



The Living Reef
January 2004 - AGM THIS MONTH!

Editorial....

Another year has gone by, a new year is upon us. For MASWA this means membership subscriptions are now due with this being the final reminder for members. It also brings the opportunity for new and old members alike to get their claws into the nitty gritty of MASWA. What does this mean? Getting involved in the MASWA committee. The **Annual General Meeting**, or **AGM** is the time and place to register your interests and get your chance to become a committee member. The task is not a daunting one, only six committee meetings a year plus all the food and drink that Marilyn can provide. More information can be found in the "MASWA Message Board" on page 3. Lastly from next month we are going to have a member profile in each newsletter. If you would like to let everyone in on all your secrets please contact the editor, whoever it may be after the AGM!

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MASWA Meeting Calendar....

January 28th 2004 – Paul Taylor
333A Railway Road Shenton Park
AGM and Guest Speaker

February 25th 2004 – David Bloch
FRAGFEST

March 31st 2004 – Elmer Elison
Special Raffle

April 28th 2004 – Marc Quaid
Guest Speaker

May 26th 2004 – ***This could be you!***
FRAGFEST

June 30th 2004 - ***This could be you!***
Special Raffle

Meetings start promptly at 7.30pm!

The Marine Aquarists Society of WA is a name that we, as a group of friends with like interests have applied to ourselves for the purpose of information exchange. No one person, nor the group as a whole, can be held responsible for liabilities, injuries or other that may result either directly or indirectly as a result of our gatherings or the information exchange therein. The same applies to the information contained in this newsletter.

MASWA Contact Information....

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MEMBERSHIP PAYMENTS

Cheque: Make all cheques payable to Paul M. Tayler.

EFT: Make all EFT transfers to BSB 086 217 A/C # 69355 1664 (please include your name on all EFT transfers!).

Cash: Make payment in person only.

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NEWSLETTER CONTRIBUTIONS

If you would like to make a contribution to the newsletter please don't hesitate to contact the Newsletter Editor, David Bloch on the phone number or email address listed above. Contributions to the newsletter need to be received no later than 7 days prior to the next meeting date.

off the mark by Mark Parisi
www.offthemark.com



December Meeting Rundown....

It was a beautiful warm and still evening that presented itself for our end of year MASWA Christmas meeting. The agenda for the night was to chat, relax, have a couple of hotdogs, relax, chat some more, RAFFLE, DOOR PRIZE, Nathan's aquarium rundown and finally the annual MASWA trophies and awards. The member turnout was phenomenal with soooooo many people that we ran out of drinks and to send Tony to buy some more.

As usual, Tony's good looks and charm sold record number of raffle tickets. This may have had something to do with the 6 for \$10 thingy but lets not crush Tony's ego, not yet anyway..... As an added bonus we had our special raffle (every three months) coinciding with our Christmas meeting and up for grabs were three marine related books. We also had a book for the door prize. The winners of the books for the raffle were Elmer Elison, Taygen Dray and Tony Fiorentino. The winner of the door prize was Simon Hawke.

The highlight of the night was the trophies and awards. The recipients were:

Nigel Clarke - Living Legend Award (for being able to spend sooooo much money on his aquarium without being killed by his wife!)

Paul Tayler - Bribery Award (for having to build a new kitchen for his wife so she would let him setup a new aquarium.)

Merilyn Tayler - Golden Gloves Award (for constantly bashing people at the committee meeting in order to keep them in line.)

Darren & Raqual Collins - Covert Nookie Award (for secretly breeding and raising clown fish and then making only nonchalant mention of it after the event.)

Grant Magill - Danger Zone Award (for requiring members to wear a safety helmet before entering his lounge room.)

David Bloch & Paul Tayler - Thankless Task Award (for, respectively, production of MASWA's monthly newsletter & for budgeting, documenting and controlling MASWA's finances.)

Tony Fiorentino - DIY Rescue Award (for organising and producing MASWA's flyer stands, Frag Fest tank and trophy bases.)

Simon Hawke - Money Box Award (for always contributing his 2 cents during presentations.)

Peter Fullarton - Benedictine Monk Award (for studiously keeping his thoughts to himself.)

Simon Hawke & Peter Fullarton - Fruits of the Sea Award (for generous donation of livestock to the MASWA raffles.)

