

State code 18: Constructing or raising waterway barrier works in fish habitats

18.1 Purpose statement

The purpose of the code is to ensure that development involving the constructing or raising of **waterway barrier works** in a **fish habitat**:

1. maintains **fish** movement and connectivity throughout **waterways** and within and between **fish habitats**
2. maintains the health and productivity of **fisheries resources** and **fish habitat**
3. maintains the community and **fishing** sectors' use of the area and access to **fisheries resources**
4. only occurs only where there is a need for the development and no other reasonable alternative exists
5. provides adequate **fish** passage including a **fish way**, if necessary
6. avoids impacts on **marine plants**, **waterways** that provide for **fish** passage and **declared fish habitat areas** that are **matters of state environmental significance**, and where avoidance is not reasonably possible, minimises and mitigates impacts, and provides an **offset** for **significant residual impacts** where appropriate.

Note: For guidance on how to determine whether this code applies to development, see fact sheets:

1. Maintaining Fish Passage in Queensland: What is a waterway, Department of Agriculture, Fisheries and Forestry, 2014
2. Maintaining Fish Passage in Queensland: What is a waterway barrier work, Department of Agriculture, Fisheries and Forestry, 2014
3. Maintaining Fish Passage in Queensland: What is not a waterway barrier work, Department of Agriculture, Fisheries and Forestry, 2014.

18.2 Performance outcomes and acceptable outcomes

Development that is operational work for constructing or raising **waterway barrier works** in **fish habitats** should demonstrate compliance with the relevant provisions of table 18.2.2. For further details of the specific performance outcomes to be addressed, please refer to table 18.2.1.

Table 18.2.1: Development type and relevant provisions of the code

| Development | Relevant provisions of code |
|--|-----------------------------|
| All development | Table 18.2.2 – PO1 – PO18 |
| Development involving fish ways | Table 18.2.2 – PO19 – PO28 |
| Development involving floodgates | Table 18.2.2 – PO29 – PO31 |
| Temporary waterway barrier works | Table 18.2.2 – PO32 – PO35 |
| Matters of state environmental significance | Table 18.2.2 – PO36 |

Table 18.2.2: Operational work

| Performance outcomes | Acceptable outcomes |
|---|--------------------------------------|
| All development | |
| PO1 There is a demonstrated need for the development and alternatives (locations and designs) which do not involve constructing or raising waterway barrier works are not viable. | No acceptable outcome is prescribed. |
| PO2 Development has a functional requirement to be located within a waterway . Ancillary elements of development occur outside the waterway . Note: Bed and banks of the waterway and any associated wetlands and riparian areas within the development site should be accurately identified on plans provided with the application, together with the location of highest astronomical tide, mean high water spring and mean low water spring tide heights if the waterway is tidal. | No acceptable outcome is prescribed. |

| Performance outcomes | Acceptable outcomes |
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| <p>PO3 The number and extent of waterway barrier works and the spatial and temporal extent of their impacts on waterways providing for fish passage are minimised.</p> | <p>No acceptable outcome is prescribed.</p> |
| <p>PO4 For the life of the barrier, adequate fish passage must be provided and maintained at all waterway barrier works through:</p> <ol style="list-style-type: none"> 1. fish way(s) that adequately provide for the movement of fish; or 2. the movement of fish is adequately provided for in another way. | <p><i>For all crossings:</i></p> <p>AO4.1 Hydraulic conditions (depth, velocities and turbulence) from the downstream to the upstream limit of the structure allow for fish passage of all fish attempting to move through the crossing at all flows up to the drownout of the structure.</p> <p>AND</p> <p>AO4.2 For the life of the crossing, the relative levels of:</p> <ol style="list-style-type: none"> 1. a bed level crossing or a culvert invert 2. bed erosion protection 3. apron scour protection; and 4. the stream bed are maintained to avoid drops in elevation at their joins. <p>AND</p> <p>AO4.3 The crossing and associated erosion protection structures are installed at no steeper gradient than the waterway bed gradient.</p> <p>AND</p> <p>AO4.4 The crossing and associated erosion protection structures are roughened throughout to approximately simulate natural bed conditions.</p> <p>AND</p> <p>AO4.5 Design and maintenance measures are in place for the life of the crossing to keep crossings clear of blockages through a regular inspection program in order to retain fish passage through the crossing.</p> <p>AND</p> <p><i>For waterway crossings other than bridges and culverts:</i></p> <p>AO4.6 The crossing is built at or below bed level so that the surface of the crossing is no higher than the stream bed at the site.</p> <p>AND</p> <p>AO4.7 The lowest point of the crossing is installed at the level of the lowest point of the natural stream bed (pre-construction), within the footprint of the proposed crossing.</p> <p>AND</p> |

