

# Values-Based Outcomes Related to Freshwater Inflow in the Watershed of the Mid-Texas Coast

Summary Output from Co-production of a Water Flow Decision Tool to Support Resource Management

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**Logic model showing linkages between changes in freshwater flow, values, and outcomes developed from stakeholder workshops and literature review**



	Value-based Outcomes	Metric	Supporting references	Evidence Literature
<b>Cultural Value</b>				
1	Educational opportunity	Presence/absence or change in number of field trips or outdoor ed programs	Farmer et al 2007	School trips add to people’s ecological knowledge and environmental attitudes
2	Agriculture	Change in crop acreage	Manning et al, 2017;	Crop producers adjust their crop based on water availability
3	Sense of Place/heritage/legacy/togetherness	Change in value of place (residents)	Anderson et al 2019; Rudestam 2012;	Literature state stakeholders have a sense of place as it related to local waterbodies and that they value and are concerned for water scarcity
4	Sense of Place/heritage/legacy/togetherness	Change in value of place (Tourists)	Darby et al 2021; Turpie and Joubert, 2001;	Water resources and biodiversity influence recreational use value
5	Environmental Value/Ecological value	Change in ecological value	Yoskowitz & Hutchison 2018;	Reports on people's Willingness-to-pay for FWI;
6	Environmental Value/Ecological value	Change in carbon sequestration	Limpert et al 2020; Yoskowitz & Hutchison 2018	Adding water to degraded floodplain reduces carbon emission by 28-84%;
7	Environmental Value/Ecological value	Change in ecosystem service value	Andersen, Levin, and Odgaard 2010; Muller, Hamilton, and Doole, 2016; Yoskowitz & Hutchison 2018	The economic value of recreation and waterfront property increases with water clarity; ecosystem service value decreased with eutrophication; report on blue carbon and other ES of heathy wetlands with case study on Texas estuary;
<b>Economic Activity</b>				
8	Food Production	Measurement of food availability or food security	Chapagain and Hoekstra, 2003;	Because of the import/export market food security as a result of water availability has worldwide reaching outcomes
9	Commercial fishing industry	Number /amount of commercially landed seafood	Robins et al, 2005	This paper provides quantitative evidence that estuarine fisheries in tropical Australia are related to freshwater flow.
10	Tourism	economic impact analysis from visitation and recreational activities	Turpie & Joubert 2001;	water resources and biodiversity influence recreational use value
<b>Human Health</b>				
11	Mental health benefits	Change in well-being	Barton & Pretty, 2010; Zhang et al, 2014; Adjei & Agye, 2015;	Literature that links human well-being to nature
12	Mental health benefits	Change in diagnostic rates for depression	Kessler et al, 2006; Reacher et al, 2004	Literature related effects of flooding to mental health
<b>Property Value and Protection</b>				
13	Property change, property value, directly impacts asking price - lots of land to lose	Change in property value	Nicholls and Crompton, 2018; Andersen, Levin, and Odgaard 2010	Literature on WQ and effect on Property values
14	Recreation	Change in home values in proximity to recreational sites	Kovacs, 2012;	Recreation access to parks can increase the property values

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