

AQUABLU

Issue 1

Newsletter September 2006

Welcome

Hi all, welcome to Aquablue's first Newsletter. This hopefully will be the first of many to keep you informed of the development of one of Australia's most modern aquaculture facilities. Located on the pristine shores of Bundabah Creek which runs into Port Stephens just North of Newcastle NSW, Aquablue is both a Marine and Freshwater aquaculture facility. Its early days yet as we are just beginning with all the trials and tribulations involved in setting up any new facility. This newsletter will give you a good insight into what's happened and where we are heading. I hope you enjoy it and if you have any comments or suggestions then drop us a line.

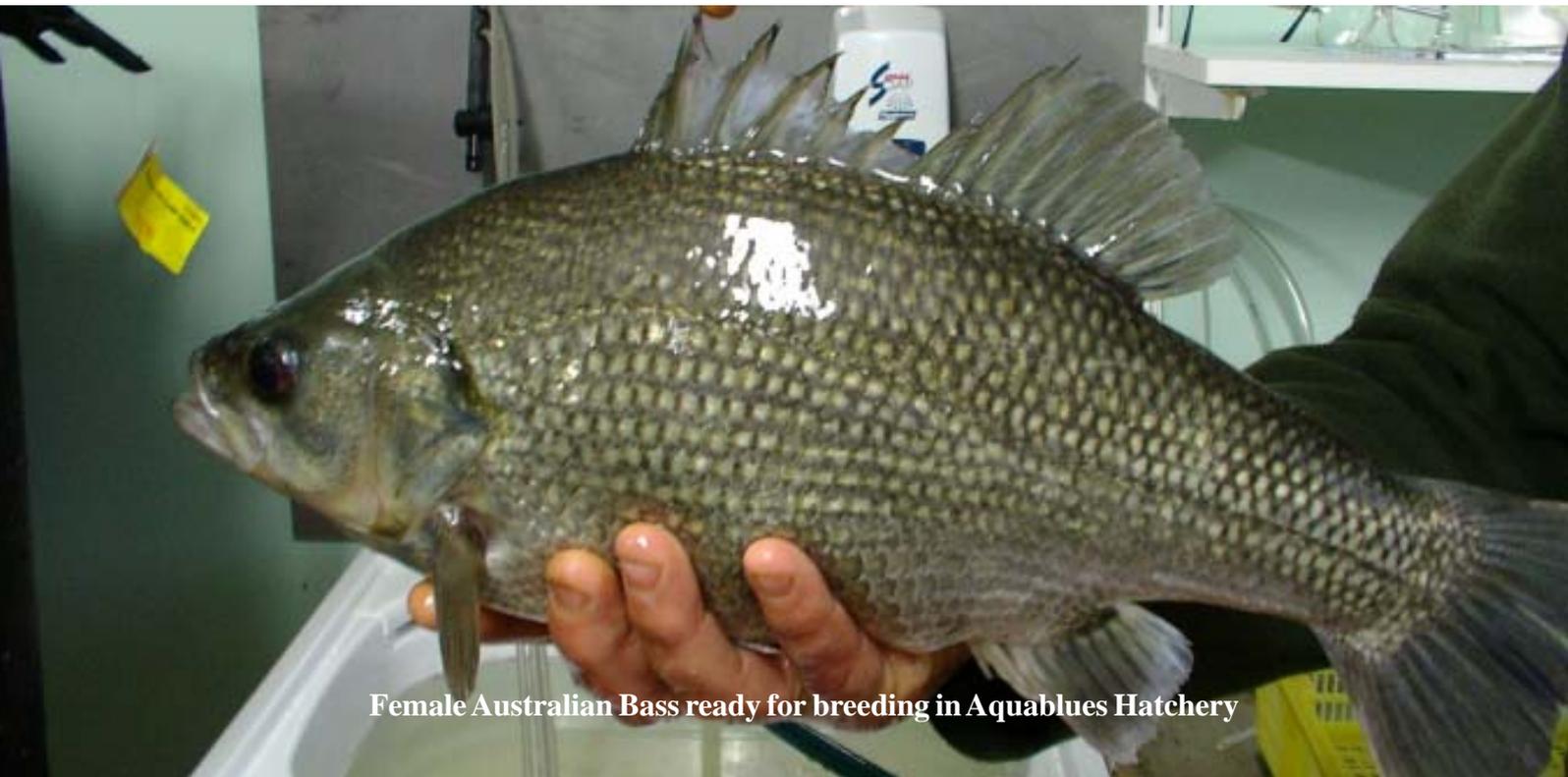
Wharf Construction Completed

It was with a sigh of relief when the final nail was hammered into the wharf. The wharf is the cornerstone of this operation as it hosts the pumps and pipes that supply the salt water to the hatchery and ponds. With the wharf finished we can pump up water into the tanks via either a 50 mm 3 phase pump or the 75 mm 3 phase pump. Both pumps are supplied by a 100 mm intake located at the end of the wharf. It's then 100 mm distribution hose from pumps to ponds and the



