

The National Cooperative Observer Newsletter



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EASTERN REGION

SOUTHERN REGION

CENTRAL REGION



WESTERN REGION

ALASKA REGION

PACIFIC REGION

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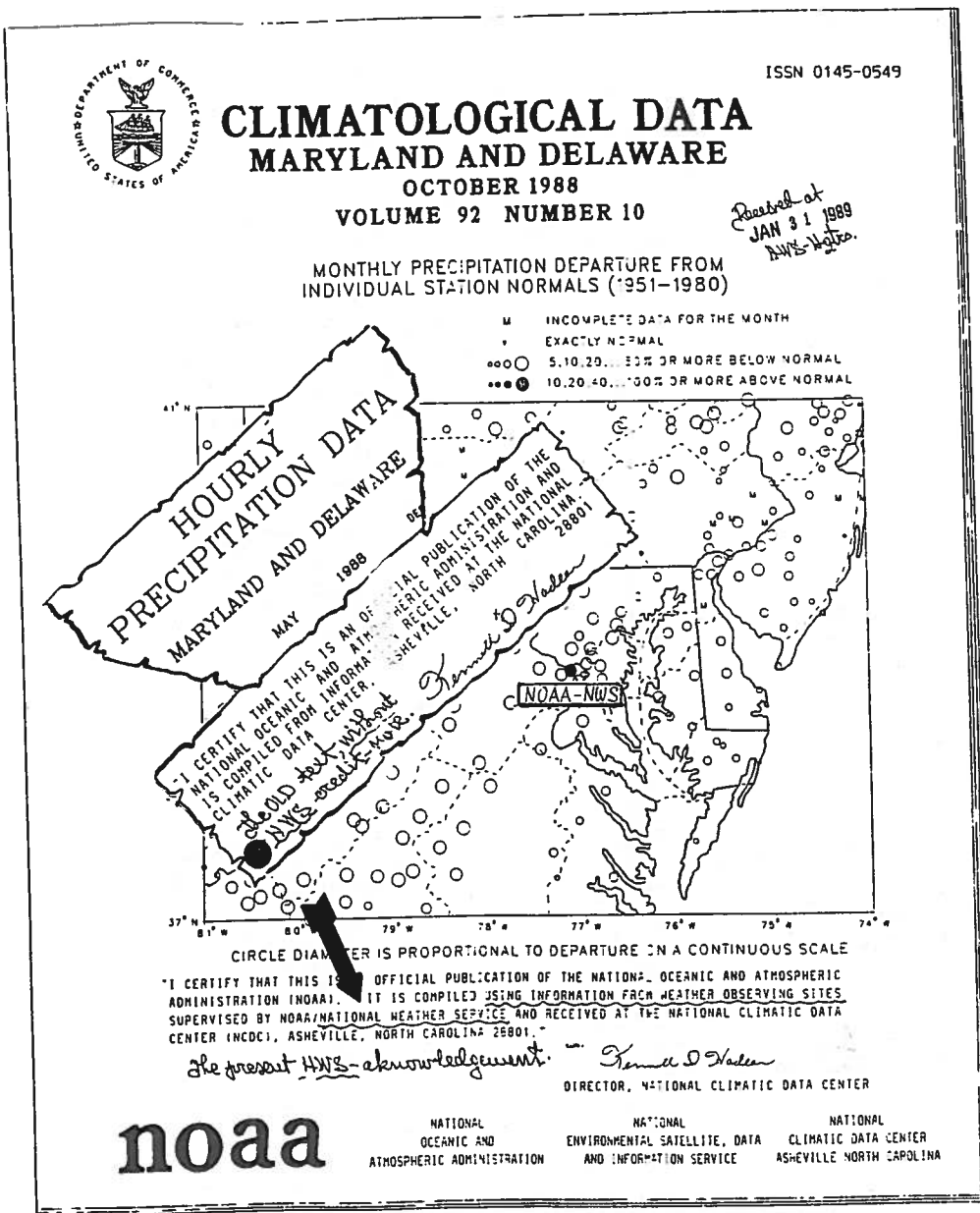
NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION

NATIONAL WEATHER SERVICE

The NATIONAL COOPERATIVE OBSERVER NEWSLETTER (NCON) is published quarterly as a tool linking the National Weather Service (NWS) with nearly 11,000 cooperative observers nationwide. Photographs and text are collected by NWS Headquarters from the various regions and provided to the National Climatic Data Center (NCDC) for publication. Copies are provided to observers in partial recognition of their contribution to the climatic history of the United States. Subscriptions to this publication are not available.

