

## HYDROLOGY

Water is an important factor in our lives here in Western Washington. The NWS provides the official word for warnings, watches and other pertinent hydrologic information on water flow, flood potential, and water supply on our area's waterways and land areas. We provide forecasts for certain locations on area rivers.

The hydrologic forecast process starts at the NWS River Forecast Center located in Portland, OR. Hydrologists collect data from various sources including precipitation gauges, SNOTEL gauges, river gauges, and various weather observations. Hydrologists quality control these data, then use these data (along with other data from agencies like the US Army Corp of Engineers, US Bureau of Reclamation, US Geological Survey, Washington Department of Water Resources, and Natural Resource Conservation Service) in sophisticated computer programs to model rainfall, snow accumulation and melt, soil saturation, runoff, and stream flow. Hydrologists review the model output and refine the forecasts before making them available for use.

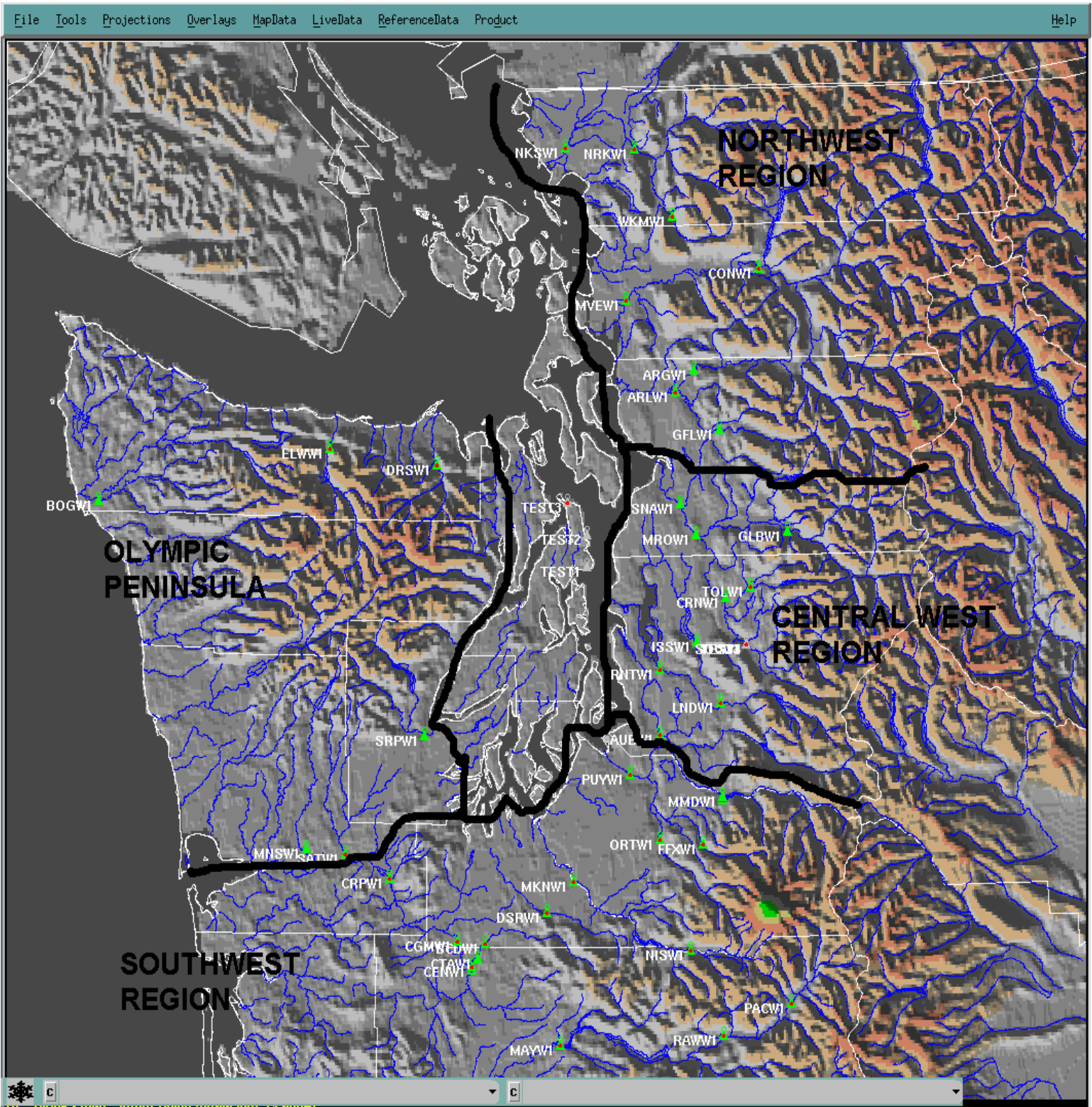
Because hydrologic concerns are complex across different geographic areas, the NWS has special positions at selected offices called Service Hydrologists. The Service Hydrologist provides special forecasts like the Water Supply Outlook, the monthly Washington Precipitation Summary and Spring Flood Potential, and coordinates with community and county officials in establishing and maintaining river flood stages and forecast points.

