

TABLE: Burnett-Baffle Water Quality Improvement Plan (WQIP) – Baffle/Littabella Creek draft waterway ecological values, October 2008

The accompanying table and map summarise the ecological values of fresh, estuarine and coastal/marine waters in and adjacent to Baffle and Littabella Creeks and their tributaries. This work forms an input to the Burnett-Baffle WQIP being undertaken by the Burnett Mary Regional Group.

The table gives particular regard to high ecological value (HEV) waters. Draft HEV waters were provided to and discussed at a community workshop at Rosedale in May 2007. Results from the community workshop were subsequently placed on the BMRG web site and emailed to participants for comment. The project team has subsequently made a series of changes to the tables and mapping based on feedback received and further technical review.

Major changes (eg main boundary changes) are shown in **yellow highlighting**.

Ecological values of waterways were derived from:

- default HEVs (key estate and other protection designations – eg National Park);
- identification of ecological values through technical assessments (including a technical panel workshop) prior to the community workshop;
- interpretation of draft Baffle Aquatic Conservation Assessment (ACA) results (EPA, 2008) for freshwaters;
- feedback from workshops; and
- other technical review pre and post-workshop.

All identified areas are draft and subject to further change. Further comment on these and/or other waterway ecological values can be provided as part of the public feedback process for the draft WQIP.

TABLE: Burnett-Baffle Water Quality Improvement Plan (WQIP) – Baffle/Littabella Creek draft waterway ecological values, October 2008

Main changes to areas containing HEV waters following stakeholder consultations in 2007 are shown in **yellow highlighting**.

Ecological Values of Baffle/Littabella Creek waters				
WATER TYPE/ Sub catchment/ waterway	Code on map	HEV waters and values	Main changes to HEVs since round 1 consultation (May 2007)	Other significant natural assets
ALL WATERS				
DEFAULT HEV WATERS		<p>National Parks (NP), Forest Reserve (where proposed to become NP), Fish Habitat ‘A’ areas, zones under the Marine Parks Act (eg Marine National Park, Preservation, Scientific Research, and Buffer zones: all of these = ‘highly protected areas’ under Marine Parks Act/Regulation).</p> <p>Additional to the above, the following zones/estates have also been considered for their waterway ecological values in workshops and, where agreed in workshops, have also been identified as HEV: State Forests, Conservation Parks, Nature Refuge, Marine Park Conservation Park zone and Dugong Protection Areas (A/B).</p>	<p>Nil – localised variations to boundaries/areas are discussed below.</p>	
FRESHWATERS				
<p>Northern freshwater coastal tributaries of Rodds Bay</p> <p>(Sandy, Scrubby, Pine, Worthington Creeks)</p>		<p>HEV waters: The majority of freshwater tributaries of Rodds Bay are proposed as HEV. These include waters within Eurimbula National Park (NP), Castletower NP, and Eurimbula Conservation Park (CP), which comprise a large proportion of this unit.</p> <p>Values: High (good) water quality, natural water flows (ie minimal impact from dams/weirs), minimal land use change in catchment (ie limited rural/urban settlement), good riparian habitat and connectivity to estuarine waters that have also been identified as HEV (outlined later in this table).</p> <p>Area also contains richness and special values.</p>	<p>Removal of some areas that have been cleared/developed (eg rural areas in Scrubby/Sandy Ck catchment, and development around Turkey Beach)</p>	

