



Aquaculture News

Issue 21 - June 2017

**DIARY DATE - 'Oysters Bringing Us Together'
NSW Oyster Conference 22-24 August 2017**

The NSW Oyster Conference is scheduled to include interactive workshops, presentations, field trips, a trade display and a conference dinner at Merimbula. See www.nswoysters.com.au/2017conference

NSW Aquaculture Research Advisory Committee

ARAC met in Nundle on 3 & 4 May 2017. The first day was facilitated by Mr Peter Dundas-Smith to update the ARAC RD&E Strategic Plan for 2017-2022. The Committee meeting was held on the second day and included a visit to ARAC member Russel Sydenham's Arc-en-Ciel Trout Farm at Hanging Rock. The Strategic Plan and the meeting summary can be found at: <http://www.dpi.nsw.gov.au/fishing/aquaculture/committees/arac> Contact Jo Pickles DPI 4916 3901



ARAC members at Arc-en-Ciel-trout farm

NSW Shellfish Committee

Shellfish Committee met on 10 May 2017 with the next meeting scheduled for 16 August. See the meeting summary at:

<http://www.foodauthority.nsw.gov.au/industry/shellfish/nsw-shellfish-committee>

Contact Hazel Farrell NSW Food Authority 9741 4882

Sydney Royal Aquaculture Competition

Congratulations to fine food Champions Jim Doyle (Doyle's Oysters) and Russel Sydenham (Arc-en-Ciel Trout) who took out key awards at this year's Sydney Royal Aquaculture Competition. Jim took out the Champion Aquaculture Product Perpetual Trophy for his Clyde River Sydney Rock Oysters, and Russel the Champion Trout Product for his whole smoked Rainbow Trout. First time entrant Murray Gold Australia scored a Gold Medal. See <http://www.rasnsr.com.au/sydney-royal-competitions/view-results/#pg1>



Jim Doyle and Hilary Steward (Doyle's Oysters)



Gerry Anderson, Meg and Russel Sydenham, John Susman

Sydney Rock Oyster breeding update

There has been considerable progress to develop the multi-trait Sydney Rock Oyster breeding program for industry. This has been supported through a number of concurrent research projects funded by the Future Oysters Cooperative Research Centre and Fisheries Research and Development Corporation (FRDC). Projects include:

- **Accelerated Sydney Rock Oyster breeding research** (NSW DPI, Macquarie University, CSIRO and SOCo). This project will double the number of Sydney Rock Oyster families for industry and assess potential markers for disease resistance.
- **New technologies to improve Sydney Rock Oyster breeding and production** (NSW DPI, University of Newcastle, University of the Sunshine Coast (USC), SOCo and Southern Cross Shellfish). This project will provide: access to triploid Sydney Rock Oysters; reductions in hatchery operating costs; and increased breeding program reliability.
- **Genetic services for the Sydney Rock Oyster selective breeding program** (SOCo, NSW DPI and CSIRO). This project will provide a solid platform for multi-trait Sydney Rock Oyster breeding allowing the program to service industry needs.

Contact Michael Dove DPI 4916 3807

Select Oyster Company (SOCo) news

Sydney Rock Oyster pedigree family lines are now commercially available. Hatcheries have access to families for QX disease resistance, condition and growth. These were selected by SOCo under guidance and training from CSIRO geneticists with funding from FRDC. Growers are urged to put in orders to their nurseries and hatcheries. Spat levy rebates of up to \$2000 per grower are available thanks to a NSW Government subsidy. Claims must be made within six months of purchasing spat, and until funds are exhausted. With NSW TAFE and funding from Local Land Services (LLS), SOCo are collaborating to build our hatchery training program for a launch in late 2017. SOCo is also working with the University of Newcastle to investigate influences of motion, food and other environmental parameters on Sydney Rock Oyster growth and shape in Wallis Lake.

