

Interagency Aviation Accident Prevention Bulletin



No. IA APB 21-05

September 15, 2021

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Subject: Drought Conditions and Increased Risk for Water-Scooping Aircraft

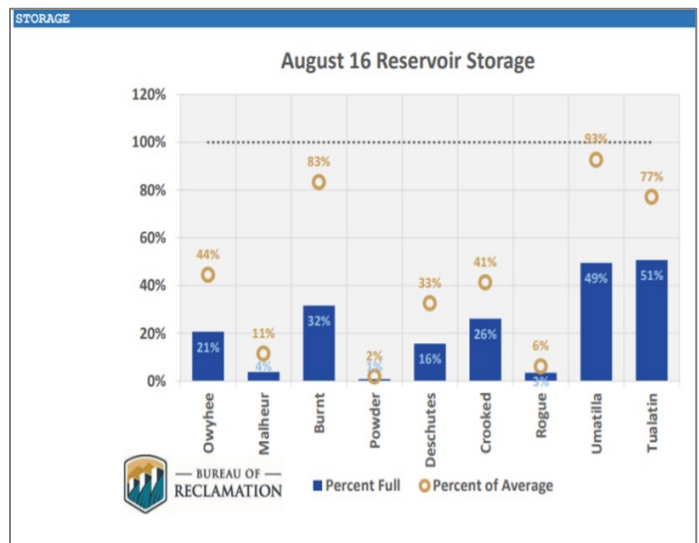
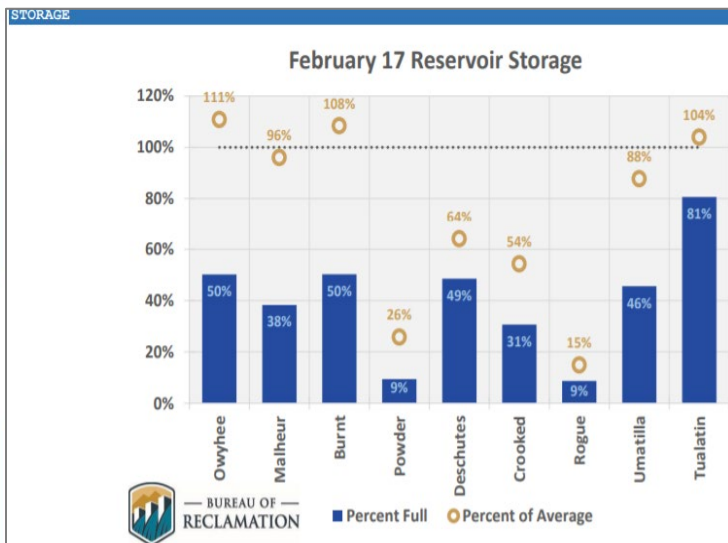
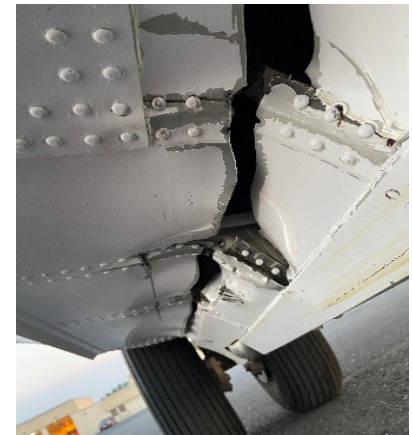
Area of Concern: Flight Safety

Distribution: All Aviation Activities

Discussion: Due to prolonged drought conditions, many reservoirs, lakes, and streams in the western states are at or near historic low water levels. As water levels fall, obstacles such as rocks, tree stumps or logs that were once submerged are now closer to the surface where they can create a significant hazard for scooping aircraft and bucketed helicopters.

Recently, a Fire Boss float was damaged while scooping from a lake when it struck a submerged tree stump. Fortunately, the pilot was able maintain control and fly the aircraft safely back to the airport.

A reservoir storage graph (below) contains data for nine different reservoirs in Oregon. The graphs illustrate a comparison of the water level percentages of the reservoirs in February 2021 and August 2021. Based on these conditions, bodies of water previously approved for scooping operations or dipsites should be reassessed for new hazards and risks prior to use.



Water source selection is critical to the safe operation of scooping and bucket operations. The [NWCG Standards for Water Scooping Operations, PMS 518](#) identifies that water sources should be surveyed for suitability, including winds, water conditions, length, width, depth, natural and man-made hazards, recreation, and ingress/egress routes. Depth can be assessed by the position of the high-water mark along shores, or other visual cues such as boat dock position or types of boats being operated. Adequate depth in the event a water scooper needs to reject a take-off and settle into displacement taxi, is also critical. Fire Boss aircraft typically require a **minimum** of 4 feet of depth and a CL-415/CL-215 requires 6 feet of depth. That said, most pilots would prefer at least 7 feet.



Accident Prevention Recommendations:

- Conduct a low-level reconnaissance to ensure dip/scoop site is clear of obstacles and hazards.
- Obtain a Predictive Services report on water conditions and reservoir levels and ensure it is briefed. Water condition reports are available at <https://water.weather.gov/ahps/>.
- At a minimum, approved scoop sites and dip sites should be reviewed at the beginning of the season, mid-season, and end of season.
- Monitor and be aware of snow-pack levels over the winter and note start of season levels.
- Report any new hazards appearing within a designated scoop/dip site and ensure communication with all resources at briefings.

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