NCDC PUBLICATION STAFF
S. C. Lackey, Editorial Clerk

ABOUT THE COVER: NEW YEAR'S EVE FLOOD, HAWAII. Heavy rain began about 5:00 p.m. December 31, 1987 and continued until about 3:00 a.m. New Year's Day 1988. During these ten or so hours of record rainfall, over 20 inches fell in the head of Hahaione Valley in Hawaii Kai. Flood waters heavily gouged out Kahena Street and did extensive damage to surrounding properties and homes.



The National Weather Service NAME
Identification

Finally, after several years - Alexander Radichevich, Meteorologist at the National Weather Service Cooperative Program Headquarters, has succeeded in this proposal.

bulletins have a front page acknowledgment for our principal mission in Weather Observation and 11,500 station network supervision.

Since last Fall, all NCDC monthly publications of our "Climatological Data" and "Hourly Precipitation Data"

NOAA awarded Alexander a SMART certificate of appreciation for his suggestion. We thank him, also.

PACIFIC REGION

The National Weather Service paid tribute to two private Maui institutions during the month of November for their voluntary work in collecting rainfall and temperature data at their respective stations. Pioneer Mill Company, Ltd. was a recipient of a 75-Year Institutional Award for 75 continuous years of weather recording data for both the Lahaina and Launiupoko Intake stations. Accepting the award on behalf of Pioneer Mill Company were Pioneer Mill Co. manager John C. Hance, crop control superintendent Kimo Falconer, and Hydrographer Emiliano Santella.

Ulupalakua Ranch, Inc. was awarded a 25-Year Institutional Award for their share of services in

recording rainfall information at the Auwahi station in the Hana district. Receiving the award on behalf of their company were general manager Edward O. Rice, office manager Babs Faye, and office clerk Bertha Isobe.

The National Weather Service relies on the "kokua" of these volunteer weather cooperators for invaluable climatological data which eventually form a history of the climate of the United States. Their dedicated services are among the nation's most valuable resources and probably nets the public more per dollar expended than any other government service in the world.



Pioneer Mill Company was presented a 75-Year Institutional Award. Left to right: Manager John C. Hance, Hydrographer Emiliano Santella, and Crop Control Superintendent Kimo Falconer.



Ulupalakua Ranch, Inc. was presented a 25-Year Institutional Award. Left to right: Office clerk Bertha Isobe, General Manager Edward O. Rice, and Office Manager Babs Faye.

PACIFIC REGION



Sidney Keene and Susan Doleman accepted a 50-Year Institutional Award for the Board of Water Supply's Wilhelmina Rise Station.



Observer John W. Vollrath completed 20 years of service at Pupukea Heights.



Rachel Tamura accepted a 25-Year Institutional Award for Lihue Plantation. Three of their stations (Kaneha Reservoir, Lihue Variety Station, and Wailua Kai) completed over 25 years of service.



Joni Samson, cooperative station Ailinglapalap, Marshall Islands, was presented a 20-Year Service Award by Paul S. Peter (left).



Dr. Donald Mitchell of Ahuimanu Loop was recognized by the NWS for 20 years of service.



Mr. and Mrs. William Kirkpatrick, Hokuloa, were presented a 10-Year length-of-service award by Ray Terada, CPM, HNL.

ALASKA REGION



Observer's Home



Path to shelter and former observer's cabin



Observer Art Pope (left), with pilot



Path to rain gage and Bay



Intricate Bay

"Intricate Bay Cooperative Station"

The station is located on the southeast side of Iliamna Lake which is in the Aleutian Range. The isolated area is only reached by float operation in the summer and by skis in winter. Mr. Pope took over the station in 1979. Intricate Bay is 200 air miles southwest of Anchorage.

EASTERN REGION



Harold H. Hollis, cooperative observer, Cooperstown, NY, was presented the Thomas Jefferson Award.

