

## APPENDIX B9:B - ECOLOGICAL CHARACTERISTICS OF KEY NATIVE FISH SPECIES RECORDED FROM SUNSHINE COAST AIRPORT SITE

### ***Anguilla reinhardtii* (Long-finned Eel)**

*A. reinhardtii* has a widespread distribution occurring in the eastern drainages of Australia as well as being recorded in New Caledonia, New Guinea and New Zealand. This species is widespread and generally common throughout coastal drainages of central Queensland.

*A. reinhardtii* is reported to prefer more flowing waters in comparison to other species of the same genus, although is found over a variety of lotic and lentic habitats. Large adult *A. reinhardtii* are more commonly recorded distant to river mouths than juveniles, suggesting upstream migration with growth. Juveniles and sub-adults are most commonly recorded near the bottom of the water column, usually in close association with the substrate. Adult *A. reinhardtii* are usually observed in deeper, slower moving water than juveniles and sub-adults. *A. reinhardtii* is a carnivorous species, with an increase in prey size with growth. The diet of juveniles is dominated by aquatic invertebrates, while adult diets are comprised largely of aquatic invertebrates, fish, molluscs and crustaceans.

Adult *A. reinhardtii* undertake extensive migrations from freshwaters to the Coral Sea, with juveniles returning to freshwaters to complete the life cycle.

Australian anguillid eels are notoriously hardy of extremes in water quality and none are listed as threatened species under either State or Commonwealth legislation.

### ***Gambusia holbrooki* (Mosquitofish, Gambusia)**

*G. holbrooki* are native to rivers draining the Gulf of Mexico, but have been widely translocated throughout Australia, Europe, Asia, and Africa (Froese & Pauly 2007). *G. holbrooki* are widespread and abundant throughout Victoria, New South Wales, South Australia, coastal drainages of Queensland and parts of Western Australia and Northern Territory. *G. holbrooki* is a tolerant species capable of handling a wide range of temperature and salinity extremes. An aggressive species, *G. holbrooki* chase and fin-nip fish much larger than themselves as well as prey on the eggs of native fish and frogs. They have been implicated in the decline of nine fish species Australia-wide and more than 10 species of frog in Australia.

*G. holbrooki* is found in a variety of habitats including still or slow-moving aquatic habitats in large lowland floodplain rivers, upland rivers and streams, small coastal streams (Allen *et al.* 2002). *G. holbrooki* prefers warm still areas and are typically seen shoaling along the edges of aquatic vegetation beds in streams and lakes (Allen *et al.* 2002).

*G. holbrooki* are ovoviviparous fishes, capable of releasing broods of well-developed offspring at approximately monthly intervals during the warmer months (Milton & Arthington 1983). Peak spawning activity begins in spring and continues through summer (Penn & Potter 1991).

*G. holbrooki* is an adaptable generalist carnivore (Penn & Potter 1991) feeding at the water surface and throughout the water column on a wide range of both terrestrial insects and aquatic invertebrates.

*G. holbrooki* is an introduced species and are considered a noxious pest.

## APPENDIX B9:B

### ***Gobiomorphus australis* (Striped Gudgeon)**

*G. australis* is a relatively stout and robust species of small to moderate size (up to 225 mm) occurring in coastal catchments from central Queensland south to eastern Victoria, and is moderately common throughout south east Queensland.

*G. australis* occurs in a variety of habitats, but are most commonly found less than 20 m above sea level, in water between 10–60 cm in depth in the lower half of the water column, within 1m of the bank and in close association with submerged cover (ie vegetation, woody debris etc.).

*G. australis* is a carnivore, thought to consume prey primarily from the benthos, the bulk of the diet comprising of aquatic macroinvertebrates, however larger individuals have been known to take fish also. *G. australis* is also an important food source for many larger carnivorous fish, including Australian Bass (*Macquaria novemaculeata*).

*G. australis* is common throughout central and south eastern Queensland and is non-threatened, with exception to populations in Victoria which are classified as vulnerable as a result of restricted distribution within the state.