Nathan's tank was looking great as usual. It's amazing how an aquarium come back from the brink (the leaking incident!) and look better than it's ever looked. One aspect of Nathan's tank that stood out was the diversity and density of life in the live sand. The sand was practically bubbling with creatures. This would be one of the main reasons for the success of the aquarium.

We hope everyone had a great time and would like to thank all those who donated their goods, time and services to the evening. CYA all @ the January meeting.

January Meeting Information....

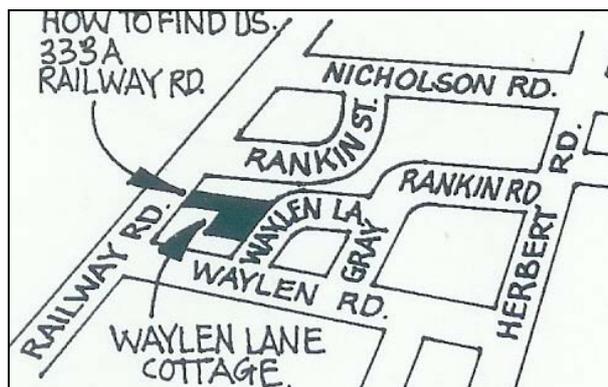
I can't believe it's January already. I was hoping we might skip this meeting and just jump to February. Unfortunately this is not going to happen. Why is this so you mat ask? Because I am scared! Our hostess of this meeting, Marilyn, is the lovely wife of our bean counter treasurer, Paul Tayler. She was awarded the **Golden Gloves award** at the December meeting (Tony's idea BTW Marilyn!) for the very reason that she likes to bash up her guests!. At the December meeting she gave me a pinching twist on the arm that almost brought tears to my eyes. It left a bruise that lasted two weeks! For your own protection please don't make eye contact or any unnecessary conversation. She is a dangerous woman! You have been warned ☺

Cautions and warnings aside, January's meeting will be held at the home of Paul and Marilyn Taylor. Last time we saw Paul's tank it was coming along nicely. His mangrove sump had just been established and his corals and fish were settling in well. From all accounts his trochus snail population has bloomed (raffle prizes Paul?) and his mangroves are threatening to take over his house. In fact his neighbours recently rung the police to report a rogue saltwater crocodile in the back alley behind his house. Apparently it has been

inhabiting the mangrove swamp that has grown forth from his sump and has now taken over his courtyard!

This month we will hold our **Annual General Meeting, AGM**. The AGM is very important and is crucial to ensure the functioning of MASWA in the coming months. More information can be found in the MASWA Message Board section of the newsletter. We will also be having a guest speaker at this meeting who will be talking to us about working building and working with acrylic. The speaker will be none other than our infamous DIY guru and guest star of Nuts and Bolts, Tony Fiorentino.

The address of the meeting is **333A Railway Road Shenton Park**. If you haven't been to Paul's place before please have a look at the map below. The entrance to the house is not on Railway Road, its on the laneway that comes off Waylen Road.



The meeting starts at **7:30pm** with drinks and snacks provided.

MASWA Message Board....

AGM THIS MONTH!

The AGM will be run this month, in the January 2004 general meeting. Last year we ran MASWA without a full committee. Missing were the positions of Secretary and Vice President. This year we want to fill all the positions so that we can do a better job at organising and running MASWA.

The Positions in the MASWA committee are:

President
Vice President
Secretary
Treasurer
Newsletter Editor
Webmaster
Social Coordinator
Science Officer

What does is mean to be a MASWA committee member? For six days a year (every second month) you get to take an active role in the running of MASWA. You also get to sample the delights of Mrs Tayler's cooking (Paul wife). The pay is lousy - \$0.0, however the social interaction and "stories" you hear are very entertaining!

To be in the committee you need to be nominated either by yourself or someone else, and if no one else is nominated for that position you are elected to that position. If there are other nominees then a vote is taken by the members for the successful candidate for the position.

If you think you have what it takes and are keen to help out then please talk to a committee member at the upcoming meeting and make your intentions known

SUBSCRIPTIONS FOR 2004 ARE NOW DUE!

The end of the year has come and gone and membership subscriptions for MASWA 2004 are now due. We will not be carrying unfinancial members for months at a time like in previous years. Memberships cost \$24 for "general membership" (includes partner or child) and \$12 for "associate/country membership" (for those not attending meetings). If your membership dues are not paid by the upcoming January 2004 meeting you will be struck off the membership register and receive no more newsletters! A membership invoice can be found on the back page of the newsletter and for payment information please see the "MASWA Contact Info" on page 2.

