

# Healthy waters for Queensland: Environmental values, management goals and water quality objectives

## Frequently asked questions

### **Why are local environmental values and water quality objectives being developed for Queensland waters?**

Identifying local environmental values (EVs), management goals and water quality objectives (WQOs) for Queensland's tidal and non-tidal waters protects the state's water environment whilst allowing for development that is ecologically sustainable.

### **What legislation governs the development of environmental values and water quality objectives?**

The *Environmental Protection Act 1994* and the Environmental Protection (Water and Wetland Biodiversity) Policy 2019 — the EPP (Water and Wetland Biodiversity) — provide the framework for developing EVs, management goals and WQOs for Queensland waters.

Schedule 1 of the EPP (Water and Wetland Biodiversity) lists the EVs and WQOs for Queensland waters. These are a part of the legislation and therefore considered by planners and managers when making decisions about waters and/or water quality.

### **What are EVs?**

EVs are the qualities that make water suitable for supporting aquatic ecosystems and human uses. These qualities need to be protected from the effects of habitat alteration, waste releases, contaminated runoff and changed flows to ensure healthy aquatic ecosystems and waterways that are safe for community use.

All tidal and non-tidal waters, including wetlands, lakes and groundwater, have EVs. Aquatic ecosystem health is an EV of all Queensland waters.

Table 1 provides a full list of EVs that include:

- aquatic ecosystem health
- aquaculture and human consumption of aquatic foods
- agricultural uses (e.g. stock watering and irrigation)
- recreational uses (e.g. swimming, wading, boating, fishing and aesthetic)
- drinking water (raw water supply)
- industrial uses (e.g. power generation and manufacturing, mining and minerals refining/processing)
- cultural and spiritual values.

### **What are management goals?**

Management goals are measures or statements used to assess whether EVs are being maintained (see figures 1 and 2).

### **What are water quality guidelines?**

Water quality guidelines are technically-derived numerical measures (e.g. concentrations) or descriptive statements to protect particular EVs. They are based on best-available science and use local water quality data where possible. They are developed under the processes outlined in the [Australian and New Zealand Guidelines for Fresh and Marine Water Quality](#) (ANZG, 2018), the Queensland Water Quality Guidelines, and the [DRAFT Guideline: Deciding aquatic ecosystem indicators and local water quality guidelines](#).

Water quality guidelines are a key input in deriving WQOs (see figures 1 and 2).

## What are WQOs?

WQOs are the quantitative measures or narrative statements established to protect the EVs of waters. WQOs are derived from site-specific scientific studies, the Queensland Water Quality Guidelines, ANZG, and other documents published by recognised entities. WQOs may be modified by social and economic inputs under section 12 of EPP (Water and Wetland Biodiversity) (see Figure 2).

WQOs are not individual point source emission objectives but the receiving water WQOs.

WQOs are expressed in various ways, including concentrations, loads (e.g. tonnes/year), and biological measures. Indicators can include physical (e.g. turbidity, suspended sediment and temperature), chemical (e.g. phosphorus, nitrogen, biochemical oxygen demand and toxicants), biological (e.g. macroinvertebrates and fish), pathogens, and other measures of waterway condition (e.g. erosion and riparian vegetation extent and condition).

The WQOs for waters that have not been listed in schedule 1 are the set of water quality guidelines for all indicators that will protect the EVs. These are listed in section 8 of the EPP (Water and Wetland Biodiversity).

## What are levels of aquatic ecosystem protection?

For the aquatic ecosystem EV, the EPP (Water and Wetland Biodiversity) identifies four levels of protection according to the current condition of waters. These are high ecological value (HEV), slightly disturbed (SD), moderately disturbed (MD) and highly disturbed (HD) (refer Figure 3).

Each level of protection is assigned a specific management intent. For HEV waters, the management intent is to maintain natural values/condition, and WQOs are set accordingly to maintain this natural state. For waters identified as slightly disturbed, the intent is to progressively improve them towards the HEV condition (with corresponding WQOs).

## How are environmental values and water quality objectives being developed for Queensland waters?

The Department of Environment and Science (the department) is working with communities (including industry and commerce sectors) in partnership with Regional Natural Resource Management (NRM) groups and local governments to develop EVs and WQOs for all Queensland waters. The current focus is on waters draining into the Great Barrier Reef and those within the Queensland Murray–Darling Basin. EVs and WQOs for waters scheduled under the EPP (Water and Wetland Biodiversity) are available on the department's [website](#).

## Can I comment on local EVs?

Yes. The department's website contains information about consultation opportunities for particular EVs projects and how you can provide comments (e.g. by email). Figure 2 outlines the generic EVs process, including the stages at which consultation typically occurs during the process.