The WFO Seattle staff interprets river forecasts and issues appropriate watches, warnings, and statements when necessary. When flooding begins, we prepare special statements and forecasts for selected points on rivers in our area. During certain times of the year, storms may cause quick bursts of rainfall resulting in flash flooding. Our forecasters issue watches, warnings and statements during these events as well. We also issue appropriate statements in the unlikely event of a dam failure.

A list of the WFO Seattle river forecast points follows on the next page. When drier conditions prevail a hydrologic outlook may be issued when a Drought Plan is deemed necessary by Washington state officials. Besides issuing the outlook product, the forecast office will provide additional hydro-meteorological support to local area emergency managers.

Advanced Hydrologic Prediction Service (AHPS) is an essential component of our Climate, Water, and Weather Services available on all weather forecast office's websites. AHPS is a web-based suite of accurate and information-rich river forecast products. They display the magnitude and uncertainty of occurrence of floods or droughts, from hours to days and months, in advance. These graphical products are useful information and planning tools for many economic and emergency managers. These new products will enable government agencies, private institutions, and individuals to make more informed decisions about risk based policies and actions to mitigate the dangers posed by floods and droughts.

# WFO SEATTLE HYDROLOGIC SERVICE AREA



## WFO SEATTLE RIVER FORECAST POINTS

<i>NWSLI</i>	<i>RIVER FORECAST POINT</i>	<i>FLOOD STAGE</i>
<b>COWLITZ RIVER BASIN</b>		
PACW1	COWLITZ R AT PACKWOOD	10.5 ft
RAWW1	COWLITZ R AT RANDLE	18.0 ft
MAYW1	COWLITZ R BLO MAYFIELD DAM	25,000 cfs
<b>CHEHALIS / NEWAUKUM / SKOOKUMCHUCK RIVER BASIN</b>		
CENW1	CHEHALIS R AT CENTRALIA	65.0 ft
BCDW1	SKOOKUMCHUCK R NR BUCODA	13.5 ft
CTAW1	SKOOKUMCHUCK R AT CENTRALIA	85.0 ft
CGMW1	CHEHALIS R NR GRAND MOUND	14.0 ft
CRPW1	CHEHALIS R AT PORTER	21.0 ft
<b>NORTH OLYMPIC PENINSULA RIVER BASINS</b>		
BOGW1	BOGACHIEL R NR LA PUSH	37.0 ft
ELWW1	ELWHA R AT MCDONALD BRIDGE, NR PORT ANGELES	20.0 ft
DRSW1	DUNGENESS R NR SEQUIM	7.0 ft
<b>SOUTH OLYMPIC PENINSULA RIVER BASINS</b>		
SATW1	SATSOP R NR SATSOP	34.0 ft
MNSW1	WYNOOCHEE R ABV BLACK CK, NR MONTESANO	18.0 ft
SRPW1	SKOKOMISH R NR POTLATCH	16.0 ft
<b>DESCHUTES RIVER BASIN</b>		
DSRW1	DESCHUTES R NR RAINIER	11.0 ft
<b>NISQUALLY RIVER BASIN</b>		
NISW1	NISQUALLY R NR NATIONAL	10.0 ft
MKNW1	NISQUALLY R AT MCKENNA	10.0 ft
<b>PUYALLUP / CARBON / WHITE RIVER BASIN</b>		
FFXW1	CARBON R NR FAIRFAX	13.5 ft
MMDW1	WHITE R NR BUCKLEY (Mud Mountain Dam)	8,000 cfs
ORTW1	PUYALLUP R NR ORTING	4,500 cfs
PUYW1	PUYALLUP R AT PUYALLUP	30.0 ft
<b>GREEN RIVER BASIN</b>		
AUBW1	GREEN R NR AUBURN	64.0 ft
<b>CEDAR RIVER and ISSAQUAH CREEK BASINS</b>		
LNDW1	CEDAR R NR LANDSBURG	5.0 ft
RNTW1	CEDAR R AT RENTON	12.0 ft
ISSW1	ISSAQUAH CK NR MOUTH, NR ISSAQUAH	10.5 ft