Australian Bass *Macquaria novemaculeata*

It's Australian Bass breeding time at Aquablue and we are all systems go full steam ahead on breeding Bass. Bass are a catadromous species that can live in fresh water but must migrate back to the sea to breed in marine salt water. We capture Bass from the rivers and streams of NSW and take them straight back to our hatchery for breeding or hold them in ponds or tanks until required. We capture bass under a broodstock collection permit issued to us by NSW DPI Fisheries. We supply fish for restocking back into the rivers and streams of NSW and by catching the stock from the rivers their offspring are going to be restocked back into, ensures that the fish genetics are correct for each area. Also by catching wild fish and breeding with them we ensure that the offspring are good healthy genetic stock.



Female Australian Bass ready for breeding in Aquablues Hatchery

Bass are winter breeders and start breeding around June and finish about August each year. Each mature female migrates downstream to the salt water, breeds and then generally returns back to the freshwater. It is a bit of a concern that due to climate change and drought we are not getting the flood events that we used too. Generally starting in May on the east coast we would get storm events that would give us good flood levels in the freshwater river systems, this assist the bass to migrate down river. Bass are winter breeders that only have that small window of opportunity to breed. If the conditions are not right they will not migrate downstream and will not breed.

This year was another dry one with no flood events occurring which did dramatically reduced the amount of bass that have made it down river to breed. It is a continuing concern that the prolonged drought conditions in NSW is having a serious impact on our native species. This makes our Bass breeding program more essential to keep the stocks up in our coastal rivers, streams and lakes.

We fish all over for bass but we do have our favourite spots and the main one we use is a choke point where the freshwater meets the salt. Bass must pass this point to make it to the salt so we can hopefully capture them easily. Unfortunately with the drought catching bass has been a real effort this year and hundreds of man hours have been needed to get sufficient good breeding stock for our hatchery program.

We have just about completed our bass breeding for the year and fingerlings are growing rapidly in our ponds. Sales will start in late October or early November.

We have put the hours in this year and still managed to get enough for a good breeding run. The bass captured are returned to our hatchery at Aquablue, anaesthetised with clove oil, weighed and hormone injected to induce spawning. They are then released into 1400 litre spawning tanks in our hatchery and which are filled with marine salt water and heated to 18 deg C. Approximately 36 hours later they breed naturally in the tanks, we remove the broodstock leaving just the eggs in the tank to hatch. Around 48 hours later the eggs hatch into larva and we keep them in the hatchery for 7 to 9 days before they are removed to nursery tanks or released directly into prepared ponds. Larval bass eat rotifers when they first start feeding and we have rotifer culture tanks here that generate a constant supply. Rotifers are just a microscopic animal less than 200 micron in size that eats algae. Newly feeding bass love them and will eat a massive amount of these microscopic animals. As the bass grow into fingerlings we feed them larger zooplankton such as copepods, daphnia, brine shrimp and red wiggler worms. The baby bass are in the tanks and ponds growing a bit every day and we expect to start harvesting them for sale in November. Will give you an update next newsletter.



Australian Bass larvae in our nursery tanks



Hatchery Quality Assurance Program

Aquablue Seafoods has a brand new state of the art fish hatchery, designed to the highest standards of hygiene and safety. This hatchery was purpose built to meet the new hatchery quality assurance regulations being implemented into NSW. The hatchery was one of the first infrastructure projects completed as we wanted to get the last of the silver perch breeding season in before it closed. Unfortunately we were not successful as it was just too late in the season by the time it was completed.

The hatchery quality assurance program is progressing slowly but surely in NSW. This is a program where hatcheries in NSW that want to supply fingerlings for the dollar for dollar program will need to be accredited by NSW DPI Fisheries and other hatcheries can get accreditation to help promote their produce. It's a 3 year lead in time table but bottom line is if you do not get accreditation you will not be able to supply fish for the dollar for dollar program for restocking into the wild. Additionally some hatcheries are getting accreditation for their own reasons mostly as a sales pitch assist.

