project Information | | Reservoir Elevation | | | Reservoir Storage | | |
|---|---|---|---|---|---|---|---|---|
| Project | Multi-Purpose Pool Elev. | Flood Control Pool Elev. | Current Elevation (6/21/05) | Previous Elevation (6/14/05) | Change | Current Storage (MAC-FT) (6/21/05) | Previous Storage (MAC-FT) (6/14/05) | Change (MAC-FT) |
| Ft. Peck, MT | 2160 - 2246 | 2246 – 2250 | 2201.89 | 2201.19 | 0.70 | 9.283 | 9.170 | 0.113 |
| Garrison, ND | 1775 – 1850 | 1850 – 1854 | 1812.23 | 1811.17 | 1.06 | 11.423 | 11.163 | 0.260 |
| Oahe, SD | 1540 - 1617 | 1617 – 1620 | 1577.25 | 1576.94 | 0.31 | 11.125 | 11.055 | 0.070 |
| Big Bend, SD | 1415 – 1422 | 1422 – 1423 | 1420.75 | 1421.32 | -0.570 | 1.665 | 1.695 | -0.030 |
| Ft. Randall, SD | 1320 – 1365 | 1365 – 1375 | 1357.20 | 1356.56 | 0.640 | 3.720 | 3.661 | 0.059 |
| Gavins Point, SD | 1204.5 - 1208 | 1208 - 1210 | 1206.77 | 1207.33 | -0.560 | 0.379 | 0.391 | -0.012 |

| 27 JUNE 2005 | Project Information | | Reservoir Elevation | | | Reservoir Storage | | |
|---|---|---|---|---|---|---|---|---|
| Project | Multi-Purpose Pool Elev. | Flood Control Pool Elev. | Current Elevation (6/27/05) | Previous Elevation (6/21/05) | Change | Current Storage (MAC-FT) (6/27/05) | Previous Storage (MAC-FT) (6/21/05) | Change (MAC-FT) |
| Ft. Peck, MT | 2160 - 2246 | 2246 – 2250 | 2202.55 | 2201.89 | 0.66 | 9.377 | 9.283 | 0.094 |
| Garrison, ND | 1775 – 1850 | 1850 – 1854 | 1813.48 | 1812.23 | 1.25 | 11.675 | 11.423 | 0.252 |
| Oahe, SD | 1540 - 1617 | 1617 – 1620 | 1577.47 | 1577.25 | 0.22 | 11.164 | 11.125 | 0.039 |
| Big Bend, SD | 1415 – 1422 | 1422 – 1423 | 1420.54 | 1420.75 | -0.21 | 1.655 | 1.665 | -0.010 |
| Ft. Randall, SD | 1320 – 1365 | 1365 – 1375 | 1356.97 | 1357.20 | -0.23 | 3.704 | 3.720 | -0.016 |
| Gavins Point, SD | 1204.5 - 1208 | 1208 - 1210 | 1206.79 | 1206.77 | 0.020 | 0.378 | 0.379 | -0.001 |

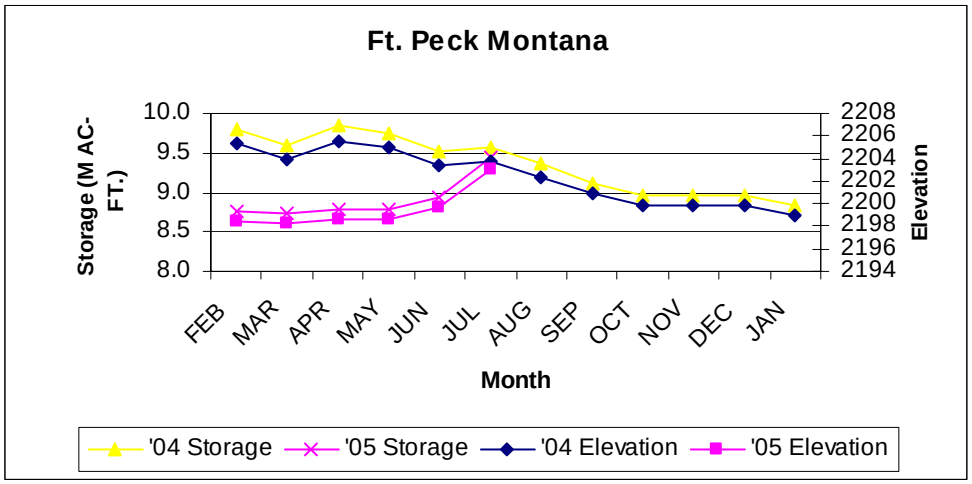
| 4 JULY 2005 | Project Information | | Reservoir Elevation | | | Reservoir Storage | | |
|---|---|---|---|---|---|---|---|---|
| Project | Multi-Purpose Pool Elev. | Flood Control Pool Elev. | Current Elevation (7/4/05) | Previous Elevation (6/27/05) | Change | Current Storage (MAC-FT) (7/4/05) | Previous Storage (MAC-FT) (6/27/05) | Change (MAC-FT) |
| Ft. Peck, MT | 2160 - 2246 | 2246 – 2250 | 2203.2 | 2202.55 | 0.65 | 9.487 | 9.377 | 0.110 |
| Garrison, ND | 1775 – 1850 | 1850 – 1854 | 1815.9 | 1813.48 | 2.42 | 12.275 | 11.675 | 0.600 |
| Oahe, SD | 1540 - 1617 | 1617 – 1620 | 1577.9 | 1577.47 | 0.43 | 11.263 | 11.164 | 0.099 |
| Big Bend, SD | 1415 – 1422 | 1422 – 1423 | 1420.5 | 1420.54 | -0.04 | 1.650 | 1.655 | -0.005 |
| Ft. Randall, SD | 1320 – 1365 | 1365 – 1375 | 1355.8 | 1356.97 | -1.17 | 3.604 | 3.704 | -0.100 |
| Gavins Point, SD | 1204.5 - 1208 | 1208 - 1210 | 1205.7 | 1206.79 | -1.09 | 0.351 | 0.378 | -0.027 |

