

THE BITOU WATER CRISIS: ON THE ECOLOGICAL RESERVE OF THE KEURBOOMS AND WHY ABSTRACTION LIMITS EXIST

Just to add some context that often gets lost in the discussions around the drought we are experiencing and the towns extraction/demand, and just what is at stake as there doesn't seem to be much or enough urgent public messaging:

The abstraction limits on the Keurbooms system aren't arbitrary, and they're not just about "being green". They're tied to what's called the ecological reserve, which is a legal requirement under the National Water Act.

In simple terms, the ecological reserve is the minimum quantity and quality of water needed to keep the river and estuary functioning as a living system. Once flows drop below that threshold, the system doesn't just degrade linearly and instead it can collapse suddenly and irreversibly.

When flows are pushed too low, a few things happen very quickly:

- Natural filtration processes stop working
- Oxygen levels drop → fish and invertebrates die
- Algal blooms increase (often toxic)
- Sediment builds up and smothers estuarine plants
- The estuary can close or become eutrophic

At that point, you don't just have an "environmental problem", you have:

- Higher water treatment costs
- Loss of fisheries and birdlife
- Odours, health risks, and unusable water bodies
- A dead estuary, which directly affects property values and tourism

The key thing is that once an estuary or river crosses certain ecological thresholds, you can't engineer your way back easily. Pumps and pipes can't replace ecosystem services like filtration, nutrient cycling, and flow regulation.

So the abstraction limits aren't about protecting fish instead of people, they're about preventing a system failure that would make water security, tourism, and municipal finances much worse in the medium to long term.

Short-term over-extraction during droughts feels like a solution, but it often just borrows from the future at compound interest.

Adding an important clarification based on current flow data:

Under normal operating conditions, the municipality abstracts at a minimum of ± 300 ℓ/s at the weir.

During the festive season, an emergency application was made and approved to reduce abstraction to ± 150 ℓ/s due to drought conditions.

As of 7 January, river flows at the weir are approximately 80 ℓ/s , which is well below the emergency threshold. At this level, the municipality is required to stop abstraction from the river, and it appears this has now been done (so I'm told).

Current supply is therefore relying on municipal boreholes, desalination plant and the Roodefontein Dam, which is itself critically low. These sources act as short-term buffers, not long-term substitutes for sustained river flow.

Just remember the Keurbooms water source accounts for 80% of bitou's municipal water provision, which has now ceased.