Phil Read our NSW DPI extension officer is helping with the hatchery quality assurance program and he is compiling the list of interested hatcheries. When I was at Grafton Aquaculture Centre in February picking up Silver Perch Broodstock I had a chat with Phil and told him about our new hatchery and how it was now ready for preliminary inspection and what do we do now. Phil gave me a run down on where the process is and what is required. This is what I found out from Phil.

Most Hatcheries in NSW have applied for accreditation but still some have not bothered. Phil is compiling a list and will start a run to visit all the hatcheries on the list. The hatchery visits are just a starting point and Phil will have a look around your farm and see how you will go towards meeting all the criteria for accreditation. This is just some of the things that I think Phil will be looking for (no particular order or importance) Phil will be looking at the whole farm not just the hatchery

- Good records
- Records of pond/tank sizes, capacities etc.
- Records of chemical usage
- Records disease outbreaks and treatments
- Records of Broodstock, strains, genetics etc.
- Effluent capacity and disposal.
- Hatchery equipment, monitors, microscopes, dissection set etc.
- Water supply, quantity, quality, reliability etc.
- Filtration equipment, inlets outlets etc.
- Office and workshop
- Health Management Plan
- Quarantine Facilities

The new accreditation scheme will apply to all hatcheries regardless of size. The same regulations will apply whether you have a \$2000 dollar hatchery or a \$2 Million dollar hatchery.

The Hatchery here at Aquablue Seafood's at Pindimar NSW (Port Stephens) has a hatchery for Silvers, Goldens, Bass, Bream Witting, and Snapper, etc. This hatchery was inspected as part of Phil Reads tour around the state looking at Fish Hatcheries in late March early April 2006. Phil was on the last leg of his tour and had been on the road a couple of weeks and done over 4000 kms with still more to go.

Phil

Phil checked out the hatchery and the farm as a whole. He had a checklist of specific items he was interested in and ran through them all and checked them off or advised what will need to be done to meet the criteria for accreditation. It was all quite painless and easygoing. Whilst Phil was there we picked his brains on all sorts of areas of interest or problems. We were in the process of designing and building an 80,000 litre recirculation system so Phil's advice was greatly appreciated as he has been around for a long time and seen it all. He knows what works and what doesn't and more importantly why. With Phil's advice we tweaked our system and design.



Phil Read (NSW DPI) and Neil Meyrick (Aquablue) inspect 1400 litre hatchery breeding tanks

Phil inspected everything and ticked off everything on the list. It looks very good for us with no unforeseen obstacles or hurdles in front of us for the future. It was very important for Aquablue to get a good report from Phil as we are applying for the Dollar for Dollar Australian Bass scheme. Only approved hatcheries are allowed to apply as fish supplied by the hatchery will be restocked back into the wild and it is imperative that these fish are healthy, disease free and of the correct genetic stock to ensure there is zero impact on other native fish populations. Phil continued on his hatchery inspection tour after half a day with us.

I will keep you informed of our progress on the hatchery accreditation program, to date Aquablue is hassle free.



No. 1 recirculation system

NSW DPI Grafton Aquaculture Centre (GAC)

NSW DPI Grafton Aquaculture Centre started in 1984. Since that time it has grown into Australia's leading Silver Perch (*Bidyanus bidyanus*) research centre.

I visited Grafton in February to pick up some Silver Perch broodstock for a new Silver Perch hatchery (Aqua Blue Seafoods) starting up at Pindimar, NSW (Port Stephens area). It's great that NSW DPI makes these fish available to industry as this is so much easier than attempting to catch fish from the wild yourself. Broodstock collection permits are a nightmare but that's another story. All the boys were at Grafton that day so I took the opportunity to have a look around and have a bit of a chat. The 4 main people based at Grafton are Stuart Rowland, Charlie Misfud, Mark Nixon and Phil Read. These 4 guys and the aquaculture research centre are the cornerstones of the Silver Perch industry in Australia. Stuart Rowland is the chief biologist who started all the research and his fantastic results, drive and enthusiasm has created the industry in NSW and Australia, without him there would be no industry. Charlie Misfud is the muscle that does all the breeding, transporting and harvesting of all the fish and carries out the experiments. Mark Nixon manages the ponds, cages and equipment and assists Charlie with fish husbandry, water quality monitoring and health management. Phil as you all know is our silver perch extension officer based at Grafton but his brief is far larger than just extension.

