

Idaho Water Supply Outlook Report January 1, 2004



Myrtle Creek SNOTEL site -- installed October 2003 at an elevation of 3,520 feet in the Panhandle Basin.

The site was installed to monitor rapid snowmelt and precipitation events after the Myrtle Creek fire occurred in September 2003. Myrtle Creek is located 6 miles west of Bonners Ferry in northern Idaho.

Standard sensors include: snow water, precipitation, snow depth and air temperature.

Enhanced sensors include: soil moisture and temperature at 2, 4, 8 and 20 inches deep, wind speed and direction, humidity, solar radiation, and snow depth

Basin Outlook Reports and Federal - State - Private Cooperative Snow Surveys

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<http://www.id.nrcs.usda.gov/snow/>

How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

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IDAHO WATER SUPPLY OUTLOOK REPORT

January 1, 2004

SUMMARY

The 2004 water year began October 1 with a slow start. Mother Nature started delivering abundant moisture to Idaho on Christmas Eve. Snowpacks have been increasing since and are now 100-150% of average as of January 7. This is good news but, with half the winter still to come, the water supply outlook will not be fully known until Mother Nature plays her final card. Streamflow forecasts for most basins are in the 90-110% of average range for the April-September period. The exception is the Bear River at Stewart Dam which is forecast at only 20% of average. Water users should be prepared for shortages in Bear Lake area, especially if future precipitation is below average. In most other basins, streamflow forecasts look encouraging for Idaho's numerous water users. With more than half the season still to come, snowpack conditions in the second half of winter could improve with additional storms, maintain current snow levels with normal precipitation, or deteriorate with below normal precipitation. With some variables unknown such as soil moisture, timing of the runoff, future precipitation, it is too early to tell whether this year will break the four year drought.

SNOWPACK

Abundant moisture since Christmas Eve gave Idaho's snowpacks the boost they needed and they have continued increasing into the first week of January. January 1 snowpacks were the highest in the basins south of the Snake River at 130% of average. Elsewhere in the state, most basins range from 105-115% of average. A few isolated basins, Mores, Owyhee and Willow (eastern Idaho), are greater than 140% of average. The lowest snowpacks are 90-95% of average in the Lemhi, Mann, Little Lost, Birch, Medicine Lodge, and Greys (Wyoming) basins.

PRECIPITATION

The new water year started dry, much like water year 2003 ended. October precipitation ranged from 16% of average in the basins south of the Snake River to 40% in the Salmon basin. Only the Clearwater and Panhandle Region received near average precipitation in October. November brought a little more precipitation and snow to start the annual accumulation of Idaho's high elevation snowpack, ranging from 70% of average in central Idaho to 125% in the Clearwater basin. In December, the weather pattern changed with a few SNOTEL sites in southern Idaho and northern Nevada receiving 200% of average precipitation while the Panhandle Region and Clearwater basin received only 75-85%. Precipitation for the water year ranges from 90% of average in the Salmon basin to 108% in the basins south of the Snake River.

RESERVOIRS

Reservoir storage remains low to record low across southern and eastern Idaho. Combined storage for Palisades and Jackson reservoirs is 24% of capacity, 36% of average, and lower than last year. Blackfoot Reservoir remains nearly empty at about 18,000 acre-feet, the lowest November storage level since 1935. Bear Lake has only 134,700 acre-feet, only about 15,000 acre-feet usable storage. Oakley and Salmon Falls reservoirs are 25% of average and nearly empty like a year ago. Owyhee Reservoir is 14% of average, its third lowest December storage level. Magic Reservoir is nearly empty at only 9% full, 22% of average, which is the same as a year ago. Little Wood and Mackay are 60% full. The Boise reservoir system is 43% full, 77% of average. The Payette reservoir system is 58% full, slightly better than last year. Brownlee and Dworshak reservoir are at average. The lakes and reservoirs in northern Idaho and northwest Montana are storing near average amounts except for Coeur d'Alene Lake which is 39% of average.

Note: NRCS reports reservoir information in terms of usable volumes, which includes both active, inactive and, in some cases, dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in this report.

STREAMFLOW

Streamflow forecasts for most basins are in the 90-110% of average range for the April-September period. The exception is the Bear River at Stewart Dam which is forecast at only 20% of average. The headwater streams in the Bear River are forecast at 90% of average and decrease similarly like last year's streamflow as you travel downstream. The highest forecasts are in the Owyhee basin at 120% of average. These forecast numbers are the volume under the 50% Chance of Exceeding, which means there is a 50% chance the volume will be greater or less than the given value. The numbers sound promising right now, except in the Bear, but with more than half the winter still to come, things could change for the better or worse. Water users may consider using a lesser exceedance forecast to reduce their risk of being water short. With so many future unknown variables such as soil moisture, timing of the runoff, future winter and spring precipitation, it is too early to tell whether this year will break the three to four year southern Idaho drought until Mother Nature has her final say. Remember last spring, when record low temperatures gave way to record high temperatures in May, flushing the snow out of the mountains and into the streams and reservoirs only to be followed by a very dry summer.

Some late fall and early winter rains helped to improve soil moisture conditions in the west-central mountains and in the Clearwater and Panhandle regions, but soils are still dry at the 20 inch depth as indicated by soil moisture sensors at Jackson Peak SNOTEL in the Boise basin. As a result of the precipitation, some Panhandle streams spiked upward above normal flows after several precipitation events this fall, only to sharply drop off back to below normal levels. This indicates the effects of the drought are still present and the need for additional precipitation for the remainder of the winter season to alleviate the long-term drought not just in northern Idaho but also southern Idaho. In fact, several wet years may be needed to eliminate the drought in southern Idaho.

RECREATION

Mother Nature started delivering abundant moisture across Idaho on Christmas Eve and didn't stop until the first week of January. This was a Christmas present for Idaho's winter recreationists with some snow measuring sites nearly doubling in snow depth and snow water. Snow measuring stations indicate that mid-elevation areas in the 6,000 foot zone in the west-central mountains received the most snowfall from the recent storms. Snow sites in the headwaters of the Boise basin are nearly 100 inches deep, about the same as in the Clearwater basin, which usually receives much more snow. Cold temperatures allowed the snow to fall with a light density. The 30 inches of snow that fell above Idaho City only had 2.5 inches of water and was at 8% density. The light snow made backcountry travel difficult and dangerous. Some snow surveyors reported they dug tunnels through the snow to get to some snow sites in western Wyoming. Light snow caused more drifting and increased avalanche danger. The snow depth will settle with new snow or warmer temperatures.

Streamflow forecasts look encouraging for Idaho's whitewater rafting season, but with more than half the season still to come, snowpack conditions in the second half of winter could improve more with additional storms, maintain current levels with normal future precipitation, or deteriorate with below normal precipitation. Stay tuned, as we still have 5 more innings to go...

This Percent of Peak report is available Monday through Friday on the Idaho Snow Survey web page: <http://www.id.nrcs.usda.gov/snow/data/current.html>

Based on mountain data from NRCS SNOTEL Sites as of Friday: January 9, 2004

| <u>BASIN</u> | <u>SNOW WATER EQUIVALENT Percent of Average For Today</u> | <u>SNOW WATER EQUIVALENT Percent of April 1 Peak**</u> |
|--------------------------------------|---|--|
| Idaho Panhandle Region | 100 | 50 |
| Clearwater Basin | 110 | 53 |
| Salmon Basin | 107 | 49 |
| Weiser Basin | 114 | 53 |
| Payette Basin | 120 | 54 |
| Boise Basin | 122 | 57 |
| Big Wood Basin | 117 | 55 |
| Little Wood Basin | 135 | 60 |
| Big Lost Basin | 124 | 55 |
| Little Lost, Birch Basins | 101 | 47 |
| Medicine Lodge, Beaver, Camas Basins | 129 | 58 |
| Henry's Fork, Teton Basins | 133 | 62 |
| Snake Basin Above Palisades | 117 | 55 |
| Willow, Blackfoot, Portneuf Basins | 130 | 60 |
| Oakley Basin | 128 | 58 |
| Salmon Falls Basin | 131 | 59 |
| Bruneau Basin | 139 | 64 |
| Owyhee Basin | 154 | 76 |
| Bear River Basin | 113 | 50 |

IDAHO SURFACE WATER SUPPLY INDEX (SWSI) As of January 1, 2004

The Surface Water Supply Index (SWSI) is a predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.1 (abundant supply) to -4.1 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences.

SWSI values are published January through May and provide a more comprehensive outlook of water availability than either streamflow forecasts or reservoir storage figures alone. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been established for most basins to indicate the potential for agricultural water shortages.

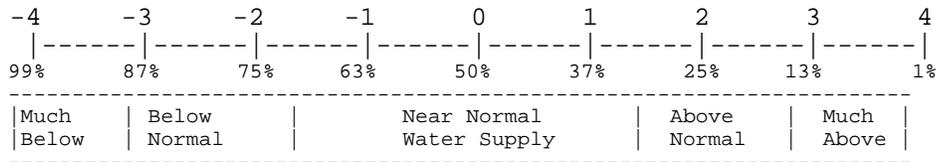
The following agencies and cooperators provide assistance in the preparation of the Surface Water Supply Index for Idaho:

US National Weather Service
 US Bureau of Reclamation
 Idaho Water Users Association

US Army Corps of Engineers
 Idaho Dept. of Water Resources
 PacifiCorp

| <i>BASIN or REGION</i> | <i>SWSI Value</i> | <i>Most Recent Year With Similar SWSI Value</i> | <i>Agricultural Water Supply Shortage May Occur When SWSI is Less Than</i> |
|------------------------|-------------------|---|--|
| PANHANDLE | -0.9 | 1993 | NA |
| CLEARWATER | 1.1 | 1989 | NA |
| SALMON | -0.2 | 2003 | NA |
| WEISER | 0.5 | 2002 | NA |
| PAYETTE | 0.0 | 2003 | NA |
| BOISE | 0.2 | 1993 | -2.1 |
| BIG WOOD | -0.2 | 2000 | -1.0 |
| LITTLE WOOD | 0.5 | 1996 | -2.0 |
| BIG LOST | 0.0 | 1993 | -0.5 |
| LITTLE LOST | -0.5 | 1990 | 0.0 |
| HENRYS FORK | 1.5 | 1993 | -3.3 |
| SNAKE (HEISE) | -0.7 | 2000 | -2.0 |
| OAKLEY | -0.7 | 1995 | -1.0 |
| SALMON FALLS | -1.5 | 2000 | -1.0 |
| BRUNEAU | 1.0 | 1996 | NA |
| BEAR RIVER | -3.9 | 2003 | -3.8 |

