

WSD Outbreak Situation Report – as of 8 pm Friday 30th December 2016

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This is a summary of developments along the Logan River since my last report of 13th December 2016. The current situation with respect to infected premises can be found in Figure 1 (over page).

14th December 2016

1. On Wednesday 14th December after the industry phone conference (where it was mentioned chlorination of ponds on 3IP was scheduled for completion that day), I inspected several supermarkets in the vicinity of Southport and witnessed thawed frozen raw prawns from various countries (China, Thailand, Malaysia) being sold at multiple Woolworths and Coles outlets by the kg over the counter without any signage or advice to consumers not to use them as bait.

15th December 2016

2. On Thursday 15th December after the industry phone conference call I participated in a National Industry wide phone conference with State and Federal Biosecurity authorities where official updates for the WSD outbreak situation were given. One very important piece of information that was provided by Federal authorities was that as of May 2016, of the 448 consignments of imported frozen raw prawns bought into Australia, 73 consignments (16.3%) tested positive for whitespot virus. It will be important to ascertain the exact sampling methodologies used by Federal biosecurity and border security staff to arrive at these figures, so that the potential likelihood of false negative test results in any non-positive consignments can be better assessed.

3. At 4 pm I inspected Gem Bait and Tackle and witnessed that all the freezers which had contained frozen prawns had been shut down, cleaned out and chlorinated by Biosecurity QLD (Figure 2), as had all of the recirculation systems that housed live yabbies. Staff were in the process of restocking the freezers with bait prawns sourced from outside the fishing closure area.

4. At 4.20 pm I inspected the Alberton Boat ramp and found that there were no advisory signs informing boaters or fishers of the fishing closure conditions. I spoke to the farmers at 3IP and they confirmed that all ponds and drains had been chlorinated including settlement ponds. I phoned the farmers at 4IP and they confirmed that the last 5 ponds on their property had been chlorinated today. I then parked outside 2IP where there was still no supervision or signage informing traffic along Rotary Park Rd not to fish in the 1IP intake. Not being able to locate a Biosecurity QLD site controller, I entered the decontamination area, then spoke to the single bird control officer on site, who was placed near the index Pond 22 (Figure 1), which was chlorinated late pm on 14th December. There were large numbers of dead *P. monodon* and jelly prawns visible along the edges and pond margins (Figure 3). I then inspected the remaining ponds 21, 20, 19, 18, 16 and 15, then sampled 60 prawns from Pond 17 for gentics and left the samples fixed in 95% ethanol inside the feed hut at 7 pm, before decontaminating and returning home.

