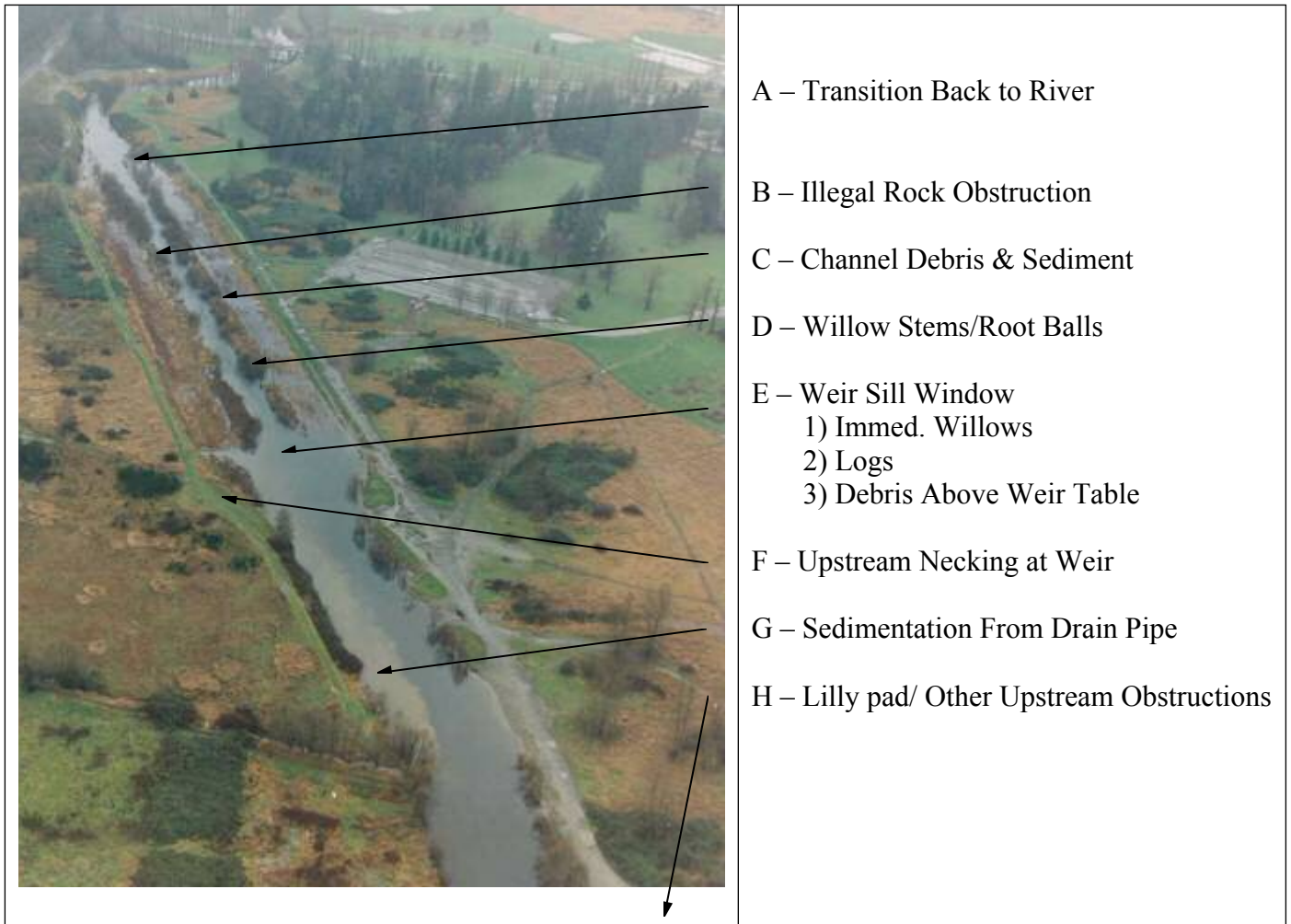


## Summary of Actionable Elements for TZ Maintenance

The Sammamish weir and transition zone maintenance can be divided into a series of separate actions. The following diagram and list presents these. Subsequently, each is described. It's proposed that these be "rated" as to potential for flow improvement and ease with respect to receiving permits as soon as possible. There may be other actions that can be distinguished AND this list is not to be construed as a set of options to restore requisite flow at all levels of the lake. All may be necessary.



**A – Transition Back to River** – Essentially there are 3 channels that must merge back to the main river at the terminus of the TZ. Presently the outside channels terminate prematurely because this area is somewhat backwatered and materials carried in the stronger flow further toward the weir “fall out” in this area. Maintenance of this return area has not occurred.

**B – Illegal Rock Obstruction** – Discovered last fall during cutting and reopening of the center channel for navigability, this obstruction presents both a blockage to flow and a hazard to the public. For both reasons it should be removed.

**C – Channel Debris & Sediment** – Most individuals consider the maintenance action to clear the side channels as the primary task for maintenance. Certainly the presence of half a foot of sediment build-up will have an effect. There may be debris atop this sediment, as well. Returning these high flow channels to the quarry spalls lining the channel may not be possible, but some feasible action needs to be identified.

D – Willow Stems/Root Balls – The high flow channels, for the most part, are relatively clear but are covered by Reed Canary Grass, an invasive. Closer to the center, low flow channel will be found mounds of root balls and stems of willows left as part of the clearing operation. This creates a major impediment to flow and, technically, given the agreed width of the willows is only 10 ft., should be removed.

E – Weir Sill Window – The weir was designed for flow to occur across its entire width AND with the expectation that below it would be a window through which the passing waters could easily flow. This condition has been obliterated.

- 1) Immed. Willows – immediately below the weir are willows which might be pulled back 100 ft.
- 2) Logs and debris have been allowed to accumulate in this same area, altering the original design.
- 3) Debris Above Weir Table – while related to the above, the objective should be to assure that nothing below the weir extends above the table (or elevation) established by the weir itself.

F – Upstream Necking at Weir – As noted in E, above, the original design called for a flare in the river to allow the full width of the weir to pass water. Cattails and other growth have been allowed to establish themselves and reduce the width of the window passing water. These should be removed and a smooth transition to a wider window reestablished.

G – Sedimentation From Drain Pipe – Sediment build up in the river leading to the weir may be affecting flow. Actions to evaluate remediation should be identified, evaluated, and included as appropriate. Certainly long term monitoring is appropriate.

H – Lilly pad/ Other Upstream Obstructions – Further toward the mouth of the lake will be found infestations of lily pads and other obstructions to flow. Since slowing the rate of flow in the river will result in an increase its temperature, and this is detrimental to juvenile fish, action here may also be appropriate.