Went for a bit of a tour around the facilities at Grafton with Charlie and had a look at the ponds and tanks and had a bit of a chat with both Charlie and Stuart on their current research projects. I was at Grafton to pick up some brood stock from selected strains of Silver Perch which Grafton is doing research on. They had stock there from 2 different strains, Murray River Strain and Cataract Strain available for industry and I was going to take these back to Aquablue for broodstock to be used in our Silver Perch hatchery program.



**Murray Male from Grafton
Aquaculture Centre**



Cataract Female from Grafton Aquaculture Centre

I picked up 20 Murray Males and 20 Cataract Females and I will use them in our breeding program to improve our genetic diversity. It was interesting chatting with Stuart about the genetics of these fish. Though they are both Silver Perch there are enough genetic differences in the mitochondrial DNA to identify the different strains. The Cataract Strains were selected individuals that I could choose from and these were just in a tank in the hatchery so Charlie just anaesthetised (benzocaine) the whole tank of fish to slow them down and I scooped out the individual fish I wanted. They were all good fish, clean, healthy, good shape and no deformities.

The fish I were selecting from were around 2 years old and had been held back. The Murray Strain were also in a tank and I just selected males. I had the choice of both males and females but for my breeding program I only needed Murray Males and Cataract Females as we will cross breed these to give a larger faster growing offspring. It took me quite some time to actually select the fish I wanted but the Grafton boys were very accomodating and waited patiently as I checked out hundreds of fish but only kept the best 40 of the best.

The fish at Grafton that industry does not take up will go back to ponds or cages to be used into the next breeding program later this year. Silver Perch are summer breeders, season goes



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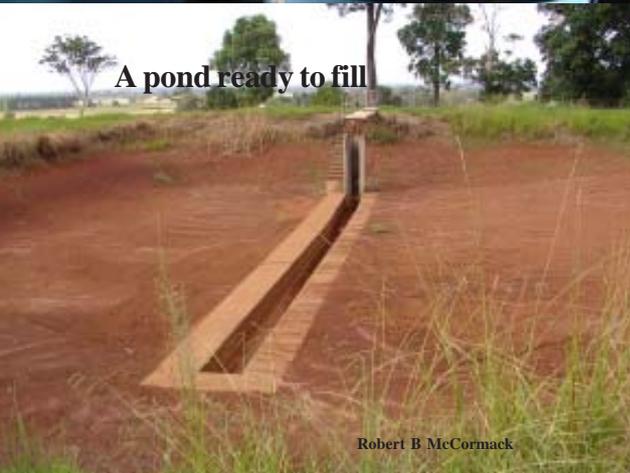
from October to February but can extend a bit either way. Charlie at Grafton likes to breed his fish early in the season around October as this maximises the growing season for the fingerlings. These fish will be captured from the outside ponds in October 2006, breed in the GAC hatchery in the 1800 litre spawning tanks. The broodstock will be anesthetized, hormone injected and placed in the breeding tanks. Around 36 hours later they will spawn releasing around 125,000 eggs per kg of fish. Fish would usually be bred in 2 pairs/tank and multiple tanks. After breeding the fish will be returned to the ponds for use again next year and the eggs will then be transferred to 1000 litre incubation tanks. Eggs will be counted volumetrically and around 250,000 eggs will be placed in each 1000 litre tank. The eggs will hatch into larvae (24 to 28

hours) and when they are ready to feed (4 to 6 days) they will be transferred to outside ponds that have been prepared for them ready with plankton of a suitable size for the larvae to feed on. The larvae are just

transferred from the hatchery to the ponds in plastic bags that just need 30 minutes of acclimatization in the ponds. Silvers are great this way as they don't need much in the way of acclimatization, unlike fish like Australian Bass that need 12 to 14 hours acclimatization. It's a massive job moving larvae from tanks to ponds and Charlie likes to do it early morning before it gets too hot and before the pH starts fluctuating as server pH changes can be deadly to 4 day old larvae.