## How will EVs and WQOs be used?

Figure 4 summarises the ways in which EVs and WQOs can be used in legislative and non-legislative decision making. Under the EPP (Water and Wetland Biodiversity), EVs and WQOs become part of the legislation by being included in schedule 1. Once scheduled, they inform:

- planning and decision making for development under the *Environmental Protection Act 1994* (e.g. point source environmentally relevant activities);
- local government planning and decision making for urban land development under the State Planning Policy (Water Quality State Interest - Planning Act);
- best practice management approaches to address diffuse emissions from rural lands;
- development of report cards on aquatic ecosystem health; and
- catchment scale management planning and decisions by non-legislative Regional NRM bodies.

## Further information

Guidelines and fact sheets under the EPP (Water and Wetland Biodiversity) Policy 2019 are available on the department's [website](#). For more information on these, email [evinfo@des.qld.gov.au](mailto:evinfo@des.qld.gov.au).

Learn more about the [Reef protection regulations](#) which aim to address industrial and agricultural sources of water pollution to the Great Barrier Reef.





➤ **High ecological value (HEV)**

- maintain natural values/condition

➤ **Slightly disturbed (SD)**

- maintain current condition & improve towards HEV over time

➤ **Moderately disturbed (MD)**

- improve & maintain WQ (achieve WQOs)

➤ **Highly disturbed (HD)**

- halt decline & progressively improve WQ to achieve the WQOs (long term)