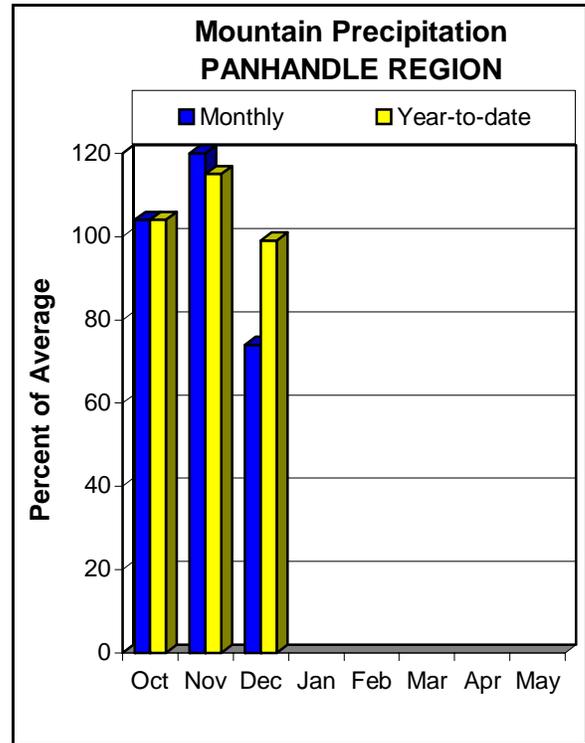
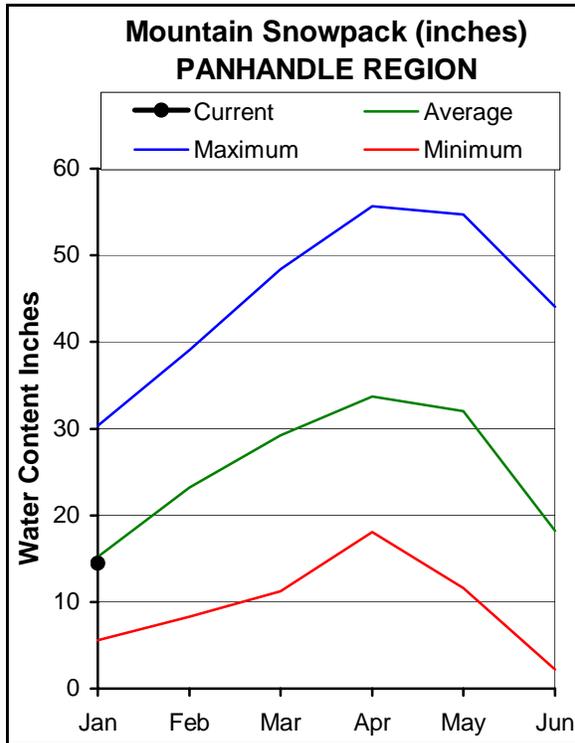
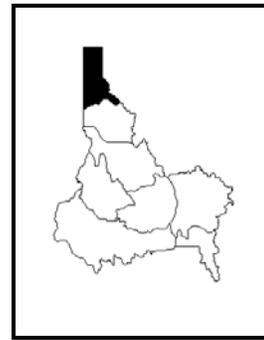
SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION



Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply," represents three SWSI units and would be expected to occur about one-third (36%) of the time.

PANHANDLE REGION

JANUARY 1, 2004



WATER SUPPLY OUTLOOK

The Panhandle Region and the Clearwater basin were the only areas in the state to receive near normal or better precipitation in October and November. December brought precipitation that was 74% of average, the lowest in the state. Water year to date precipitation is normal. The snowpack is normal in the Pend Oreille basin. The Coeur d'Alene River basin snowpack is 111% of average, nearly twice what it was last year. The St. Joe basin snowpack is 96% of average. The Spokane River basin snowpack is 105% of average, much better than the 51% of average measured a year ago. The snowpacks are just less than half of their seasonal peaks that occur around April 1. The lakes and reservoirs in northern Idaho and northwest Montana are storing near average water except for Coeur d'Alene Lake which is 39% of average. Streamflow forecasts call for near average runoff ranging from 95-105% of average. With half the winter still to come, conditions can still improve. The normal or better fall rains increased the soil moisture in this region and the soil moisture appears in better shape than the rest of Idaho. However, even with the fall rains, streamflow levels were still returning to below normal levels between rain events indicating dry soils and springs may still be lingering from the dry summer.

PANHANDLE REGION
Streamflow Forecasts - January 1, 2004

| Forecast Point | Forecast Period | <<===== Drier ===== Future Conditions ===== Wetter =====>> | | | | | 30-Yr Avg. (1000AF) | |
|----------------------------------|-----------------|--|-----------------|---------------------------------|----------|-----------------|------------------------|-----------------|
| | | Chance Of Exceeding * | | | | | | |
| | | 90% (1000AF) | 70% (1000AF) | 50% (Most Probable) (1000AF) | (% AVG.) | 30% (1000AF) | | 10% (1000AF) |
| KOOTENAI at Leonia (1,2) | APR-JUL | 4780 | 6080 | 6670 | 95 | 7260 | 8560 | 7040 |
| | APR-SEP | 5010 | 6880 | 7730 | 95 | 8580 | 10450 | 8120 |
| MOYIE RIVER at Eastport | APR-JUL | 300 | 360 | 400 | 99 | 440 | 500 | 405 |
| | APR-SEP | 315 | 380 | 420 | 100 | 460 | 525 | 420 |
| SMITH CREEK | APR-JUL | 90 | 108 | 120 | 98 | 132 | 150 | 123 |
| | APR-SEP | 92 | 112 | 125 | 97 | 138 | 158 | 129 |
| BOUNDARY CREEK | APR-JUL | 91 | 108 | 119 | 97 | 130 | 147 | 123 |
| | APR-SEP | 96 | 113 | 125 | 97 | 137 | 154 | 129 |
| CLARK FK at Whitehorse Rpd (1,2) | APR-JUL | 5500 | 8890 | 10430 | 92 | 11970 | 15360 | 11300 |
| | APR-SEP | 6130 | 9870 | 11560 | 93 | 13250 | 16990 | 12500 |
| PEND OREILLE Lake Inflow (2) | APR-JUL | 7580 | 10060 | 11740 | 92 | 13420 | 15900 | 12700 |
| | APR-SEP | 8360 | 11060 | 12900 | 93 | 14740 | 17440 | 13900 |
| PRIEST near Priest River (1,2) | APR-JUL | 640 | 780 | 845 | 104 | 910 | 1050 | 815 |
| | APR-SEP | 570 | 795 | 900 | 103 | 1000 | 1230 | 870 |
| COEUR D'ALENE at Enaville | APR-JUL | 560 | 685 | 770 | 104 | 855 | 980 | 740 |
| | APR-SEP | 590 | 720 | 810 | 104 | 900 | 1030 | 780 |
| ST. JOE at Calder | APR-JUL | 820 | 1010 | 1130 | 100 | 1250 | 1440 | 1130 |
| | APR-SEP | 885 | 1070 | 1200 | 100 | 1330 | 1520 | 1200 |
| SPOKANE near Post Falls (2) | APR-JUL | 1640 | 2130 | 2470 | 97 | 2810 | 3300 | 2550 |
| | APR-SEP | 1720 | 2220 | 2570 | 97 | 2920 | 3420 | 2650 |
| SPOKANE at Long Lake (2) | APR-JUL | 1720 | 2360 | 2790 | 100 | 3220 | 3860 | 2780 |
| | APR-SEP | 1890 | 2560 | 3020 | 100 | 3480 | 4150 | 3010 |

| PANHANDLE REGION Reservoir Storage (1000 AF) - End of December | | | | | PANHANDLE REGION Watershed Snowpack Analysis - January 1, 2004 | | | |
|---|-----------------|------------------------|-----------|--------|---|----------------------|-------------------|---------|
| Reservoir | Usable Capacity | *** Usable Storage *** | | | Watershed | Number of Data Sites | This Year as % of | |
| | | This Year | Last Year | Avg | | | Last Yr | Average |
| HUNGRY HORSE | 3451.0 | 2666.0 | 2551.0 | 2420.9 | Kootenai ab Bonners Ferry | 15 | 142 | 96 |
| FLATHEAD LAKE | 1791.0 | 1119.0 | 1192.0 | 1192.7 | Moyie River | 4 | 174 | 111 |
| NOXON RAPIDS | 335.0 | 310.8 | 323.4 | 315.8 | Priest River | 4 | 103 | 103 |
| PEND OREILLE | 1561.3 | 553.4 | 911.1 | 673.4 | Pend Oreille River | 65 | 158 | 100 |
| COEUR D'ALENE | 238.5 | 42.5 | 79.5 | 110.1 | Rathdrum Creek | 1 | 126 | 96 |
| PRIEST LAKE | 119.3 | 63.2 | 58.0 | 55.7 | Hayden Lake | 0 | 0 | 0 |
| | | | | | Coeur d'Alene River | 6 | 206 | 111 |
| | | | | | St. Joe River | 4 | 189 | 96 |
| | | | | | Spokane River | 9 | 196 | 105 |
| | | | | | Palouse River | 1 | 300 | 100 |