This award is presented to approximately five of the most outstanding cooperative weather observers in the United States. Those honored are selected from the more than 12,000 observers who devote so much time and effort to recording the climate of this country.

This award is for unusual and outstanding accomplishment in the field of meteorological observations. The award was named for President Jefferson who began taking weather observations in 1776 and maintained a virtually unbroken record through 1816.

In 1981, Mr. Hollis received the John Campanius Holm Award for his long period of outstanding accomplishment in the field of meteorological observations.

Harold began his weather observing career as a weather officer in the U.S. Army Air Corps during WWII. He began taking observations for the Weather Service in May 1950. Weather observations began in Cooperstown in January 1854. Harold has collected the data from 1854 to present and has compiled the only climatological data record for the village. The record consists of daily, monthly, seasonal, annual averages, and 30-year normals. The data has been archived on microfilm.

Harold worked 36 years as a journalist and retired as managing editor. He also served with village government for 23 years, 7 years as mayor, the office he currently holds. He has been a member of the Board of Directors of the National Baseball Hall of Fame, and the Farmers Museum. He's also a Rotarian and has been president of the Friends of Bassett Hospital for 12 years.

Presenting the award at the home of Harold Hollis was Roland Loffredo, Area Manager; Ray West, Cooperative Program Manager, Albany, NY; Steven Letro, Meteorologist-in-Charge; and Thomas Econopouly, Hydrologist, Binghamton, NY. Photo by Roland Loffredo.



Edward T. Marks, observer, Wilson 2 NE, NY, was presented the John Campanius Holm Award by Don Wuerch, Area Manager, Buffalo, NY. Each year this award is presented to only 25 of the nearly 12,000 cooperative weather observers in the United States. Mr. Marks received the John Campanius Holm Award for his long period of outstanding accomplishment in the field of meteorological observations. Arrangements for the presentation were made by Ray West, Cooperative Program Manager, Albany, NY.

Photo left to right: Don Wuerch and Edward Marks. Photo by Ray West.



Edith Morrison accepted a 50-Year Institutional Award on behalf of the Rexmann Memorial Farm, Wardensville, WV.

Presentation was made by James Smith, Cooperative Program Manager, Biltmore, MD. Photo by James Smith.



Mr. LeFevre, Correctional Superintendent, accepted a 50-Year Institutional Award on behalf of the Dannemora, NY Correctional Facility Power House. Ray West made the presentation.

Photo left to right: Mr. Senkowski, First Deputy Superintendent; Ray West; Joseph Bola, Power House Superintendent; and Mr. LeFevre.

EASTERN REGION



James R. Butler, Superintendent, accepted a 50-Year Institutional Award on behalf of the Alliance Wastewater Plant, Alliance, OH.

Presentation was made by Marvin Miller, Area Manager, Cleveland, OH; Ed Heath, Meteorologist-in-Charge, Akron, OH; and Michael Wyatt, Cooperative Program Manager, Columbus, OH.

Photo left to right: Marvin Miller, James Butler, and Ed Heath. Photo by Michael Wyatt.



Daniel Dolan, cooperative observer, Marysville, OH, was presented a 20-Year length-of-service pin and Special Service Award by Lew Ramey, Meteorologist-in-Charge, Columbus, OH, and Michael Wyatt.

Photo left to right: Lew Ramey and Daniel Dolan. Photo by Michael Wyatt.



Larry Lawler and Harley Shuck accepted a 25-Year Institutional Award on behalf of the U.S. Corps of Engineers, Senecaville Lake, OH.

Michael Wyatt, Cooperative Program Manager, Columbus, OH, made the presentation.

Photo left to right: Larry Lawler and Harley Shuck. Photo by Michael Wyatt.



Mrs. Artz accepted a 10-Year length-of-service pin on behalf of her husband Marion who is our cooperative observer at Woodstock, VA.

James Smith, Cooperative Program Manager, Baltimore, MD, made the presentation. Photo by James Smith.



Ila B. Simons, observer, Piseco, NY, was presented a 40-Year length-of-service pin. Ray West made the presentation. Photo by Ray West.