| Performance outcomes | Acceptable outcomes |
|----------------------|--|
| | <p>AO4.8 There is a height difference between the lowest point of the crossing and the edges of the low flow section of the crossing so that water is channelled into the low flow section of the crossing.</p> <p>AND</p> <p>AO4.9 The level of the remainder of the crossing is no higher than the lowest point of the natural stream bed outside of the low flow channel.</p> <p>AND</p> <p><i>For bridges:</i></p> <p>AO4.10 Bridge support piles are not constructed within the low-flow channel and do not constrict the edges of the low-flow channel, and the number of piles in-stream are minimised.</p> <p>AND</p> <p>AO4.11 Bridge abutments and bank revetment works do not extend into the waterway beyond the toes of the banks.</p> <p>AND</p> <p>AO4.12 Suitable fish habitats are maintained within the low-flow channel.</p> <p>AND</p> <p><i>For culverts:</i></p> <p>AO4.13 Culverts are only installed where the site conditions do not allow for a bridge.</p> <p>AND</p> <p>AO4.14 The combined width of the culvert cell apertures are equal to 100 percent of the main channel width.</p> <p>AND</p> <p>AO4.15 The base of the culvert incorporates a low flow channel consistent with the natural low flow channel and:</p> <ol style="list-style-type: none"> 1. is buried a minimum of 300 millimetres to allow bed material to deposit and reform the natural bed on top of the culvert base; or 2. the base of the culvert is the stream bed; or 3. the base of the culvert cell and any instream scour protection is roughened throughout to approximately simulate natural bed conditions. <p>AND</p> |

| Performance outcomes | Acceptable outcomes |
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| | <p>AO4.16 The outermost culvert cells incorporate roughening elements such as baffles on their bankside sidewalls.</p> <p>AND</p> <p>AO4.17 Roughening elements are installed on the upstream wingwalls on both banks to the height of the upstream obvert or the full height of the wingwall.</p> <p>AND</p> <p>AO4.18 Roughening elements provide a contiguous lower velocity zone (no greater than 0.3 metres/second) for at least 100 millimetres width from the wall through the length of the culvert and wingwalls.</p> <p>AND</p> <p>AO4.19 Culvert alignment to the stream flow minimises water turbulence.</p> <p>AND</p> <p>AO4.20 There is sufficient light at the entrance to and through the culvert so that fish are not discouraged by a sudden darkness.</p> <p>AND</p> <p>AO4.21 The depth of cover above the culvert is as low as structurally possible, except where culverts have an average recurrence interval (ARI) greater than 50 years.</p> <p>AND</p> <p>AO4.22 For culvert crossings designed with a flood immunity ARI greater than 50 years, fish passage is provided up to culvert capacity.</p> <p><i>For all other development no acceptable outcome is prescribed.</i></p> |
| <p>PO5 Waterway barrier works are designed, constructed, operated and maintained to provide lateral and longitudinal fish passage for all members of the fish community, regardless of size, species, life-stage or swimming ability, and accommodating future and seasonal increases in fish biomass.</p> <p>Note: In order to demonstrate compliance with this performance outcome, the seasonal and flow related biomass of the fish community at the location of the proposed waterway barrier works will need to be surveyed and addressed in the design of the fish way by a person suitably qualified and experienced in fish passage biology. In addition, any future increases in fish biomass should be quantified and catered for.</p> | <p>No acceptable outcome is prescribed.</p> |