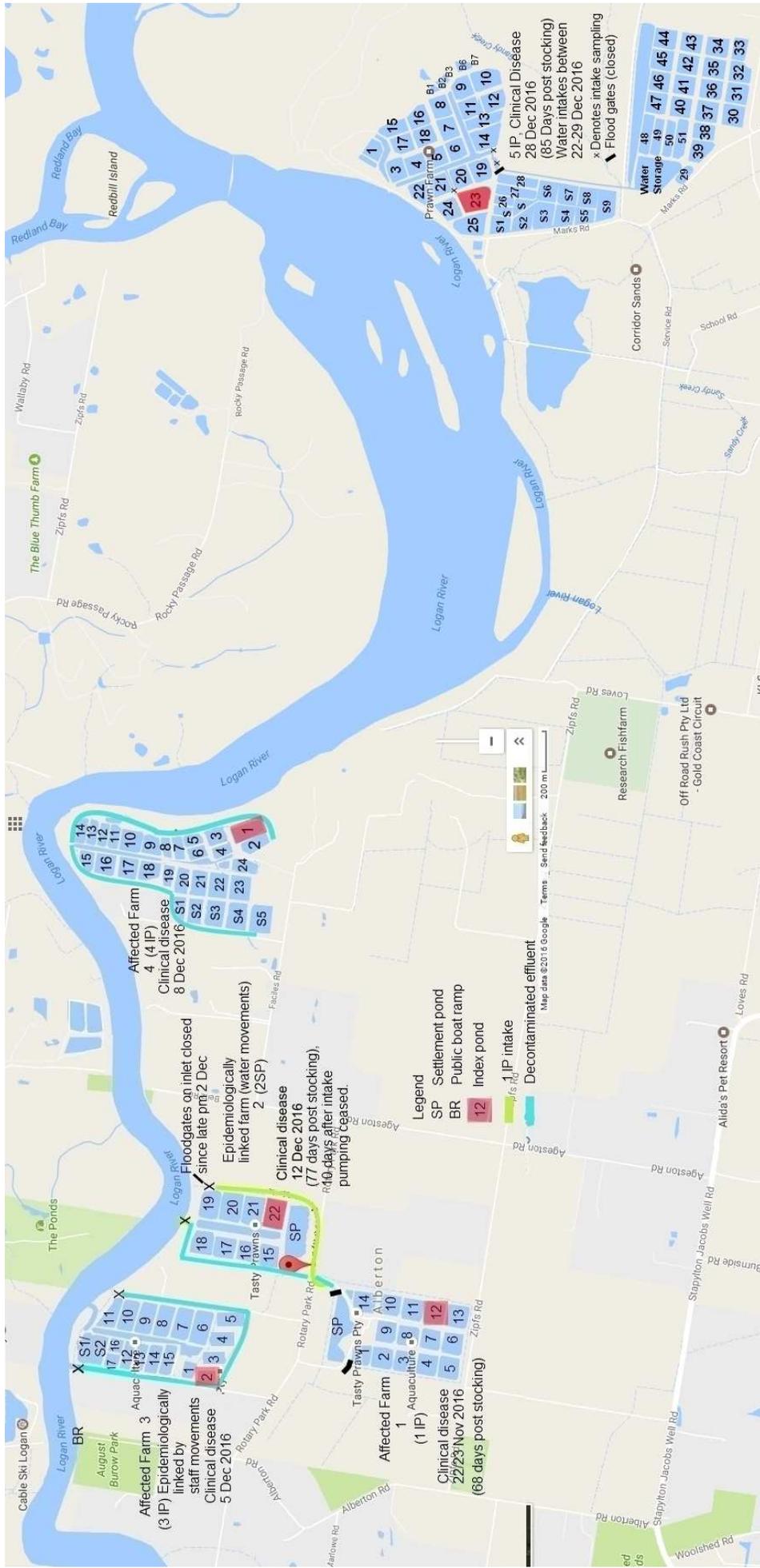


Figure 1. Locations of farms, including pond numbers and location of index ponds at each site as of 30th December 2016.



Figure 2. Cleaned and chlorinated freezers at Gem Bait and Tackle on 15 December 2016.



Figure 3. Large numbers of dead *P. monodon* and jelly prawns were visible and accessible to birds along the edges of pond 22 at 24 hours post chlorination on 15 December 2015. Only one bird control officer was on site that evening.

16th December 2016

5. On Friday 16th December I was phoned by Dan from 3IP at 9 am who informed me that he had just witnessed a live prawn swim over to him at their pond 1 that morning, 3 days after it had been chlorinated. He thought it may have survived by hiding near the inlet boards where a dilution effect may have occurred. On the industry phone conference at 9.30 am we were informed that decontamination of all drains and inlets of 3 IP and 4 IP was to be completed today and that 2 IP would be completed tomorrow. A phone hookup with the Biosecurity QLD technical working group at 11 am disclosed that some of the earlier bait samples I had obtained from Gem Bait and Tackle tested positive, others were borderline positive /indeterminate, but the species of the positive sample (Banana prawn, *Metapenaeus*, Palaemonid) was not certain/known.

17– 20th December 2016

6. From Saturday 17th till Tuesday 20th December I participated in various phone conferences (Industry, Biosecurity QLD, Disposal and Decontamination Technical Working Group). Notes from these conferences are available if required.

21st December 2016

7. On Wednesday 21st December I participated in an industry phone conference and a technical working group phone conference. In the Technical Working Group phone conference it was disclosed that the samples from Gem Bait and Tackle which I had identified and fixed representative samples in 95% ethanol prior to them being seized on 11th December were PCR positive, but the species that were positive was not identified. It was disclosed, however, that “3 or 4” of the bait prawns sampled had real time PCR CT values of 32-35, but histology showed no confirmed inclusions. It must be noted that histopathology of bait samples that had been frozen for possibly 2 or more weeks prior to fixation in 95% ethanol would result in many artefactual changes that may greatly reduce the sensitivity of histopathology as a diagnostic tool under such circumstances, especially with prawns due to the fact that crustacean tissues autolyse very quickly after death.