Curtis Ballard, observer, Lindsie, WV, was presented a 10-Year length-of-service pin by David Keller, Hydrologic Cooperative Program Manager, Charleston, WV.

SOUTHERN REGION



Manen Bishop, observer, Warrior Lock and Dam and L.E. Bridges, Area Engineer, accepted a 50-Year Institutional Award for the Corps of Engineers by Frank Makosky, Area Manager, WSFO/BHM. Pictured left to right: Makosky, Bishop, and Bridges.



Leroy Gates, cooperative observer, Thomasville, AL, was recognized by the NWS for 35 years of service. The presentation was made by Tom Kriehn (left), MIC, WSO, Mobile. CPM/BHM - Bill Kent.



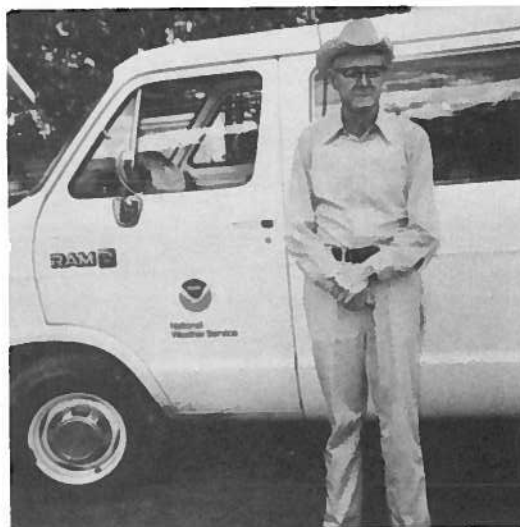
Dorothy M. Been, cooperative observer, Greenwood, AR, was presented a 40-Year length-of-service award by Woody Currence, CPM/LZK.



Ethel Law, observer, Patterson, AR, was presented a 35-Year length-of-service award by John McBroom, CPM, Memphis, TN.



A 25-Year Institutional Award was presented to the Corps of Engineers (Somerville Dam) recently. Accepting the award were (left to right): Wynona Mathews, Skip LeFevre, and Danice Hurt. Alan Starnes, CPM/ACT, made the presentation.



Mack Roberts, cooperative observer, Antelope, TX, was presented a 35-Year length-of-service award by Bob Manning, Chief, Regional Cooperative Program Manager, Fort Worth, TX.

SOUTHERN REGION



Margie M. Wiley, cooperative observer, Aledo 4 SE, TX, was presented a 30-Year length-of-service award by Jerry Wolfe, CPM, Fort Worth Forecast Office. Margie began observations when construction was planned for Benbrook Dam. Their ranch is located on the Clear Fork of the Trinity River near Aledo, TX. (Pictured left to right - Jerry Wolfe, Margie M. Wiley, and Mr. Wiley).



John Moffatt, cooperative observer, Seminole, TX, was presented a 25-Year length-of-service award recently. John and his wife Jean own the Seminole Printing Company and make daily calls to the National Weather Service with the temperature and precipitation readings. Chuck Megee, CPM, Lubbock WSFO, made the presentation.



Elmer E. Booth, cooperative observer, Charlotte 5 NW, TX, was presented a 25-Year length-of-service award by Al Drumont, MIC/AM WSFO/SAT.



Willie Jean Arrington, cooperative observer, Greensboro, AL, was presented a 20-Year length-of-service award by Frank Makosky, Area Manager, WSFO, Birmingham, AL. CPM/BHM - Bill Kent.



Mrs. H. M. Hudson, cooperative observer, Winona 5 E, MS, was presented a 25-Year length-of-service award by Thom Stenman, CPM/JAN. Mrs. Hudson keeps her community well informed of the weather by telephoning her temperatures and rainfall to the local radio station daily.



Isabella Carter, cooperative observer, Wann, OK, was presented a 20-Year length-of-service award by John Lambert, MIC/OKC. Mrs. Carter is a retired postal worker.

CENTRAL REGION



Andrew C. Heinitz, Carrington, ND, was presented the John Campanius Holm Award for more than 33 years of continuous and exceptional public service. It is one of the highest honors paid to a National Cooperative Program Weather observer.

