

Introduction:

This paper is welcomed by BWA although some of our members have expressed caution and concern over the 'agenda'. As the paper says, currently "there are at least 9 Acts or Regulations which prohibit or restrict the discharge of sewage and waste from vessels into Western Australian waters". It is thus extremely difficult for even the most environmentally conscious boat owner to find out what those regulations are. Ultimately however it is the Health Act, 1911 that prohibits the discharge of sewage within three miles of the coast throughout the state. This means that there are many illegal actions performed by virtue of existing "straight-through" toilets, the law is difficult to enforce and many boat owners probably are not aware that they are breaking the law.

It is also currently impossible to legally operate on-board sewage treatment plants (or as the Americans call them, Marine Sanitation Devices (MSDs)) in WA, as there is no regulation under which they can be approved. With such equipment now increasingly available in Australia it is important that this matter is resolved satisfactorily so that they can be used where it is appropriate to do so.

BWA acknowledges the expressed intention of the discussion paper to avoid a prescriptive approach, which has not worked well in other states or other countries, and to allow boat owners to choose which method of handling sewage disposal suits their particular needs.

We are also aware that other Australian States have been working on developing new regulations for more than a year. Queensland and NSW will most likely release draft discussion papers within a few weeks and it is likely that their recommendations may be somewhat different. And we acknowledge the push for uniform laws across the country and that Australia may well become a signatory to MARPOL Annex IV. Whilst this would obviously be desirable we would not support proposals for this reason alone.

This proposed system does represent a significant change as to where it will be legally allowable to discharge sewage from vessels, and we welcome this.

Following are our comments on the paper, section by section:

1. Foreword

BWA does not support the practice of government agencies joining together to develop a draft document such as this without external stakeholder involvement and then providing a very short period for community comment. This practice may meet their statutory requirements but it does not allow for time it takes for community groups to consult with their members.

We acknowledge that having similar regulations across the states is desirable in most instances however there will be some differences and WA needs to make its regulations appropriate to this State.

2. Introduction

BWA supports absolutely the need to protect our unique marine environment. We

also acknowledge that some estuaries of the southwest are nutrient-enriched as a result of human activities and that this problem needs to be addressed.

A major question is that of just how much the recreational boating community contributes to this problem. It is obviously true to say that there are certain near-shore areas that have a high concentration of boating activities.

This section indicates that several incidents over the last 10 years have precipitated a number of reports and reviews to look at the issue of sewage in the Swan and Canning Rivers. It does NOT say whether these incidents were due to recreational boating. Specific instances have been reported due to power failures in the sewage system. There does not seem to have been any serious attempt to quantify the contribution from recreational boating. Perusal of the Swan River Trust's 1997-98 Annual Report reveals almost no mention of boating activity at all, and none in relation to nutrient or sewage input to the river systems. In fact that document specifically refers to the river catchment areas and fertilisers as the main source of nutrients into the river systems.

On page 4 we read that there are approximately 60,000 recreational vessels in Western Australia with about 68% (40,800) of those to be found in the metropolitan area. This may be so but it is somewhat misleading to use this figure as an indication of the size of the problem in the metropolitan area without first qualifying it. Eighteen months ago there were approximately 1,500 swing moorings and 3,000 wet pens on the Swan and Canning Rivers. The number of moorings has most likely gone down with the recent rationalisation, and the number of pens has probably increased. Then there are boats in pens in the various coastal harbours - we will assume 3,000 for our purposes here. Thus there are between 4,500 and 5,000 boats kept on the river and 3,000 along the coast - say 8,000. Many of these are racing sail craft not fitted with toilets. The other 32,800 must be trailer boats kept in people's back yards, which means they are probably less than 22-24ft, and not fitted with toilets. We need to be looking at the average number of boats **fitted with on-board toilets** likely to be occupied on the river on average summer weekend days. A typical Saturday with clubs racing and many other pleasure boats out for the day may have at the very most 10% of the 40,800 in the metropolitan area (say 4,800) on the Swan/Canning Rivers. Would 50% of these be equipped with toilets and are they used? We believe not.