Ecological Values of Baffle/Littabella Creek waters				
WATER TYPE/ Sub catchment/ waterway	Code on map	HEV waters and values	Main changes to HEVs since round 1 consultation (May 2007)	Other significant natural assets
Eurimbula Creek freshwaters (Eurimbula, Middle Creeks)		<p>HEV waters: All freshwaters in the Eurimbula Creek catchment are proposed as HEV. Includes waters within Eurimbula NP, Eurimbula CP, and Eurimbula Resources Reserve, which comprise a large proportion of this unit.</p> <p>Values: High (good) water quality, natural water flows (ie minimal impact from dams/weirs), minimal land use change in catchment (ie limited clearing/urban settlement), good riparian habitat and connectivity to estuarine waters that have also been identified as HEV (outlined later in this table).</p> <p>Area also contains high richness and special values</p>	No changes to Eurimbula HEVs. HEV waters of Round Hill Creek included in separate row below.	
Round Hill Creek freshwaters		<p>HEV waters: Areas within Eurimbula NP (western side of creek) and Round Hill Head CP.</p> <p>Values: Within protected estate. Adjoins large HEV area within Eurimbula catchment to the west and upper Baffle (Oyster Ck) to the south.</p>	Localised refinement to exclude residential lots eastern side of Round Hill Ck, and removal of Agnes Waters urban/developed area from HEV.	
Deepwater/Blackwater Creek freshwaters (Deepwater, Fullers, Bullock, Blackwater, Cks)		<p>HEV waters: 1) Deepwater (north) - Freshwaters in the northern Deepwater Ck catchment proposed as HEV include waters within Deepwater Creek NP (with small impounded section of Deepwater Ck excluded), Broadwater CP (containing fresh and estuarine waters) and the Bush Heritage Australia Reedy Creek reserve (adjoining Deepwater Ck NP). Reaches of Deepwater/Fullers Creek adjacent to these reserves are also identified as HEV, as are lower reaches of Five Mile Ck. Waters in the rural residential area (upper Five Mile Creek) are not included as HEV. Impounded reaches of Deepwater Ck (small structure) are not included as HEV.</p> <p>Values: High (good) water quality, generally limited changes to water flows (two small structures), minimal land use change in selected areas (ie main cleared/rural residential areas are excluded), good riparian habitat and connectivity to coastal HEV waters (outlined later in this table). Area also contains high richness and special values.</p>	<p>Removal of Agnes Waters urban/developed area from upper most reaches of Deepwater HEV.</p> <p>Removal of impounded reaches of Deepwater Ck.</p> <p>Removal of most the existing rural residential area (eg upper sections of Five Mile Creek) from HEV.</p>	Impounded reaches of Deepwater Creek have slight disturbance (impoundment is small). Area has potential for improvement /restoration back towards HEV given that both upstream (freshwater) and downstream (coastal) waters are largely identified as HEV.

Ecological Values of Baffle/Littabella Creek waters				
WATER TYPE/ Sub catchment/ waterway	Code on map	HEV waters and values	Main changes to HEVs since round 1 consultation (May 2007)	Other significant natural assets
		<p>2) Blackwater (south) - A small area of upper Blackwater Creek (south of the main rural residential area) has also been identified as HEV (waters in the rural residential area are not identified as HEV).</p> <p>Values: See above.</p>	<p>Removal of most the existing rural residential area (eg reaches in Pearson, Blackwater Creeks) from HEV.</p> <p>Removal of impounded reaches of Blackwater Ck.</p>	
Baffle Creek				
<p>Baffle Ck western freshwater tributaries</p> <p>(Three Mile, Killarney, Colosseum, Banksia, Seven Mile, Bootoo, Granite Creeks)</p>		<p>HEV waters: 1) Headwaters on the western fringe of the Baffle Basin (Many Peaks Range), largely within protected estate/forests, including Bilburin NP, Mt Colosseum NP, Warro NP, and Bilburin State Forest (SF). Also includes some localised extensions of HEV waters adjacent to protected estate (eg reaches or tributaries of Scrubby, Colosseum, Banksia, Cabbage Tree, Seven Mile, Horsehair, Granite Cks).</p> <p>Values: These are largely upland freshwaters in minimally disturbed catchments with substantial coverage in or adjacent to protected estate. In the main they have limited catchment clearance, high remnant vegetation, and low level of water resource development/flow alteration. These areas contrast with waterways/landuses further down the catchment where there is a greater degree of alteration.</p>	<p>Localised extensions to include upland headwaters adjacent to protected estate (eg reaches or tributaries of Scrubby, Colosseum, Banksia, Cabbage Tree, Seven Mile, Horsehair, Granite Cks).</p>	
		<p>2) Headwaters of Killarney/Three Mile Ck (east of Bororen) linking to HEVs in upper Worthington/Pine Cks (in Eurimbula NP and CP), and upper Baffle Ck (see below).</p> <p>Values: See above.</p>	<p>New area based on stakeholder workshop and further technical review. This is part of a larger HEV amalgamation straddling the upper Baffle, Pine/Worthington Creeks (the latter largely within protected estate).</p>	
<p>Baffle Creek main channel and central freshwater tributaries</p> <p>(Baffle, Captain, Oyster, Euleilah Creeks)</p>		<p>HEV waters: 1) Upper Baffle waters in the Edinburgh Range, largely within protected estate/forests, including Eurimbula NP, Eurimbula CP, and Baffle Ck CP.</p> <p>Values: Largely headwater streams in upper catchment protected estate within minimal impact from landuse change, water resource development.</p>	<p>Nil</p>	