Figure 3 Levels of aquatic ecosystem and corresponding management intent

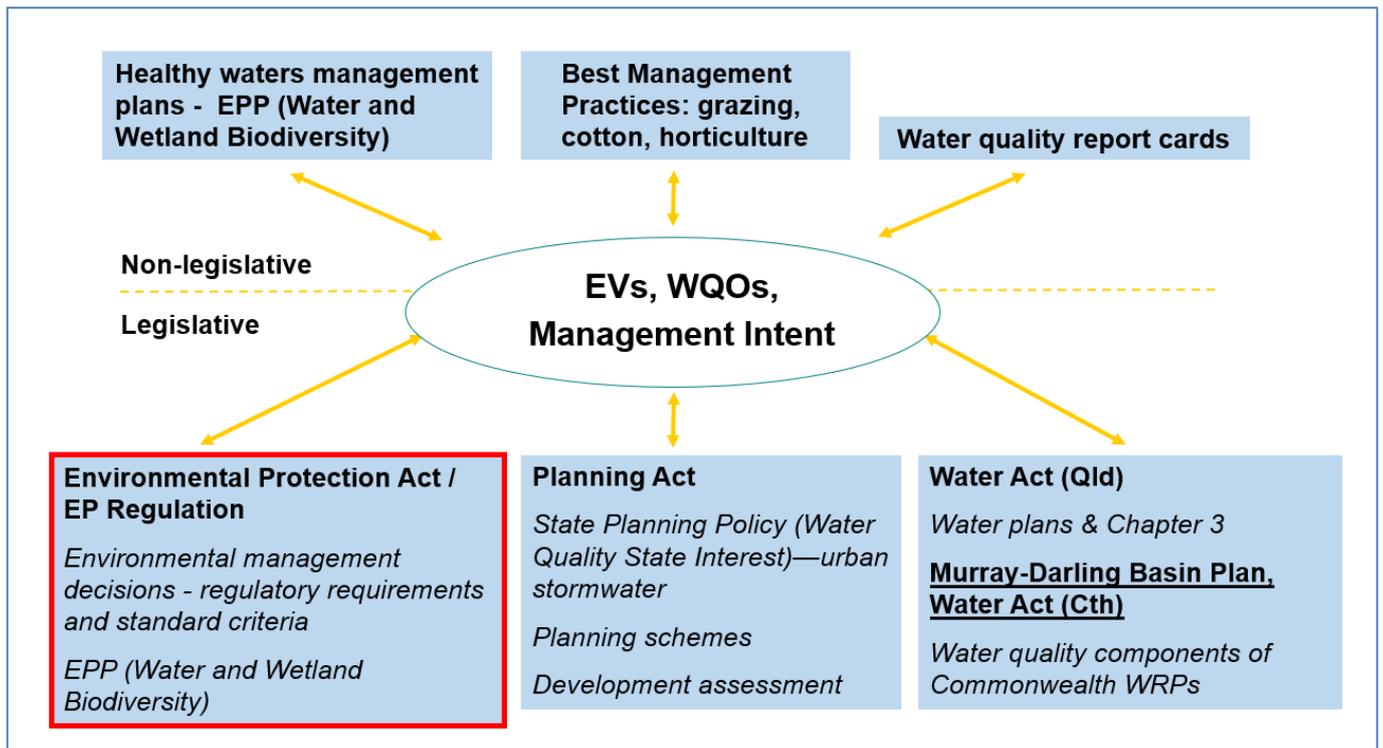


Figure 4 EVs/WQOs linkages to legislative and non-legislative activities

**Table 1 List of EVs**

Environmental values and definitions
<p><b>Aquatic ecosystem</b></p> <p>'A community of organisms living within or adjacent to water, including riparian or foreshore area'. (EPP (Water and Wetland Biodiversity), schedule 2)</p> <p>The intrinsic value of aquatic ecosystems, habitat and wildlife in waterways and riparian areas, for example, biodiversity, ecological interactions, plants, animals, key species (such as turtles, platypus, seagrass and dugongs) and their habitat, food and drinking water.</p> <p>Waterways include perennial and intermittent surface waters, groundwaters, tidal and non-tidal waters, lakes, storages, reservoirs, dams, wetlands, swamps, marshes, lagoons, canals, natural and artificial channels and the bed and banks of waterways.</p> <p>(This EV incorporates the 'wildlife habitat' EV used in the South East Queensland Regional Water Quality Management Strategy (SEQRWQMS)). See below for more details on aquatic ecosystems, based on the EPP (Water and Wetland Biodiversity).</p>
<p><b>High ecological/conservation value waters</b></p> <p>'Waters in which the biological integrity of the water is effectively unmodified or highly valued.' (EPP (Water and Wetland Biodiversity), schedule 2).</p>
<p><b>Slightly disturbed waters</b></p> <p>'Waters that have the biological integrity of high ecological value waters with slightly modified physical or chemical indicators but effectively unmodified biological indicators' (EPP (Water and Wetland Biodiversity), schedule 2).</p>
<p><b>Moderately disturbed waters</b></p> <p>'Waters in which the biological integrity of the water is adversely affected by human activity to a relatively small but measurable degree.' (EPP (Water and Wetland Biodiversity), schedule 2).</p>
<p><b>Highly disturbed waters</b></p> <p>'Waters that are significantly degraded by human activity and have lower ecological value than high ecological value waters or slightly or moderately disturbed waters.' (EPP (Water and Wetland Biodiversity), schedule 2).</p>
<p><b>Irrigation</b></p> <p>Suitability of water supply for irrigation, for example, irrigation of crops, pastures, parks, gardens and recreational areas.</p>
<p><b>Farm water supply/use:</b></p> <p>Suitability of domestic farm water supply, other than drinking water. For example, water used for laundry and produce preparation.</p>
<p><b>Stock watering</b></p> <p>Suitability of water supply for production of healthy livestock.</p>
<p><b>Aquaculture</b></p> <p>Health of aquaculture species and humans consuming aquatic foods (such as fish, molluscs and crustaceans) from commercial ventures.</p>
<p><b>Human consumers of aquatic foods</b></p> <p>The suitability of the water for producing aquatic foods for human consumption such as fish, crustaceans and shellfish from natural waterways.</p>
<p><b>Oystering</b> (goal within the EV of human consumers of aquatic foods)</p>

<b>Environmental values and definitions</b>
Health of humans consuming oysters from natural waterways and commercial ventures. (Applies only to tidal waterways.)
<p><b>Primary recreation</b></p> <p>Means a use that involves the following types of contact with the water—full body contact, frequent immersion by the face and trunk, frequent contact with spray by the face where it is likely some water will be swallowed or inhaled, or come into contact with ears, nasal passages, mucous membranes or cuts in the skin. Examples—diving, swimming, surfing (EPP (Water and Wetland Biodiversity), section 6).</p>
<p><b>Secondary recreation</b></p> <p>Means a use that involves the following types of contact with the water—contact in which only the limbs are regularly wet, and other contact, including the swallowing of water, is unusual (examples—boating, fishing, wading) or occasional inadvertent immersion resulting from slipping or being swept into the water by a wave. (EPP (Water and Wetland Biodiversity), section 6).</p>
<p><b>Visual recreation</b></p> <p>Means a use that does not ordinarily involve any contact with the water—for example angling from the shore, sunbathing near water (EPP (Water and Wetland Biodiversity), section 6).</p>
<p><b>Drinking water supply</b></p> <p>Suitability of the water for supply as drinking water having regard to the level of treatment of the water.</p>
<p><b>Industrial use</b></p> <p>Suitability of water supply for industrial purposes, for example, food, beverage, paper, petroleum and power industries, mining and minerals refining/processing. Industries usually treat water supplies to meet their needs.</p>
<p><b>Cultural and spiritual values</b></p> <p>Means scientific, social or other significance to the present generation or past or future generations, including Aboriginal people or Torres Strait Islanders (EPP (Water and Wetland Biodiversity)), section 6), for example:</p> <ul style="list-style-type: none"> <li>• custodial, spiritual, cultural and traditional heritage, hunting, gathering and ritual responsibilities</li> <li>• symbols, landmarks and icons (such as waterways, turtles and frogs)</li> <li>• lifestyles (such as agriculture and fishing).</li> </ul>