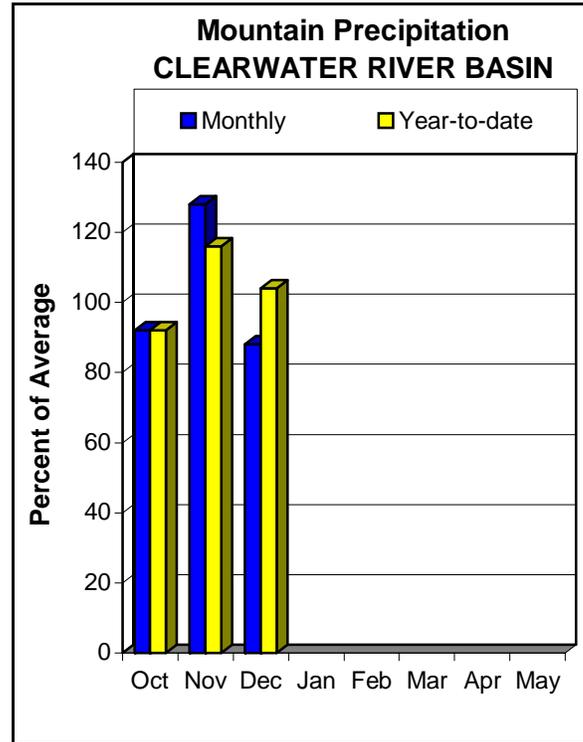
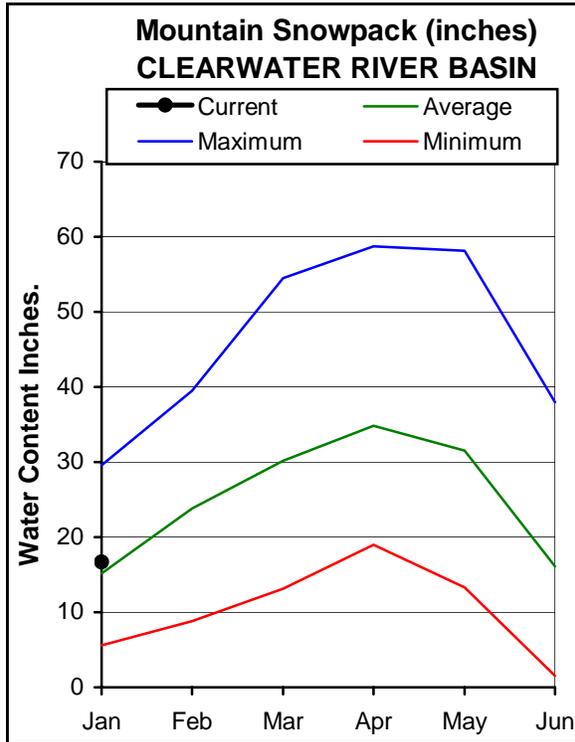
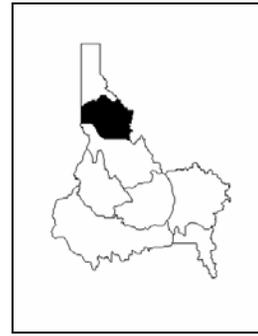
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

CLEARWATER RIVER BASIN

JANUARY 1, 2004



WATER SUPPLY OUTLOOK

The Clearwater basin and Panhandle Region were the only areas in the state to receive near normal or better precipitation in October and November. Precipitation in December was 88% of average and is just above normal since the water year started October 1. The Clearwater basin had the highest snowpaks in the state for most of December, around 115% of average. However, the winter storms at the end of December tracked through central and southern Idaho, which kept the Clearwater basin snowpack around 112% of average at month's end. This weather pattern allowed some southern Idaho snowpaks to increase 30-40 percentage points. The Selway basin snowpack is the highest at 124% of average. The Lochsa and North Fork Clearwater basins are 105% of average. Overall, the Clearwater basin snowpack is 109% of average, much better than the 60% of average measured a year ago. Depth of snow at several SNOTEL sites in the Clearwater basin is 100 inches deep. Dworshak Reservoir is 64% of capacity, same as a year ago, which is also average for January 1. Streamflow forecasts range from 100-105% of average for these Clearwater streams. With the snowpack currently at half of its seasonal peak, lets hope the second half of winter sees normal or better precipitation to maintain these near normal snowpaks.

CLEARWATER RIVER BASIN
Streamflow Forecasts - January 1, 2004

| Forecast Point | Forecast Period | <<===== Drier ===== Future Conditions ===== Wetter =====>> | | | | 30-Yr Avg. (1000AF) | | |
|------------------------------|-----------------|--|-----------------|--|-----------------|------------------------|-----------------|------|
| | | Chance Of Exceeding * | | | | | | |
| | | 90% (1000AF) | 70% (1000AF) | 50% (Most Probable) (1000AF) (% AVG.) | 30% (1000AF) | | 10% (1000AF) | |
| SELWAY near Lowell | APR-JUL | 1610 | 1930 | 2140 | 104 | 2350 | 2670 | 2060 |
| | APR-SEP | 1690 | 2020 | 2250 | 104 | 2480 | 2810 | 2170 |
| LOCHSA near Lowell | APR-JUL | 1130 | 1370 | 1530 | 100 | 1690 | 1930 | 1530 |
| | APR-SEP | 1210 | 1450 | 1610 | 100 | 1770 | 2010 | 1610 |
| DWORSHAK RESV INFLOW (1,2) | APR-JUL | 1580 | 2440 | 2830 | 107 | 3220 | 4080 | 2640 |
| | APR-SEP | 1750 | 2610 | 3000 | 107 | 3390 | 4250 | 2800 |
| CLEARWATER at Orofino (1) | APR-JUL | 2370 | 3890 | 4580 | 99 | 5270 | 6790 | 4640 |
| | APR-SEP | 2620 | 4140 | 4830 | 99 | 5520 | 7040 | 4900 |
| CLEARWATER at Spalding (1,2) | APR-JUL | 4060 | 6630 | 7800 | 105 | 8970 | 11540 | 7440 |
| | APR-SEP | 4500 | 7070 | 8240 | 105 | 9410 | 11980 | 7850 |

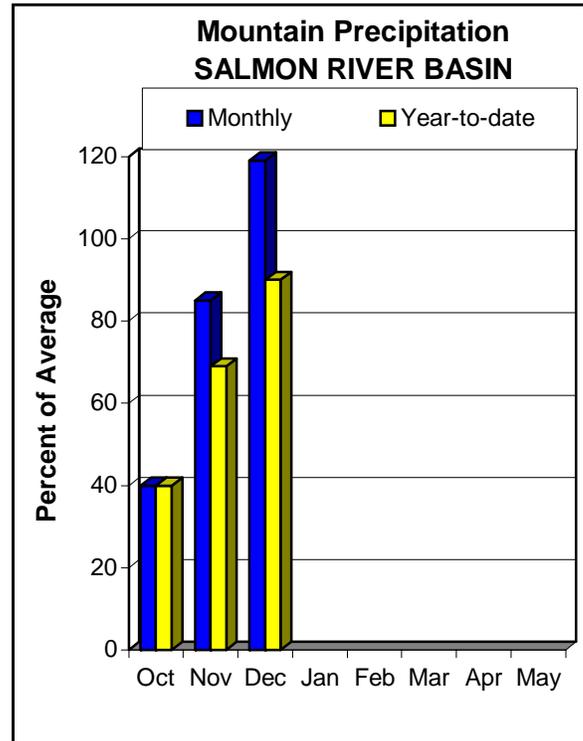
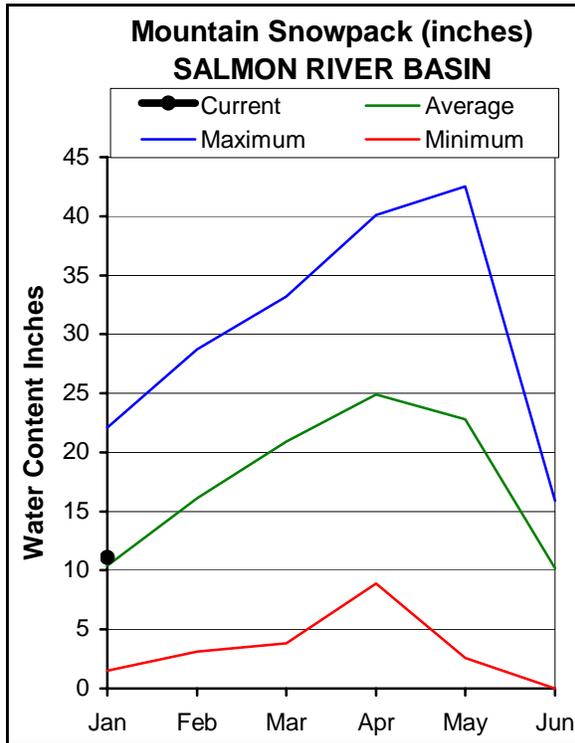
| CLEARWATER RIVER BASIN Reservoir Storage (1000 AF) - End of December | | | | | CLEARWATER RIVER BASIN Watershed Snowpack Analysis - January 1, 2004 | | | |
|---|-----------------|------------------------|-----------|--------|---|----------------------|-------------------|---------|
| Reservoir | Usable Capacity | *** Usable Storage *** | | | Watershed | Number of Data Sites | This Year as % of | |
| | | This Year | Last Year | Avg | | | Last Yr | Average |
| DWORSHAK | 3468.0 | 2209.0 | 2194.6 | 2228.2 | North Fork Clearwater | 9 | 179 | 106 |
| | | | | | Lochsa River | 3 | 163 | 105 |
| | | | | | Selway River | 4 | 166 | 124 |
| | | | | | Clearwater Basin Total | 17 | 179 | 109 |

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

SALMON RIVER BASIN JANUARY 1, 2004



WATER SUPPLY OUTLOOK

Monthly precipitation keeps getting better with each passing month, increasing from 40% of average in October, 85% in November, to 119% in December. Precipitation since the water year started remains below normal at 90% of average, which also shows how dry the fall was. January 1 snowpacks in the Salmon River basin decrease from west to east. The Little Salmon basin is the highest at 119% of average, South Fork Salmon is 114%, Middle Fork Salmon is 103%; Salmon basin above Salmon is 97%, and Lemhi basin is 92% of average. Overall, the Salmon basin snowpack is 106% of average. The snowpack at Deadwood Summit SNOTEL site, 6,860 feet, on January 5 was 100 inches deep with 22.3 inches of water, slightly better than last year and 2.5 inches above average. Two new streamflow forecasts were developed and are now being published by the NRCS. These include the Middle Fork Salmon River at Middle Fork Lodge, forecast at 91% of average, and Lemhi River near Lemhi, forecast at 75%. The Lemhi River forecast is a projection of observed flow and is not corrected for the diversions above the USGS gaging station. The Salmon River at Salmon is forecast at 96% of average and the Salmon River at White Bird is forecast at 102% of average. The water supply outlook is looking promising with more than half the April 1 seasonal peak snowpack already on the ground.