| Performance outcomes | Acceptable outcomes |
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| <p>Longitudinal fish passage refers to the movement into both permanent and temporary offstream systems, including wetlands, lagoons, floodplain etc. Fragmentation of connectivity into and out of these systems must be mitigated via adequate fish passage.</p> | |
| <p>PO6 Development is designed and operated so that all components of waterway barrier works (for example scour protection, intake and outlet structures, spillway, stilling basin, apron and dissipation structures) and all pathways of potential fish movement provide safe fish passage. Stepped spillways (including sheet pile weirs) are not acceptable.</p> <p>Note: Stepped spillway (including sheet pile weirs) have been associated with high mortalities and injuries to fish.</p> <p>Assessment of this performance outcome will include consideration of adequate tailwater depth at the toe of the spillway (for example: stilling basin) at commencement to spill (for example: 30 percent of the head difference).</p> | <p>No acceptable outcome is prescribed.</p> |
| <p>PO7 The drownout characteristics of the waterway barrier works and the frequency, timing and duration of drownout conditions will provide adequate fish passage for the fish community and biomass moving past the barrier.</p> <p>Note: Determining adequacy of fish passage will involve consideration of passage achieved during drownout and during other hydraulic conditions and the relative frequencies of these conditions among other things.</p> | <p>No acceptable outcome is prescribed.</p> |
| <p>PO8 Development does not increase the risk of mortality, disease or injury, or compromise the health, productivity, marketability or suitability for human consumption of fisheries resources, having regard to (but not limited to):</p> <ol style="list-style-type: none"> 1. biotic and abiotic conditions, such as water and sediment quality 2. substances that are toxic to plants or toxic to or cumulative within fish 3. design of structures 4. impacts on reproductive success 5. effect on fish energy reserves 6. whether fish may be physically damaged, injured, killed, trapped or stranded 7. fish passage and access to habitat generally; and 8. the impacts of pest fish and other relevant pest species. <p>Note: A fish salvage plan may be required to demonstrate compliance with the performance outcome and may form a condition of any approval.</p> <p>Permits or other authorities may be required under the <i>Fisheries Act 1994</i> for the use of regulated fishing apparatus and to possess fisheries resources.</p> | <p>No acceptable outcome is prescribed.</p> |
| <p>PO9 Development:</p> <ol style="list-style-type: none"> 1. avoids non-essential hardening or unnatural modification of the main channel of the waterway 2. retains natural fish habitat and features such as rock outcrops and boulders, wherever possible | <p>No acceptable outcome is prescribed.</p> |

| Performance outcomes | Acceptable outcomes |
|--|--------------------------------------|
| <p>3. avoids channelisation (i.e. straightening) of meandering waterways or where channels need to be significantly modified, simulates natural watercourses and habitat features (for example, by including meanders, pools, riffles, shaded and open sections, deep and shallow sections and different types of substrata); and</p> <p>4. avoids construction during times of elevated flows.</p> | |
| <p>PO10 Where waterway barrier works will modify water levels or flow characteristics of the waterway, existing up and downstream structures are upgraded to provide adequate fish passage in accordance with the new levels or flow characteristics.</p> | No acceptable outcome is prescribed. |
| <p>PO11 Sufficient water exchange and flow is maintained and provided to sustain and where necessary restore, water quality and the health and condition of fisheries resources, ecological functions and fish passage.</p> | No acceptable outcome is prescribed. |
| <p>PO12 Development likely to cause drainage or disturbance to acid sulfate soils, prevents the release of contaminants and impacts on fisheries resources and fish habitats.</p> <p>Note: Management of acid sulfate soil is consistent with the current Queensland acid sulfate soil technical manual: Soil Management Guidelines V4.0, Department of Science, Information Technology, Innovation and the Arts, 2014.</p> | No acceptable outcome is prescribed. |
| <p>PO13 Construction avoids direct and indirect disturbance, or where avoidance is not possible, minimises direct and indirect disturbance to beds, banks and vegetation adjacent to the permanent development footprint.</p> | No acceptable outcome is prescribed. |
| <p>PO14 After completion of in-stream works, disturbed areas of the bed and banks of the waterway outside the permanent development footprint are returned to their original profile and stabilised to promote regeneration of natural fish habitats.</p> <p>Note: Monitoring of the success of fish habitat regeneration, within and adjacent to the work site, is likely to be conditioned as part of any development approval.</p> | No acceptable outcome is prescribed. |
| <p>PO15 The natural substrate of the waterway bed is retained or reconstructed so that the post-construction substrate is comparable to the natural substrate; for example in terms of size and consistency.</p> | No acceptable outcome is prescribed. |
| <p>PO16 Development does not adversely impact on community access to tidal land and waterways.</p> | No acceptable outcome is prescribed. |
| <p>PO17 Development does not adversely impact on community access to fisheries resources and fish habitats including recreational and indigenous fishing access.</p> <p>Note: In some cases, compensation for impact on fisheries access, operations and/or productivity may be necessary. The Guideline on fisheries adjustment provides advice for proponents on relevant fisheries adjustment processes and is available by request from the Department of Agriculture and Fisheries.</p> | No acceptable outcome is prescribed. |
| <p>PO18 Development does not adversely impact on commercial fishing access and linkages between a</p> | No acceptable outcome is prescribed. |

