

Keen, Shelley

From: Marron, Jim - Portland, OR [jim.marron@por.usda.gov]
Sent: Tuesday, August 02, 2005 12:48 PM
To: Abramovich, Ron - Boise, ID; Pasteris, Phil - Portland, OR; Morrissey, Phil - Boise, ID; Shelley.Keen@idwr.idaho.gov
Subject: FW: Surface Water Supply Index

Shelly,

It is certainly our intent to provide SWSI data into the future. The form of the publication may change but the information will still be available.

I am forwarding this email to Ron Abramovich in Idaho who calculates the index and provides the index in the Idaho publications.

Jim

Jim Marron, Hydrologist
National Water & Climate Center
Natural Resources Conservation Service
US Department of Agriculture
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Portland, Oregon 97232
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-----Original Message-----
From: Keen, Shelley [mailto:Shelley.Keen@idwr.idaho.gov]
Sent: Tuesday, August 02, 2005 11:05 AM
To: 'jmarron@wcc.nrcs.usda.gov'
Subject: Surface Water Supply Index

What is the easiest way to find Surface Water Supply Index information for Idaho? Do you intend to continue publishing SWSI data into the future?

Thank you.

Shelley Keen
Water Right Permits Section
Idaho Dept. of Water Resources
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SURFACE WATER SUPPLY INDEX

IDAHO SURFACE WATER SUPPLY INDEX (SWSI)

As of April 1, 2005

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 +4.0 (abundant supply) to -4.0 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences. The SWSI analysis period is from 1971 to present.

SWSI values provide a more comprehensive outlook of water availability by combining streamflow forecasts and reservoir storage where appropriate. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been determined for some basins to indicate the potential for agricultural irrigation water shortages.

BASIN or REGION	SWSI Value	Most Recent Year With Similar SWSI Value	Agricultural Water Supply Shortage May Occur When SWSI is Less Than
PANHANDLE	-3.5	----	NA
CLEARWATER	-2.4	1994	NA
SALMON	-2.6	1988	NA
WEISER	-2.6	1991/94	NA
PAYETTE	-2.6	2001	NA
BOISE	-3.1	2001	-2.1
BIG WOOD	-2.6	2004	-1.0
LITTLE WOOD	-1.6	2004	-2.0
BIG LOST	-1.2	2003	-0.5
LITTLE LOST	-2.6	2001	0.0
HENRYS FORK	-3.3	1992	-3.3
SNAKE (HEISE)	-3.8	2001	-2.0
OAKLEY	-2.4	2004	-1.0
SALMON FALLS	-2.6	2002	-1.0
BRUNEAU	-1.0	2002	NA
BEAR RIVER	-3.8	2003/04	-3.8

SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

-4	-3	-2	-1	0	1	2	3	4
-----	-----	-----	-----	-----	-----	-----	-----	-----
99%	87%	75%	63%	50%	37%	25%	13%	1%

Much	Below	Near Normal			Above	Much		
Below	Normal	Water Supply			Normal	Above		

NA = Not Applicable

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.



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SURFACE WATER SUPPLY INDEX

*Can this be used to define
"average" flow?*

IDAHO SURFACE WATER SUPPLY INDEX (SWSI)
As of February 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

U. S. Army Corps of Engineers
Idaho Department of Water Resources
PacifiCorp

BASIN or REGION	SWSI Value	Most Recent Year With Similar SWSI Value	Agricultural Water Supply Shortage May Occur When SWSI is Less Than
PANHANDLE	0.1	1996	NA
CLEARWATER	1.6	1999	NA
SALMON	0.2	1998	NA
WEISER	0.2	2002	NA
PAYETTE	0.0	2003	NA
BOISE	0.2	2000	-2.1
BIG WOOD	-0.2	2000	-1.0
LITTLE WOOD	0.2	1985	-2.0
BIG LOST	-0.2	1993	-0.5
LITTLE LOST	-0.5	1990	0.0
HENRYS FORK	1.3	1985	-3.3
SNAKE (HEISE)	-1.2	1989	-2.0
OAKLEY	-1.2	1987	-1.0
SALMON FALLS	-1.7	1988	-1.0
BRUNEAU	1.0	1996	NA
BEAR RIVER	-3.9	2003	-3.8

SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

-4	-3	-2	-1	0	1	2	3	4
----- ----- ----- ----- ----- ----- ----- ----- -----								
99%	87%	75%	63%	50%	37%	25%	13%	1%
----- ----- ----- ----- ----- ----- ----- ----- -----								
Much Below	Below Normal	Near Normal Water Supply			Above Normal		Much Above	

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.

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[E-mail Questions or Comments](#)

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