

Cascades could see less snow amid climate change

By **BRADLEY W. PARKS**
Oregon Public Broadcasting

Annual snowpack will no longer be a guarantee in the Pacific Northwest if global warming continues unchecked.

Peak annual snowpack in the Cascade Mountains could decline by nearly a quarter by 2050 and up to nearly three-quarters by the end of the century, according to a new analysis from the Lawrence Berkeley National Laboratory.

Research scientist and co-author Alan Rhoades said the lab hopes to elevate snow-

pack loss as one of the American West's foremost climate issues alongside things like sea level rise and the worsening wildfire season.

"This is one of the grand challenges both scientifically and societally for the Western U.S. in the coming decades," Rhoades said. "And it has large implications for water management and also just mountain ecosystems."

In the Northwest, snow accumulates in the mountains from late fall through early spring to form snowpack. In the best of times, that snow melts slowly and evenly over the course of the summer, pro-

viding water to drink, grow food, temper wildfires and sustain plant and animal life before the cycle repeats the following winter.

Peak annual snowpack is the largest volume of snow a mountain range sees over the course of a year. It's a key predictor of how much water will be available throughout the dry months, especially in semi-arid regions east of the Cascades.

The analysis from Berkeley Labs, one of 17 national laboratories run by the U.S. Department of Energy, points out that the volume of peak annual snowpack is declin-

ing as the widespread burning of fossil fuels drives global warming.

Oregon's most recent state climate assessment also projects that by mid-century, less than 25% of wet days every year will have snow. In other words, snowpack is becoming much less of a sure thing.

"If you have your precipitation ... predominantly falling in the form of rain instead of snow, your runoff from the mountains downstream to where all the water users are is going to be much flashier," said research scientist and co-author Erica Siirila-Woodburn.

OBITUARIES

Katrina Danielle Hovden Spokane, Washington Nov. 8, 1989 — Oct. 13, 2021

In loving memory of Katrina Danielle Hovden.

Former Oregon resident Katrina Danielle Hovden passed away on Oct. 13, 2021, at her residence in Spokane, Washington. She was 31. Her life was taken early, but her memory will live on forever.



Katrina Hovden

Katrina was born on Nov. 8, 1989, in Astoria, to Rob Hovden and Dawnett Reneke. She attended Seaside High School and received her GED diploma.

Katrina was a beautiful child, who grew into a self-sufficient, amazing and beautiful young lady. She loved to take care of animals, and devoted much of her time and energy to writing poetry and taking care of her animals.

She is survived by her

father and stepmother, Rob and Paula Hovden; her mother, Dawnett Reneke; her sib-

lings, Jerrod Hovden, Lindsey Hovden, Greg Boucher, Michael Boucher, Chelsey Sempek, Jacob Sempek, Tiffany Sempek, Priscilla Sempek, Isaac Sempek and Benjamin Sempek; paternal grandparents, Bob and Crystal Hovden; maternal grandparents, Chuck and Sharon Reneke; aunts, Heidi Hovden and Julie Hovden; great-grandfather, James Campbell; and many nieces, nephews and cousins.

In lieu of cards or flowers, please make donations to the Clatsop County animal shelter, or any animal shelter of your choosing, in memory of Katrina.

A celebration of life will be scheduled at a later date.

Katherine Anne Forbush Edmonds, Washington 1941 — 2021

Katherine Anne Forbush passed away Oct. 12, 2021, at the age of 80. She valiantly battled cancer for four and half years. God allowed her to pass peacefully at home, with her family surrounding her.



Katherine Forbush

Katherine was born in 1941 to William and Katherine Eagen in Odebolt, Iowa.

The family later moved to Longview, Washington, where she attended St. Rose Catholic School and subsequently graduated from Kelso High School.

It was in Longview, while attending college, that she met David Forbush, the man who would be her husband for over 60 years of marriage. Together they raised 10 wonderful children.