MASWA 2004 ARTICLE PRIZE!

To try and encourage members to get actively involved we have decided to offer a \$100 prize to the person who has contributed the most hobby related articles, cartoons or jokes etc to the MASWA 2004 newsletters. The content must be suitable for general audiences (no rude jokes Nigel and Tony! Ed.). The winner will be announced at the **December 2004 CHRISTMAS** meeting.

Stress, A Fishes Point of View....

By Jane Fewtrell

Fish get stressed? Yes, and if the fish in your aquarium are displaying signs of illness or infection, dying unexpectedly, growing too slowly or your brood-stock are not performing optimally then chances are your fish are STRESSED. Stress is one of the major causes of mortalities and poor health of fish that are involved in all forms of aquaculture. So what is happening to your fish when they are stressed?

Understanding stress

Stress is defined as the response reaction by the fish to a stimulus, or stressor, and this response may somehow alter the fishes homeostatic state (Barton and Iwama, 1991). The absence of any mention of the stress response being detrimental to the fishes well-being in this definition is noteworthy. This is because the stress response is a mechanism that evolved under natural selection pressures to enable the fish to cope with a potentially hostile environment (Pickering, 1989). Therefore, in the natural environment a stress response usually benefits immediate survival. The problems arise in an aquacultural environment where the stressors are usually more severe and prolonged as there is no escape or avoidance. Under these circumstances the benefits of

the immediate survival stress response may become harmful to the fishes well being.

The physiology of the stress response is complicated, but for convenience it has been classified into three stages; primary, secondary and tertiary. The primary response occurs first. The effects of this response induce secondary effects which, depending on the severity of the stressor, induce tertiary effects.

Primary response

There are two major primary responses to stress, the hypothalamic-pituitary-interrenal (HPI) axis and the adrenergic response. Both responses are stimulated by the detection of the stressor by the brain. Through a cascade of neuro-endocrine events the HPI axis results in an increase of circulating corticosteroids, in particular cortisol. The adrenergic response results in an increase in the levels of circulating, particularly adrenalin. Both of these primary hormones can be measured to detect a stress response however the techniques employed are complicated and the equipment used is expensive. It is therefore more common to measure the secondary effects to detect a stress response in fish.

Secondary response

The increase in circulating corticosteroids and catecholamines induce many disturbances in the fishes' metabolism and osmotic balance. These changes are referred to as secondary effects and occur as the fish tries to maintain homeostasis. The secondary effects of stress are numerous so only a few will be covered in this article.

A major secondary response is an increase in blood glucose levels induced by the increased levels of both corticosteroids and catecholamines. The adaptive significance of this response is to provide the fish with an energy source to enable it to either cope with or escape the stressor.

The increase in cortisol levels will affect the immune system of the fish. It has been shown that cortisol causes a decline in circulating lymphocytes (blood cells involved in the immune system) and a reduction in their ability to respond to antigens and mitogens (Wedemeyer and McLeay, 1981; Ellsaesser and Clem, 1986). Cortisol will also induce a decline in macrophage activity. Macrophages are cells that have a wide variety of functions including phagocytosis, release of antimicrobial and antitumor agents. These effects of stress will have a marked effect on immunocompetence and potential susceptibility to disease (Ellis, 1981; Pulsford et al., 1994).

The increase in adrenalin will induce an increase in opercular movement and heart rate. The change in catecholamine levels may also induce a change in the colouring of the fish. If the stressor is prolonged, or severe enough, secondary effects will induce the tertiary response to stress.

Tertiary response

The tertiary response to stress results in effects that manifest as whole organism responses (Wedemeyer and McLeay, 1981). The extent to which the fish are affected by tertiary effects will depend on the level of the stressor and hence, the primary and secondary responses. Tertiary effects include;

- impaired growth

- interference with the reproductive processes (Carragher et al., 1989)
- increase in the incidence of disease, infectious and non-infectious
- behavioural changes (Schreck, 1990)
- death

None of these effects are desirable in any form of aquaculture.

So what causes them?

Common stressors in aquaculture

The stressors that fish involved in aquaculture may be exposed to are endless. Some common stressors are;

- handling
- poor water quality
- transport
- stocking density

It is important to be aware that different species of fish do vary in the severity of their responses to particular stressors. For example, you probably know of some fish that are particularly tolerant to poor water quality and others that must be kept in water of perfect quality at all times.