Contact Emma Wilkie Ops. Manager 0402 677 534
selectoysterco@gmail.com www.selectoysterco.com.au

Boaters, fishers and oyster leases

The communications plan to raise awareness of responsible boating and fishing around oyster leases is ongoing. Videos, flyers, stickers and social media are planned for 2017, boosted by a grant of \$8,000 secured from the Saltwater Recreational Fishing Trust. Despite efforts prior to Christmas, industry has reported ongoing lease damage. Any damage should be reported to local

District Fisheries Officers. Local Fisheries Officers are providing information to fishers at pre-event competition briefings. Industry involvement is also recommended at these briefings. Members of DPI Aquaculture and Recreational Fishing, OceanWatch, RMS, NSW Farmers, the Implementation Group and Shellfish Committee are progressing these initiatives and hope to update industry at the upcoming NSW Oyster Conference in Merimbula.

Contact Ian Lyall DPI 4916 3856

Marine Waters Sustainable Aquaculture Strategy

The second draft of the Strategy has received agency feedback and advice on legislative amendments. The next step is to undertake consultation with key groups before preparing the Strategy for broader community consultation. The key groups proposed are: Marine Estate; LLS; Port Corporation and Port Authority of NSW; Water Police; Aboriginal Land Council and Native Title Services Group; DPI Ministerial committees; Yachting NSW; Boating Industry Association; OceanWatch; and Nature Conservation Council. DPI is also progressing spatial constraint mapping of the coast and prioritising potential lease sites.

Contact Ian Lyall DPI 4916 3856

Murray Cod RD+E future vision

The Freshwater Native Fish Association has invited NSW DPI, FRDC, the NSW Aquaculture Association and Murray Cod producers from NSW, Victoria and Queensland to a meeting on 5 July 2017 to prioritise and progress initiatives identified in the *Review of Research and Development Needs for Murray Cod Aquaculture in Australia 2016*. The meeting will also allow for networking and an update from Matt Barwick on the National Carp Control Plan.

Contact Lisa Ryan FNFA nettedsystems@bigpond.com

Ministerial Fisheries Advisory Committee

MFAC members were updated on aquaculture management and research initiatives at their meeting at Port Stephens Fisheries Institute 2 June 2017.



Woolooware Bay oyster land bases

Due to plans to remediate tar contamination, DPI and two oyster farming businesses are negotiating with RMS over the long term future of the one remaining land base in Woolooware Bay, Georges River. RMS is the land holder in Botany Bay. This site is essential for the oyster industry and DPI's oyster breeding program. The Minister has received representation from ARAC, Shellfish Committee and NSW Farmers on this matter.

Contact Ian Lyall DPI 4916 3856

Tim Gippel

Tim has moved to NSW Water in a senior role. Tim commenced work in the Aquaculture Unit in 2001 managing the oyster lease cleanup projects in Port Stephens and Georges River. Tim was instrumental in developing the NSW Oyster Industry Sustainable Aquaculture Strategy (OISAS) and the process of referring developments that may impact oyster harvest water quality to DPI and Industry. Much of his work revolved around assessing developments to protect estuarine water quality. Tim managed the ongoing oyster lease cleanup project for derelict infrastructure and defaulting lessees, policy development and two updates to OISAS. Tim is to be congratulated for the sound legacy he has left the NSW aquaculture industry.

NSW Aquaculture Association field days

The Association held a field day on 5 May 2017 visiting Port Stephens Fisheries Institute and Tailor Made Fish Farm. A field day is also scheduled at Yabby-Dabba-Doo yabby farm on 19 August 2017 at Karuah.

See <http://nswaqua.com.au/>

Marine Aquaculture Research Lease



The Yellowtail Kingfish research trial with Huon Aquaculture off Port Stephens is progressing well. There are two pens on the lease with three more ready to deploy. The first harvest of Yellowtail Kingfish will take place later this year with fish growing quicker than anticipated. Huon and NSW DPI will support the *Love*

Seafood, Love Port Stephens event during the month of August. A June 2017 stakeholder update is available at: http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0003/720750/OUT17-23205-MARL-Stakeholder-Update-June-2017.pdf



Contact Ian Lyall DPI 4916 3856

NSW Marine Estate news

A draft Marine Estate Management Strategy is being developed by the Marine Estate Management Authority. The Strategy will detail government's plans to coordinate the management of the NSW marine estate over the next 10 years with a focus on achieving the objects of the *Marine Estate Management Act 2014*. The draft Strategy is underpinned by a state-wide Threat and Risk Assessment (TARA) which identified and assessed threats and risks to environmental assets, such as seagrass as well as the social and economic benefits the community derive from the marine estate, such as viability of marine businesses.