| Performance outcomes | Acceptable outcomes |
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| <p>commercial fishery and infrastructure, services and facilities.</p> <p>Note: In some cases, compensation for impact on fisheries access, operations and/or productivity may be necessary. The Guideline on fisheries adjustment provides advice for proponents on relevant fisheries adjustment processes and is available by request from the Department of Agriculture and Fisheries.</p> | |
| Development involving fish ways | |
| <p>PO19 Having regard to the hydrology of the site and fish movement characteristics, the fish way is capable of operating, and will operate:</p> <ol style="list-style-type: none"> 1. for as long as the waterway barrier work is in position; and 2. whenever there are inflows into the impoundment or waterway, release out of the impoundment and during overtopping events; and 3. when the impoundment is above dead storage level. | <p>AO19.1 For the life of the waterway barrier works, the lower operational range of the fish way is at least:</p> <ol style="list-style-type: none"> 1. 0.5 metres below minimum headwater drawdown level; and 2. 0.5 metres below minimum tail water level at the site. |
| <p>PO20 For the life of the waterway barrier works, the hydrology of the development allows for adequate fish movement.</p> | <p>AO20.1 The lower operational range of the fish way is at least:</p> <ol style="list-style-type: none"> 1. 0.5 metres below minimum headwater drawdown level; and 2. 0.5 metres below minimum tail water level at the site. |
| <p>PO21 Fish way maximises fish movement by providing:</p> <ol style="list-style-type: none"> 1. continuous attraction flows at the fish way entrance under all flow conditions within the fish way's operating range 2. additional means of fish attraction are included in the fish way design if appropriate 3. attraction flow velocities are sufficient and variable to attract the whole fish community, and expected future and seasonal biomass 4. adequate holding chamber capacity for the expected fish biomass in any lock, lift, trap and transfer type fish ways 5. adequate exit conditions for downstream fish passage; and 6. for future adjustments in capacity or operation that may be needed once in place. | <p>No acceptable outcome is prescribed.</p> |
| <p>PO22 Fish ways are designed so that:</p> <ol style="list-style-type: none"> 1. water intakes, outlets, screens and other structures do not cause entrainment, injury or mortality to fish 2. appropriate light levels are maintained at entrances, exits and throughout the fish way to ensure successful use by fish 3. fish attracted to the spillway or outlet flows are able to access the fish way without having to swim back downstream 4. fish are able to exit upstream and downstream fish ways at a water levels over the full range of tailwater and headwater levels 5. exits are located to avoid fish being washed back over the spillway during overtopping | <p>No acceptable outcome is prescribed.</p> |

| Performance outcomes | Acceptable outcomes |
|---|---|
| <p>6. adequate hydraulic conditions and minimum water depth for fish passage is maintained throughout the fish way</p> <p>7. predation on fish using the fish way is avoided</p> <p>8. rubbish and debris do not impede fish passage or cause blockages or damage the fish way</p> <p>9. delays in fish movement are avoided when fish are undertaking upstream spawning migrations; and</p> <p>10. delays in fish movement are avoided immediately after times when there have been flows in the system but no fish passage in the rising hydrograph.</p> | |
| <p>PO23 All water releases are directed through the fish way as a priority over the outlet works.</p> | <p>No acceptable outcome is prescribed.</p> |
| <p>PO24 All flows and releases initiate and terminate adjacent to the fish way or are directed parallel to the fish way entrance and all flows are transferred to the fish way as soon as possible during a flow recession.</p> <p>Note: Flows and releases include but are not limited to spillway overtopping and outlet flows. Such flows must not compete with fish way attraction flows or reduce the operation of a fish way.</p> | <p>No acceptable outcome is prescribed.</p> |
| <p>PO25 Mechanisms are in place to ensure that operational issues in fish ways are promptly rectified for the life of the fish way including but not limited to:</p> <ol style="list-style-type: none"> 1. all components are designed to be durable, reliable and adequately protected from damage during high flow and flood events 2. all components can be replaced; and 3. a contingency plan ensures provision of alternate adequate fish passage during the fish way re-instatement process. <p>Note: Fish way downtime greater than 14 consecutive calendar days is likely to have a significant impact to fisheries resources.</p> | <p>No acceptable outcome is prescribed.</p> |
| <p>PO26 Development provides for:</p> <ol style="list-style-type: none"> 1. installation of monitoring equipment (such as traps and lifting equipment); and 2. access for monitoring, maintenance and operational purposes. | <p>No acceptable outcome is prescribed.</p> |
| <p>PO27 Water supply for the fish ways and attraction flows are sourced from surface quality water or equivalent water quality.</p> | <p>No acceptable outcome is prescribed.</p> |
| <p>PO28 Tailwater control structures such as a gauging weir, rock bar or stream crossings are fitted with a fish way or designed to provide fish passage.</p> | <p>No acceptable outcome is prescribed.</p> |
| Development involving floodgates | |
| <p>PO29 Floodgates are designed and operated:</p> <ol style="list-style-type: none"> 1. to provide hydraulic conditions adequate for fish passage over an adequate duration of the tidal cycle; and 2. as tidally activated, automatic floodgates. | <p>No acceptable outcome is prescribed.</p> |
| <p>PO30 The invert of the floodgate is at bed level.</p> | <p>No acceptable outcome is prescribed.</p> |
| <p>PO31 The operation of the floodgate will not result in adverse impacts on water quality that may harm fish or fish habitat.</p> | <p>No acceptable outcome is prescribed.</p> |

