

FUTURE WISCONSIN AWS FIELD SEASON 2018-2019

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1. OVERVIEW

After a moderately successful 2017-2018 field season, the University of Wisconsin-Madison upcoming 2018-2019 field season has four regions of operation planned. This is not unlike most field seasons (Lazzara et al., 2012; Lazzara et al., 2015). Work will be based out of West Antarctica Ice Sheet (WAIS) Divide Camp, South Pole Station, and McMurdo Station, Antarctica, with additional collaborative work done in East Antarctica. With this level of coverage, and with the gap in flights and support to and from Antarctica for the United States Antarctic Program (USAP), a team of four members along with a Polar Teachers and Researchers Exploring and Collaborating (PolarTREC) teacher will be deployed on the ice from late November until early February. Work will focus on weather station repairs, raising Automatic Weather Station (AWS) sites with high accumulation, and the installation of a new Polar Climate and Weather Station (PCWS). (See talk in this workshop titled "The Madison Polar Climate and Weather Station (PCWS) Project: A Report to the Community" for more information). Community feedback and comments will be welcome during and after this presentation.

2. WEST ANTARCTICA

While the 2017-2018 season was extremely successful by historical standards for AWS servicing, several additional site visits are

required this year. Planned sites to visit include: Evans Knoll, Thurston Island, Bear Peninsula, Austin, Elizabeth, and Harry. The most notable of these is the attempt that will be made to remove Evans Knoll AWS as it is located behind a crevasse. The station is no longer in a safe location for servicing.

3. ROSS ICE SHELF

Several key sites that were not visited in the last few seasons or were not able to be visited last season due to bad weather will be serviced this coming year. Sabrina, Margaret, Gill, Marilyn and Lettau AWS will be on this list. Additionally, Alexander Tall Tower! AWS will be serviced and is due to be raised, as the station is no longer at its optimal height of 100 feet.



Figure 1. Elaine AWS is seen here during its January 2018 servicing with Dave Mikolajczyk on the AWS tower and the Kenn Borek Air twin otter aircraft in the background.

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4. MCMURDO AREA

With problems in the relay of the 900 megahertz (MHz) ultra-high frequency (UHF) transmissions from the radio modem AWS subnetwork in the Ross Island region, all of the AWS sites in the region will be visited this season to reconfigure the network. Options for reconfiguration and continuing to use the UHF modems is being weighed against having this entire subnetwork changed to Iridium communications. Additionally, repairs to Phoenix AWS will be conducted, as this site has failed. Sites planned for servicing include: Minna Bluff, Marble Point I & II, Cape Bird, White Island, Windless Bight, Phoenix, Willie Field, Lorne, Ferrell, and Laurie II.



Figure 2. Before (top) and after (bottom) photos of Minna Bluff AWS taken during its servicing in early 2018. This is the second time icing this season on the AWS tower impeding its operation.

5. SOUTH POLE AND EAST ANTARCTICA

Based from South Pole Station, long overdue repairs to both Nico and Henry AWS sites will be conducted. Further in East Antarctica, work with our international Antarctic collaborators on other AWS sites, such as D-85 AWS (French) and Mizuho Station (Japanese) AWS, may also be conducted, depending on need.

6. ACKNOWLEDGEMENTS

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6. REFERENCES

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- Lazzara, M.A., L.J. Welhouse, D.E. Mikolajczyk, M. Tsukernik, J.E. Thom, L.M. Keller, G.A. Weidner, J. Snarski, J.J. Cassano, and L. Kalnajs, 2015: Automatic weather station (AWS) program operated by the University of Wisconsin-Madison during the 2012-2013 field season: challenges and successes. *Antarctic Record*, **59**, 73-86.

Corrections, updates and additions to the AWS map (see next page) are requested by all meeting attendees.