3. The Approach

We welcome the proposal to provide a mechanism for the approval of, and use of MSD's in this state. BWA supports the allowance of more flexibility for boat owners to "choose the system that best suits their operation" and agrees that such an approach will result in a higher degree of compliance provided that Health Department standards for on-board treatment plants are achievable by existing manufacturers.

4. Outcomes

Whilst acknowledging the desirability of uniform guidelines, and flexibility of choice for owners, BWA has some concerns about the stated proposed outcomes. Firstly, it would seem that the most desirable outcome of all would be a lessening in nutrient levels, together with a lessening in the quantity of faeces and associated toilet paper in the areas with high boating usage. This, quite extraordinarily, is not mentioned in the listed outcomes. Of course, in order to be able to decide whether there has been an improvement there would need to be a monitoring system set up before any

regulations were imposed to establish the benchmark against which improvements could be measured. And there would need to be some review at regular periods after the introduction of the said regulations.

As for new technology and industry development which "must surely follow the introduction of this type of legislation across the nation", it is important that the "goal posts" are not set so high that it becomes counter-productive. It needs to be remembered that most equipment available currently in Australia comes from the US and is manufactured to meet US Coast Guard national standards. If we are not reasonably consistent with the USCG standards we may not be able to find equipment to meet our proposed standards (They seem to be a new world high standard). Nor would any manufacturer be likely to spend considerable funds developing such a system.

On the last point in this section we want to be assured that adequate government funding would be provided to ensure that public shore-based toilets and pump-out facilities are available for those who need them, and that they are in place before any such regulations came into force. Experiences in other states and countries show that Clubs and Marinas with pump-out facilities quite understandably give preference and exclusivity to their members, a consequence of which can be illegal dumping of sewage (plus environmentally hazardous chemicals such as formaldehyde). What will occur when boaters are turned away or find themselves in long queues? Given that the average pump-out station (with one hose) can handle about 4 boats per hour there is a need to assess this situation thoroughly and make adequate provision for non-club boats. There are also documented health risks associated with pump out facilities.

5. Potential Vessel Sources of Sewage

There are two points on which we wish to comment in this section.

Firstly, privately owned houseboats should either be considered in the same category as "recreational vessels with the capability of having onboard toilet and berths", or considered individually in relation to their capacity to generate sewage. There is a misperception that private houseboats on which people live have large numbers of people. This is rare for a live-aboard situation. Generally speaking 'liveaboard' houseboats have one, or at the most two, people living on them - they are not suitable for larger numbers. Also the Swan River Trust, for example, defines any vessel on which people live as a "houseboat" - and this could be a yacht, power craft etc. Commercial 'houseboats' are dealt with later in this paper.

The other comment relates to the large number of vessels not fitted, and not able to be fitted with toilets (in the metropolitan area that is likely to be most of the 32,800 trailer boats previously mentioned). The last paragraph says that they "will be required to abide by the discharge restrictions when they are operating Restricted Areas. What can these people do?

6.1 Current Practices

Given that there does not appear to have been any measuring of the contribution by recreational vessels it is not really possible to dispute the view of many people who question the impact small individual amounts have on the overall situation. This is not

meant to deny that there may be some locations at certain times where many vessels are gathered requiring special attention.

6.2 Nutrients

We acknowledge the problems which can be triggered by excessive nutrient input into a waterway and we know that the major sources of nutrient input comes from farms in the catchment areas, and run-off from lawns and gardens in the metropolitan area. This has been found to be so all over the world where the problem exists. Even though boats are often the most visible target, closer investigation generally proves the above to be true. The last statement ("The **large numbers** of vessels which discharge sewage into the estuaries provides a further nutrient load to the existing elevated levels") in this section needs to be quantified. See our comment under section **2. Introduction**

6.3 Health Aspects

It is acknowledged that there have been times at Rottnest when water quality may have been temporarily reduced - are there any figures that show to what extent and for how long? Did this survey occur when the Island Sewage System discharged raw sewage just off Fay's Bay? This situation should also improve as the Rottnest Island Authority continues to provide more toilets in the bays (eg it's new facility intended for the use of boaters in Thompson's Bay). Most of our members reported that they encouraged their crew and guests to use shore facilities.

