

ANNUAL OPERATION PROPOSAL NARRATIVE (DRAFT)

FALL DRAW DOWN

Goal: Gradually reduce reservoir elevation to protect upstream shoreline structures from ice damage and to reduce potential flooding downstream of the Rest Lake Dam.

- Begin draw down September 15, targeting 8'.0 elevation by October 1 (6 inch drawdown)
- Continue draw down and extend through November 15.
- Draw down will be to the 5'.6" elevation.
- At no time shall the chain be lowered at a rate exceeding 2 inches per day.
- Reduce downstream flooding potential by extending the draw down period by 2 weeks.

WINTER OPERATION

Goal: Maintain stable reservoir elevation through run-of-river operation by matching discharge and inflow.

- Maintain chain water level at 5'.6"
- Operate as run of river (outflow is equal to inflow). This will be accomplished by maintaining a stable reservoir level during the winter months.

SPRING RE-FILL

Goal: Provide sufficient discharge to maintain suitable habitat for sturgeon spawning and aquatic life. Refill the reservoir as quickly as possible for recreation uses.

- At spring thaw (first major runoff event), capture 12 inches of water for storage. This is likely to occur before 75% of the ice is off Rest Lake. This will help augment flows later in spring.
- Once majority (> 75%) of the ice is off Rest Lake, the chain can begin to be filled above the 6'.6" level. Full pool elevation is 8'.6".
- Forecast the type of water year we can expect (heavy snow pack, high groundwater levels etc.). This may involve consultation with DNR Wisconsin Valley Improvement Company, National Weather Service etc... Both parties should initiate consultation during the second or third week of April, after the initial spring thaw, so everyone will have a better idea of what inflows are and what might be reasonable to pass for the spring period. Another method of determining flow goals is the run of river flow at the time the chain begins to be filled (majority of ice off of Rest Lake).
- During the first week of May, or when water temperatures are suitable (52-61 degrees F) begin to pass minimum sturgeon target flows (75-150 cfs). Another method of determining timing of flow goals would be to monitor water temperatures on a daily basis. A goal for spring of 2007 is the installation of a temperature data logger that could be accessed by phone (similar to Turtle Flambeau Reservoir).
- A review of the historical Rest Lake Dam operating data indicates that approximately 70 percent of the time flow equal to or greater than 75 cfs and be passed over the 5

week period and still fill the chain by July 1. These flow ranges should be maintained for a 5-week period.

- Under extreme dry conditions (when inflows are less than 150 cfs), it may not be possible to meet target flow goals. In this case a 50 cfs minimum flow or some other minimum sturgeon target flow may be adopted after consulting with DNR.
- **Under extreme wet years when inflows are high and the chain is near full, optimize sturgeon spawning conditions by maintaining even higher flows (>150 cfs) throughout the spawning season.**
- If possible avoid major changes in water flow (i.e. 50 cfs- 350 cfs in one day). This may be unavoidable during periods of abnormally high precipitation, extreme runoff, flood conditions, ice conditions or dam emergencies.
- Spring re-fill period should extend until July 1.

SUMMER OPERATION

Goal: Provide adequate discharge to maintain aquatic habitat downstream.

- From July 1 to October 1 maintain the chain at an elevation between 8'.0" and 8'.6". Recently summer target elevations have been between 8'.4" and 8'.6".
- Maintain a minimum flow of 50 cfs down stream. This will require that the chain be drawn down during dry conditions until the minimum summer elevation of 8'.0" is reached.
- If the summer minimum chain elevation is reached (8'.0"), or in dry years the minimum summer elevation is not reached (through refill), a different minimum flow may be established upon an Xcel initiated consultation with DNR. This should occur prior to the minimum elevation being reached. A new minimum flow or an outflow that best approximates inflow into the chain could be considered upon consultation with DNR. All hydrological and biological conditions should be taken into account during consultation (it is not an automatic decision).