

Session: Environmental Flows for Flood-Pulse River Systems: Issues, Challenges and Opportunities
Presentation: Oral

Vegetation and wildlife Eflows indicators in the Okavango River Basin: their relation to flows and their potential response flow variations

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The Okavango River Basin supports a high diversity of flora and fauna that are variably related to flows of the basin river systems. The highest diversity of flora and fauna within the basin is found in the Okavango Delta. In view of the potential developments within the basin, an environmental flows assessment for the Okavango River Basin was conducted to establish potential response of vegetation and wildlife to flow variation. Flow related vegetation and wildlife indicators were identified based on available literature and expert knowledge of the basin wildlife and vegetation. Six wildlife indicators were identified for the whole basin. They are semi aquatics, frogs and river snakes, middle floodplain grazers, outer floodplain grazers and lower floodplain grazers. For vegetation, ten river indicators namely channel macrophytes, upper wet bank 1 (reeds), upper wet bank 2 (trees & shrubs), river dry bank, floodplain dry bank, floodplain residual pools, lower river floodplain, middle river floodplain and upper river floodplains. For the Delta, eight vegetation indicators were identified. They are open waters, permanent swamps, lower floodplain upper floodplain, occasionally flooded grassland sporobolus islands, riparian woodland and savanna/scrub. As expected, aquatic and semi aquatic indicators appeared to be more sensitive to flow variation. A development scenario analysis predicted that under low and medium water development scenarios, there will be no major deviation from the present day conditions of vegetation and wildlife, while a high water development scenario would significantly affect vegetation and wildlife, especially in the Delta. A high water development scenario would result in significant reduction of flows, and that will effectively change the floodplain vegetation which offers high quality grazing when the floods recede. The loss of floodplain ecosystems would definitely have negative impacts on floodplain grazers. However, major knowledge gaps were identified during the process, suggesting that long-term monitoring of the response of indicators to flow variation is an absolute necessity.

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