7. Predicting the Potential Impacts

We have two comments on this section. Firstly there is no mention of any attempt to quantify the amount of sewage that might be discharged from typical recreational vessels in typical situations. This means that there is no way to measure whether there is any improvement in the future. This should be simple enough to do, and indeed we know of at least one paper from the US, which makes an attempt at estimating amounts of sewage from a marina into the waterway.

The other comment relates to houseboats. Private houseboats should generally be treated separately from commercial houseboats that are usually set up to take 6-10 people. As already mentioned, private houseboats used for living aboard generally have only one or two people and may generate no more waste in one week than a pleasure boat out for a day with 7 or 8 people on board. Commercial 'houseboats' should be treated in the same fashion as Ferry operators as they currently are in the Peel Region where there is a pump out facility.

8.1 Western Australia

We believe that it is a better approach to try to get the community "entering into the spirit of doing something to improve the management of the environment". And we believe that education is the way to do this. We believe that generally boaters are much more aware of the need to care for their marine environment and can be encouraged to be even more so. We provide some anecdotal evidence that at least in some areas of high boating usage there has been an improvement over the last thirty years. Our increased use of shore based facilities at Rottnest attests to this.

8.2 Australia

Australia should be a signatory to Marpol IV.

8.3 International

As above

9 Current Situation - Other States

As previously mentioned we are aware of problems in other states related to the insufficient provision of pump-out facilities - as in some states in America. Given that there is no mention of government providing public facilities it is unlikely that the situation would be different here. This will undoubtedly lead to discharge of larger quantities in sensitive areas proposed as 'No Discharge Zones'

10 Sewage Treatment Methods for Vessels

Holding tanks supported by Pump-out Facilities Onshore:

A leading expert on marine sewage disposal in the US warns against fitting collapsible bladders into confined spaces where they are difficult to get at because of the action of vessels in heavy seas causing damage to the bladder. There are many articles on some of the problems associated with holding tanks and pump-outs stations, especially as they get older. The drawbacks include dangerous gases that can be both explosive, and life threatening. We have already spoken of the problems of insufficient on-shore pump-out stations. There can also be problems with, cost to the boater, operating hours and level of maintenance.

Onboard Treatment Plants

We have been told that it is not currently possible for any on-board sewage treatment plant to reduce nutrients. If a system can be developed to meet the requirements of the table in Section 14 on page 15 we could probably allow such sewage to be discharge in otherwise No Discharge Zones!

Onboard Macerators

Self-explanatory

Self-Contained Portable Toilets

We understand by this that sewage from these devices could be discharged in the Open Discharge Zone.

11. Australian Standard

Australian Standards 3542 (Pleasure boats - toilet waste collection) refers to holding and transfer systems. There is no mention here that this AS3542 highlights the dangers associated with holding tanks - referring variously to hydrogen sulphide as "a flammable poisonous gas". It also says, "It is extremely hazardous and collapse, coma or death from respiratory failure may occur within seconds after one or two inhalations of a high concentration. It is an insidious poison as the sense of smell may be affected and fail to give warning of a high, lethal concentration". Hydrogen sulphide also "is heavier than air and forms an explosive mixture with air in concentrations greater than 4.3% by volume". Is the proposed outcome going to cause more problems than the current situation?

12. Possible Strategies for Dealing with Onboard Sewage

BWA believes that situation needs to resolved so that boat owners can easily establish what regulations they need to consider when fitting onboard toilets, treatment plants and/or holding tanks. We also support a more flexible approach.