SALMON RIVER BASIN
Streamflow Forecasts - January 1, 2004

| Forecast Point | Forecast Period | <<==== Drier ===== Future Conditions ===== Wetter =====>> | | | | 30-Yr Avg. (1000AF) | | |
|--------------------------|-----------------|---|-----------------|---------------------------------|----------|------------------------|-----------------|-----------------|
| | | Chance Of Exceeding * | | | | | | |
| | | 90% (1000AF) | 70% (1000AF) | 50% (Most Probable) (1000AF) | (% AVG.) | | 30% (1000AF) | 10% (1000AF) |
| SALMON at Salmon (1) | APR-JUL | 380 | 680 | 820 | 96 | 955 | 1265 | 855 |
| | APR-SEP | 520 | 820 | 960 | 96 | 1100 | 1400 | 1000 |
| Lemhi River nr Lemhi | APR-JUL | 31 | 49 | 64 | 74 | 81 | 108 | 86 |
| | APR-SEP | 41 | 62 | 79 | 75 | 98 | 130 | 105 |
| MF Salmon at MF Lodge | APR-JUL | 456 | 606 | 720 | 91 | 844 | 1045 | 790 |
| | APR-SEP | 511 | 675 | 800 | 91 | 935 | 1153 | 875 |
| SALMON at White Bird (1) | APR-JUL | 3590 | 5210 | 5940 | 102 | 6670 | 8290 | 5850 |
| | APR-SEP | 4230 | 5850 | 6580 | 102 | 7310 | 8930 | 6480 |

| SALMON RIVER BASIN Reservoir Storage (1000 AF) - End of December | | | | | SALMON RIVER BASIN Watershed Snowpack Analysis - January 1, 2004 | | | |
|---|-----------------|------------------------|-----------|-----|---|----------------------|-------------------|---------|
| Reservoir | Usable Capacity | *** Usable Storage *** | | | Watershed | Number of Data Sites | This Year as % of | |
| | | This Year | Last Year | Avg | | | Last Yr | Average |
| | | | | | Salmon River ab Salmon | 9 | 107 | 97 |
| | | | | | Lemhi River | 6 | 141 | 92 |
| | | | | | Middle Fork Salmon River | 3 | 107 | 103 |
| | | | | | South Fork Salmon River | 3 | 104 | 114 |
| | | | | | Little Salmon River | 4 | 108 | 119 |
| | | | | | Salmon Basin Total | 24 | 115 | 106 |

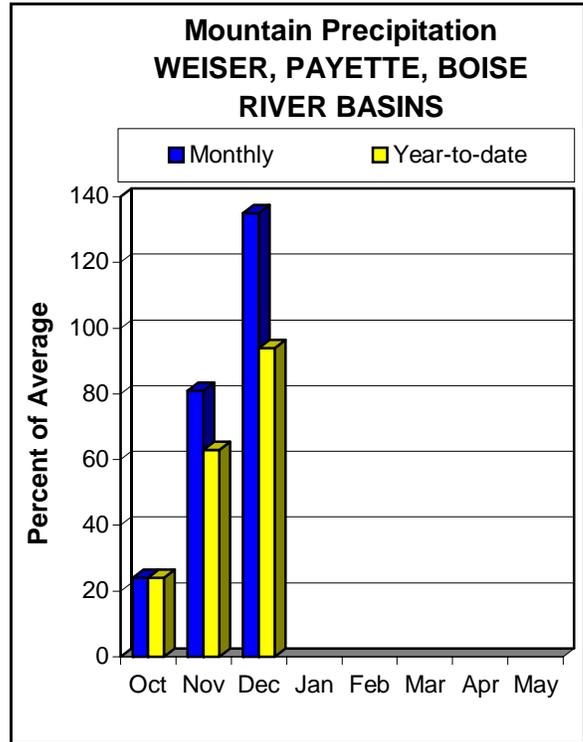
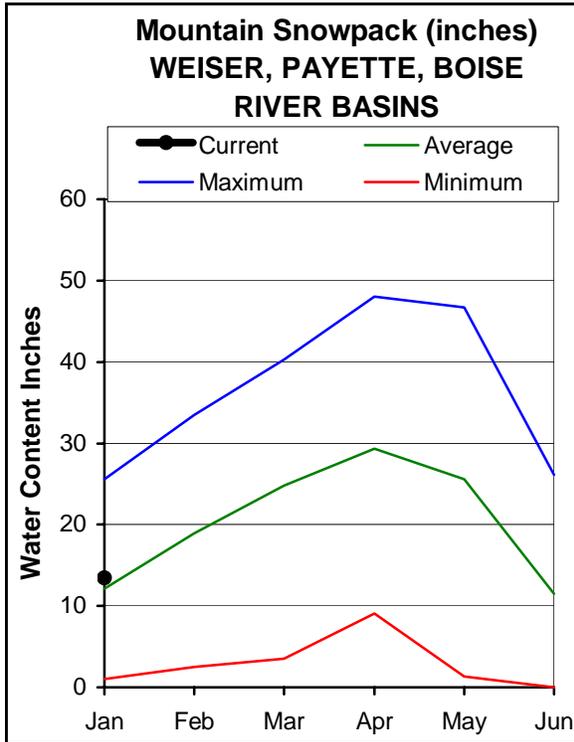
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural volume - actual volume may be affected by upstream water management.

WEISER, PAYETTE, BOISE RIVER BASINS JANUARY 1, 2004



WATER SUPPLY OUTLOOK

The new water year started with only 25% of average precipitation falling in October, but increased to 81% in November and to 135% in December. Water year to date precipitation is improving but remains below average at 94% of average. Some late fall and early winter rains helped to improve soil moisture conditions in the west-central mountains as indicated by the Jackson Peak soil moisture sensors, but soils are still dry at the 20 inch deep sensor. Snow measuring stations indicate that mid-elevations in the 6,000 foot zone received the most snowfall from the recent winter storms. The Mores Creek drainage snowpack is 145% of average. Mores Creek SNOTEL, elevation 6,100 feet, has about 20 inches of snow water (90 inches of snow on the ground), nearly the same amount as Trinity Mountain SNOTEL site at 7,770 feet. The snowpack in the North Fork Payette basin is 128% of average, Payette Basin is 122%, Boise basin 120%, and Weiser basin is 104%. The Payette Reservoir System is 58% full, 91% of average. The Boise Reservoir System is 43% full, 77% of average. Streamflow forecasts are for 100% of average for the Weiser River, 95% for the Payette River near Horseshoe Bend, and 99% for the Boise River near Boise. The water supply picture improved greatly with the storms since Christmas Eve with some sites nearly doubling their snow water content amounts. However, with only slightly more than half of the snow water content on the ground when compared to the normal April 1 seasonal peaks, we still have a ways to go to ensure an adequate water supply.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - January 1, 2004

| Forecast Point | Forecast Period | <<===== Drier ===== Future Conditions ===== Wetter =====>> | | | | | | 30-Yr Avg. (1000AF) |
|--------------------------------------|-----------------|--|-----------------|---------------------------------|----------|-----------------|-----------------|------------------------|
| | | Chance Of Exceeding * | | | | | | |
| | | 90% (1000AF) | 70% (1000AF) | 50% (Most Probable) (1000AF) | (% AVG.) | 30% (1000AF) | 10% (1000AF) | |
| WEISER near Weiser (1) | APR-SEP | 185 | 345 | 420 | 100 | 495 | 655 | 420 |
| SF PAYETTE at Lowman | APR-JUL | 290 | 375 | 430 | 105 | 485 | 570 | 410 |
| | APR-SEP | 320 | 410 | 470 | 100 | 530 | 620 | 470 |
| DEADWOOD RESERVOIR Inflow (1,2) | APR-JUL | 75 | 111 | 127 | 95 | 143 | 179 | 134 |
| | APR-SEP | 82 | 118 | 134 | 94 | 150 | 186 | 142 |
| LAKE FORK PAYETTE near McCall | APR-JUL | 63 | 75 | 83 | 98 | 91 | 103 | 85 |
| | APR-SEP | 66 | 78 | 86 | 97 | 94 | 106 | 89 |
| NF PAYETTE at Cascade (1,2) | APR-JUL | 280 | 415 | 480 | 97 | 545 | 680 | 495 |
| | APR-SEP | 315 | 450 | 515 | 97 | 580 | 715 | 530 |
| NF PAYETTE nr Banks (2) | APR-JUL | 400 | 535 | 625 | 97 | 715 | 850 | 643 |
| | APR-SEP | 425 | 570 | 665 | 96 | 760 | 905 | 690 |
| PAYETTE nr Horseshoe Bend (1,2) | APR-JUL | 860 | 1330 | 1540 | 95 | 1750 | 2220 | 1620 |
| | APR-SEP | 970 | 1450 | 1670 | 95 | 1890 | 2370 | 1760 |
| BOISE near Twin Springs (1) | APR-JUL | 445 | 575 | 635 | 100 | 695 | 825 | 635 |
| | APR-SEP | 435 | 610 | 690 | 100 | 770 | 945 | 690 |
| SF BOISE at Anderson Ranch Dam (1,2) | APR-JUL | 370 | 470 | 515 | 95 | 560 | 660 | 540 |
| | APR-SEP | 305 | 475 | 550 | 95 | 625 | 795 | 580 |
| MORES CREEK near Arrowrock Dam | APR-JUL | 95 | 124 | 143 | 109 | 162 | 191 | 131 |
| | APR-SEP | 100 | 129 | 149 | 109 | 169 | 196 | 137 |
| BOISE near Boise (1,2) | APR-JUN | 750 | 1090 | 1240 | 98 | 1390 | 1730 | 1260 |
| | APR-JUL | 785 | 1200 | 1390 | 99 | 1580 | 1990 | 1410 |
| | APR-SEP | 900 | 1320 | 1510 | 99 | 1700 | 2120 | 1530 |

WEISER, PAYETTE, BOISE RIVER BASINS
Reservoir Storage (1000 AF) - End of December

WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - January 1, 2004

| Reservoir | Usable Capacity | *** Usable Storage *** | | | Watershed | Number of Data Sites | This Year as % of | |
|-------------------------|-----------------|------------------------|-----------|-------|---------------------------|----------------------|-------------------|---------|
| | | This Year | Last Year | Avg | | | Last Yr | Average |
| MANN CREEK | 11.1 | 0.8 | 1.2 | 3.3 | Mann Creek | 1 | 104 | 94 |
| CASCADE | 693.2 | 411.1 | 423.7 | 456.4 | Weiser River | 3 | 109 | 104 |
| DEADWOOD | 164.0 | 81.9 | 55.7 | 82.5 | North Fork Payette | 8 | 115 | 128 |
| ANDERSON RANCH | 450.2 | 277.2 | 142.5 | 296.8 | South Fork Payette | 5 | 112 | 113 |
| ARROWROCK | 272.2 | 1.3 | 79.2 | 173.1 | Payette Basin Total | 14 | 116 | 122 |
| LUCKY PEAK | 293.2 | 156.8 | 110.0 | 95.5 | Middle & North Fork Boise | 5 | 115 | 112 |
| LAKE LOWELL (DEER FLAT) | 165.2 | 103.4 | 59.3 | 98.4 | South Fork Boise River | 7 | 104 | 108 |
| | | | | | Mores Creek | 5 | 153 | 145 |
| | | | | | Boise Basin Total | 14 | 121 | 120 |
| | | | | | Canyon Creek | 2 | 110 | 147 |

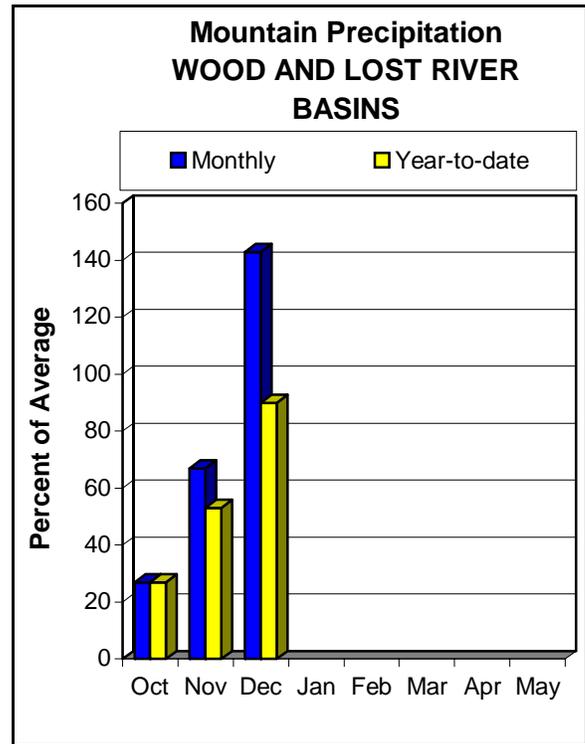
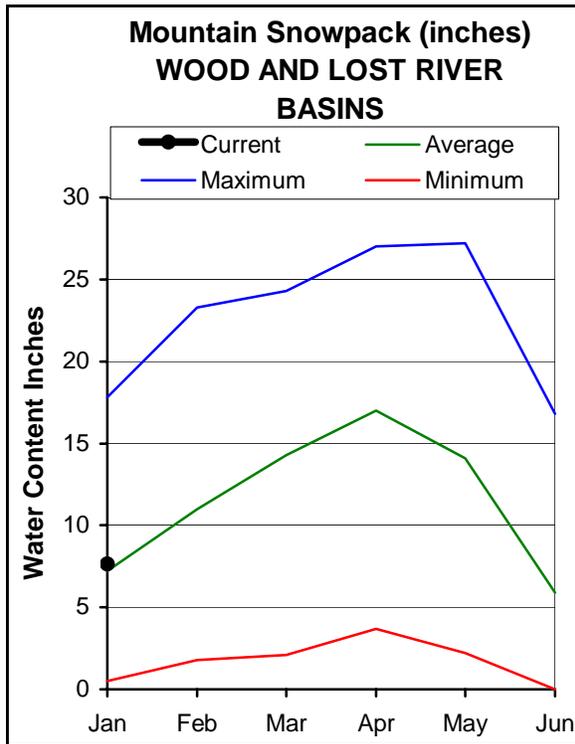
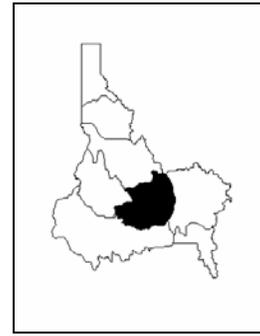
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural volume - actual volume may be affected by upstream water management.

WOOD and LOST RIVER BASINS JANUARY 1, 2004



WATER SUPPLY OUTLOOK

Monthly precipitation keeps getting better with each month. Precipitation in October was a quarter of average and only two-thirds in November, which means the soils are still dry under the snow. December precipitation was 143%. Of average, only the basins south of the Snake River received more. Precipitation for the water year is below average at 90% of average, another indicator of the dry fall weather. January 1 snowpacks are the greatest in the mid-elevation Camas Creek basin, 141% of average. Little Wood snowpack is 122% of average and Big Lost is 112%. Big Wood above Hailey snowpack is 103% of average, while some of the lowest snowpacks in the state are 93% of average in the Little Lost, Birch and Medicine Lodge basins. These basins have increased 10-20 percentage points since the first of January. Reservoir storage remains nearly empty with Magic, Little Wood and Mackay reservoirs having a combined storage of 15% of capacity, 35% of average. Streamflow forecasts call for near average runoff, except for the Little Lost River forecast at 80% of average. The snowpack is encouraging at this point, but is only slightly more than half of its normal April 1 peak. With more than half the season still to come, much more moisture is needed to overcome the moisture deficit from the past four drought years.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - January 1, 2004

| Forecast Point | Forecast Period | <<==== Drier ===== Future Conditions ===== Wetter =====>> | | | | | 30-Yr Avg. (1000AF) | |
|-------------------------------------|-----------------|---|-----------------|--|-----|-----------------|------------------------|-----------------|
| | | Chance Of Exceeding * | | | | | | |
| | | 90% (1000AF) | 70% (1000AF) | 50% (Most Probable) (1000AF) (% AVG.) | | 30% (1000AF) | | 10% (1000AF) |
| BIG WOOD at Hailey (1) | APR-JUL | 122 | 199 | 240 | 94 | 285 | 397 | 255 |
| | APR-SEP | 141 | 225 | 270 | 93 | 319 | 440 | 290 |
| BIG WOOD near Bellevue | APR-JUL | 65 | 113 | 154 | 82 | 201 | 281 | 188 |
| | APR-SEP | 73 | 124 | 166 | 83 | 214 | 296 | 201 |
| CAMAS CREEK near Blaine | APR-JUL | 47 | 79 | 105 | 105 | 135 | 187 | 100 |
| | APR-SEP | 47 | 79 | 106 | 105 | 136 | 188 | 101 |
| BIG WOOD below Magic Dam (2) | APR-JUL | 80 | 193 | 270 | 93 | 345 | 460 | 290 |
| | APR-SEP | 94 | 211 | 290 | 94 | 370 | 485 | 310 |
| LITTLE WOOD near Carey (2) | MAR-JUL | 42 | 75 | 97 | 101 | 119 | 152 | 96 |
| | MAR-SEP | 47 | 82 | 105 | 101 | 128 | 163 | 104 |
| | APR-JUL | 37 | 68 | 89 | 102 | 110 | 141 | 87 |
| | APR-SEP | 41 | 74 | 96 | 102 | 118 | 151 | 94 |
| BIG LOST at Howell Ranch | APR-JUN | 86 | 116 | 136 | 102 | 156 | 186 | 134 |
| | APR-JUL | 105 | 147 | 176 | 102 | 203 | 248 | 173 |
| | APR-SEP | 122 | 168 | 200 | 102 | 230 | 280 | 197 |
| BIG LOST below Mackay Reservoir (2) | APR-JUL | 70 | 111 | 139 | 99 | 167 | 207 | 141 |
| | APR-SEP | 95 | 140 | 170 | 99 | 201 | 246 | 172 |
| LITTLE LOST blw Wet Creek | APR-JUL | 15.1 | 20 | 24 | 77 | 28 | 33 | 31 |
| | APR-SEP | 20 | 27 | 31 | 80 | 35 | 42 | 39 |