Ecological Values of Baffle/Littabella Creek waters				
WATER TYPE/ Sub catchment/ waterway	Code on map	HEV waters and values	Main changes to HEVs since round 1 consultation (May 2007)	Other significant natural assets
		<p>HEV waters: 2) Upper Baffle waters – Westwood Range (east of Miriam Vale) and Dromedary Mountain. This is a southern extension of HEVs and adjoins the HEVs in protected estate outlined above. This southern extension includes reaches within the Westwood Range and Dromedary Mountain/Arthurs Seat State Forest area, and is focused upon upper Baffle and Gorge Creeks and tribs (eg Tolson Ck).</p> <p>Values: Available information suggests very high catchment naturalness and aquatic naturalness, with minimal impact to catchment, riparian zone and instream values.</p>	<p>New/extended area based on stakeholder workshop and further technical review. This is part of a larger HEV amalgamation straddling the upper Baffle, Pine, and Worthington Creeks (the latter largely within protected estate)</p>	
		<p>HEV waters: 3) Tributaries of Baffle Creek coming off the Gwynne Range (north of Lowmead).</p> <p>Values: Upland sections have limited clearing and available information suggests high catchment naturalness (within upland sections) and aquatic naturalness, with minimal impact to catchment, riparian zone and instream values.</p>	<p>New/extended area based on further technical review. Area almost adjoins the upper Baffle HEV unit outlined in 2) above.</p>	
		<p>HEV waters: 4) Tributaries of Baffle Creek, Mt Maria, east of Lowmead. This smaller area comprises headwaters of Sandy and Island Creeks as they come off Mt Maria before joining the Baffle.</p> <p>Values: Available information suggests high catchment naturalness (within upland sections) and aquatic naturalness, with minimal impact to catchment, riparian zone and instream values.</p>	<p>New area based on further technical review. Area is south of the upper Baffle HEV unit outlined in 3) above.</p>	
		<p>HEV waters: 5) Upper Oyster Creek (adjacent to Deepwater Creek). Main area is on eastern side of Oyster Creek extending south to One Mile Creek (behind Bullock Creek). This area adjoins the HEV waterways identified in Deepwater Creek (outlined above in Deepwater/Blackwater Creek). (A small HEV portion of Oyster Ck occurs around Arthurs Seat SF, and is part of the upper Baffle Creek HEV amalgamation [Westwood Range/Dromedary Mountain] outlined in 2 above.)</p> <p>Values: Available information suggests high catchment naturalness (within selected area on eastern side Oyster Ck) and aquatic naturalness, with minimal impact to catchment, riparian zone and instream values.</p>	<p>New area based on further technical review. Area adjoins the Deepwater Ck HEV amalgamation outlined under 'Deepwater Creek' above.</p>	

Ecological Values of Baffle/Littabella Creek waters				
WATER TYPE/ Sub catchment/ waterway	Code on map	HEV waters and values	Main changes to HEVs since round 1 consultation (May 2007)	Other significant natural assets
Baffle Ck southern freshwater tributaries (Scrubby, Branch, Grevillea, Third/Fourth Camp, Murrays, Native Dog, Sheep Station and Bottle Creeks)		<p>HEV waters: 1) Headwaters within protected estate/forests, including Warro NP, Littabella Forest Reserve (FR) and Monduran SF.</p> <p>Also includes upland waters immediately adjacent to protected estate including waters in the Mt Warro area (Scrubby, Prospector and Branch Cks), tributaries north of Scrubby Ck (west of Lomead), headwaters around and south of Mt Grevillea (Grevillea, Third and Fourth Camp Cks), and upper reaches of Murrays Creek adjacent to Monduran SF and One Tree Hill. These areas adjoin upper Kolan catchment HEV waters to the south.</p> <p>Values: These are largely upland freshwaters in minimally disturbed catchments with substantial coverage in or adjacent to protected estate. In the main they have limited catchment clearance, high remnant vegetation, and low level of water resource development/flow alteration. These areas contrast with waterways/landuses further down the catchment where there is a greater degree of alteration.</p>	<p>Waterways outside protected estate were identified following further technical review.</p>	
		<p>HEV waters: 2) Freshwaters surrounding Bottle Creek near junction with Baffle Creek.</p> <p>Values: These waters remain relatively uncleared and have limited evidence of impact.</p>	<p>New area based on further technical review.</p>	
Littabella Creek freshwaters (Littabella, Mullet, Arthur Cks)		<p>HEV waters: 1) Waters within protected estate/forests, including Littabella NP, Littabella FR, and Watalgan SF</p> <p>Values: Within protected estate and forming a continuum of waterways from upper catchment through to lower catchment areas.</p>	<p>Nil</p>	
		<p>HEV waters: 2) Local units in Arthur Ck, tributary of Mullet Ck, upper Littabella Ck and east of Yandaran. Arthur and Mullet Ck units are between Littabella FR and Watalgan SFs. Upper Littabella Ck is immediately south of Littabella SF at the top of the catchment. The other unit is immediately east of Yandaran.</p> <p>Values: All units have minimal evidence of clearing or other instream disturbance.</p>	<p>New area based on further technical review.</p>	