| Performance outcomes | Acceptable outcomes |
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| Temporary waterway barrier works | |
| <p>PO32 The temporary waterway barrier works will exist only for a specified temporary period and provide for adequate fish movement.</p> | <p>AO32.1 The temporary waterway barrier work:</p> <ol style="list-style-type: none"> 1. is a partial barrier, or 2. does not constrict the area or flows of a low flow channel. <p>AND one of the following acceptable outcomes apply</p> <p>AO32.2 The temporary structure is only in place outside of known fish spawning or migration periods.</p> <p>OR</p> <p>AO32.3 The barrier is opened periodically every five days for at least 48 hours to allow fish movement and water exchange.</p> <p>OR</p> <p>AO32.4 Fish movement is provided for via a stream diversion.</p> |
| <p>PO33 Temporary barriers are removed at the end of their design life, so that full movement for fish is reinstated and the bed and banks are returned to their original profile and stability.</p> | <p>No acceptable outcome is prescribed.</p> |
| <p>PO34 Where there are species, at the site of the temporary waterway barrier works that require downstream movement during works, provisions are made to allow those species to move downstream.</p> | <p>No acceptable outcome is prescribed.</p> |
| <p>PO35 The condition and value of aquatic macrophytes and other fish habitats is maintained.</p> | <p>No acceptable outcome is prescribed.</p> |
| Matters of state environmental significance | |
| <p>PO36 Development:</p> <ol style="list-style-type: none"> 1. avoids impacts on matters of state environmental significance; or 2. minimises and mitigates impacts on matters of state environmental significance after demonstrating avoidance is not reasonably possible; and 3. provides an offset if, after demonstrating all reasonable avoidance, minimisation and mitigation measures are undertaken, the development results in an acceptable significant residual impact on a matter of state environmental significance. <p>Statutory note: For Brisbane core port land, an offset may only be applied to development on land identified as E1 Conservation/Buffer, E2 Open Space or Buffer/Investigation in the Brisbane Port LUP precinct plan. For the Brisbane Port LUP, see www.portbris.com.au.</p> <p>Note: For the purpose of this code, the matters of state environmental significance assessed are marine plants, waterways that provide for fish passage and declared fish habitat areas.</p> <p>Guidance for determining if the development will have a significant residual impact on the matter of state</p> | <p>No acceptable outcome is prescribed.</p> |

| Performance outcomes | Acceptable outcomes |
|---|---------------------|
| <p>environmental significance is provided in the Significant Residual Impact Guideline, Department of State Development, Infrastructure and Planning, 2014. Where the significant residual impact is considered an acceptable impact on the matter of state environmental significance under the Environmental Offsets framework and an offset is considered appropriate, the offset should be delivered in accordance with the <i>Environmental Offsets Act 2014</i>.</p> | |

18.3 Reference documents

Department of Agriculture and Fisheries website, [What is a waterway?](#)

Department of Agriculture and Fisheries website, [What is a waterway barrier work?](#)

