RECLAMATION
Managing Water in the West

U.S. Department of the Interior
Bureau of Reclamation

2019 Science and Technology Unmanned Aerial Systems (UAS) Research Training Workshop: Executive Summary and Applications for Bureau of Reclamation Operations

Summary of the S&T UAS Research Training Workshop and an accompanying survey

Research Bulletin
Science and Technology Program

S&T Project 8120

In 2019, the Reclamation Technical Service Center and Research and Development Office conducted a survey and hosted a UAS Research Training Workshop to help generate ideas for UAS applications.

Mission Issue

Generating ideas for useful applications of Reclamation UAS will be also be in line with Reclamation's mission.

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"The S&T UAS Research Training and Workshop was a perfect way to get all interested parties in the same room to prioritize Reclamation UAS applications for future research and development."

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More Information

https://www.usbr.gov/research/projects/detail.cfm?id=8120

Problem

UAS technology has been adopted by Reclamation and is being used in many different ways. However, are the current uses of UAS really capturing what is needed at Reclamation?

Solution

Early in 2019, the Reclamation Technical Service Center (TSC) conducted a survey that was sent to aviation personnel, and area and regional office supervisors. The purpose of the survey was to determine what UAS activities they were aware of already and what UAS activities would most benefit their office. Then in late spring, the TSC and Research and Development Office, hosted the first ever UAS Research Training Workshop where current UAS research projects were presented and a discussion was held to determine which applications are the most desired in Reclamation. Participants were shown the results of the survey and ideas were shares. Then the ideas were ranked in importance.

Application and Results

These areas were identified and prioritized for future research including 1) UAS data artificial intelligence, machine learning and processing precision and accuracy as related to Reclamation facilities, 2) UAS automatic inspection of interior features such as tanks and tunnels, 3) exploring the benefits and limitations of UAS-borne LIDAR (light ranging and detecting) and 4) exploring how UAS can improve sedimentation monitoring. Research proposals were consequently developed and submitted for FY20 consideration.

Future Plans

Research will continue on the submitted UAS applications if they are funded. In addition, there was strong support that the workshop would be continued at least annually.