Ecological Values of Baffle/Littabella Creek waters				
WATER TYPE/ Sub catchment/ waterway	Code on map	HEV waters and values	Main changes to HEVs since round 1 consultation (May 2007)	Other significant natural assets
ESTUARIES				
Hummock Hill Island estuarine waters		<p>HEV waters: Nearly all estuarine waters in this area are proposed as HEV. Includes waters within the Dugong Protection Area and estuarine wetlands identified in EPA wetlands mapping. Excludes Gladstone Port area.</p> <p>Values: High value water quality, land use modification (ie minimal change), and special values. Seagrass beds provide good habitat for dugong & juvenile fish /prawns (bed numbers 71, 110, 111). Foreshores are feeding habitat for migratory shorebirds; nesting resident shorebird records.</p> <p>Hard and soft coral communities (up to 30% coral cover) extend along the entire seaward side of Hummock Hill Island. These coral communities are found on rock and coffee rock within 2km from the shore [Sander Scheffers pers.comm.]</p>	***Ports boundary decision needed***	
Colosseum Inlet estuarine waters		<p>HEV waters: Nearly all estuarine waters in this area are proposed as HEV. Includes several proposed default HEV waters under Colosseum Inlet FHA 'A' (Seven Mile Ck, Thorton Ck, Boyne Ck, Colosseum Inlet), Dugong Protection Area, and estuarine wetlands identified in EPA wetlands mapping.</p> <p>Also propose inclusion of Colosseum Inlet FHA 'B' area in Wild Cattle Ck, as this is now adjoined by NP.</p> <p>Excludes areas immediately adjacent to accessways and causeways (based on exclusions identified in FHA mapping).</p> <p>Values: Considerable area under existing legislative protection. High value water quality, species richness, land use modification (ie minimal change). Reef in estuary. Resident nesting shorebird records. Some migratory shorebird roosts. Notable mangrove species record (<i>Ceriops tagal var tagal</i>)**. Intertidal seagrass habitat for prawns, fish.</p>	Nil	

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7 Mile Creek estuarine waters		<p>HEV waters: Nearly all estuarine waters in this area are proposed as HEV.</p> <p>Includes proposed default waters under Colosseum Inlet FHA 'A', and also propose FHA 'B', Dugong Protection Area, and estuarine wetlands identified in EPA wetlands mapping.</p> <p>Values: High value water quality, species richness, land use modification (ie minimal change), and special values. Seagrass beds provide good habitat for prawns, juvenile fish, turtles. Resident nesting shorebird habitat. Links to upstream freshwaters also identified as HEV.</p>	Nil	
Turkey Beach, Rodds Bay, Worthington Ck, Hilliard Ck estuarine waters		<p>HEV waters: Includes proposed default waters under Rodds Harbour FHA 'A', Dugong Protection Area, and estuarine wetlands identified in EPA wetlands mapping.</p> <p>Excludes areas immediately adjacent to accessways and causeways (based on exclusions identified in FHA mapping).</p> <p>Values: High value water quality, land use modification (ie minimal change), and special values. Seagrass beds provide good habitat for dugong (bed numbers 112, 107, 88, 89), and also prawns, juvenile fish, and turtles. Some migratory shorebird roosts. Notable mangrove species record (<i>Ceriops tagal var tagal</i>).**</p>	Turkey Beach FHA B excluded from HEV.	
Rodds Peninsula/Rodds Harbour (adjoining Eurimbula NP) estuarine waters		<p>HEV waters: Nearly all estuarine waters in this area are proposed as HEV.</p> <p>Includes proposed default waters under Colosseum Inlet FHA 'A', Dugong Protection Area, and estuarine wetlands identified in EPA wetlands mapping.</p> <p>Excludes areas immediately adjacent to accessways and causeways (based on exclusions identified in FHA mapping).</p> <p>Values: High value water quality, species richness, land use modification (ie minimal change), and special values.</p>	Nil	