Department of Agriculture and Fisheries website, [What is not a waterway barrier work?](#)

Department of Environment and Heritage Protection 2016, [Queensland environmental offsets framework documents](#)

Department of National Parks, Sport and Racing 2005, [Fish habitat area code of practice: The lawful use of physical, pesticide and biological controls in a declared fish habitat area.](#)

Department of Primary Industries 1998, [Restoration of fish habitats: Fisheries guidelines for marine areas FHG 002](#)

Department of Primary Industries 2000, [Fisheries guidelines for fish habitat buffer zones FHG 003](#)

Department of Primary Industries and Fisheries 2006, [Fisheries guidelines for fish-friendly structures FHG 006](#)

Department of State Development, Infrastructure and Planning 2014, [Significant residual impact guideline](#)

Local Government Association of Queensland 2012, [Mosquito management code of practice](#)

Policies

Department of National Parks, Sport and Racing 2013, [Marine resource management: Fish habitat Area selection, assessment, declaration and review](#)

Department of National Parks, Sport and Racing 2015, [Marine resource management: Management of declared fish habitat areas](#)

Department of Primary Industries 1998, [Departmental procedures for provision of fisheries comments: Dredging, Extraction and Spoil Disposal Activities \(FHMOP 004\)](#)

Department of Primary Industries and Fisheries 2007, [Management and protection of marine plants and other tidal fish habitats \(FHMOP001\)](#)

Department of Primary Industries and Fisheries 2007, [Tidal fish habitats, erosion control and beach replenishment \(FHMOP010\)](#)

Department of Agriculture and Fisheries 2015, [Oyster industry Management Plan for Moreton Bay Marine Park](#)

Ministerial Council on Forestry, Fisheries and Aquaculture 1999, [National Policy for the Translocation of Live Aquatic Organisms – Issues, Principles and Guidelines for Implementation](#)

Queensland Department of Primary Industries 1996, [Departmental Procedures for Permit Applications Assessment and Approvals for Insect Pest Control in Coastal Wetlands \(FHMOP 003\)](#)

Accepted development

Department of Agriculture and Fisheries 2017, [Accepted development requirements for operational work that is constructing or raising waterway barrier works](#)

Department of National Parks, Sport and Racing 2005, [Fish habitat area code of practice: The lawful use of physical, pesticide and biological controls in a declared fish habitat area](#)

Other references

Department of Agriculture, Fisheries and Forestry 2012, [Declared Fish Habitat Area Network Assessment Report 2012](#)

Department of Agriculture, Fisheries and Forestry 2013, [Guideline on fisheries adjustment as a result of development](#)

Department of Employment, Economic Development and Innovation 2010, [Declared fish habitat area network strategy 2009-14: Planning for the future of Queensland's declared fish habitat area network](#)

Department of Environment and Resource Management 2011, [Queensland Wetland Buffer Planning Guideline](#)

Department of National Parks, Recreation, Sport and Racing 2013, [Declared fish habitat area network progress report – June 2013](#)

Department of National Parks, Recreation, Sport and Racing website, [Declared fish habitat area plans](#)

Department of Natural Resources and Mines 2002, [Queensland Acid Sulfate Soil Technical Manual: Soil Management Guidelines](#)

International Ecohydraulics Symposium 2012, [From Sea to Source: International guidance for the restoration of fish migration highways](#)

International Erosion Control Association Australasia 2008, [Best practice erosion and sediment control document](#)

[SEQ Catchments website](#)

18.4 Glossary of terms

Declared fish habitat area see the *Fisheries Act 1994*.

Note: **Declared fish habitat area** means an area that is declared under the *Fisheries Act 1994* to be a **fish habitat** area. Section 120 of the *Fisheries Act 1994* deals with declaration of **fish habitat** areas.

Disease see section 94 of the *Fisheries Act 1994*.

Note: **Disease** means:

1. a **disease**, parasite, pest, plant or other thing (the **disease**) that has, or may have, the effect (directly or indirectly) of killing or causing illness in **fisheries resources**, or in humans or animals that eat **fisheries resources** infected with or containing the **disease**
2. a chemical or antibiotic residue
3. a **fish** or plant species that may compete against **fisheries resources** or other **fisheries resources** to the detriment of the **fisheries resources** or other **fisheries resources**.

