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Periodic outburst floods from an ice-dammed lake in East Greenland

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We report evidence of four cycles of outburst floods from Catalina Lake, an ice-dammed lake in East Greenland, identified in satellite imagery between 1966-2016. The lake is 20-25 km2, and lake level drops 100-120 m in each event, corresponding to a water volume of ∼2.5 Gt and a release of potential energy of 1016 J, among the largest outburst floods reported in historical time. The drainage cycle has shortened systematically over each cycle, suggesting that the drainage pattern is changing due to climate warming with possible implications for environmental conditions in Scoresbysund fjord.