Ecological Values of Baffle/Littabella Creek waters				
WATER TYPE/ Sub catchment/ waterway	Code on map	HEV waters and values	Main changes to HEVs since round 1 consultation (May 2007)	Other significant natural assets
		Seagrass beds provide good habitat for dugong (109) also prawns, juvenile fish, (bed numbers 94, 96, 104, 105). Migratory shorebird roosts. Numerous resident nesting shorebird records. False water rat records & habitat.		
Pancake/Middle/ Jenny Lind Creeks estuarine waters		<p>HEV waters: Nearly all estuarine waters in this area are proposed as HEV.</p> <p>Includes proposed default HEV waters in Rodds Harbour FHA 'A' (which comprises Jenny Lind Ck, Middle Ck, Pancake Ck), and estuarine wetlands identified in EPA wetlands mapping.</p> <p>Values: High value water quality, species richness, land use modification (ie minimal change), and special values.</p> <p>Unique coral reef in estuary. Seagrass beds (dugong habitat). Internationally significant migratory shorebird roosts, and resident shorebird nesting habitat. False water rat records & habitat. High EVR spp diversity. High ecosystem diversity & connectivity.</p> <p>Mangrove species range limits, and mangrove communities southern limit (<i>Bruguiera</i>, <i>Osbornia octodonta</i>)*. Notable mangrove species record (<i>Pemphis acidula</i>**). Freshwater seepage from dunes. Only passage system between Great Sandy Strait & the Narrows. Near pristine estuary and catchment has considerable protected area.</p>	Nil	
Eurimbula Creek estuarine waters		<p>HEV waters: Includes proposed default HEV waters in FHA 'A' (within Eurimbula Ck and surrounded by Eurimbula NP), with localised boundary changes to include estuarine wetlands identified in EPA wetlands mapping. Area extends to join marine waters within the Marine Conservation Park and the adjoining 1770-Round Hill FHA 'A'. (refer separate listing for these).</p> <p>Values: High value water quality, species richness, land use modification (ie minimal change). Area falls within a largely protected catchment (Eurimbula NP) and is a mud crab sanctuary. It contains false water rat records & habitat. Near pristine estuary.</p>	Nil	

Ecological Values of Baffle/Littabella Creek waters				
WATER TYPE/ Sub catchment/ waterway	Code on map	HEV waters and values	Main changes to HEVs since round 1 consultation (May 2007)	Other significant natural assets
1770/Round Hill Creek estuarine waters		<p>HEV waters: Includes proposed default HEV waters in 1770-Round Hill FHA 'A' (within Round Hill Creek.), with localised boundary changes to include estuarine wetlands identified in EPA wetlands mapping. Excludes the area under FHA 'B' designation. Area links to adjoining Eurimbula HEV waters.</p> <p>Values: High value water quality, species richness, land use modification (ie minimal change).</p> <p>False water rat records & habitat. Mangrove community southern limit (<i>Bruguiera</i>)*. Notable mangrove fern record (<i>Acrostichum speciosum</i>)**. Freshwater seepage from dunes. Terns roost on moving sandbars.</p>	Nil	
Deepwater Ck estuarine waters (including Blackwater, Mitchell estuaries)		Not identified as HEV.	Nil. Workshop agreed that estuarine reaches are not HEV, given effects on connectivity by two small barrages.	Considered slightly disturbed. Area has potential for improvement /restoration back towards HEV given that both upstream (freshwater) and downstream (coastal) waters are largely identified as HEV.
Baffle Creek estuarine waters		<p>HEV waters: Includes HEV waters in Baffle Creek FHA 'A' (containing estuarine waters in Baffle, Oyster, Euleilah and Bottle Creeks). Area also includes estuarine wetlands identified in EPA wetlands mapping. (Baffle estuary is also identified as a Conservation Park zone in the Great Sandy Marine Park zoning plan.)</p> <p>Values: High value water quality, species richness, land use modification (ie minimal change).</p> <p>Near pristine estuary with extensive brackish reaches. Turtles & dugongs forage on estuarine seagrass beds. Adjacent to Fingers Reef soft coral reef. Very high fish spp diversity**. Valuable recreational fishery.</p> <p>(Stakeholders considered that the FHA A designation had helped to maintain/improve ecological values of the estuary)</p>	Localised boundary changes to upstream end of estuary based on technical review of declared downstream limits (DDL) information and wetlands mapping.	