Drownout means when the tailwater and headwater levels across a weir are essentially equal, velocities are sufficiently low at, or close to, the edge of the spillway crest and the weir is fully submerged to a sufficient depth to allow for **fish** passage and for the species and size-classes of **fish** moving through the site to cross the weir.

Fish see section 5 of the *Fisheries Act 1994*.

Note: **Fish**:

1. means an animal (whether living or dead) of a species that throughout its life cycle usually lives:
 - a. in water (whether freshwater or saltwater); or
 - b. in or on **foreshores**; or
 - c. in or on **land** under water
2. includes:

- a. prawns, crayfish, rock lobsters, crabs and other crustaceans
 - b. scallops, oysters, pearl oysters and other molluscs
 - c. sponges, annelid worms, beche-de-mer and other holothurians
 - d. trochus and green snails
3. does not include:
- a. crocodiles; or
 - b. protected animals under the *Nature Conservation Act 1992*; or
 - c. pests under the *Pest Management Act 2001*; or
 - d. animals prescribed under a regulation not to be **fish**
4. also includes:
- a. the spat, spawn and eggs of **fish**
 - b. any part of **fish** or spat, spawn or eggs of **fish**
 - c. treated **fish**, including treated spat, spawn and eggs of **fish**
 - d. coral, coral limestone, shell grit or star sand
 - e. freshwater or saltwater products declared under a regulation to be **fish**.

Fish habitat see the *Fisheries Act 1994*.

Note: **Fish habitat** includes land, waters and plants associated with the life cycle of **fish**, and includes land and waters not presently occupied by **fisheries resources**.

Fish way see the *Fisheries Act 1994*.

Note: **Fish way** means a **fish** ladder or another structure or device by which **fish** can pass through, by or over **waterway barrier works**.

Fisheries resources see the *Fisheries Act 1994*.

Note: **Fisheries resources** includes **fish** and **marine plants**.

Fishery see section 7 of the *Fisheries Act 1994*.

Note: **Fishery** means activity by way of **fishing**, for example, activities specified by reference to all or any of the following:

1. a species of **fish**
2. a type of **fish** by reference to sex, size or age or another characteristic
3. an area
4. a way of **fishing**
5. a type of boat
6. a class of person
7. the purpose of an activity
8. the effect of the activity on a **fish habitat**, whether or not the activity involves **fishing**
9. anything else prescribed under a regulation.

Fishing see the *Fisheries Act 1994*.

Note: **Fishing** includes:

1. searching for, or taking, **fish**
2. attempting to search for, or take, **fish**
3. engaging in other activities that can reasonably be expected to result in the locating, or taking, of **fish**
4. landing **fish** (from a boat or in another way), bringing **fish** ashore or transshipping **fish**.

Foreshore see the *Fisheries Act 1994*.

Note: **Foreshore** means parts of the banks, beds, reefs, shoals, shore and other land between high water and low water.

Legally secured offset area see the *Environmental Offsets Act 2014*.

Note: An area of land is a **legally secured offset area** if:

1. the area is:
 - a. an environmental **offset** protection area; or
 - b. an area declared as an area of high nature conservation value under section 19F of the *Vegetation Management Act 1999*; or
 - c. another area prescribed under a regulation; and
2. under the *Environmental Offsets Act 2014* or another Act, the area is subject to a delivery or management plan or agreement (however described in this Act or the other Act) to achieve a conservation outcome for a **prescribed environmental matter**.

Main channel means the active component of the flow channel of a **waterway** characterised by a distinct change in appearance or structure at the upper limit of the channel (refer to accepted development requirements for examples).

Marine plant see section 8 of the *Fisheries Act 1994*.

Note: **Marine plant** includes the following:

1. a plant (a tidal plant) that usually grows on, or adjacent to, **tidal land**, whether it is living, dead, standing or fallen
2. material of a tidal plant, or other plant material on **tidal land**
3. a plant, or material of a plant, prescribed under a regulation or management plan to be a **marine plant**.

A **marine plant** does not include a plant that is a declared pest under the *Land Protection (Pest and Stock Route Management) Act 2002*.

Matters of state environmental significance (MSES) see schedule 2 of the Environmental Offsets Regulation 2014.