8. In the PM, I briefly inspected 2IP at 2.30 pm with the then site manager (Perry Jones) to ascertain that chlorination of all ponds there had been completed, and witnessed that chlorination of the settlement pond there was about to commence. I then attended a meeting at 1IP with Biosecurity QLD and the affected farmers from 1, 2, 3, and 4IP, where strategies for finalizing decontamination and beginning the process of draining and disposal were discussed. The meeting finished with resolutions from Biosecurity QLD to finalise disposal strategies in close collaboration with farmers.

22-28th December 2016

7. Between Thursday 22nd and Wednesday 28th December I participated in 1 industry phone hookup (23rd Dec) where it was disclosed that the South Australian Government had prohibited entry of live or dead (uncooked) crustacean of the order Decapoda from the Logan River area. Then at 8 pm on the 28th of December Helen Jenkins rang to inform me that there were signs of unusual behaviour in prawns from Pond 23 at 5 ARP, that samples had been sent off for testing, and to stand by for more information. The last time the pond had been sampled for testing was Thursday 22nd December, which apparently gave negative results. However since that time the farm had taken in approximately 54,450 tonnes of water at the top of the tide since 22nd December

(approx 1.5 tonnes per second for the following time periods 22 Dec – 120 min between 3.40-5.40 am, 23 Dec- 300 min between 4.20 to 6.50 am and 14.20 till 6.50 pm, 24 Dec – 95 min between 5.35 am and 7.10 am, 29 Dec- 90 min between 11 am and 12.30 pm) that was not treated.

29th December 2016

8. On Thursday 29th December Helen Jenkins rang to confirm the samples from Pond 23 on 5 ARP were positive by PCR for WSSV. Hence 5 ARP was now designated 5IP. After a brief phone conversation with Nick Moore at 9.25 am (who was trying to keep terns away from infected pond 23 just as bird mitigation arrived) I organized to visit 5IP on 30 Dec. It was noted by Nick Moore that use of non-lethal ammunition simply moved birds that were feeding on pond 23 away to other ponds on site and that distribution of diseased prawns from pond 23 to other ponds within 5IP (including pond 25) was observed by him.

30th December 2016

9. On Friday 30th December I was rung by Bomber Lancaster (5IP site controller) and briefed that I should liaise with Brian Paterson on farm for any sample collection etc. that was to be performed that day. I arrived on farm at 8.30 am to see chlorine trucks adjacent to ponds 23 and 25 (Figure 1). Pond 23 had been chlorinated with 24 tonnes of chlorine the previous evening and Pond 25 was emergency harvested early am that morning and was partially drained (Figure 4). After topping up chlorine levels in pond 23 with an additional 15 tonnes of chlorine, the truck put the remaining chlorine (5 tonnes ?) into pond 25 as the level was being raised back up with water from the adjacent effluent canal. I was informed by Nick Moore and Alistair that the adjacent ponds 26, 27 and 28 (Figure 1) had been harvested earlier (date to be confirmed) with 98-100% survival. The survival data for prawns from Pond 25 that was harvested that morning was not available at the time, however a small number of clinically diseased prawns were apparently noted by 5 IP staff from that pond.

10. During discussions with Brian Paterson he mentioned seeing sluggish prawns at ponds 21, 20, and 19. I inspected these ponds and confirmed that moribund prawns with clinical signs of WSSV were visible along the pond edges of ponds 21 and 19. A group of half a dozen seagulls were roosting between ponds 22 and 21 so I informed Biosecurity QLD staff that pond 21 was also infected and that bird control needed to look in that direction as well. There were more birds on 5IP than at previous farms including a flock of approximately 60 seagulls between ponds 15 and 16 (Figure 5), and bird control staff were observed to be using a mixture of both non-lethal and lethal ammunition. A delivery of 6 new plankton nets was delivered to the farm gate around 9.30 am and I worked with on site fabricator Sean to rig them up with poles so that plankton could be sampled from the intake canals.

11. Fabrication of the plankton net poles was completed by 1.30 pm (Figure 6) and during the morning and afternoon I had several meetings with Biosecurity QLD staff, Nick Moore, Alistair Dick and Noel Herbst to get up to speed with the farm layout and their harvesting plans. Moving back onto the farm at 1.30 pm I noted that the next chlorine truck was already treating pond 21, however chlorine availability or equipment breakdown prevented treatment of ponds 20 and 19.

12. I then went to inspect the ponds on the eastern side of the farm and noted that ponds 1, 15, 17, 16, 18, 8 and 9 were all lined (as are most/all the ponds in this section of the farm) and looked normal. I did note one sluggish prawn along the eastern edge of pond 11 at around 4.30 pm. I then proceeded to the edge of pond 19 under supervision of Brian Paterson to collect plankton samples at 3 sites (marked x in Figure 1) between 4.48 pm and 5.20 pm (Figure 7).