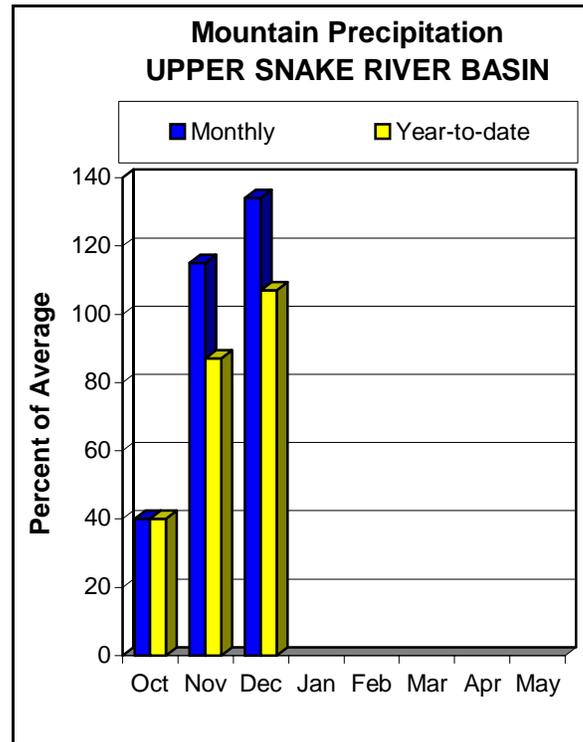
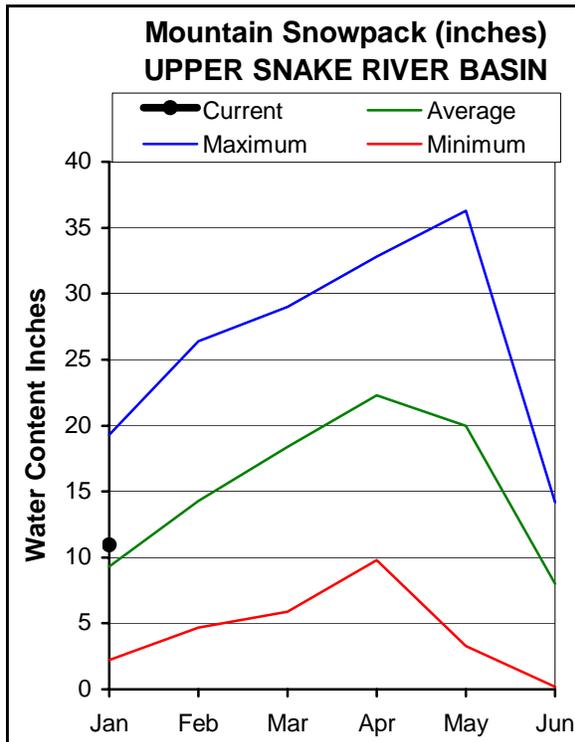
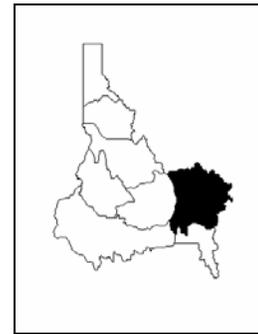
| WOOD AND LOST RIVER BASINS Reservoir Storage (1000 AF) - End of December | | | | | WOOD AND LOST RIVER BASINS Watershed Snowpack Analysis - January 1, 2004 | | | |
|---|-----------------|------------------------|-----------|------|---|----------------------|-------------------|---------|
| Reservoir | Usable Capacity | *** Usable Storage *** | | | Watershed | Number of Data Sites | This Year as % of | |
| | | This Year | Last Year | Avg | | | Last Yr | Average |
| MAGIC | 191.5 | 17.8 | 14.8 | 79.7 | Big Wood ab Hailey | 8 | 91 | 103 |
| LITTLE WOOD | 30.0 | 9.1 | 7.3 | 14.1 | Camas Creek | 3 | 104 | 141 |
| MACKAY | 44.4 | 13.7 | 10.0 | 23.7 | Big Wood Basin Total | 11 | 93 | 109 |
| | | | | | Fish Creek | 0 | 0 | 0 |
| | | | | | Little Wood River | 5 | 80 | 122 |
| | | | | | Big Lost River | 5 | 84 | 112 |
| | | | | | Little Lost River | 3 | 114 | 91 |
| | | | | | Birch-Medicine Lodge Cree | 2 | 144 | 94 |
| | | | | | Camas-Beaver Creeks | 4 | 150 | 126 |

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

UPPER SNAKE RIVER BASIN JANUARY 1, 2004



WATER SUPPLY OUTLOOK

The water year started with only 40% of average precipitation in October. November fared better with above normal precipitation at 115% of average and increasing to 134% in December. Water year to date precipitation is 107% of average in the upper Snake basin. The snowpack is 130% of average in the headwaters of the Henrys Fork and Snake River, and decreases to 114% for the Snake above Palisades Reservoir. In the lower elevation basins, the snowpack increases to 143% of average in Willow basin, 132% in Portneuf basin and 117% in Blackfoot basin. Overall, the Snake basin above American Falls Reservoir is 120% of average and has 50% more snow than a year ago. Wildhorse Divide SNOTEL site, located 10 miles south of Pocatello at 6,490 feet, has 11.1 inches of snow water, the most snow on January 1 since 1997, and it has already exceeded last year's peak of 11.0 inches that occurred on March 28! Wildhorse Divide SNOTEL site has two-thirds of its normal seasonal maximum of 17.7 inches that occurs around April 3. The current snowpack is 55-60% of its seasonal peak. Normal or better precipitation is needed in the second half of winter to maintain these encouraging snow numbers and start overcoming the moisture deficit from the four-year drought. Reservoir storage remains at or near record low levels; combined storage for Palisades and Jackson is 36% of average, which is lower than last year. Because of deep snow, the Blackfoot water master was not able to read the reservoir storage last month but the abundant snowfall is a welcome sign. Blackfoot Reservoir remains nearly empty at about 18,000 acre-feet, the lowest November storage level since 1935. Streamflow forecasts range from 90-110% of average in the upper Snake basin.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - January 1, 2004

| Forecast Point | Forecast Period | Future Conditions | | | | | | 30-Yr Avg. (1000AF) |
|----------------------------------|-----------------|-----------------------|-----------------|---------------------------------|----------|----------------------|-----------------|------------------------|
| | | <<===== Drier =====>> | | Chance Of Exceeding * | | ===== Wetter =====>> | | |
| | | 90% (1000AF) | 70% (1000AF) | 50% (Most Probable) (1000AF) | (% AVG.) | 30% (1000AF) | 10% (1000AF) | |
| HENRYS FORK near Ashton (2) | APR-JUL | 500 | 555 | 595 | 104 | 635 | 690 | 572 |
| | APR-SEP | 680 | 745 | 790 | 104 | 835 | 900 | 763 |
| HENRYS FORK near Rexburg (2) | APR-JUL | 1110 | 1280 | 1400 | 107 | 1520 | 1690 | 1310 |
| | APR-SEP | 1440 | 1630 | 1760 | 107 | 1890 | 2080 | 1650 |
| FALLS near Squirrel (1,2) | APR-JUL | 310 | 370 | 395 | 103 | 420 | 480 | 385 |
| | APR-SEP | 370 | 440 | 470 | 102 | 500 | 570 | 460 |
| TETON near Driggs | APR-JUL | 118 | 148 | 169 | 102 | 190 | 220 | 165 |
| | APR-SEP | 153 | 190 | 215 | 102 | 238 | 278 | 210 |
| TETON near St. Anthony | APR-JUL | 305 | 370 | 415 | 103 | 460 | 525 | 405 |
| | APR-SEP | 370 | 445 | 495 | 102 | 545 | 620 | 485 |
| SNAKE near Moran (1,2) | APR-SEP | 655 | 815 | 890 | 99 | 965 | 1130 | 895 |
| PACIFIC CREEK at Moran | APR-SEP | 144 | 170 | 188 | 102 | 205 | 230 | 184 |
| SNAKE above Palisades (2) | APR-JUL | 1900 | 2200 | 2410 | 102 | 2620 | 2920 | 2360 |
| | APR-SEP | 2230 | 2570 | 2800 | 102 | 3030 | 3370 | 2740 |
| GREYS above Palisades | APR-JUL | 225 | 285 | 325 | 96 | 365 | 425 | 340 |
| | APR-SEP | 270 | 335 | 380 | 96 | 425 | 490 | 395 |
| SALT near Etna | APR-JUL | 210 | 280 | 325 | 96 | 370 | 440 | 340 |
| | APR-SEP | 270 | 350 | 405 | 96 | 460 | 540 | 420 |
| PALISADES RESERVOIR INFLOW (1,2) | APR-JUL | 2010 | 2670 | 2970 | 101 | 3270 | 3930 | 2950 |
| | APR-SEP | 2830 | 3570 | 3910 | 101 | 4250 | 4990 | 3890 |
| SNAKE near Heise (2) | APR-JUL | 2800 | 3280 | 3600 | 101 | 3920 | 4400 | 3560 |
| | APR-SEP | 3290 | 3830 | 4200 | 101 | 4570 | 5110 | 4160 |
| WILLOW CREEK nr Ririe | MAR-JUL | 41 | 67 | 87 | 99 | 110 | 149 | 88 |
| BLACKFOOT RESV INFLOW | APR-JUN | 66 | 99 | 122 | 102 | 145 | 177 | 120 |
| SNAKE nr Blackfoot (1,2) | APR-JUL | 3470 | 4440 | 4880 | 106 | 5320 | 6290 | 4600 |
| | APR-SEP | 4550 | 5520 | 5960 | 106 | 6400 | 7370 | 5620 |
| PORTNEUF at Topaz | MAR-JUL | 64 | 77 | 86 | 97 | 95 | 108 | 89 |
| | MAR-SEP | 79 | 95 | 105 | 96 | 115 | 131 | 109 |
| AMERICAN FALLS RESV INFLOW (1,2) | APR-JUL | 1610 | 2800 | 3340 | 103 | 3880 | 5070 | 3240 |
| | APR-SEP | 1870 | 3060 | 3600 | 103 | 4140 | 5330 | 3500 |

UPPER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of December

UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - January 1, 2004

| Reservoir | Usable Capacity | *** Usable Storage *** | | | Watershed | Number of Data Sites | This Year as % of | |
|----------------|-----------------|------------------------|-----------|--------|---------------------------|----------------------|-------------------|---------|
| | | This Year | Last Year | Avg | | | Last Yr | Average |
| HENRYS LAKE | 90.4 | 66.6 | 66.1 | 82.5 | Henrys Fork-Falls River | 10 | 175 | 133 |
| ISLAND PARK | 135.2 | 68.1 | 56.4 | 96.1 | Teton River | 3 | 147 | 123 |
| GRASSY LAKE | 15.2 | 9.5 | 12.3 | 11.6 | Henrys Fork above Rexburg | 13 | 169 | 131 |
| JACKSON LAKE | 847.0 | 142.9 | 245.7 | 481.7 | Snake above Jackson Lake | 9 | 158 | 129 |
| PALISADES | 1400.0 | 398.9 | 443.2 | 1036.5 | Gros Ventre River | 2 | 130 | 96 |
| RIRIE | 80.5 | 27.5 | 31.5 | 34.5 | Hoback River | 5 | 142 | 103 |
| BLACKFOOT | | NO REPORT | | | Greys River | 4 | 134 | 92 |
| AMERICAN FALLS | 1672.6 | 609.9 | 688.0 | 986.6 | Salt River | 3 | 128 | 105 |
| | | | | | Snake above Palisades | 22 | 146 | 114 |
| | | | | | Willow Creek | 2 | 134 | 143 |
| | | | | | Blackfoot River | 2 | 118 | 117 |
| | | | | | Portneuf River | 3 | 167 | 132 |
| | | | | | Snake abv American Falls | 34 | 151 | 120 |