Pictured at left, Don Stolz, MIC/AM WSFO Bismark; center, Andrew C. Heinitz; right, Martha Roletto, Service Hydrologist, Bismark, ND. Photo taken by Vernon Roller, CPM.



C. E. "Ted" Schumacher, Pana, IL, was presented the Thomas Jefferson Award on December 7, 1988, by Ray Waldman, MIC/AM IL; Ray Hughes, IC SPI; and Don Morrison, CPM IL.



Dr. Dalias A. Price, Charleston, IL, was presented the John Campanius Holm Award on November 15, 1988, by Ray Waldman, MIC/AM IL and Don Morrison, CPM IL.



Time marches on...and Albert Gull of Edgemont, SD, reached another milestone when he was recognized this year by the National Weather Service for 40 years as a cooperative weather observer. He is one of 11,500 observers throughout the United States who daily record weather observations for the National Weather Service. Their observations, along with records of the Weather Service, provide the basis for the National Oceanic and Atmospheric Administration's climate program.

Climatic data is essential to builders of roads, buildings, and dams. It is used in planning the distribution of fuel and electricity, in criminal investigations, for supporting insurance claims, and in the planning of government projects for flood control and atmospheric pollution studies.

David Olkiewicz, Cooperative Program Manager, National Weather Service, Sioux Falls, was in Edgemont on Monday, October 24, to present Gull with a plaque award and pin.

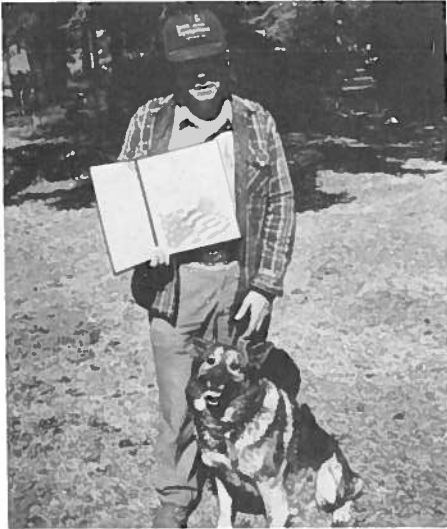
Gull has compiled very detailed and accurate records of the data he reads from his equipment located in his yard and home. He uses a computer to arrive at average monthly temperatures and to figure "degree days".

In a letter to Gull, Joe Friday, director of the National Weather Service, said "The success of our climatological program is due in great measure to conscientious citizens like you. The records our observers furnish add to our knowledge of the climate of the United States."



Stella Asling, Diamond Springs, KS, was presented the Thomas Jefferson Award by Gary Robinson, Hydrologist, WSFO Topeka. Stella served as an observer for over 47 years and had previously been awarded the Holm Award.

CENTRAL REGION



George Becherer, Minong, WI, has been keeping track of weather for 20 years and was recently honored for his volunteer work by the National Weather Service, Milwaukee.



Browns honored by weather service



Mildred L. Wulkau, cooperative observer, Williams, IA, was presented a 20-Year length-of-service award by Bill Newman CPM/DSM.

(NO PICTURE)

Robert Strozewski, Mather 3 NW, WI, was presented a 10-Year award.

Carl and Hazel Brown of Vevay, TN, received a special award Thursday, September 29, 1988, for their years of service to the National Weather Service.

Mr. Brown became a cooperative observer for the National Weather Service in 1964. Since that time, the Browns have been recording observations of the weather daily. Each month they mailed their data to the forecast office in Indianapolis. Copies are then sent to the National Climatic Center in Asheville, North Carolina, where it is archived after publication in the Indiana climatological data.

Roger Kenyon, Indiana Cooperative Program Manager at the weather service office in Indianapolis, presented the award.

Kenyon noted that the Browns' service was valuable not only to the community and the state, but also to the national climatological network. There are nearly 200 cooperative observers in Indiana and over 12,000 nationwide.

The data which is collected is used for forecasts of flooding and flash floods, and is made available to over 50 users which include members of Congress, the news media, the departments of Agriculture, Defense, and Transportation, universities, manufacturers, and insurance adjusters.

Mr. and Mrs. Brown said that they miss checking the weather for the service each day, but they still continue to monitor the temperature and rainfall.