Aquaculture in its various forms was assessed as part of this process and deemed a minimal or low risk to the assets or benefits derived from the marine estate. Oyster aquaculture was assessed as minimal to low risk to environmental assets, with the exception of seagrass, which was assessed as a moderate risk from aquaculture infrastructure. Stressors include shading from active and abandoned infrastructure, propeller impacts and smothering from resuspension of sediment. Impacts on aquaculture production and business viability were identified in the social and economic assessment from pests and disease. Input from industry has assisted in finalising the state wide TARA.

The draft Strategy provides an opportunity to further investigate and address identified priority threats associated with aquaculture over the next 10 years, including a range of water quality related threats and stressors. It is anticipated the draft Strategy will be provided to the community and stakeholders for comment in late 2017.

Contact Nicola Johnstone DPI 6691 0601

Yellowtail Kingfish feed development

The Department of Agriculture and Water Resources-FRDC research project aimed at determining the nutritional requirements and best feeding strategies for Yellowtail Kingfish is 50% complete. Research at PSFI completed to date includes experiments to: determine the requirements for choline and histidine; determine the digestibility of raw materials; and to determine which feeding strategies promote the fastest growth of Kingfish reared at different water temperatures. The results of these experiments will be used to update NSW DPI's existing growth models for Yellowtail Kingfish. The project has a strong educational component which has seen the Aquaculture Nutrition Unit grow to involve a senior research fellow from James Cook University (Dr Igor Pirozzi), a senior scientific technical supervisor (Dr Basseer Codabaccus) and three PhD candidates who are studying through JCU, University of NSW and USC, respectively. Students are also exploring how different ingredients and diets affect the gut microbial flora of Kingfish. Students are being supported by highly experienced technical staff including Ian Russell, Justin Tierney, Brooke McCartin and Steve Gamble.

Contact Mark Booth DPI 4916 3816

E-business

NSW DPI has been exploring options for the development of an e-business system, so that the aquaculture industry can undertake administrative transactions online. As a starting point, the Aquaculture Unit is updating all lease/permit application forms. Once completed, these forms will be available online so they can be completed electronically and submitted via email. NSW DPI is also exploring the possibility of an online version of the annual aquaculture production returns. At this stage, it is anticipated to have a system up and running by June 2018. As NSW DPI moves towards increasing its online services, there is a need to ensure that the contact details for all aquaculture farmers are up to date. For this reason, all farmers will be required to provide a mobile number (for SMS communication) and an email address on the above mentioned online forms.

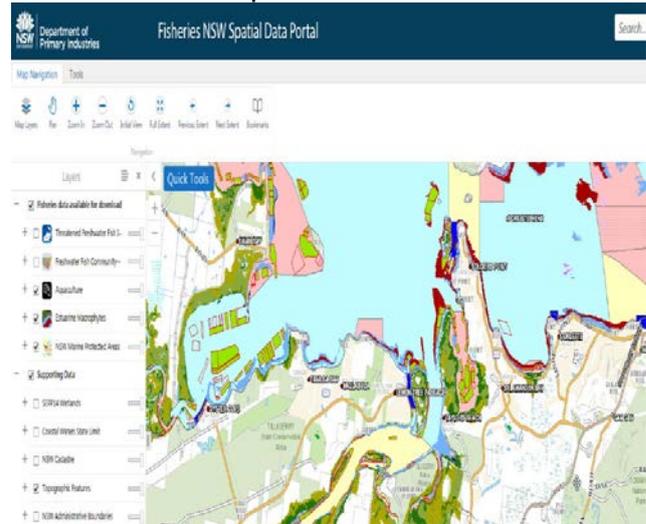
Contact Raelene Trenaman DPI 4916 3843

Pacific Oyster research update

The Future Oysters Cooperative Research Centre and FRDC have recently funded several Pacific Oyster projects to assist with the management of Pacific Oysters in the face of POMS. Australian Seafood Industries lead a project entitled "Enhancing Pacific Oyster breeding to optimize national benefits". A second project, "Polymicrobial involvement in OsHV outbreaks" is being undertaken by the University of Technology, Sydney, and will look at the involvement of other potentially pathogenic bacteria in POMS outbreaks.

