

**Example of Causal Pressures, and Consequent Pressures and Impacts on Values/Uses In Waterways**

<b>Causal Pressures (Causes on land &amp; in-stream)</b>	<b>Consequent Pressures In Waterways</b>	<b>Impacts on Values/Uses In Waterways</b>
<b>Point Sources:</b>		
Sewage treatment plant discharges	Elevated nutrient levels  Increased faecal coliforms levels	Algal blooms, macrophytes Reduction in seagrass depth range  Increased illness in primary recreation users
Industrial wastewater treatment plant discharges	Relevant contaminants in discharges (e.g. heavy metals, nutrients, etc) Increased toxicant levels in water and sediments	Changes in biota (species diversity, abundance)  Increased illness from consumption of contaminated fish/shellfish
<b>Rural (non-urban) Diffuse Sources (Changes in land use &amp; management):</b>		
Grazing activities: Land clearing Soil erosion	Elevated sediment levels Loss of habitat (e.g. filling of pools, reduction in seagrass)	Increased injury levels in primary recreation users Changes in biota (species diversity, abundance)
Cropping activities: Land clearing Soil erosion  Fertiliser use  Pesticide (herbicide, insecticide) use	Elevated sediments levels Loss of habitat (e.g. filling of pools, reduction in seagrass)  Increased salinity levels  Elevated nutrients levels  Increased pesticide levels in water and sediments	Increased injury levels in primary recreation users Changes in biota (species diversity, abundance)  Impacts on irrigated crops Impacts on stock from drinking water  Algal blooms, macrophytes  Fish (and other biota) kills Changes in biota (species diversity, abundance) Increased illness from consumption of contaminated fish/shellfish
<b>Urban Stormwater Runoff (Changes in urban land use &amp; management):</b>		
Increased “hard surface” areas (roads, roofs)	Reduced infiltration Reduced baseflows Increased peak flows Increased streambank erosion and sediment levels Loss of habitat (e.g. filling of pools, reduction in seagrass)	Increased injury levels in primary recreation users Changes in biota (species diversity, abundance)
Land clearing for new developments	Elevated sediment levels Loss of habitat (e.g. filling of pools, reduction in seagrass)	Increased injury levels in primary recreation users Clogging of irrigation infrastructure Clogging of drainage infrastructure Changes in biota (species diversity, abundance)
Behavioural practices of urban community: Soil use and disturbance  Fertiliser use  Pesticide use  Water use	Elevated sediments levels Loss of habitat (e.g. filling of pools, reduction in seagrass)  Elevated nutrients levels  Increased pesticide levels in water and sediments  Changes to flow regimes	Increased injury levels in primary recreation users Changes in biota (species diversity, abundance)  Algal blooms, macrophytes  Fish (and other biota) kills Changes in biota (species diversity, abundance) Increased illness from consumption of contaminated fish/shellfish  Changes to/loss of biota
Drainage management	Change to physical form of waterway Changes to/loss of habitat	Changes to/loss of biota
Littering and other waste release	Litter in waterways	Reduced aesthetic values Impacts on biota (e.g. hooks in pelicans)
<b>Riparian Zone &amp; In-stream Disturbances:</b>		
Clearing of riparian vegetation	Increase in water temperature (reduced shading) Reduction in leaf litter in-stream (food source) Changes to habitat condition	Changes in biota (species diversity, abundance)
Drainage works	Reduced baseflows Increased peak flows Increased streambank erosion Changes to/loss of habitat	Changes in biota (species diversity, abundance)
Abstraction of biota (fishing, etc)		Changes in biota (species diversity, abundance)
Shipping movement/ballast water	Introduced pests	Changes in biota
Introduction of exotic biota eg aquarium fish	Introduced pests	Changes in biota
Boat anchoring	Change to physical form of waterway	Damage to corals

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<b>Flow Alterations:</b>		
Dams, weirs	Changes to flow regimes (peak, base flows, etc.) Changes to/loss of habitat	Changes to/loss of biota
Barrages	Changes to flow regimes (tidal flows, etc) Changes to/loss of habitat	Changes to/loss of biota
Levee banks	Changes to flow regimes Changes to/loss of habitat	Changes to/loss of biota
Abstractions for off stream use	Changes to flow regimes (peak flows, etc.) Changes to habitat	Changes to/loss of biota
<b>Other Causal Pressures:</b>		