Mr. Brown at one time had a daily spot on the local radio station and has written reports many times for the Vevay Reveille and Switzerland Democrat. He recalled that some of the worst weather he has seen was the blizzard in 1977 and 1978. "That was the only time I can remember that the Shoe Factory shut down," said Brown.

Brown started monitoring the weather station when it was moved to the Vevay Water Plant. It was moved to their home on Arch Street in 1974. Bob Riggs of Vevay had operated the station before it was moved to the water plant, and took over the station again when the Browns retired this June.

WESTERN REGION



Burdett Bevan (left) was presented the Thomas Jefferson Award as well as a 40-Year length-of-service award by William J. Alder (right), Area Manager for Utah. Weather observations have been taken in Tooele, UT, by the Bevan family since 1908. Weather information is telephoned daily to the NWS forecast office in Salt Lake City. Burdett, retired from the Tooele County Road Department, enjoys farming-ranching as well as gardening. From his cabin in the nearby mountains, he takes readings for the Soil Conservation Service.



Howard Norman (left), Gunnison, UT, was presented the Holm Award by William J. Alder, Area Manager at the Weather Service Forecast Office, Salt Lake City, and by CPM Dean Hirschi. Mr. Norman, 88 years young, has only missed one observation since he began taking observations in 1965. He is the owner of the local telephone company, likes to bowl and play golf, and loves the weather!



It was a red-letter day for sure when the Oregon Park Service received a 50-Year Institutional length-of-service award for Silver Creek Falls State Park. The award was presented by the Honorable Neil Goldschmidt, Governor of Oregon! Left to right in photo are George Miller, NWS Area Manager for Oregon; Governor

Goldschmidt; and, representing the staff at Silver Creek Falls, Park Secretary Mary Moses and Assistant Park Manager Rich Walkoski. Silver Creek Falls State Park is located in the foothills of the Cascades about 20 miles east of Salem, Oregon.

CENTRAL REGION



Calvin LaPorte, owner of LaPorte Shopping Center in Manitowish Waters, has been honored by the National Weather Service for 40 years as a weather observer. LaPorte said he "fell into the situation" because of his involvement with the Rest Lake Dam on the Manitowish Chain and has been at it ever since. He operates the dam for the Chippewa and Flambeau Improvement Co., which has always used precipitation (rain and snow) information to aid in the operation of the dam.

Before he became involved with the National Weather Service as a cooperative weather observer, LaPorte recorded precipitation and temperature information for Marie Zimmerman and Winnie Young, two women that ran the Rest Lake Dam years ago. Young's father was the original caretaker at the dam and the two women took over its operation when he died.

LaPorte had worked for the two women at a resort at one time, eventually inheriting the dam's caretaking chores from them. The tie-in with the National Weather Service just naturally interlocked, LaPorte said.

In the more than 40 years that LaPorte has spent watching Northwoods weather he has noticed a trend in both precipitation and temperature.

"In the last 20-some years the temperatures have become noticeably warmer and the snowfall has been decreasing by quite a bit," LaPorte said. "The coolest temperature I can recall (in the past 20 years or so) was in the -40° range, and it's been years and years since we've seen anything like that. Temperatures in the -30° range are even rare (now)."

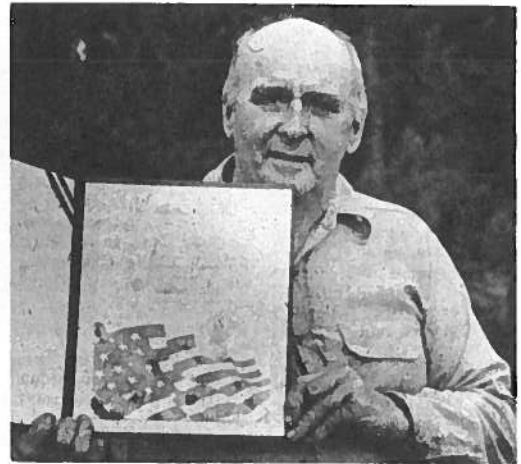
LaPorte said that every 10 years the area suffers through a noticeable drought. The dry spell that has taken hold of the entire state and the majority of the Midwest has been with us for the last three years, LaPorte said.