Contact Wayne O'Connor DPI 4916 3906

NSW DPI Fisheries Spatial Data Portal



Have you ever wanted to see where all your leases are in an estuary? This web map now gives users the option to view, query, download data, print and save maps. Data includes: leases; Oyster Industry Sustainable Aquaculture Strategy areas, estuarine macrophytes (such as seagrass, mangroves) and Marine Park zones. There will be more data added in the future with a user guide available on the website [Fisheries Spatial Data Portal](#) Contact Antonia Creese DPI 4916 3810

Vigilance required to safeguard NSW

On 1 December 2016 White Spot Disease (WSD), caused by White Spot Syndrome Virus (WSSV) was detected around the Logan River area in Queensland. Following its detection on commercial prawn farms, the virus was also detected in wild prawns in the Logan River and Moreton Bay. While prawns infected with WSSV do not pose a risk to food safety or human health, it has the potential to cause significant financial impact to the wild harvest and farmed prawn industries. There is recent evidence from United States that WSD has the potential to significantly impact farmed freshwater crayfish. Since detection of the virus, NSW DPI staff have worked closely with their counterparts nationally to prevent the spread of WSSV into NSW, including controls over decapod crustaceans and marine worms moving out of the affected area of Queensland. All samples taken from NSW prawn farms have tested negative for WSSV. Wild prawns in NSW have also been sampled and are currently being tested. Advisory information is being generated to promote measures to prevent the spread of WSD into NSW. Prawn and yabby farmers, along with all other aquaculture operators, are reminded to maintain good biosecurity practices, including avoidance of the use of uncooked crustacean products as feed for cultured crustacea and to report any usual mortality and suspicions of notifiable diseases to NSW DPI. Contact Debra Doolan Biosec. 4982 3846

South Coast Oyster Workshops

The South Coast Oyster Workshops again proved popular with oyster farmers. The workshops were funded by South East LLS and facilitated by Sapphire Coast Wilderness Oysters and OceanWatch with assistance from NSW DPI. They were held at Pambula, Tanja (Wapengo), Batemans Bay and Greenwell Point. The workshops were attended by over 60 south coast oyster farmers and covered a wide range of topics including: advances in oyster breeding; changes to biosecurity legislation; climate change; farm management tools; oyster grading; oyster marketing; industry representation; and NSW DPI compliance. Thanks to Sid Pachalidis and Anthony Munn for the use of their oyster sheds for the workshops.

Contact Jillian Keating EMS Coord. 0429 079 021



Oyster workshop participants at Pambula

Grouper research

Grouper are high-value marine fish species and aquaculture production of several grouper species is rapidly expanding. The vast majority of overseas grouper farms continue to feed low-value trash fish with extremely poor feed conversion efficiencies. General marine fish commercial feeds are available; however, problems with plateauing growth trajectories and health issues (i.e. excessive visceral fat deposition and fatty livers) have been reported. To be able to facilitate the formulation of a nutritionally appropriate and practical aquafeed firstly the species-specific nutritional requirements need to be investigated. Research to date includes: protein, energy and feed utilisation efficiencies as well as dietary protein and energy requirements of tiger and humpback grouper. Feeding frequency has also been investigated for gold-spot grouper. This information provided a platform to develop aquafeeds for grouper using fishmeal replacement proteins such as soybean meal (SBM) and soy protein concentrate (SPC). Currently, we have a large feeding trial running to benchmark 10 experimental diets using both SBM and SPC against fishmeal based aquafeeds. This work has been carried out at JCU, Palawan Aquaculture Corporation the Philippines and PSFI. Diet validation

trials are initially carried out in controlled recirculation tanks with follow up on-farm trials. This work has funding from U.S. Soybean Export Council and the support of NSW DPI.

Steve Gamble was one of only three candidates to recently be awarded a travel bursary to an upcoming conference in Kuala Lumpur. The award committee of the World Aquaculture Society, Asian Pacific Chapter together with 12 external reviewers evaluated the abstracts submitted for this bursary. Steve will be presenting some of his research on the aerobic metabolism and protein and energy requirements of tiger grouper at the conference.