| 11 JULY 2005 | Project Information | | Reservoir Elevation | | | Reservoir Storage | | |
|---|---|---|---|---|---|---|---|---|
| Project | Multi-Purpose Pool Elev. | Flood Control Pool Elev. | Current Elevation (7/11/05) | Previous Elevation (7/4/05) | Change | Current Storage (MAC-FT) (7/11/05) | Previous Storage (MAC-FT) (7/4/05) | Change (MAC-FT) |
| Ft. Peck, MT | 2160 - 2246 | 2246 – 2250 | 2203.59 | 2203.2 | 0.39 | 9.533 | 9.487 | 0.046 |
| Garrison, ND | 1775 – 1850 | 1850 – 1854 | 1817.04 | 1815.9 | 1.14 | 12.520 | 12.275 | 0.245 |
| Oahe, SD | 1540 - 1617 | 1617 – 1620 | 1577.76 | 1577.9 | -0.14 | 11.245 | 11.263 | -0.018 |
| Big Bend, SD | 1415 – 1422 | 1422 – 1423 | 1420.7 | 1420.5 | 0.2 | 1.663 | 1.650 | 0.013 |
| Ft. Randall, SD | 1320 – 1365 | 1365 – 1375 | 1354.51 | 1355.8 | -1.29 | 3.498 | 3.604 | -0.106 |
| Gavins Point, SD | 1204.5 - 1208 | 1208 - 1210 | 1205.66 | 1205.7 | -0.04 | 0.349 | 0.351 | -0.002 |

## Mainstem Reservoir Storage Comparison – Water Year 2004 vs. Water Year 2005

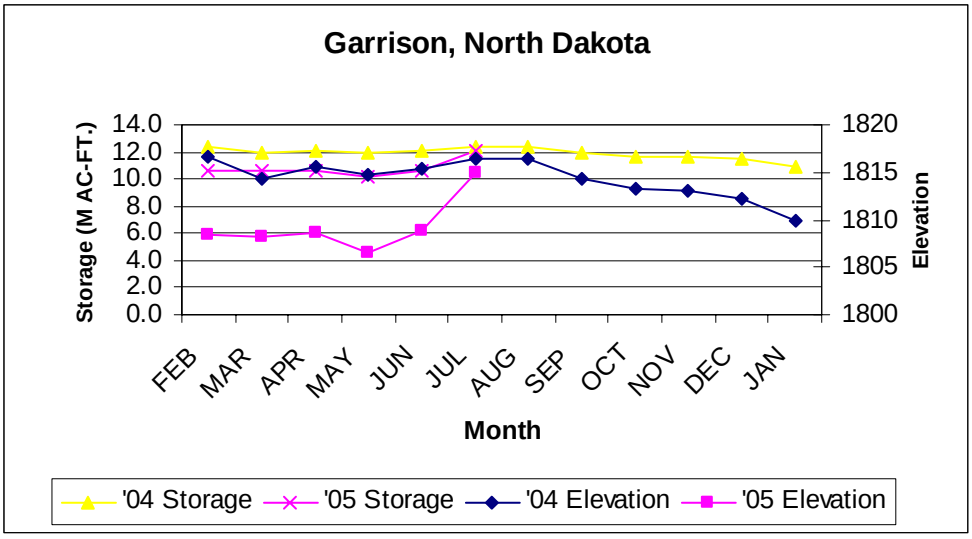
### Ft. Peck, MT

| Water Year 2004 (FEB 2004 - JAN 2005) | | | Water Year 2005 (FEB 2005 - JAN 2006) | | |
|---|---|---|---|---|---|
| Date | Elevation | Storage (MAC-Ft.) | Date | Elevation | Storage (MAC-Ft.) |
| FEB | 2205.3 | 9.806 | 2/1/05 | 2198.4 | 8.749 |
| MAR | 2204 | 9.603 | 3/1/05 | 2198.3 | 8.732 |
| APR | 2205.5 | 9.837 | 4/1/05 | 2198.52 | 8.773 |
| MAY | 2204.9 | 9.740 | 5/1/05 | 2198.53 | 8.773 |
| JUN | 2203.4 | 9.507 | 6/1/05 | 2199.61 | 8.935 |
| JUL | 2203.8 | 9.565 | 7/1/05 | 2203 | 9.448 |
| AUG | 2202.4 | 9.357 | | | |
| SEP | 2200.9 | 9.121 | | | |
| OCT | 2199.8 | 8.969 | | | |
| NOV | 2199.8 | 8.963 | | | |
| DEC | 2199.8 | 8.961 | | | |
| JAN | 2198.9 | 8.829 | | | |



