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Assessment of Sedimentation in Maithon Reservoir using Remote Sensing and GIS

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***Abstract*:** Multipurpose reservoir plays a vital role in water resources development; at the same time sedimentation in these reservoirs causes hurdle in water resources management. In this study, reservoir capacity and sedimentation survey of Maithon reservoir was done with the help of remote sensing and GIS. The water spread area of the reservoir was calculated using per-pixel classification technique using Landsat data images between 2018 to 2019 and then capacity of reservoir was calculated using prismoidal formula at different elevation. It was observed that capacity of reservoirs was decreased to 441.93 MCM in 2019 as compared to 611.3 MCM in 1994 as reported by central water commission. Assessment revealed 6.7 MCM/year is the loss of capacity during the last 25 years; which is due to sedimentation in the reservoir. The study shows that reservoir water spread area and sediment deposited was effectively estimated using remote sensing and GIS, which may act as time saving process as compared to manual based survey in future.

Keywords: Reservoir, Sedimentation, Remote sensing, Maithon, Landsat