Robert B McCormack



A pond ready to fill

Robert B McCormack



McCormack

They will spend about 3 months in this pond and then be drain harvested. They should be around the 2 to 5 gram each and they will be returned to the hatchery for sorting and grading. Basically just 2 sorts, selected and none selected, basically the larger faster growing ones will be the selected. They will then be transferred back to separate ponds for further grow out and hopefully some of these selected stock will be made available to industry in the future.



I also looked at the holding cages with Charlie, these are cages suspended in ponds and different strains and experiments can be cultured in these cages and the results easily established and published. I personally am a firm believer of cage culture and it is ultimately where I see the industry heading in the future. Silvers are an ideal species that grows well in cages at high densities. Cages allow easy handling, feeding, monitoring and harvesting of the fish so it makes life so much easier for the farmer. Aquablue will be using both floating cages and tanks floated in the ponds to grow

out both freshwater and marine fish so I was very interested in how they were doing it a Grafton.

The fish I obtained from Grafton made it back to Aqua Blue Seafood's in perfect health and are now in their own pond being fed up ready for the coming breeding season in October 2006. It was great that NSW DPI made these fish available as the time and cost involved in trying to source wild stock plus the difficulty in even getting a permit to do so would rapidly remove your enthusiasm. I wish the Grafton Boys all the best and send my thanks for all their efforts.

Snapper and Bream Broodstock from Silver Beach Aquaculture

As a new marine hatchery we needed to obtain some broodstock for breeding purposes. We have applied for our own broodstock collection licence but in the mean time we picked up some stock from Silver Beach Aquaculture.

Silver Beach Aquaculture (SBA) was New South Wales' first marine sea cage fish farm and is 100% Australian owned and has been in operation since 1995. This sea cage farm is located some 700m from Silver Beach, Kurnell, in Botany Bay NSW. The fish and cages are protected from heavy seas and



Dave Barker, Neil Meyrick & John Hedison

prosper in the clean oceanic waters, close to the entrance of Botany Bay. John Hederson of Silver Beach Aquaculture owns the sea cages in Botany Bay. It's a great site with good tidal flows of clear clean water and about 6 metres deep.

John's cages are approximately 5 metres square and 4 metres deep and he has various mesh sizes for the different size fish. A wide variety of species are under culture with the main ones being snapper and mulloway with trials on bream, whiting and kingfish underway. John has a large lease 4 hectares and he hopes to further develop the site in the near future with diversification into pearl oysters and scallops. It was interesting to see the pearl oysters (akoya) growing naturally on the cage supports and structures.

I met up with John Hedison and Dave Barker at their land base with Neil Meyrick who accompanied me from Aquablue. SBA has purchased a land base site located on Silver Beach 700 metres from, and adjacent to, the sea cage farm site. This base provides easy access and observation of the sea cages that are directly out front of the base. This dwelling is an historic boat shed, sound but in need of restoration. SBA has consulted with local council and heritage authorities regarding the restoration and refurbishment of the shed plus a wharf with no foreseeable problems to their proposals.

They use this boat shed site as a head office and for daily operations such as fish feeding and harvesting procedures.

From the land base boat shed all 4 of us hopped into a little tinny for the quick trip out to the cages. It's a bit of a wild ride but we all lived to tell the story. Once out at the cages we were there to get some brood stock for our marine hatchery at Aqua Blue. It's a real mixed bag out there in the cages with huge Mulloway swimming around with Bream, Snapper, Whiting and Yellowtail Kingfish.

After a tour John and Dave capture us some nice broodstock snapper and bream from the cages and then we headed back to the boat shed. We actually hormone injected the bream then and there at the boatshed before we loaded them up with the snapper into our fish transported for the run back up the coast to our hatchery at Pindimar. All the fish made it home OK and we are currently in the process of constructing a snapper breeding season. Snapper start breeding in October so we are hoping to get all the bass finished and out of the road before we start breeding snapper. The beauty of sourcing the snapper

from an aquaculture facility instead of the wild is that the fish are more trained and easier going. Wild caught fish tend to stress out and are very hard to train onto pellets. John's fish from the cages are use to pellets and being crowded together so go fantastic in our tanks.



Robert B McCormack



Robert B McCormack



Robert B McCormack

Silver Bream *Acanthopagrus australis*

Silver Bream are another species under culture at Aquablue. We were trying hard to get the hatchery in operation to catch the tail end of the Bream Breeding season that runs from over most of summer. We had some of our own stock here from fish that Neil Meyrick raised from fry in his personal recirculation system. Neil has had these fish since 2002 and they have been transported to the farm here at Pindimar.