Figure 4. Chlorination of pond 25 (left) with leftover chlorine from index pond 23 (right) at 5IP at 9 am on 30th Dec. Pond 25 is partially drained from the emergency harvest that morning.



Figure 5. More birds are present on 5IP than other farms I have inspected. Here a flock of 60 seagulls roost between ponds 15 and 16.

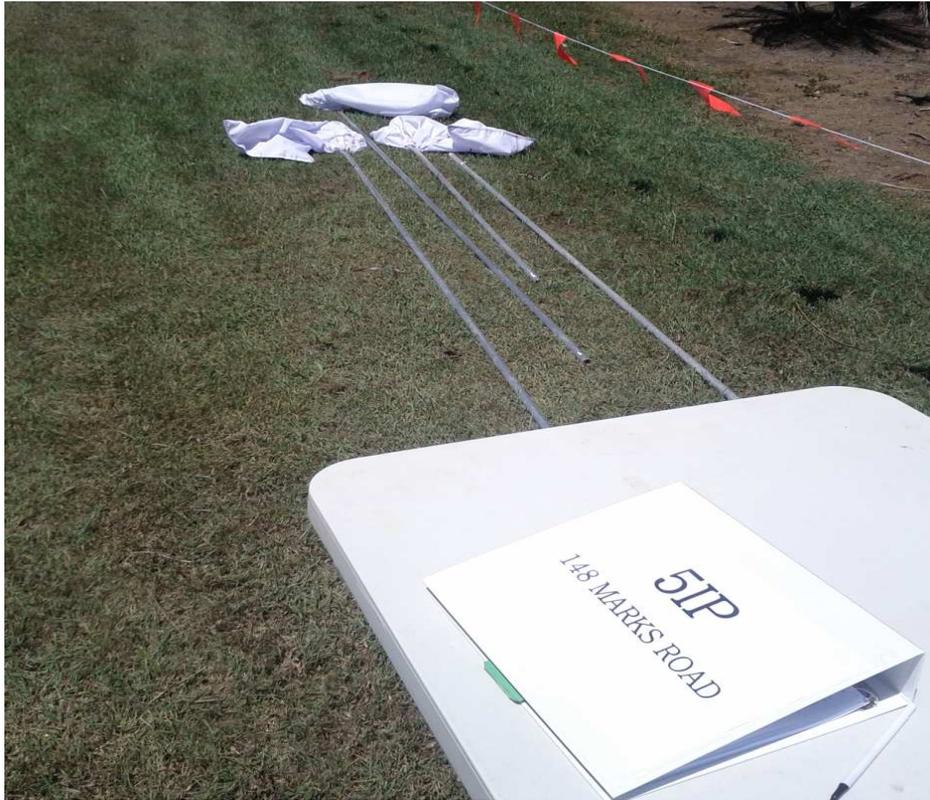


Figure 6. Plankton sampling nets rigged and ready to go courtesy of fabricator Sean.



Figure 7. Brian Paterson taking plankton samples at the southern end of the 5 IP intake near pond 19.

13. Keen to observe what was happening in the intake channels at night, I returned to the same 3 plankton sampling locations after 7 pm in the dark to repeat the sampling process. When resampling the main intake channel, I noticed a vast increase in crustacean activity compared to 2 hours previous. Indeed in the torchlight I was surprised by the amount of visible crustacean life (mainly large numbers of banana prawns) at the very end (rather than down the sides) of the intake channel. I managed to capture and inspect 10 to 12 of the banana prawns (which were apparently healthy) with the plankton net (using it as a scoop net) and fixed them in ethanol for later analysis, but I could have sampled 60 to 100 or more if I had a castnet. I intend to return tonight and resample the intake properly (hopefully with Biosecurity QLD supervision) with a new castnet to quantify the number of animals along the sides of the intake vs at the ends, because I estimate 5 to 10 times more animals at the ends of the intake compared to along the sides.

14. After completing plankton sampling and fixing samples in 50% ethanol, I stored the plankton samples and banana prawn samples on site decontaminated boots and equipment (all left on site with the samples) and left at 9 pm. I intend to return today (on the 31st) to examine the plankton samples under the microscope to see if any crustacea were actually collected with the plankton net (unsure at present), and am liaising with the site controller to organise Biosecurity QLD staff to be present to take samples from the intake at night.