Contact Steve Gamble DPI 4916



Juvenile gold-spot grouper at PSFI

Recent changes to administrative processes

To streamline our processes, a few changes have been made to the requirements of lease transactions:

- Lease photos are no longer required to be submitted with lease applications (renewals, transfers, etc). An Aquaculture Lease Area Condition (ALAC) statement is still required and must be signed by all parties involved in the transaction; and
- Stamp duty is no longer payable under the *Duties Act 1997* for aquaculture lease transfers and transmissions.

Contact Raelene Trenaman DPI 4916 3843

NSW aquaculture facts and figures

Aquaculture in NSW Facts and Figures 2017 is an updated version of a pocket book summarising aquaculture in NSW. The 2017 version is to be uploaded to the web shortly.

See <http://www.dpi.nsw.gov.au/fishing/aquaculture>

2012 regulation remake

NSW DPI is going through the process of remaking the *Fisheries Management (Aquaculture) Regulation 2012*. No amendments to the Regulation were made. The

Regulatory Impact Statement (RIS) was placed on public exhibition and closed for comment on 19 June 2017. It is anticipated that the new Regulation will commence in September 2017.

Contact Sheree Livingstone DPI 4916 3808

Carp - a large scale problem.

Carp has spread extensively in Australia with some studies suggesting they may now make up as much as 80 per cent of total fish biomass in some of our waterways, and up to 93 per cent in some highly infested areas. Combine this with Carp's bottom-feeding habits, the stirring up of sediments, increased nutrient levels and harmful blue-green algal blooms, uprooting/smothering of aquatic vegetation and other forms of habitat; the impact of Carp is significant. Researchers in Australia are carefully considering using a virus in an attempt to end Carp's reign of ruin. Cyprinid herpesvirus-3, or CyHV-3 (Carp virus), is a virus first found affecting Carp in fish farms in Israel with one very important attribute, all evidence collected to date demonstrates that it only affects Carp. This work comes under the auspices of the National Carp Control Plan (NCCP), announced in May 2016 with \$15 million of funding from the Australian Government and led by FRDC. Importantly, despite the fact that the word 'Carp' is in the name of the program, the NCCP is a program about recovering our native fisheries and waterway health. A dedicated research program is now getting underway to understand any economic, ecological or social risks inherent in possible release of the Carp virus into Australia's waterways. The Carp virus attacks the gills, skin and kidneys of carp of all ages, with a mortality rate of 70 to 90 per cent. Whilst the evidence we have demonstrates that the Carp virus will be very effective on Common Carp, examples of pest control for other species really highlights that it will be valuable to also consider secondary control measures to keep Carp numbers down. Possibly in the form of a sex-specific control measure which ensures that over time, the remaining pest population only produces offspring of one sex. Another issue with a potentially huge mortality rate is what happens to all the dead fish? Given the numbers of Carp currently clogging Australia's waterways, that would add up to a lot of decomposing biomass, and a need to manage this aspect carefully so as to protect water quality for native

species and for human use. Opportunities to stage release of the virus using natural and man-made barriers to fish migration will also be explored, which would help with the logistical challenge of tackling carp impacts on a continental scale.

Contact Matt Barwick NCCP www.carp.gov.au



Carp control program proposed

2016/2017 Aquaculture Production Report

Production returns for 2016/2017 will be forwarded to all permit holders in August 2017. All returns must be completed and returned to NSW DPI by 30 September 2017.

Contact Raelene Trenaman DPI 4916 3843

2017/2018 aquaculture accounts

A reminder that all aquaculture accounts for 2017/2018 will be sent out in mid-July. Two payment options will be available: 1) pay the account in full by 30 September; or 2) pay the account by way of four instalments, with the first instalment due 30 September 2017.

Please ensure that you stay up to date with your quarterly payments to avoid debt recovery action.

Contact Raelene Trenaman DPI 4916 3843

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www.dpi.nsw.gov.au/fisheries/aquaculture/publications/newsletter

ISSN 2204 6577 (print)

SNN 2204 6585 (online)

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