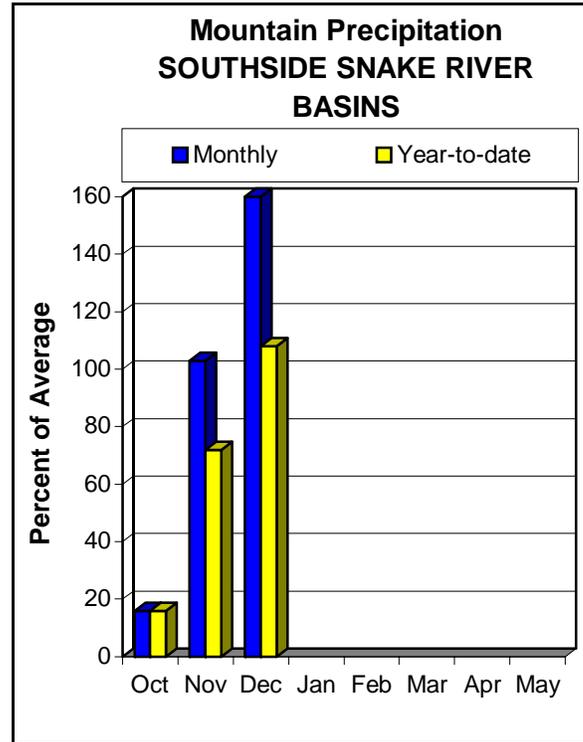
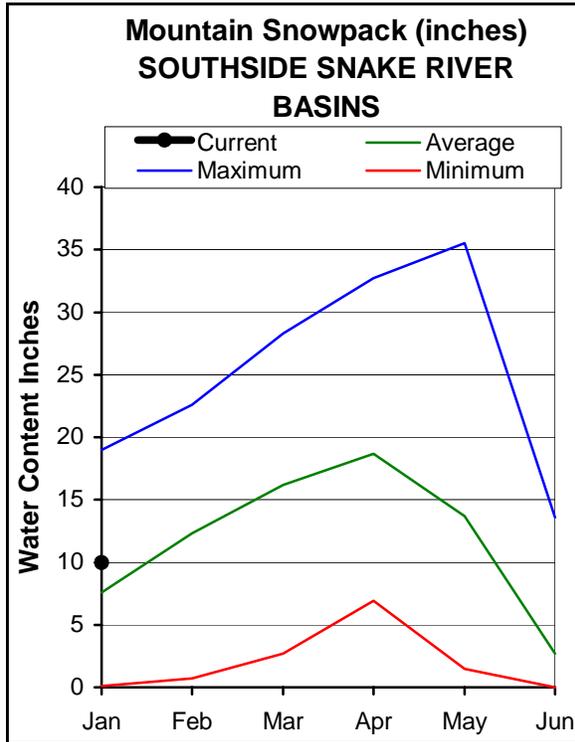
* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.

(2) - The value is natural volume - actual volume may be affected by upstream water management.

SOUTHSIDE SNAKE RIVER BASINS JANUARY 1, 2004



WATER SUPPLY OUTLOOK

The water year started where the old one ended with October bringing only 16% of average precipitation, the lowest in the state. November precipitation was average and increased to 160% in December, the highest in the state. Water year to date precipitation is slightly above average at 108% because of the abundant December moisture. Snowpacks range from 125-145% of average in these basins south of the Snake River and are 55-70% of their April 1 snow water peaks. However, the nice, white and thick snowpack looks good on the surface, but the brown, dry and thirsty soils will soak up their share of water when the snow melts later this spring. Last year's late summer and early fall streamflow are used as indicators of soil moisture and the Bruneau, Salmon Falls and Goose creeks were at or near minimum streamflow levels in late October. Reservoir storage is near zero with Oakley Reservoir at 9% full, 26% of average and less than last year. Salmon Falls Reservoir is about the same as last year at 23% of average. Owyhee Reservoir is 8% full, 14% of average and at its third lowest with only 1993 and 1989 storing less water. Streamflow forecasts call for 100-120% of average runoff, with the greater amounts in the Owyhee basin. With more than half the winter still to come, the water supply outlook can improve with above normal precipitation the rest of winter. However, if that does not happen, water users may consider using a lesser exceedance forecast to reduce their risk of being water short. With so many future unknown variables such as soil moisture, timing of the runoff, remaining winter precipitation and spring precipitation, it is too early to tell whether this year will break the four-year drought until Mother Nature plays her final card.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - January 1, 2004

| Forecast Point | Forecast Period | <<===== Drier ===== Future Conditions ===== Wetter =====>> | | | | | 30-Yr Avg. (1000AF) | |
|---------------------------------------|-----------------|--|-----------------|--|-----|-----------------|------------------------|-----------------|
| | | Chance Of Exceeding * | | | | | | |
| | | 90% (1000AF) | 70% (1000AF) | 50% (Most Probable) (1000AF) (% AVG.) | | 30% (1000AF) | | 10% (1000AF) |
| OAKLEY RESV INFLOW | MAR-JUL | 22 | 30 | 36 | 106 | 43 | 54 | 34 |
| | MAR-SEP | 24 | 33 | 39 | 105 | 46 | 58 | 37 |
| OAKLEY RESV STORAGE | FEB-28 | 9.3 | 11.6 | 13.1 | 42 | 14.6 | 16.9 | 31 |
| | MAR-31 | 13.4 | 16.3 | 18.3 | 51 | 20 | 23 | 36 |
| | APR-30 | 16.4 | 20 | 23 | 56 | 26 | 30 | 41 |
| SALMON FALLS CREEK nr San Jacinto | MAR-JUN | 53 | 72 | 85 | 96 | 98 | 117 | 89 |
| | MAR-JUL | 53 | 74 | 88 | 95 | 102 | 123 | 93 |
| | MAR-SEP | 57 | 78 | 93 | 95 | 108 | 129 | 98 |
| SALMON FALLS RESV STORAGE | FEB-28 | 14.8 | 18.5 | 21 | 35 | 24 | 27 | 60 |
| | MAR-31 | 22 | 29 | 34 | 48 | 39 | 46 | 70 |
| | APR-30 | 32 | 42 | 48 | 54 | 54 | 64 | 89 |
| BRUNEAU near Hot Spring | MAR-JUL | 161 | 212 | 250 | 106 | 291 | 358 | 237 |
| | MAR-SEP | 168 | 220 | 260 | 105 | 303 | 372 | 248 |
| OWYHEE near Gold Creek (2) | MAR-JUL | 23 | 32 | 38 | 112 | 44 | 53 | 34 |
| OWYHEE nr Owyhee (2) | APR-JUL | 48 | 79 | 100 | 122 | 121 | 152 | 82 |
| OWYHEE near Rome | FEB-JUL | 426 | 637 | 805 | 123 | 992 | 1304 | 655 |
| OWYHEE RESV INFLOW (2) | FEB-JUL | 444 | 654 | 820 | 123 | 1005 | 1310 | 665 |
| | FEB-SEP | 471 | 683 | 850 | 123 | 1035 | 1340 | 690 |
| | APR-SEP | 249 | 377 | 480 | 120 | 595 | 786 | 400 |
| SUCCOR CK nr Jordan Valley | FEB-JUL | 42 | 49 | 54 | 117 | 59 | 66 | 46 |
| SNAKE RIVER at King Hill (1,2) | APR-JUL | 519 | 1469 | 1900 | 62 | 2330 | 3280 | 3050 |
| SNAKE RIVER near Murphy (1,2) | APR-JUL | 710 | 1673 | 2110 | 68 | 2545 | 3510 | 3090 |
| SNAKE RIVER at Weiser (1,2) | APR-JUL | 725 | 2867 | 3840 | 67 | 4815 | 6950 | 5760 |
| SNAKE RIVER at Hells Canyon Dam (1,2) | APR-JUL | 975 | 3323 | 4390 | 68 | 5460 | 7800 | 6490 |
| SNAKE blw Lower Granite Dam (1,2) | APR-JUL | 8927 | 16404 | 19800 | 92 | 23200 | 30670 | 21600 |

SOUTHSIDE SNAKE RIVER BASINS
Reservoir Storage (1000 AF) - End of December

SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - January 1, 2004

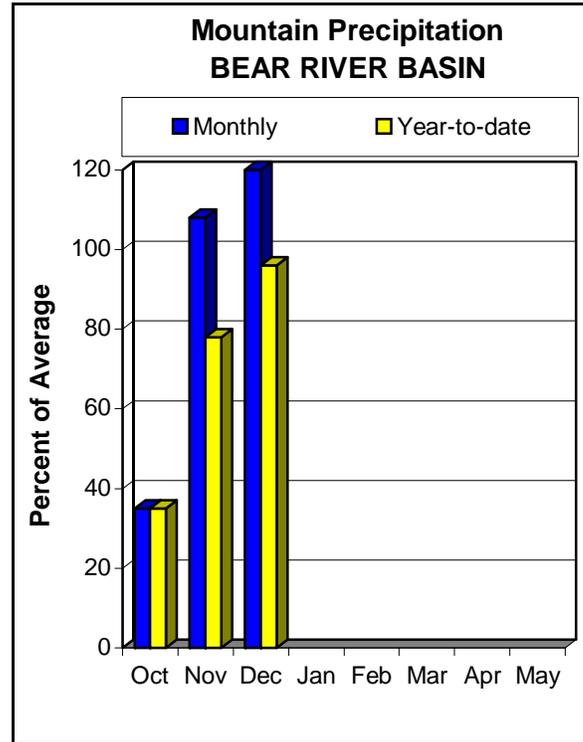
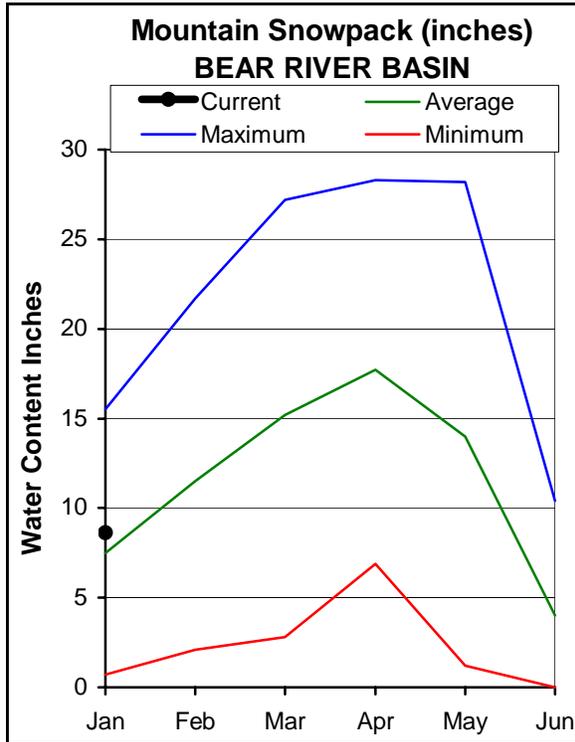
| Reservoir | Usable Capacity | *** Usable Storage *** | | | Watershed | Number of Data Sites | This Year as % of | |
|---------------------|-----------------|------------------------|-----------|--------|----------------------|----------------------|-------------------|---------|
| | | This Year | Last Year | Avg | | | Last Yr | Average |
| OAKLEY | 74.5 | 6.7 | 11.1 | 25.7 | Raft River | 1 | 175 | 124 |
| SALMON FALLS | 182.6 | 11.9 | 11.1 | 52.6 | Goose-Trapper Creeks | 3 | 182 | 132 |
| WILDHORSE RESERVOIR | 71.5 | 13.6 | 19.3 | 37.8 | Salmon Falls Creek | 6 | 161 | 127 |
| OWYHEE | 715.0 | 56.0 | 113.7 | 398.1 | Bruneau River | 5 | 144 | 131 |
| BROWNLEE | 1419.3 | 1267.3 | 1287.2 | 1303.0 | Owyhee Basin Total | 8 | 149 | 146 |