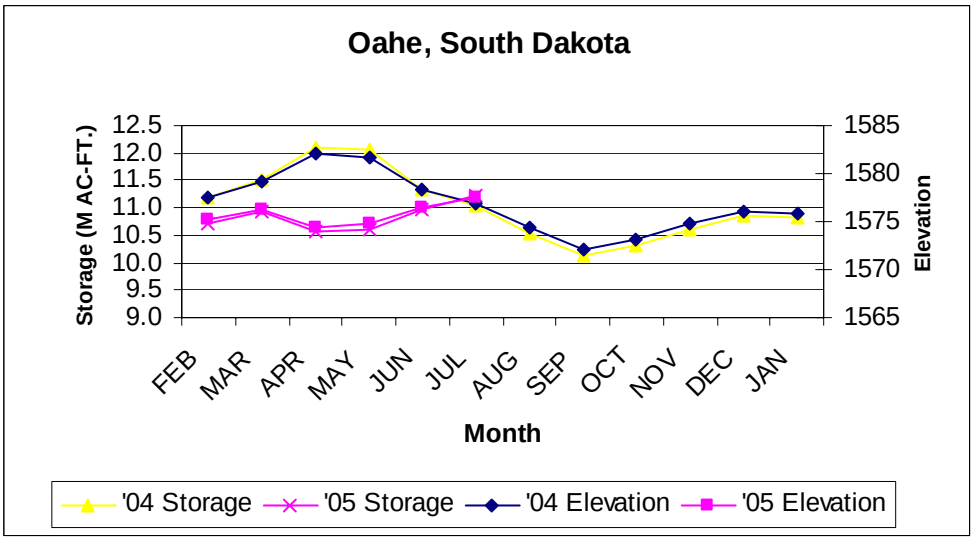
**Garrison, ND**

| Water Year 2004 (FEB 2004 - JAN 2005) | | | 2005 (FEB 2005 - JAN 2006) | | |
|---|---|---|---|---|---|
| Date | Elevation | Storage (MAC-Ft.) | Date | Elevation | Storage (MAC-Ft.) |
| FEB | 1816.7 | 12.446 | 2/1/05 | 1808.4 | 10.574 |
| MAR | 1814.3 | 11.891 | 3/1/05 | 1808.2 | 10.537 |
| APR | 1815.6 | 12.110 | 4/1/05 | 1808.65 | 10.632 |
| MAY | 1814.7 | 11.989 | 5/1/05 | 1806.47 | 10.189 |
| JUN | 1815.3 | 12.121 | 6/1/05 | 1808.8 | 10.665 |
| JUL | 1816.5 | 12.426 | 7/1/05 | 1814.9 | 12.026 |
| AUG | 1816.5 | 12.401 | | | |
| SEP | 1814.3 | 11.914 | | | |
| OCT | 1813.3 | 11.645 | | | |
| NOV | 1813.1 | 11.589 | | | |
| DEC | 1812.3 | 11.422 | | | |
| JAN | 1810 | 10.936 | | | |



**Oahe, SD**

| Water Year 2004 (FEB 2004 - JAN 2005) | | | 2005 (FEB 2005 - JAN 2006) | | |
|---|---|---|---|---|---|
| Date | Elevation | Storage (MAC-Ft.) | Date | Elevation | Storage (MAC-Ft.) |
| FEB | 1577.6 | 11.204 | 2/1/05 | 1575.2 | 10.715 |
| MAR | 1579.2 | 11.504 | 3/1/05 | 1576.2 | 10.924 |
| APR | 1582.1 | 12.110 | 4/1/05 | 1574.29 | 10.568 |
| MAY | 1581.6 | 12.056 | 5/1/05 | 1574.82 | 10.608 |
| JUN | 1578.4 | 11.338 | 6/1/05 | 1576.47 | 10.980 |
| JUL | 1576.8 | 11.045 | 7/1/05 | 1577.6 | 11.214 |
| AUG | 1574.3 | 10.540 | | | |
| SEP | 1572.1 | 10.112 | | | |
| OCT | 1573.2 | 10.316 | | | |
| NOV | 1574.8 | 10.608 | | | |
| DEC | 1576 | 10.866 | | | |
| JAN | 1575.8 | 10.824 | | | |



***<u>SYSTEM WIDE STORAGE – PREDICTED VS. ACTUAL COMPARISON.</u>***

***INSERT SHEET FROM:***

***NWOFP01\OD_PUB\OD\Drought\MAINSTEM STORAGE***

***PREDICTIONS TAB***