"In 1947-48 we had two bad years back-to-back. That was when Powell Marsh had its second burning," LaPorte said. "Two years is the longest drought I have ever seen when we could only keep the reservoir half filled."

This year is the first time in the present dry spell that the reservoir hasn't been completely filled. Unless July is a very wet month, LaPorte said, there is no way the reservoir will reach capacity. The reservoir is dropping at a rate of 1 inch per week and is just a hair over half-full, he said.

LaPorte has never consulted the Farmer's Almanac and doesn't believe that the weather can be accurately predicted so far in advance.

Photo by Kevin McCullough, Lakeland Times reporter, WI.



"When you get hooked, you get hooked real good," laughed Hind Leask, Bayfield, WI. When he speaks of his "addiction," Leask isn't referring to any food or drink, but a 30-year weather-watching habit. Leask was recently honored by the National Weather Service (NWS) division of the National Oceanic and Atmospheric Administration (NOAA) with an award marking his 30 years of volunteer weather recording.

Leask became interested in weather-watching years ago, when Sig Anderson of Bayfield was responsible for daily readings of the temperature, precipitation, or snowfall. "When he left town, he knew I was aching for the job, and gave my name to the National Weather Service," Leask said.

The NWS complied, Leask moved the recording equipment to his home north of Bayfield on County Trunk "K" and has been making daily reports between 5 and 7 a.m. ever since.

"It's like having children," noted Mildred, Hind's wife. "When we go somewhere we have to find someone to babysit the equipment."

The equipment includes a temperature gage, rainfall gage, and wind gage. "For 29 years we had to go outside every day to read the temperature and set the thermometers," Leask explained. Last year, a new system was installed which gives a digital temperature read-out on an indoor monitor, storing the high and low for the day in its memory.

On Thursday, Leask had a high of 101 degrees on his gage - the first time in his 30 years of temperature recording that the thermometer had broken 100 degrees.

Leask calls in his weather information to Milwaukee every morning, along with 174 other volunteer Wisconsin weather observers, punching in current information on a "Rosa" machine, which hooks directly to a NWS computer and transfers the information in a matter of seconds.

"People think I'm crazy for doing this when I don't get paid for it, but I get a lot of enjoyment from it," Leask said.

WESTERN REGION



Jake Kaech (left), Frances, WA, was presented the Holm Award by Rich Przywarty, Area Manager for Washington. Jake retired as postmaster at Lebam, WA, but continues as co-op observer at Frances with over 40 years of service.



Edmond Somerfeld (left), Power, MI, was presented a 35-Year length-of-service award by Jeffrey Graham (right), Service Hydrologist from the Great Falls Forecast Office.



Pictured with their 25-Year Institutional Award for the City of Wenatchee (WA) Water Pollution Control Plant are (top row) Nick Lown, Greg Pietz, Tom Hardie, and Chief Operator Mel Heckler. In the bottom row are Ken Morris, Norm Pritchard, and Al Board. Del Burns was not present for the picture.



Dena and Keith Lamb, Plymouth, UT, were presented a 30-Year length-of-service award for their efforts in recording weather information. Keith's father had the weather station before Keith took over in 1958. The Lambs operated a service station and general store prior to his retirement about six years ago. (We regret to report that Mr. Lamb passed away a few weeks after the award was presented.)



Beth Dopf, Cambridge, ID, was presented a 35-Year length-of-service award by Ingve (Olie) Olson, CPM, Boise office. When needed, Beth helps her husband with the Cambridge newspaper which he has published for many years. However, aside from weather, her real interests are her yard and her eight grandchildren, she says.

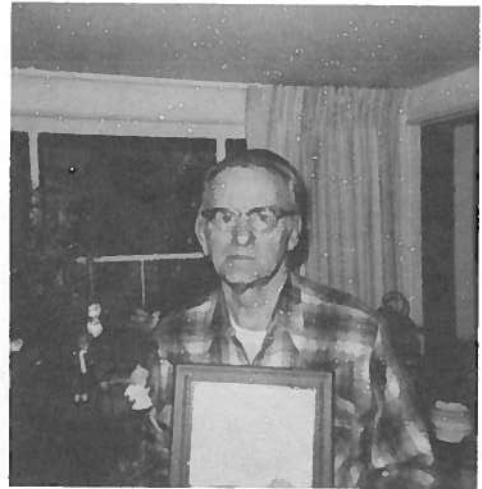


Don Noble (right), Leadore, ID, was presented a 30-Year length-of-service award by Ingve (Olie) Olson. Don, born and raised in Leadore, is the only auto mechanic in the area. He keeps the local school buses in top shape, so there are no breakdowns during the cold winters. When he can get away, he likes to hunt and fish.