I have conducted stress studies on black and silver bream. From these studies it was found that simply transferring black bream from one tank into another resulted in a stress response that took seven days for the fish to fully recover from. It was also found that exposing silver bream to water motion, similar to what would be experienced during live transport, resulted in a stress response that took approximately five days to recover from.

Of course it is extremely hard to detect these stress responses without the proper testing equipment. However, it is important to realise that even a procedure that may seem like a relatively insignificant stressor to you may have a severe effect on your fish.

What can you do?

It is impossible to completely avoid exposing your fish to stressors. However, it is possible to reduce the effects of stress on your fish. The most important factor to remember is that once your fish have been exposed to a stressor, subsequent stressors will have a cumulative effect. This may result in your fish dying from a stressor that would normally have an insignificant effect on them. Therefore, remember to allow your fish to recover from one stressor before exposing them to other stressors.

There is a tendency in aquaculture to stock fish at high densities which will lead to a rapid decline in water quality. Therefore, as poor water quality will induce a stress response in fish, it is important to monitor it regularly.

Finally, wherever possible, try to simulate a natural environment for your fish. For example, a natural pecking order may exist in your tank so provide hides for fish that may be victimised. A proper diet is also important. Remember it is in your best interest to keep your fish as happy as possible.

References

Carragher, J., Sumpter, J., Pottinger, T., Pickering, A. 1989. The deleterious effects of cortisol implantation on reproductive function in two species of trout, *Salmo trutta*

L. and *Salmo gairdneri* Richardson. General and Comparative Endocrinology 76, 310-321.

Ellis, A.E. 1981. Stress and the modulation of the defense mechanism in fish. In Pickering, A.D. (ed.) *Stress and Fish*. Academic Press, Sydney. pp 147-169

Ellsaesser, C.F., Clem, L.W. 1986. Haematological and immunological changes in channel catfish stressed by handling and transport. Journal of Fish Biology 28, 511-521.

Pickering, A.D. 1989. Environmental stress and the survival of brown trout, *Salmo trutta*. Freshwater Biology 21, 47-55.

Pulsford, A.L., Lemaire-Gony, S., Tomilson, M., Collingwood, N., Glynn, P.J. 1994. Effects of acute stress on the immune system of the dab, *Limanda limanda*. Comparative Biochemistry and Physiology 109, 129-139.

Schreck, C.B. 1990. Physiological, behavioural and performance indicators of stress. American Fisheries Symposium 8, 29-37.

Wedemeyer, G., McLeay, D. 1981. Methods for determining the tolerance of fishes to environmental stressors. In Pickering, A.D. (ed.) *Stress and Fish*. Academic Press. Sydney, pp 185-208.

Fishy Links and News....

FINGERLESS IN FLORIDA: PADI INSTRUCTOR LOSES FINGER AFTER HARASSING PORCUPINE FISH

By Willie Howard

Florida (23 Nov 2003) – Scuba divers often encounter beautiful and interesting marine life in the waters off Palm Beach County. It's common to swim right by a sea turtle, peer into a hole to spot a moray eel or glide over a nurse shark as it lounges on the bottom.

But there's a fine line between observing creatures and disturbing them, as dive leader Randy Jordan of Jupiter learned recently in Hole in the Wall, an underwater cavern off Jupiter.

Jordan, 48, owner of the Jupiter Dive Center, grew up in South Florida and has been diving for 30 years. So he thought nothing of trying to coax a porcupine puffer fish from its hole so other divers could see it. Porcupine fish are covered with spines that jut out from a round shape when they puff themselves up.

In the past, Jordan had captured a porcupine puffer underwater so it would blow up for a crowd of divers. On this dive, he wiggled his fingers in front of the fish in hopes it would come out looking for food.

The fish came out, but not in the way Jordan had expected. "He launched forward and got hold of my pinkie," Jordan said. "Playtime over! Man, that hurt."

Jordan was relieved at first because his dive glove wasn't torn. Only when he took his glove off did he realize half of his little finger was missing. The blood cloud was so thick that he couldn't see his hand. He was shocked. So were the emergency-room doctors.

The bone was so badly crushed that the missing finger part couldn't be reattached. Jordan has shared his story willingly. He wants to make sure other divers don't make the same mistake. He wrote an account of the incident and included some graphic photos on his dive-shop Web site, www.jupiterdivecenter.com, in hopes of shocking divers into being careful.