<i>NWSLI</i>	<i>RIVER GAUGING SITE</i>	<i>FLOOD STAGE</i>
<b>SNOQUALMIE / SKYKOMISH / SNOHOMISH RIVER BASIN</b>		
SQUW1	SNOQUALMIE R NR SNOQUALMIE	<b>20,000 cfs</b>
TOLW1	TOLT R NR CARNATION	<b>4,500 cfs</b>
CRNW1	SNOQUALMIE R NR CARNATION	<b>54.0 ft</b>
GLBW1	SKYKOMISH R NR GOLD BAR	<b>15.0 ft</b>
MROW1	SNOHOMISH R NR MONROE	<b>15.0 ft</b>
SNAW1	SNOHOMISH R AT SNOHOMISH	<b>25.0 ft</b>
<b>STILLAGUAMISH RIVER BASIN</b>		
GFLW1	S F STILLAGUAMISH R NR GRANITE FALLS	<b>14.0 ft</b>
ARGW1	N F STILLAGUAMISH R NR ARLINGTON	<b>13.0 ft</b>
ARLW1	STILLAGUAMISH R AT ARLINGTON	<b>14.0 ft</b>
<b>SKAGIT RIVER BASIN</b>		
CONW1	SKAGIT R NR CONCRETE	<b>28.0 ft</b>
MVEW1	SKAGIT R NR MOUNT VERNON	<b>28.0 ft</b>
<b>NOOKSACK RIVER BASIN</b>		
WKMW1	S F NOOKSACK R NR WICKERSHAM	<b>8.5 ft</b>
NRKW1	NOOKSACK R AT NORTH CEDARVILLE	<b>146.5 ft</b>
NKSW1	NOOKSACK R AT FERNDALE	<b>19.0 ft</b>

# **NORTHWEST AVALANCHE CENTER (NWAC)**

## **Mission**

The Northwest Weather and Avalanche Center (NWAC) promotes safety by helping reduce the impacts of avalanches and adverse mountain weather on recreation, industry and transportation in Washington, Oregon and southern British Columbia through [data collection](#), [mountain weather](#) and [avalanche forecasting](#) and [education](#).

To achieve this mission, the NW Avalanche Center:- assists a variety of snow safety and snow maintenance programs by providing and analyzing useful weather snow and avalanche data, and by producing and distributing a variety of mountain weather and avalanche forecast products.

- assists back country travelers by providing current information on snowpack structure and avalanche danger, and by forecasting expected changes in snow and avalanche conditions.

The professional mountain meteorologists and avalanche specialists at NWAC are on duty from September through June, issuing twice daily forecasts from about mid-November through mid-April and special statements as warranted in the early Fall and mid-late Spring.

## **Administration**

Since its inception, the NWAC has been administered by the [US Department of Agriculture-Forest Service](#).

## **Location**

The NWAC is housed at the [National Weather Service Forecast Office](#) in Seattle, Washington, at the NOAA (National Oceanic and Atmospheric Administration) Sand Point Western Region Center. The National Weather Service provides in-kind contributions of office space, computer, weather and satellite data access, and message dissemination services.

## **Staff**

To help minimize cooperator costs, three professional avalanche/weather forecasters are employed for 9-10 months/year, with a fourth forecaster intermittently available for spot forecasting during the winter months. Non-forecast season duties include planning and maintenance of the data network and related services (including web site development), program administration, education, cooperation with program cooperators, and data application of new weather and avalanche technology to meet program goals.

### **Snowpack and Avalanche Information**

Specific snowpack and avalanche information during the winter and spring seasons is available 24 hours a day by phone by calling (206) 526-6677 in Washington and (503) 808-2400 for northern Oregon. Their website is <http://nwac.us/>