13. Proposed Strategy: Three Zone Sewage Discharge System

Generally speaking this proposed system is a much more reasonable approach than the existing system. However, whilst there may be particular instances where a Primary Contact Zone should be designated (only after consultation with stakeholders), we would generally prefer the proposals put forward in the Queensland discussion paper of 1998 whereby distance from swimmers (and/or shore) is the determining factor as to where one can discharge. There is already precedence for this in the regulation relating to distance from divers in the water. The other comment relates to the Swan River. The effectiveness of on-board treatment systems we believe that the salt-water areas of the Swan and Canning Rivers and sections of other large well flushed bodies of salt water such as the section of Peel inlet between Dawesville Cut and Mandurah should be a Zone 2 for recreational vessels. Again, the Queensland proposals for distance from shore, or depth, seem to us to be a more practical guide.

14. Proposed Treated Sewage Standard

The existing Marpol IV standard for faecal coliform bacteria is 250/100ml and the 5-day BOD is 50mg/L. We understand that it is currently not possible for on-board treatment plants to reduce nitrogen or phosphorus to the proposed levels. Thus the goal posts are set so high as to provoke active discouragement for the use of these systems. We believe that this is unreasonable and that the standard should be more in line with USCG and Marpol standards.

Unless there is a program of installing sufficient public pump-out facilities it would seem to us to make much better sense to limit Zone 1 to very localised areas. This means that most tidal waterways would be Zone 2's and boat owners would be encouraged to install on-board treatment plants. Thus money does not have to be found from the public purse to provide pump-out facilities. A significant number of larger vessels with toilets could not navigate the less tidal areas because of water depth and low bridges.

15.1 Implementation

If the proposed system is implemented there are other factors that need to be considered such as exemptions for vessels that may have trouble complying? **Our members were strongly opposed to retrospective regulation.** There should be no requirement for retro fitting of holding tanks. However, as straight-through toilets come up for replacement they should be upgraded **if possible** to a toilet fitted with an on-board treatment system or holding tank. The time frame may need to be extended unless there is a definite strategy for providing public pump-out facilities.

15.2 Education

Generally speaking we believe that most boaters are more aware of their responsibilities in relation to the marine environment and that this is reflected in an improvement compared with 20-30 years ago. We also believe that education is vital in order to achieve continuing improvement. Any maps should include the location of shore facilities including pump-out stations and toilets as well as discharge zones. There should be active encouragement for boaters without on-board treatment plants or holding tanks to use shore-based facilities wherever possible. There should also be active encouragement for people to consider where their effluent will end up if they are close in to shore. Standard signage to indicate the presence of shore facilities is essential.

15.3 Pump out Facilities

This section refers to encouraging marinas yacht clubs and tourist destinations to install pump-out facilities and porta potti dump and wash facilities. We have already referred to the need for **public** facilities and we cannot stress this too strongly if these proposals were to be implemented as is. Financial incentives for marina operators and clubs was also considered vital.

13. Proposed Strategy: Three Zone Sewage Discharge System

Generally speaking this system is a much more a reasonable approach than the existing system. One point that needs to be clarified however is that of large portions of the coast where there is low usage - the 500 metres adjacent to the coast should not be a No Discharge Zone in all areas. Obviously popular swimming areas need to be No Discharge Area and community groups could perform the role to request such areas. The other comment relates to the Swan River. Given the effectiveness of on-board treatment systems the salt-water areas of the Swan and Canning Rivers should be a Zone 2 for recreational vessels.

BWA Recommendation

We propose that the first approach to boaters should be a voluntary code of conduct to be sent out with all vessel registrations for a period. During this period actual data be obtained to quantify the problem, if indeed there is a problem.

Allow existing onboard toilets to remain.

Make sure that the proposed standard for treated sewage is achievable with and allows the use of a range of currently commercially available MSD's.

Install sufficient public pump outs.

Provide more shore-based toilets.

Provide financial incentives for private facilities to install pump outs.

Standardise fittings.

Promote onboard treatment MSD's as an environmentally sound solution.

Monitor areas for water quality.