Note: **Matters of state environmental significance** are **prescribed environmental matters** under the Environmental Offsets Regulation 2014 that require an **offset** when a prescribed activity will have a **significant residual impact** on the matter. A **matter of state environmental significance** is any of the following matters:

1. regional ecosystems under the *Vegetation Management Act 1999* that:
 - a. are endangered regional ecosystems
 - b. are of concern regional ecosystems
 - c. intersect with a wetland shown on the vegetation management wetlands map
 - d. contain areas of essential habitat shown on the essential habitat map for an animal that is endangered wildlife or vulnerable wildlife or a plant that is endangered wildlife or vulnerable wildlife
 - e. are located within the defined distances stated in the Environmental Offsets Policy 2014 from the defining banks of a relevant watercourse or drainage feature as shown on the vegetation management watercourse and drainage feature map; or
 - f. are areas of land determined to be required for ecosystem functioning ('connectivity areas')
2. wetlands in a wetland protection area or wetlands of high ecological significance shown on the map of referable wetlands under the Environmental Protection Regulation 2008
3. wetlands and watercourses in high ecological value waters as defined in schedule 2 of the Environmental Protection (Water) Policy 2009
4. designated precincts in **strategic environmental areas** under the Regional Planning Interests Regulation 2014
5. threatened wildlife under the *Nature Conservation Act 1992* and special least concern animals under the Nature Conservation (Wildlife) Regulation 2006
6. protected areas under the *Nature Conservation Act 1992* excluding coordinated conservation areas
7. highly protected zones of state marine parks under the *Marine Parks Act 2004*
8. **declared fish habitat areas** under the *Fisheries Act 1994*
9. **waterways** that provide for **fish** passage under the *Fisheries Act 1994* if the construction, installation or modification of **waterway barrier works** carried will limit the passage of **fish** along the **waterway**
10. **marine plants** under the *Fisheries Act 1994*; or
11. **legally secured offset areas**.

Offset means environmental **offset** under the *Environmental Offsets Act 2014*.

Note: Environmental **offset** means an activity undertaken to counterbalance a **significant residual impact** of a prescribed activity on a **prescribed environmental matter**, delivered in accordance with the Environmental offsets framework, Department of Environment and Heritage Protection, 2014. The **prescribed environmental matters** assessed under the State Development Assessment Provisions are **matters of state environmental significance**.

Prescribed environmental matters see the *Environmental Offsets Act 2014*.

Note: A **prescribed environmental matter** is any species, ecosystem or other similar matter protected under Queensland legislation for which an **offset** may be provided. A **prescribed environmental matter** may be a matter of national, state or local environmental significance, however, assessment criteria in the State Development Assessment Provisions only relate to **matters of state environmental significance**. Each of the **prescribed environmental matters** are listed under the Environmental Offsets Regulation 2014.

Significant residual impact see the *Environmental offsets Act 2014*.

Note: **Significant residual impact** is an impact, whether direct or indirect, of a prescribed activity on all or part of a **prescribed environmental matter** that:

1. remains, or will or is likely to remain, (whether temporarily or permanently) despite on-site mitigation measures for the prescribed activity
2. is, or will or is likely to be, significant.

Guidance for determining if a prescribed activity will have a **significant residual impact** on a **matter of state environmental significance** is provided in the Significant Residual Impact Guideline, Department State Development, Infrastructure and Planning, 2014.

Strategic environmental area see the *Regional Planning Interests Act 2014*.

Note: A **strategic environmental area** is an area that:

1. contains one or more environmental attributes for the area
2. is either:
 - a. shown on a map in a regional plan as a **strategic environmental area**; or
 - b. prescribed under a regulation.

Tidal land see the *Fisheries Act 1994*.

Note: **Tidal land** includes reefs, shoals and other land permanently or periodically submerged by waters subject to tidal influence.

Waterway see the *Fisheries Act 1994*.

Note: **Waterway** includes a river, creek, stream, watercourse or inlet of the sea. For further guidance see the fact sheet Maintaining Fish Passage in Queensland: What is a waterway? Department of Agriculture, Fisheries and Forestry, 2014.

Waterway barrier works see the *Fisheries Act 1994*.

Note: **Waterway barrier works** means a dam, weir, or other barrier across a **waterway** if the barrier limits **fish** stock access and movement along a **waterway**. For further guidance see the factsheets Maintaining Fish Passage in Queensland: What is a waterway barrier work?, Department of Agriculture, Fisheries and Forestry, 2014 and Maintaining Fish Passage in Queensland: What is not a waterway barrier work?, Department of Agriculture, Fisheries and Forestry, 2014.

18.5 Abbreviations

ARI – Average Recurrence Interval