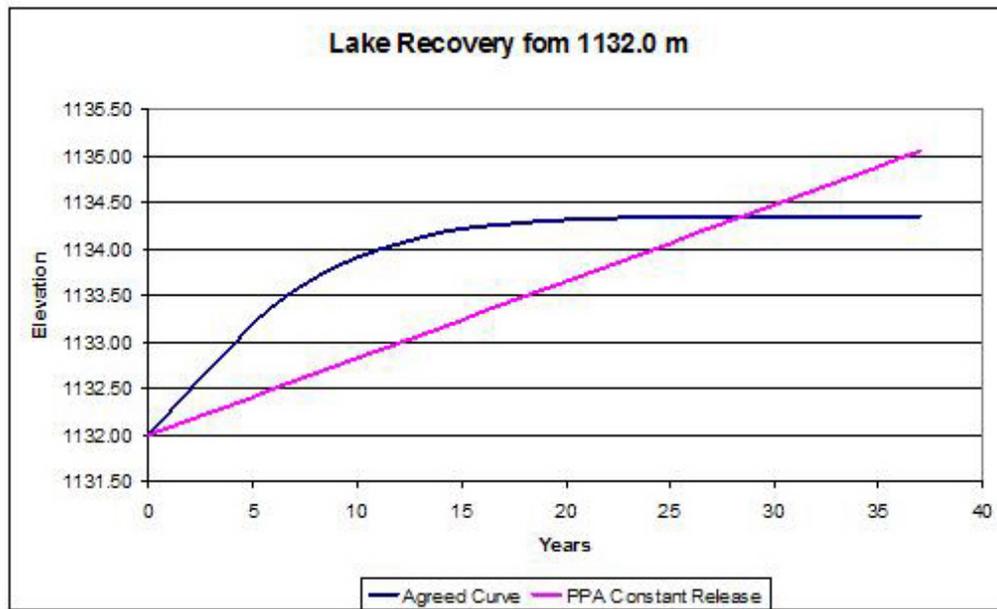


Lake Victoria and The Proposed Hydrological Curve Change

New Release Regime for Bujagali Dam Would Slow Recovery of Lake

A new hydrological release plan (known as the "Constant Release" curve) has been proposed by Power Planning Associates for the Bujagali Dam project. This raises the question: "How will the new curve affect the recovery of Lake Victoria, which has already been badly harmed by excessive releases from two existing dams?" International Rivers Network asked hydrologist Daniel Kull¹ to look at this question. Here is his reply.



The graph above shows that the Agreed Curve allows the lake level to recover more quickly than with the PPA proposed outflow regime. The graph looks at how Lake Victoria would recover from a baseline level of 1132.0 m (a low level that was experienced late last year²) during 35 years of constant average inflow (average net basin supply "NBS" 1900-2005 computed in the PPA report). As the graph shows, the Agreed Curve releases would restore the lake to a relatively "normal" level within about six years, while the Constant Release flow will not reach that level for close to 18 years. The Agreed Curve response is more representative of a naturally functioning lake, as opposed to the PPA regime, which resembles the filling of a reservoir.

In addition, the PPA report does not appear to take the current status of lake level into account when computing the likelihood of the high hydrology scenario. The report admits that: "The

¹ Daniel Kull is the author of *Connections Between Recent Water Level Drops in Lake Victoria, Dam Operations and Drought* (February 2006), which can be downloaded from <http://tinyurl.com/2mpjzm>

² The lake's level as of January 2007 was reported to be 1,132.34 metres above sea level, according to the *Tanzania Daily News* (<http://www.dailynews-tsn.com/page.php?id=5214>). From the late 1800s to about 1960, lake levels averaged between 1133.86 and 1134.86.

probability for the sequence of three extremely wet years 1961-1964 to occur again in the coming 25 years cannot be precisely known, due to the lack of a sufficiently long historical record that could allow for this exceptional event to be better assessed, but it is likely that its probability of re-occurrence is small." [Appendix, P. 40] The report further states: "Out of this historical record, only the repetition of the very exceptional inflows of the period 1961-1964 would result in a lake level clearly exceeding El. 1135.0 by 2011" (p. 55). Given the current lake levels, another three years of extremely high rain are needed to get back up to the high hydrology scenario of 1960-2000. If three very wet years are indeed needed to return to the high hydrology scenario in the immediate future, then the probability of the high hydrology scenario is even smaller than the report states. This would of course impact the power production of both Bujugali and the Nalubaale/Kiira complex.

Clarification on Recent Lake Drop and Dam Operation: On the correlation between the operation of the Kiira/Nalubaale dam complex to the drop in Lake Victoria, the PPA report states: "But in the present situation, the recent over-release results in an acceleration of the Lake level decline due to the prolonged drought. Nevertheless, since Year 2000, the over-released volume of water has been only 22% (50 billion m³ out of 224 billion m³) of the total outflow from the lake (see Table B-5 above). " This is true for the longer period shown, but as the PPA also documents, >the dams were responsible for 59% of the lake's total drop in 2004-05. Table B-5 lists the drop in lake level due to 'departure' (over-release): 26 cm in 2004 and 27 cm in 2005. Compared to the >observed drops of those years (46 and 44 cm respectively), the departure represents 59% of the total drop." The major drops in lake level were 2004-2005; by including 2000-2003 in the analysis the consultants are "watering down" the data.