Katherine dedicated her life to loving and properly raising her children. With 10 children, there were times when things were tight, but there was never a shortage of love and care in Katherine's house. She worked tirelessly to ensure that every one of her children felt loved, kept healthy and was well educated.

At times, that meant spending her summer evenings sewing warm winter coats for the coming winter. She instilled in all of her children the importance of God, family and education. She was very proud of her family.

Katherine had a close relationship with God, and from that she radiated a confident inner peace that made whoever she was with feel at ease. She had a way of making everyone feel important. No one ever left her house hungry. Katherine was a fabulous cook.

As her children grew up, and started their own families, she had to make more room at the table during the holidays, because no one wanted to miss a holiday meal at Katherine's house.

At Thanksgiving, Katherine often fed 45 family

and friends. Christmas and Easter were usually similar, but with more desserts. She would sit at the table and beam with joy as she listened to everyone and their stories. Right up to end, you could find her sitting in the living room, copying down family recipes for people that she had fed something they wanted again.

Katherine and David retired to Gearhart, to a beach house they had designed together. There, with time to herself, she turned to another of her great passions, gardening. She loved seeing things grow, whether it was children or vegetables. She prided herself on her tomatoes and corn.

She and David would spend time together every day in their garden. Every summer visitor would go home with a sack full of fresh vegetables.

Her mornings were spent in the garden, and her afternoons were spent on the dock in pursuit of her other retirement passion, bass fishing. Like with all great fishers, every fish came with a unique fish tale.

Katherine was preceded in death by her daughter, Christina, and her husband, David. She is survived by nine children, 15 grandchildren and two great-grandchildren.

Katherine was a loving wife, mother and grandmother. She shared with all she met her love and joy of life. Katherine deeply influenced all those she knew. She will be greatly missed by everyone who knew her.

Funeral services will be held at Holy Rosary Catholic Church in Edmonds, Washington, on Nov. 12 at 10 a.m.

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Barbara Ann Sullivan Brownsmead Sept. 16, 1936 — Oct. 13, 2021

Barbara Ann Sullivan, of Brownsmead, passed away on Oct. 13, 2021.

Barbara was born in West Virginia on Sept. 16, 1936, to William and Francis Morris, and was one of seven children.



Barbara Sullivan

Barbara married Robert Sullivan on March 8, 1955. They enjoyed 64 years together until Robert's passing in 2019.

Barbara enjoyed raising her four sons in Brownsmead; she often said it was the best thing she ever did for her boys.

She grew a large vegetable garden every year, and canned many jars of fruits and vegetables to provide for her family.

She couldn't pass up a garage sale, and enjoyed playing Scrabble and watching TV game shows like "Jeopardy" and "Wheel of Fortune." Every fall she cheered for the Seattle Seahawks.

When her boys were mostly raised, she worked

for Ocean Beauty Seafoods' cannery and Payless. Later in life, Barbara loved spending time with her grandkids, and always made sure to have homemade treats and cookies available.

Barbara is survived by three sons, Douglas (Donna) Sullivan, of Dickinson, North Dakota, Russ (Jane) Sullivan, of Anchorage, Alaska, and Sean (Susan) Sullivan, of Brownsmead; 13 grandchildren; 18 great-grandchildren; two sisters, Janet Woods and Sally Haxby, of Vancouver, Washington; and many nieces and nephews.

She was preceded in death by her husband, Robert; two sons, Bradley, in 1957, and Scott, in 2011; her great-granddaughter, Avery, in 2013; her parents, William and Francis; her brothers, Robert and Billy; and her sisters, Ada and Virginia.

Her final resting place will be next to her son, Scott. No service is planned at this time.