WESTERN REGION



Anna Howe, Buckhorn, CA, was presented a 25-Year length-of-service award by CPM Rick Orres.



Ed Quaale, Carnation 4 NW, WA, was presented a 20-Year length-of-service award by Earl Pickering, CPM, Seattle WSFO. Ed is a retired dairy farmer.



Dr. Robert Renard (right), Monterey, CA, was presented a 25-Year length-of-service award by CPM Rick Orres. Dr. Renard is Chairman of the Meteorology Department at the Naval Postgraduate School in Monterey. With the help of his wife, Dr. Renard has not missed an observation in his 25 years of service.



Jane Schlittenhardt, Safford, AZ, was presented a 10-Year length-of-service award by CPM Irv Haynes. Safford is 150 miles east of Phoenix in the Gila River Valley, an agricultural area of eastern Arizona.



Bill Tindall (right), Grasmere, ID, was presented a 25-Year length-of-service award from CPM Olie Olson. Bill is mostly retired now, but says he still finds a few chores to do around the ranch each day.

OTHER AWARDS - WESTERN REGION

25-Year Institutional

Radio Station KBBK, Rupert 3 WSW, ID

Special Service

Marion L. Dancer, Wallace Woodland Park, ID
Earl S. Ourada, Boise 7 N, ID
Fred Vogel, Nezperce, ID

15-Year Length of Service

Bruno E. Airas, Mullan, ID
Elmer T. Bennett, Hill City, ID
Albert W. Fullmer, Mackay 4 NW, ID
Norma Herrin, May, ID
Margaret Jones, Malad City, ID
Earl S. Ourada, Boise 7 N, ID

10-Year Length of Service

Herb Mingo, Magic Dam, ID
Ilo E. Shue, Lowman, ID



OPERATION OF HYDROLOGIC AND CLIMATOLOGICAL NETWORKS
 January 31 - February 16, 1989 in Kansas City, MO

Front Row: Charlie Ridge, Instructor, Burseson, TX; Milas Thompson, WG RFC, Fort Worth, TX; Katherine Giese, NC RFC, Minneapolis, MN; Brenda Graham, NWSO, Missoula, MT; Robert Coe, IM RFC, Slidell, LA; Charles Hoffeditz, Instructor, Office of Hydrology, Washington, D.C.; Ernest Eberhardt, Instructor, COOP, Washington, D.C.

Second Row: Gerald Hoffman, IM RFC, Slidell, LA; David Cokely, MB RFC, Kansas City, MO; Clifford Crowley, ERH/NWS, Bohemia, NY; Jeffrey Graham, NWSFO, Great Falls, MT; Michael Asmus, NWSFO, Denver, CO; Anthony Mach, NE RFC, Bloomfield, CT.

Third Row: Albert Peterlin, MA RFC, Harrisburg, PA; Donald Morrison, NWSFO, Rosemont, IL; David Reed, Instructor, SRH/NWS, Fort Worth, TX; James Jones, WRH/NWS, Salt Lake City, UT; Richard Arkell, NWSFO, Charleston, WV.

Many of the new hydrologists and cooperative program managers in the above photograph will be visiting cooperative stations in the future. Students attending the above course, held in Kansas City each winter, are trained in the tasks of installing and maintaining weather observing equipment (especially rain gages, thermometers, and river gages), keeping records of the types and locations of this equipment in a master data base, and in teaching new cooperative observers the art of taking observations and filling out forms such as the E-15.

USCOMM-NOAA-ASHEVILLE, N.C.-1989/10800

DEPARTMENT OF COMMERCE
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 NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE
 NATIONAL CLIMATIC DATA CENTER
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