

<b>Date:</b> 9 April 2011 <b>Our reference:</b> Path Rpt. DF 11/ 25 <b>Samples supplied by:</b> Kurt Hutchby <b>Company :</b> GAWB <b>Address</b>  <b>Your reference:</b> _____	<b>Sample Description:</b> Barramundi health check, Boyne River  <b>Sample screening date:</b> 7, 8 April/2011  <b>Screening method:</b> water quality measurements using YSI 85 DO/temperature/salinity/ conductivity meter
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*Disclaimer:*

DigsFish Services have taken all reasonable steps to ensure the information contained herein is accurate at the time of publication, however sample sizes used were small and less than required to make statistically rigorous conclusions on absence or prevalence of disease agents or pathological conditions. Hence this report can only be offered as general advice only and we accept no liability for any loss or damage that may result from reliance on this information.

**CASE REPORT: Barramundi health check, Boyne R., April 2011**

Sample statistics:

N = approx 100 barramundi sampled over 2 days, taken lure casting on rod and reel

Water testing

Physiochemical water parameters were tested at one location below the dam wall by Dr Ben Diggles on 7 April 2011, 10 am. Temperature 24.9°C, Salinity 0.1 ppt, Dissolved Oxygen = 97%

Gross signs

Approximately 80% of barramundi that escaped Awoonga Dam by going over the dam wall had superficial lesions consistent with trauma from contact with spillway or rocks. Around 20% of fish were unmarked.

**COMMENTS:**

Barramundi (*Lates calcarifer*) from c. 30 cm to 115 cm total length were examined visually for ectoparasites and external pathological lesions over a 2 day period in early April 2011. All fish were sampled from the Boyne River within 500 m of the Awoonga Dam spillway. The capture of one fish originally tagged in the dam confirmed that movement of fish from the dam into the river had occurred. Around 80% of the barramundi examined exhibited external lesions of the body and/or fins, presumably from trauma from contact with spillway or rocks as they escaped the dam. The most common lesion was damage to the vent area (Figure 1), probably as a result of fish hitting rocks as they tried to orient head first into the current as they went over the dam. The damage to the vent consisted of scale dislodgement and/or focal inflammation of scale pockets, with secondary invasion by microbial opportunists, including ubiquitous fungi consistent with *Saprolegnia* sp. Other lesions included deep bruising and scale loss (Figure 2) along the flanks, and *Saprolegnia* sp. infection of the epidermis covering individual scales (Figure 3). One barramundi (prevalence <1%) had an apparent Lymphocystis viral infection of the distal edge of the anal fin (Figure 4). No external parasites were noted on the gills or skin of any of the barramundi examined. All barramundi captured were in good condition and were actively feeding, as demonstrated by their disgorging bony bream during capture. Other species examined or observed included milkfish, tarpon,

forktailed catfish and mullet. The majority of catfish examined had infections of the “fish louse” *Argulus* sp. Some mullet had ulcerative lesions on the flanks consistent with trauma followed by secondary infection by *Aphanomyces invadans*, the causative agent of Epizootic Ulcerative Syndrome (EUS). EUS is known to be endemic to east coast catchments, including the Boyne River. The results from this brief survey suggest that barramundi that exit Awoonga Dam pose no significant disease threats to fish populations in the Boyne River. More in-depth research including necropsy and testing of statistically significant numbers of barramundi, and other species, would be required to generate statistical certainty on the prevalence/absence of any specific disease agents.

Ben Diggles

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Ben Diggles, PhD.



Figure 1. Damage to the vent area was the most common lesion observed, consisting of scale dislodgement and/or focal inflammation of scale pockets with secondary invasion by microbial opportunists, including ubiquitous fungi consistent with *Saprolegnia* spp. . Lesions in this anatomical location are probably due to fish hitting rocks as they tried to orient head first into the current as they went over the dam.





Figure 2. Deep bruising and scale loss along the flanks due to trauma. The lesion in this individual was healing reasonably well, with no evidence of secondary infection at the time of capture.



Figure 3. *Saprolegnia* sp. infection of the epidermis covering individual scales. The infected scales are probably due to localized trauma. Also in this individual are signs of a resolving infection of the scale pocket.





Figure 4. One barramundi had an apparent Lymphocystis viral infection (prevalence <1%). Multiple foci of infected cells were evident along the distal edge of the anal fin (arrows). This virus is endemic to east coast rivers and the most likely reservoir of infection is feral fish populations in the dam or river. Lymphocystis infections can be triggered by stressful events and/or physical damage and often resolve spontaneously.