Ecological Values of Baffle/Littabella Creek waters				
WATER TYPE/ Sub catchment/ waterway	Code on map	HEV waters and values	Main changes to HEVs since round 1 consultation (May 2007)	Other significant natural assets
Littabella Creek estuarine waters		Area of limited data. At this stage, not identified as having HEV waters.		Significant assets in modified system Most values are near the river mouth. Dugong go into the area. Potential pressure from development at Miara. Estuary is zoned as Conservation Park under Great Sandy Marine Park.
COASTAL/MARINE				
Hummock Hill Island coastal waters		HEV waters: Excludes Gladstone Port. Includes waters within Dugong Protection Area Values: High value naturalness catchment, special values. Deepwater seagrass. Coral reefs: Seal Rocks & 2 others west of Rodd's Peninsula. Seabird roosts at Seal Rocks. Provides connectivity between seagrass, reef & mangroves.	Boundaries updated to exclude Gladstone port area. **Port boundaries issue**	
Pancake Creek, Clews Point Inner/Outer Rocks coastal waters		HEV waters: Includes GBRMPA Marine National Park (MNP) - 23-1170, Conservation Parks (CP) 23-4110 and 23-4111 and waters in Habitat Protection zone (eg Inner, Middle and Outer Rocks, Clews Point/mouth of Pancake Ck). Also includes waters in Bustard Bay DOIW site on western side of the Inner Rocks. These HEV waters include coral reefs (largely in habitat protection zones - eg Inner/Middle/Outer Rocks, Clews Point, Rodds Peninsula) and seagrass habitat between Clews Point and Bustard Head. Values: High value naturalness catchment, diversity, representation, special values. Extensive fringing reefs between Clews Pt & Rodd's Peninsula (GBRMP). Seagrass between Clews Pt & Bustard Head (bed number 88). Near pristine contributing estuary & catchment. Provides connectivity between seagrass, reef & mangroves.	Based on EVs workshop comments, further consultation, and review of information, inclusion of additional HEV waters as follows: <ul style="list-style-type: none"> • additional waters between and adjacent to Inner, Middle and Outer Rocks (coral areas); • localised extension of HEV boundary to include reef waters north of Clews Point. 	

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Eurimbula/1770 coastal waters		<p>HEV waters: Includes Marine Park Conservation Park (CP)-24-4112 which extends from 1770 along coast of Bustard Bay upto Bustard Head. Stakeholder feedback was also sought on the merits of including the Directory Of Important Wetlands (DOIW) - Bustard Bay.</p> <p>Values: High value naturalness catchment, diversity, representation, special values. The estuaries contributing to this area (eg Middle, Jenny Lind, Eurimbula, Round Hill Creeks) have been identified as having high ecological values and are largely identified as Fish Habitat 'A' Areas. The contributing freshwater catchments have also been identified as having high ecological values and some are in protected estate (eg Eurimbula NP).</p>	<p>Stakeholders supported the waters within the Marine Conservation Park as HEV.</p> <p>DOIW area east of Bustard Head: results of the EVs workshop noted "more work was needed to demonstrate that waters under the DOIW area warrant consideration as HEV". At this stage DOIW waters have not been included in proposed HEV waters (subject to further review).</p>	
Lady Elliott Island coastal waters		<p>HEV waters: All waters in this area (to 3NM) are under GBRMPA Marine Park National Park (NP)-23-1169.</p> <p>Values: High value naturalness catchment, diversity, representation, special values. Very high diversity fish, corals; turtle nesting. Area is important for seabird/migratory roosting/feeding.</p>	Nil	
Bunker Island group coastal waters		<p>HEV waters: Proposed that all waters in this area (to 3 NM) be included as HEV. Comprising GBRMPA Marine Park National Park (NP)-23-1169, and part GBRMP Habitat Protection HP-23-5366.</p> <p>Values: High value naturalness catchment, diversity, representation, special values.</p> <p>Very high diversity fish, corals. Area provides essential turtle nesting habitat and is a very important seabird /migratory roosting/feeding habitat.</p>	Nil	