Additionally we wanted more fish to improve the genetic pool for breeding and we approached the boys at Silver Beach Aquaculture to help us out. They had been keeping some bream in their sea cages for over a year now waiting for us to get our act together and collect them for breeding. It was a bit of a rush job but Neil and I designed and built a bream breeding system one afternoon and headed down to Silver

Beach the following day to pick up the bream that Dave Barker and John Hederson were holding for us.

As we were going to place these fish straight into the breeding tanks when we arrived back at Pindimar we took fish breeding drugs with us and anaesthetised the fish and hormone injected them at Silver Beach before bringing them back to Pindimar. It was very late in the season and initial indications were that the fish had already naturally bred in the sea cages so expectations were not high. We did the exercise anyway but unfortunately spawning was not successful. Despite our best efforts we were approximately 2 weeks late so have missed this season. So now the fish are happy and healthy and will stay in our recirculation system till next season when we will try again. By that time we will have the



Robert B McCormack

purpose built breeding tanks in full operation



Robert B McCormack



Nodavirus

Nodaviruses are microscopic, single stranded RNA viruses. There are lots of different varieties but all are members of the family Nodaviridae. Nodavirus cause a disease known as “VNN” (Viral Nervous Necrosis). This disease typically affects newborn baby fish, if you see the little critters swimming around disorientated, swimming in spirals, chasing their tails or belly up then you have a problem. This disease is a big problem for the aquaculture industry as fish are susceptible to mass infections by this virus. This is especially a problem for fingerlings that can suffer from nodavirus infection and then up to 100% mortality. Nodavirus generally infect the fish’s brain, eyes and spinal cord and can be seriously dangerous to juvenile fish but not such a problem for larger fish which may be infected but show no outward sign of disease. Nodaviruses are quite common in dozens of different marine species worldwide and large adult fish can be carriers of this disease but otherwise healthy.



In Australia the Barramundi industry is the one that has had the most problem in the past as Barras are very susceptible to this disease. Most of the Barra Hatcheries have experienced Nodavirus outbreaks in the past despite all the best efforts to remove the potential for this problem. It’s a real battle that has been waged with a vengeance for the last 15 years and despite a phenomenal amount of research and knowledge gained on the viruses we are winning the war but still losing battles along the way. The continuing intermittent outbreaks of nodavirus in different hatcheries Australia-wide is a concern that needs to be addressed. This was brought to the fore in 2004 when a

Nodavirus outbreak occurred in the NSW DPI Bass Hatchery at Port Stephens.

In NSW the NSW DPI has always had strict regulations relating to Barramundi due to the high incidence of nodavirus infections in the past and potential for it to occur again in the future. These regulations are designed to not only protect the aquaculture industry but also protect the wild fish stocks from infection.

Now with the outbreak in another species Australian Bass (*Macquaria novemaculeata*) a new battle front has opened in NSW and a new campaign by NSW DPI is being waged to fight this problem. NSW DPI has upgraded its hatchery and management practices to eliminate or at least reduce the risk of a future outbreak of nodavirus. This is especially important because fish produced in this hatchery are used for restocking back into the wild. N.S.W DPI has a mandate to protect the environment and the wild species of fish as well as the aquaculture industry and this is being reflected in the new HQAP (Hatchery Quality Assurance Program) and the new Nodavirus Testing Program. The nodavirus testing program has been instigated for all Aust Bass hatcheries that supply bass for restocking into the wild.

Nodavirus is a disease that is hard to identify. In Australian Bass there are no absolute clinical signs to watch for in infected bass fingerlings. Generally its larval fish in the first month of life that are the most susceptible to nodavirus. You may notice a lack of appetite followed by the typical spinning swim behaviour, these would be the main symptoms to watch out for. I have heard rumours of extra shiny silver eyes but even healthy fish can show that so not sure if relevant. Another symptom I have heard is over-inflated swim bladders. If you see any or all of these symptoms in your juvenile fish then within 2 weeks if its nodavirus all your fish may be dead. This is a notifiable disease so get in touch with NSW DPI if you suspect a problem.

The only good news is that from what I can gather it is only marine fish that to date are known to suffer from this disease. Nodavirus infections don’t seem to occur in freshwater fish. Bass broodstock sourced from freshwater areas should be nodavirus free. The trouble arises that you need to breed them in salt water and the water itself can be the cause of infection.