The National Audubon Society's Field Guide to North American Fishes says the porcupine fish (*Diodon hystrix*) has a single tooth in each jaw that forms a beak, which the fish uses to crush hard-shelled invertebrates and, occasionally, fingers.

Other divers told Jordan they never knew puffer fish had teeth or could bite.

"They can and do," Jordan said. "Do not mess with the animals. They will defend themselves."

DRUM AND CROAKER – THE PUBLIC AQUARIUM JOURNAL

Drum and Croaker is a non-peer-reviewed journal that has acted as an "informal organ" for public aquarium professionals since 1958. It has a long history of providing a forum for the exchange of basic information - and occasionally humor. It was conceived in the back seat of a car in 1957, and has remained erratic and irregular throughout most of its life, characteristics it shares with a colleague or two. The original name, "Grunt and Crappie" was rejected for scatological reasons...but it was perhaps no surprise that the first call for papers then heralded the periodical as "an irresponsible journal...by undedicated aquarists". More on the early history of Drum and Croaker can be found in contributions by Bill Hagan [70(1):3] and Rick Segedi [77(2):17-18].

Drum and Croaker is currently published annually, but prior to 1985 was published on an erratic schedule of zero to four issues per year, depending on the whims of the editor or apathy of the contributors. In the mid 1980's the journal dropped out of sight altogether for almost five years, apparently due to a general lack of interest at a variety of levels. John Kuhns, the editor of the Journal of Aquaculture and Aquatic Sciences, rescued a few lost contributions in 1989 and with these again began to issue Drum and Croaker on a regular basis. In 1992, John graciously agreed to pass responsibility back to the public aquarium community through members of the Regional Aquatics Workshop (RAW). Pete Mohan has been the editor since that date.

Drum and Croaker has been published in an electronic format since 2000. Initially distributed as pdf attachments to email, these files found a permanent home on the Columbus Zoo and Aquarium's web site in November of 2001. Mike Brittsan (Curator) and Greg Bell (Finance and IT Director) are the institutional supporters that have made the site possible, while Kevin Bonifas (Web Developer) built and continues to update the pages. The many back issues now available on the site are also made possible, in part, by a 1999 Columbus Zoo and

Aquarium grant that allowed Pete to purchase the scanner and Optical Character Recognition (OCR) software that he uses to restore the original text and images. Doug Warmolts (Assistant Director of Living Collections) was an important advocate for this archiving project. Its ultimate goal is to render all of the old paper issues of Drum and Croaker as pdf files, making them once again widely available to the public aquarium community as technical and historical references.

<http://www.colszoo.org/internal/drumcroaker.htm>

Buy, Sell, Swap and Wanted?....

FOR SALE

Live rock Large amount, \$4 per Kilo ono

Large number of mushroom corals range of colours, offer

400w metal halide control gear reflector and 6.5k lamp \$150 ono

Large Blue/Purple Clam (*Tridacna maxima*, I need to check that) \$150 ono only for sale to someone with metal halide lighting

All other fish/corals free to with live rock

6 x 2h x 1.8w tank, currently used as a propagation tank in my garage on pine stand condition ok /poor . with light fitting for 6x40w fluorescent lamps and 2f sump full of bio balls, any offer

Email me Wayne Mothershaw:

Wayne.m@bigpond.com

MARINE AQUARIUM SOCIETY OF WA **INVOICE**

PO BOX 7185
 SHENTON PARK
 WA 6008

INVOICE No:
DATE: 30th September 2003

Billing Address:
 Paul M Tayler
 Treasurer
 PO Box 7185
 Shenton Park
 WA 6008

For:
 Membership 2004

DESCRIPTION	AMOUNT
Membership fee for period 1 st January 2004 to 31 st December Associate: \$12 ↑ Family: \$24 ↑ Our membership fees are due and payable by the 31st December 2003	
MAWSA as not for profit organization is not an enterprise and has no reasonable expectation of profit or gain	
TOTAL	

Make all cheques payable to **Paul M Tayler**

Make all EFT transfers to **BSB 086-217 A/C # 69355 1664**

NB It is important to include your name on all EFT transfers

If you have any questions concerning this invoice, contact [**Name, Phone Number, E-mail**]

THANK YOU FOR YOUR SUPPORT

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