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Agnes/Deepwater high dunes coastal waters		<p>HEV waters: A substantial component of this area is under GBRMPA Marine Park National Park (NP) -24-1171, and also includes Marine Conservation Park-24-4113 to the landward side of MNP. The HEV area boundaries are also designed to reflect the 'essential marine turtle nesting habitat' on the landward/beach side, and the importance of off shore waters for turtles prior to nesting ('interesting'). A northward extension of the HEV boundary (upto Agnes Headland) is proposed (to 3NM limit), based on importance of the coastal waters of this region for marine turtles. A similar extension southwards is also proposed (refer Deepwater HEV area below).</p> <p>Values: High value naturalness catchment, diversity, special values. The freshwater catchments upstream of this area have been identified as HEV waters. Essential turtle nesting habitat & interesting habitat to 15 km offshore. Before nesting, turtles rest for a period of time (eg 2 weeks) in offshore marine waters to allow egg development.</p> <p>[Stakeholders commented that 4WD access to beaches could affect nesting habitat for turtles and other social/recreational values, and some considered restrictions on 4WD access necessary.]</p>	Nil	
Deepwater coastal waters		<p>HEV waters: As above, the proposed HEV waters are drawn to reflect the 'essential marine turtle nesting habitat' on the landward/beach side, and the importance of offshore waters for turtles prior to nesting ('inter-nesting'). On this basis, all waters in this unit (WITHIN State waters, ie to 3NM) would be identified as HEV.</p> <p>Values: High naturalness, lacking evidence of disturbance (eg navigation, ports, waterway development). The freshwater catchment upstream of this area has been identified as HEV water. Area falls between HEV waters to the north (Agnes Deepwater high dunes, outlined above) and south (Baffle coastal waters, outlined below), thus providing a continuum of HEV coastal waters broadly from east of Agnes Waters in the north to the Baffle mouth in the south.</p>	Nil	

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		<p>This area also contains Fingers Reef soft coral reef, which, with the Baffle estuary, is the southern range limit Fingermark Bream (<i>Lutjanus johnii</i>). Essential turtle nesting habitat & internesting habitat to 15 km offshore. Before nesting, turtles rest for a period of time (eg 2 weeks) in offshore marine waters to allow egg development. Stakeholders commented that the area was important for marine life generally – not solely turtles. They also noted that 4WD access to beaches could affect nesting habitat for turtles and other social/recreational values, and some considered restrictions on 4WD access necessary.</p>		
Baffle Creek coastal waters		<p>HEV waters: Includes part of GBRMPA Marine Park National Park (NP)-24-1173. As above, the proposed HEV waters are drawn to reflect the ‘essential marine turtle nesting habitat’ on the landward/beach side, and the importance of off shore waters for turtles prior to nesting (‘internesting’). On this basis, all waters in this unit (to 3NM) would be identified as HEV.</p> <p>Values: High value naturalness catchment, diversity, special values.</p> <p>Provides connectivity between Baffle estuary (identified as HEV and within Fish Habitat ‘A’ Area, and containing mangroves & seagrass) to nearby Fingers Reef coral reef and GBRMPA green zone (seagrass bed number 88). [Note Fingermark Bream adults on coral reefs while juveniles found in mangrove estuaries].</p> <p>Essential turtle nesting habitat & internesting habitat to 15 km offshore. Before nesting, turtles rest for a period of time (eg 2 weeks) in offshore marine waters to allow egg development.</p>	Nil	
Littabella Creek coastal waters		<p>Area of limited information. Not identified as having HEV waters (but may contain important local sites/values). Refer estuary listing.</p>	Nil	<p>Beach between Littabella and Baffle is data poor and requires more review to determine its values (might have good ecological values). Also low accessibility so limited ability to get a judgement on ecological values. Some indirect information that it is used for turtle nesting.</p>

** Beumer, J., L. Carseldine & B. Zeller 1997. Declared fish habitat areas in Queensland. Dept Primary Industries Fish Habitat Management Operational Policy Series: Supplement to FHMOP 002. QI 97004. 178pp.

* Olsen, H.F., R.M Dowling & D. Bateman (1980). Biological Resources Survey (Estuarine inventory) Round Hill Head to Tannum Sands, Queensland, Australia 1980. Queensland Fisheries Service Research Bulletin No. 2. 101pp.