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

BEAR RIVER BASIN JANUARY 1, 2004



WATER SUPPLY OUTLOOK

Monthly precipitation in the Bear River basin increased from 35% of average in October, 108% in November, to 120% of average in December. Water year to date precipitation remains below average at 96%. Snowpack percentages range from near average in the Smith and Thomas forks, and headwaters of the Bear River in Utah to 173% of average at Oxford Spring SNOTEL site, located 5 miles northeast of Malad. Oxford Spring SNOTEL has exceeded last year's snow water content peak of 7.8 inches that occurred on March 8. Emigrant Summit SNOTEL, located 25 miles west of Montpelier, is two inches short of exceeding last year's peak snow water of 17.6 inches on April 9. Bear Lake remains nearly empty with only about 15,000 acre-feet available for irrigators this year, which means a good snow year is critical for southeastern Idaho. Streamflow forecasts are the highest in the headwaters in Utah with the Bear River near UT-WY State Line forecast at 91% of average. Streamflow forecasts decrease downstream and call for 62% of average for the Bear River near Woodruff. The Bear River at Stewart Dam is forecast at only 20% of average. This decreasing streamflow volume relationship is similar to last year's observed runoff and is a result of the accumulative drought effects -- dry soils, springs and wetland areas. The Bear River at Stewart Dam forecast was revised last summer and is now a forecast of the observed flow expected at Stewart Dam. The forecast is not adjusted or corrected for the numerous diversions above the gaging station. The Bear River basin Surface Water Supply Index is -3.9 even when using the 10% Exceedance Forecast. The SWSI is a combination of Bear Lake water and projected streamflow that ranges from +4.0 to -4.0. Conditions can improve with above normal winter and spring precipitation, but water users should be prepared for water shortages.

BEAR RIVER BASIN
Streamflow Forecasts - January 1, 2004

| Forecast Point | Forecast Period | Future Conditions | | | | | | 30-Yr Avg. (1000AF) |
|-------------------------------------|-----------------|--------------------|-----------------|---------------------------------|----------|-------------------------|-----------------|------------------------|
| | | <<==== Drier ===== | | ===== Chance Of Exceeding * | | ===== Wetter =====>> | | |
| | | 90% (1000AF) | 70% (1000AF) | 50% (Most Probable) (1000AF) | (% AVG.) | 30% (1000AF) | 10% (1000AF) | |
| Bear River nr UT-WY State Line | APR-SEP | 70 | 96 | 114 | 91 | 132 | 158 | 125 |
| Bear River ab Reservoir nr Woodruff | APR-SEP | 25 | 63 | 88 | 62 | 113 | 151 | 142 |
| Smiths Fork nr Border | APR-JUL | 52 | 74 | 89 | 86 | 104 | 126 | 103 |
| | APR-SEP | 62 | 87 | 104 | 86 | 121 | 146 | 121 |
| Bear River at Stewart Dam | APR-JUL | 7.0 | 25 | 43 | 19 | 66 | 110 | 227 |
| | APR-SEP | 9.0 | 30 | 50 | 20 | 76 | 123 | 255 |

| BEAR RIVER BASIN Reservoir Storage (1000 AF) - End of December | | | | | BEAR RIVER BASIN Watershed Snowpack Analysis - January 1, 2004 | | | |
|---|-----------------|------------------------|-----------|-------|---|----------------------|-------------------|---------|
| Reservoir | Usable Capacity | *** Usable Storage *** | | | Watershed | Number of Data Sites | This Year as % of | |
| | | This Year | Last Year | Avg | | | Last Yr | Average |
| BEAR LAKE | 1421.0 | 134.7 | 352.0 | 907.5 | Smiths & Thomas Forks | 3 | 134 | 98 |
| MONTPELIER CREEK | 4.0 | 0.8 | --- | 1.7 | Bear River ab WY-ID line | 10 | 135 | 101 |
| | | | | | Montpelier Creek | 1 | 128 | 111 |
| | | | | | Mink Creek | 1 | 163 | 130 |
| | | | | | Cub River | 1 | 172 | 114 |
| | | | | | Bear River ab ID-UT line | 15 | 145 | 109 |
| | | | | | Malad River | 1 | 224 | 173 |

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual volume will exceed the volumes in the table.

The average is computed for the 1971-2000 base period.

- (1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
- (2) - The value is natural volume - actual volume may be affected by upstream water management.

Interpreting Streamflow Forecasts

Introduction

Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflow forecasts are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

Most Probable (50 Percent Chance of Exceeding) Forecast. This forecast is the best estimate of streamflow volume that can be produced given current conditions and based on the outcome of similar past situations, There is a 50 percent chance that the streamflow volume will exceed this forecast value. There is a 50 percent chance that the streamflow volume will be less than this forecast value.

The most probable forecast will rarely be exactly right, due to errors resulting from future weather conditions and the forecast equation itself. This does not mean that users should not use the most probable forecast; it means that they need to evaluate existing circumstances and determine the amount of risk they are willing to take by accepting this forecast value.

To Decrease the Chance of Having Too Little Water

If users want to make sure there is enough water available for their operations, they might determine that a 50 percent chance of the streamflow volume being lower than the most probable forecast is too much risk to take. To reduce the risk of not having enough water available during the forecast period, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded (or possibly some point in-between). These include:

70 Percent Chance of Exceeding Forecast. There is a 70 percent chance that the streamflow volume will exceed this forecast value.

There is a 30 percent chance the streamflow volume will be less than this forecast value.

90 Percent Chance of Exceeding Forecast. There is a 90 percent chance that the streamflow volume will exceed this forecast value.

There is a 10 percent chance the streamflow volume will be less than this forecast value.

To Decrease the Chance of Having Too Much Water

If users want to make sure they don't have too much water, they might determine that a 50 percent chance of the streamflow being higher than the most probable forecast is too much of a risk to take. To reduce the risk of having

too much water available during the forecast period, users can base their operational decisions on one of the forecasts with a smaller chance of being exceeded. These include:

30 Percent Chance of Exceeding Forecast. There is a 30 percent chance that the streamflow volume will exceed this forecast value. There is a 70 percent chance the streamflow volume will be less than this forecast value.

10 Percent Chance of Exceeding Forecast. There is a 10 percent chance that the streamflow volume will exceed this forecast value. There is a 90 percent chance the streamflow volume will be less than this forecast value.

Using the forecasts - an example

Using the Most Probable Forecast. Using the example forecasts shown below, users can reasonably expect 36,000 acre-feet to flow past the gaging station on the Mary's River near Death between March 1 and July 31.

Using the Higher Exceedence Forecasts. If users anticipate a somewhat drier trend in the future (monthly and seasonal weather outlooks are **available** from the **National** Weather Service every two weeks), or if **they are** operating **at a level** where an unexpected shortage of water could cause problems, they might want to plan on receiving only 20,000 acre-feet (from the 70 percent chance of exceeding forecast). In seven out of ten years with similar conditions, streamflow volumes will exceed the 20,000 acre-foot forecast.

If users anticipate extremely dry conditions for the remainder of the season, or if they determine the risk of using the 70 percent chance of exceeding forecast is too great, then they might plan on receiving only 5000 acre-feet (from the 90 percent chance of exceeding forecast). Nine out of ten years with similar conditions, streamflow volumes will exceed the 5000 acre-foot forecast.

Using the Lower Exceedance Forecasts. If users expect wetter future conditions, or if the chance that five out of every ten years with similar conditions would produce streamflow volumes greater than 36,000 acre-feet was more than they would like to risk, they might plan on receiving 52,000 acre-feet (from the 30 percent chance of exceeding forecast) to minimize potential flooding problems. Three Out of ten years with similar conditions, streamflows will exceed the 52,000 acre-foot forecast.

In years when users expect extremely wet conditions for the remainder of the season and the threat of severe flooding and downstream damage exists, they might choose to use the 76,000 acre-foot (10 percent chance of exceeding) forecast for their water management operations. Streamflow volumes will exceed this level only one year out of ten.

WEISER, PAYETTE, BOISE RIVER BASINS Streamflow Forecasts

| Forecast Point | Forecast Period | <<===== Drier ===== Future Conditions ===== Wetter =====>> Chance Of Exceeding * | | | | | 30-Yr Avg. (1000AF) | |
|-----------------------------------|-----------------|---|-----------------|---------------------------------|----------|-----------------|------------------------|-----------------|
| | | 90% (1000AF) | 70% (1000AF) | 50% (Most Probable) (1000AF) | (% AVG.) | 30% (1000AF) | | 10% (1000AF) |
| SF PAYETTE RIVER at Lowman | APR-JUL | 329 | 414 | 471 | 109 | 528 | 613 | 432 |
| | APR-SEP | 369 | 459 | 521 | 107 | 583 | 673 | 488 |
| BOISE RIVER near Twin Springs (1) | APR-JUL | 443 | 610 | 685 | 109 | 760 | 927 | 631 |
| | APR-SEP | 495 | 670 | 750 | 109 | 830 | 1005 | |

For more information concerning streamflow forecasting ask your local NRCS field office for a copy of "A Field Office Guide for Interpreting Streamflow Forecasts" or visit our Web page.

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