The battle against nodavirus continues in NSW so be aware and on guard.

Nodavirus Testing Program in NSW (NTP) & at Aquablue

Back in 2004 a Nodavirus outbreak occurred in the NSW DPI Australian Bass hatchery at Port Stephens. This has led to a change in the management procedures for all Australian Bass hatcheries in NSW that supply bass for restocking into the wild. Aquablue has an Australian Bass hatchery that is in full production at the moment so this is very important to us.

In 2005 the Nodavirus Testing Program (NTP) was started. All Aust Bass Hatcheries that are involved in the Dollar for Dollar scheme or supply bass for stocking into the wild need to register in the NTP. This program involves the hatchery operators taking blood samples from their bass broodstock after breeding. Samples are sent to a laboratory for testing for Nodavirus. Additionally at 21 days old 1000 bass larvae are also sent in for testing.

This testing program is at no cost to the private hatcheries, it is currently being paid for by NSW DPI with assistance from money allocated from the recreational fishing trust. This is money raised from fishing licenses and as the fish being produced in the hatcheries are going out for restocking into the wild for recreational fishing its natural that some of this money is used to protect those fish stocks.

This is the second year of the testing program, it started last year with both the private hatcheries and the NSW DPI's Port Stephens Fisheries Centre participating. Last year the Nodavirus test results were

negative from all hatcheries. Both broodstock blood samples and larval samples were tested using a mixture of PCR (Polymerase Chain Reaction), virus isolation and histology techniques. Testing was also conducted on fish species captured from the wild in the coastal estuaries of NSW. The results were quite surprising with fish such as luderick and mullet showing a positive result. Positive adult fish showed no clinical signs of infection and infection rates were less than 5% which is very low.

Once again this year all hatcheries supplying fish for restocking will be involved in the nodavirus screening. Aquablue Seafood's Australian Bass Hatchery does nodavirus testing, the whole process is quite painless and just another chore that needs to be done. We are happy to do it as it ensure that the fish we send out and you get are the best and healthiest. If you need more information just contact Mr Bill



Robert B McCormack



Robert B McCormack

Bardsley at Port Stephens Fisheries Centre 02 4916 3870. Bill's great, he came out to Aquablue and showed us exactly what we had to do to get a blood sample. Basically after you have bred with the fish and remove them from the breeding tank we knock them out and take a blood sample from the tail section of the bass. We got supplied with a kit free of charge that has all you need to do the job. NSW DPI supplies a kit free to everyone involved in NTP. Once the fish is knocked out you put on some new gloves for every fish you do to avoid contamination and use the needles supplied to take one ml of blood from the tail region of each fish. .



Bill Bardsley (NSW DPI) explaining to Neil Meyrick how to take blood samples

Bill came out and showed us exactly where and how to take the samples so that the fish is unstressed and uninjured. You then place this blood in the vials supplied in the esky supplied with the ice bottles supplied, and send them to the lab by the courier that they are paying for. All very straight forward and basic.

Then after or if the eggs hatch and you get larvae some 21 days later you scoop up and send in a 1000 of them for testing. So far all the results have been negative and let's hope they stay that way. If a positive result is recorded we will be out of production until NSW DPI gives us the all clear.

Newcastle Show 2006

Aquablue seafoods displayed Australian Bass at the recent Newcastle show. The bass were some of my personal pets that I keep at home in my 6 foot aquarium. They are also ones that I use for breeding each year. Neil and I went down to the Newcastle show and set up 2 display tanks, one with the bass and one with blue yabbies. Both displays were winners and the Australian Bass Display won 3 ribbons and prizes. Our bass won a special Prize for best display. We won 3rd place in the Hunter on Show judging and we won 1st place for best Native Fish.

It was a great show and Aquablue will be back next year with more of our prize winning Bass.



The Snapper *Pagrus auratus* Breeding Season Commences

The Snapper breeding season is starting at Aquablue. We have our 10,000 litre breeding tank fully operational with our snapper from Botany Bay slowly acclimatising and preparing to breed. They are settled in nicely in their new tank which we are heating and slowly increasing the water temperature ever day. They are feeding ferociously and fattening up very well ready to breed early November.

Snapper eggs are a floating egg so they need to be captured in a basket that is located in a separate tank adjacent to the main 10,000 litre tank. It's just a flow through system with the water flowing through the external tank and then on to the pumps and filters for recycling back to the main. Will give you an update next newsletter.