### ***Hypseleotris compressa* (Empire Gudgeon)**

*H. compressa* are a widespread species commonly found in coastal streams across eastern and northern Australia as well as in New Guinea. It is abundant throughout much of its range.

This species is most common in the lower reaches of rivers in close proximity to aquatic macrophytes and in-stream wood. However, they may penetrate far inland in some river systems. The diet of *H. compressa* is dominated by aquatic insects and microcrustaceans.

Like many other freshwater eleotrids, juveniles and sub-adults appear to a facultative mass dispersal phase and mass upstream migrations have been recorded.

*H. compressa* is not listed as a threatened species in either State or Commonwealth legislation and is generally common throughout most of its coastal distribution.

### ***Hypseleotris galii* (Firetailed Gudgeon)**

There is considerable confusion over the identification of the *Hypseleotris* complex in south-eastern Australia. However, specimens of *Hypseleotris galii* were clearly identified at site AQ04 during the July 2012 surveys.

As a group, *Hypseleotris* are widespread and common throughout the eastern seaboard of Australia (Pusey *et al.* 2004). This group of species is found in slow-flowing or still waters, normally associated with aquatic vegetation. Although experimental data are not available, tolerances for low dissolved oxygen and high turbidity are inferred from distributional studies.

While originally thought to be a relatively sedentary species, recent studies have shown that large numbers of *Hypseleotris* attempt to move through fishways (Baumgartner 2003). Whether these movements reflect local dispersal or foraging movements is unknown.

None of the *Hypseleotris* species recorded in Queensland are listed in either State or Commonwealth legislation and are highly adaptable and tolerant of a very wide range of environmental conditions.

## APPENDIX B9:B

### ***Nannoperca oxleyana* (Oxelyan Pygmy Perch)**

*N. oxleyana* is a small (up to 75 mm) moderately compressed species with a very restricted and patchy abundance in coastal lowland ecosystems from south eastern Queensland to north eastern New South Wales.

*N. oxleyana* is most frequently found within habitats exhibiting low water velocity, over mud/sand substrates in moderate depths (10–50 cm) often found in association with submerged vegetation, undercut banks and woody debris.

*N. oxleyana* is a microphagic carnivore, predated primarily upon micro and macro crustaceans, aquatic insects and small amounts of terrestrial insects.

*N. oxleyana* is classified as vulnerable due to habitat loss, road construction and expansion of exotic pine plantations.

This species was not recorded at the SCA site but has been included in this appendix due to its conservation status and previous records in nearby locations.

### ***Pseudomugil mellis* (Honey Blue-eye)**

*P. mellis* is a small fish (up to 38mm) with a moderately compressed and elongated body and a relatively large eye in comparison to body size.

*P. mellis* has a restricted and patchy distribution, restricted to coastal lowland wallum in two distinct locations in central and south eastern Queensland.

A loosely schooling species, *P. mellis* utilises waters ranging from <10 cm→2 m in depth, commonly swimming along the edges of Macrophyte clumps, usually within the top 3<sup>rd</sup> of the water column.

*P. mellis* is a microphagic omnivore, diets comprising of algal, planktonic and macrophyte matter.

*P. mellis* is listed as endangered due to its restricted range, habitat requirements and habitat loss.

This species was not recorded at the SCA site but has been included in this appendix due to its conservation status and previous records in nearby locations.

### ***Rhadinocentrus ornatus* (Ornate Rainbowfish)**

*R. ornatus* is a small (up to 65 mm), slender and relatively elongate species with a laterally compressed body.

*R. ornatus* has a patchy distribution restricted to coastal lowland wallum and rainforest ecosystems, ranging from central Queensland to northern New South Wales, including coastal sand dune islands. *R. ornatus* habitat is characterised by dystrophic, acidic darkly stained waters with sandy substrates and abundant submerge and emerged vegetation with low water velocity and moderate depths.

*R. ornatus* is a microphagic carnivore, primarily consuming aquatic macroinvertebrates and macrocrustaceans.

*R. ornatus* is considered as least threatened, however it has been listed as being of high concern under the Back on track legislation due to its patchy distribution, restricted range and habitat loss.