Rework of issue paper # 4 - riparian

In natural river systems in the southwest, disturbance events from snowmelt or rainfall and periods of no precipitation define the climate that shape the riparian community and morphology of the rivers. The Grand Canyon was historically characterized by spring floods that scoured near shore vegetation and deposited bare sand beaches. Mesquite/acacia communities that became established above the 10-year flood level survived this regime, but the canyon had less vegetation than after the dam was constructed.

The post-dam flow regime significantly reduced the annual peak release stage down from the pre-dam flood level except for years in which large snowmelt runoff could not be totally controlled. The resultant powerplant bypasses reset the riparian system to a degree dependant on the magnitude of the releases, but since the peak releases of the majority of post-dam years was less than powerplant capacity, the NHWZ and marsh areas became more dominant.

Stakeholders place different values on each of the types of riparian communities, and have differing views on the operational and management actions that could be taken to enhance particular communities. However, AMWG members indicated that all of these communities are important, and as a result value aspects of both natural and controlled river processes. Thus, the MOs for riparian resources attempt to preserve the OHWZ and bare sand beach communities through occasional large-magnitude triggered BHBFs, recognizing that during the intervening period, the NHWZ and marsh communities will become re-established or recover. The ebb and flow thus established will mimic some of the processes of natural rivers, but perhaps on a time scale of years instead of months. The magnitude of BHBFs may determine the level at which the OHWZ is retained and could vary from the pre-dam level, and other factors such as sediment budget and aquatic and cultural resources may play a role in these decisions.