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SEVEN-DAY FORECAST FOR ASTORIA

TODAY	FRIDAY	SATURDAY	SUNDAY	MONDAY	TUESDAY	WEDNESDAY
57 47	55 46	53 44	52 41	50 44	53 45	54 46
Very windy; rain	Rain	Rain; winds subsiding	Cloudy, a little rain	Cloudy, rain possible	A chance of rain	Chance of a shower

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REGIONAL FORECAST

Shown is today's weather. Temperatures are today's highs and tonight's lows.

City	Today Hi/Lo/W	Fri. Hi/Lo/W	City	Today Hi/Lo/W	Fri. Hi/Lo/W
Seattle	58/47	53/37/c	Wenatchee	52/39	56/48/sh
Spokane	53/38	57/46/r	Moses Lake	58/41	57/46/r
Aberdeen	57/48	59/43	Yakima	57/36	57/46/r
Olympia	56/45	63/43	Kennewick	63/43	59/42
Longview	57/48	61/42	Walla Walla	59/42	59/43
Astoria	57/47	61/42	Lewiston	59/42	59/43
Portland	59/49	61/42	Enterprise	56/36	57/46/r
Salem	58/48	61/42	La Grande	57/41	57/46/r
Corvallis	56/45	61/42	John Day	57/39	63/39
Eugene	56/46	61/42	Ontario	63/39	62/38
Bend	51/40	57/28	Burns	57/28	57/46/r
Medford	59/41	57/46/r	Klamath Falls	52/32	57/46/r

ALMANAC

Astoria through Tuesday

Temperatures

High/low	54/44
Normal high/low	57/42
Record high	71 in 1970
Record low	23 in 1935

Precipitation

Tuesday	0.24"
Month to date	0.66"
Normal month to date	0.61"
Year to date	50.97"
Normal year to date	49.14"

Forecasts and graphics provided by **AccuWeather, Inc.** ©2021

UNDER THE SKY

Tonight's Sky: After sunset, you can spot Venus (SW), Saturn (S) and Jupiter (SE).

Source: Jim Todd, OMSI

SUN AND MOON

Sunrise today	8:01 a.m.
Sunset tonight	5:57 p.m.
Moonrise today	7:39 a.m.
Moonset today	6:04 p.m.

New First Full Last
Nov 4 Nov 11 Nov 19 Nov 27

TODAY'S TIDES

Astoria / Port Docks	Time	High (ft.)	Time	Low (ft.)
1:22 a.m.	7.6	7:17 a.m.	1.2	
1:12 p.m.	9.2	8:04 p.m.	-1.1	
12:57 a.m.	7.6	6:25 a.m.	-1.3	
12:47 p.m.	9.2	7:10 p.m.	-1.3	
1:07 a.m.	7.9	6:47 a.m.	1.1	
12:59 p.m.	9.5	7:31 p.m.	-1.3	
1:17 a.m.	8.0	7:01 a.m.	1.3	
1:07 p.m.	9.6	7:48 p.m.	-1.0	
1:59 a.m.	7.9	8:18 a.m.	1.0	
1:49 p.m.	9.4	9:05 p.m.	-0.9	
12:10 a.m.	7.9	5:52 a.m.	1.4	
12:00 p.m.	9.7	6:40 p.m.	-1.3	

NATIONAL CITIES

City	Today Hi/Lo/W	Fri. Hi/Lo/W
Atlanta	53/42/r	55/42/pc
Boston	50/38/pc	50/35/s
Chicago	48/33/s	51/34/s
Dallas	58/42/pc	63/42/s
Denver	66/41/s	70/40/c
Honolulu	85/75/sh	85/74/sh
Houston	60/49/sh	67/45/s
Los Angeles	77/57/s	79/55/pc
Miami	84/74/c	81/71/t
New York City	50/39/pc	50/39/s
Phoenix	88/61/s	88/60/s
San Francisco	67/53/pc	65/53/pc
Wash., DC	54/37/c	54/39/s

Weather (W): s-sunny, pc-partly cloudy, c-cloudy, sh-showers, t-thunderstorms, r-rain, sf-snow flurries, sn-snow, l-ice.