# Rowing Australia - ENVIRONMENTAL SUSTAINABILITY POLICY AND GUIDELINES November 2009

## INTRODUCTION

Rowing is a sport that requires clean water and clean air. Rowers are mindful of protecting the environment on which they must rely to carry on their sport. The intention of this document is to record Rowing Australia's commitment to rowing practices, which continue that association and encourage a culture of responsibility for protecting nature and therefore the sustainability of the sport. The document highlights important issues and appropriate ways of dealing with them in accordance with sustainable environmental practice.

The policy and guidelines establish the commitment of the world rowing community to respect and safeguard the environment in which the sport of rowing is conducted. The guidelines, which are recommended here, are no substitute for compliance with national and local laws. They are intended to focus the collective minds of the rowing community on the part each can play in ensuring that the natural and physical resources which the sport of rowing needs to flourish will be sustained.

The document reflects the IOC's Olympic Charter and Agenda 21 for Sport, which encourage the Olympic movement to demonstrate a responsible concern for environmental issues, and to reflect that in its activities, while educating those connected with them about the importance of environmental sustainability. The document is meant to be a "living" document that can and should be evaluated and revised on a regular basis, in response to changes in technology and the understanding of the significance of environmental sustainability in the sphere of rowing.

## PART I – POLICY AND PRINCIPLES

### *1.0 POLICY*

1.1. Rowing Australia is committed to promoting practices within the sport of rowing which are environmentally sustainable.
1.2. Environmental sustainability in rowing includes social, cultural, economic and ecological responsibility which fulfils present needs while allowing future generations to meet their needs.

### *2.0 PRINCIPLES FOR ENVIRONMENTAL SUSTAINABILITY*

In implementing this policy Rowing Australia will be guided by the following principles:

- Protection of the habitat of fauna and flora and bio-diversity
- Conservation of resources both renewable and non-renewable
- Reduction of the production of waste and pollutants in all their forms
- Recognition of the importance of heritage and indigenous cultural values
- Promotion of healthy conditions for athletes, officials, volunteers and spectators in which to conduct the sport of rowing
- Fostering environmental awareness and education about sustainable development within the international rowing community and,
- Consulting the wider community to foster positive partnerships.

## PART II – GUIDELINES FOR ROWING AUSTRALIA SANCTIONED EVENTS AND FACILITIES

### *3.0 ROWING AUSTRALIA SANCTIONED ROWING EVENTS*

**Explanation**

Rowing Australia expects that sanctioned events are organised and run in a way that protects environmental and social conditions in and around the proposed venue. The aim of this section is to ensure that organisers of Rowing Australia sanctioned events adequately identify the environmental and social conditions of the venues and provide guidance to organisers as to the steps that could be taken to minimise the impact of hosting such and event. The investigations of environmental and social impacts will need to be sufficient to assure Rowing Australia that the spirit and intent of its Policy and Principles will be met; investigation will generally be undertaken in accordance with the rules and practices of the nation or region in which the event is to be held.

### 3.1. Organisational Planning

(a) Develop an environmental management system, which clarifies the goals, objectives for environmental sustainability for the event, outlines the plan of action and how that plan will be monitored and reported on.
(b) Place the responsibility for environmental sustainability with someone in a senior position within the management structure.
(c) Undertake an assessment for all aspects of environmental sustainability related to the preparation, hosting and decommissioning of the event – please see following sections to determine what this might entail.
(d) Consult and involve local community and stakeholders throughout the planning stage.
(e) Ensure that all operational areas incorporate environmental sustainability.
(f) Train staff and volunteers in sustainability as it relates to the organisation and execution of a Rowing Australia sanctioned event.
(g) Ensure that the event meets the environmental requirements of federal, regional and local legislation.
(h) Develop educational materials for the public on how the event is working towards environmental sustainability.
(i) Engage the media in reporting on the environmental sustainability initiatives of the event.

### 3.2. Energy Conservation

(a) Maximise the use of public and mass transit and non-motorised modes of transportation such as biking and walking.
(b) Use renewable, cleaner energy sources to help reduce fossil fuel use and the production of greenhouse gases.
(c) Reduce energy consumption by using efficient equipment (eg. Photocopiers with standby function).
(d) Adopt a non-idling policy for events vehicles including transportation vehicles (also contributes to improved air quality).
(e) Motorised equipment on the water should use efficient clean burning engines that meet best standards.

### 3.3. Materials and Wastes

(a) Reduce, reuse and recycle materials.
(b) Implement a waste management plan for the event administration and events operations that outlines the types of waste and materials generated and how they will be reused, recycled or disposed of.

(c) Preference should be given to purchasing items that have less packaging, or reusable and/or recyclable packaging.
(d) Reduce the amount of toxic materials and compounds purchased.

### 3.4. Air Quality

(a) Select non-toxic materials and processes in order to eliminate the risk of toxic emissions or off-gassing from items such as paints, carpets and cleaning materials.
(b) Provide smoke-free indoor and outdoor environments.
(c) Adopt a no idling policy for event fleet vehicles and boats when ever possible.
(d) Post information on daily levels of air quality for the information of participants and medical staff.
(e) The indoor and outdoor air quality should at least meet the World Health organisation guidelines for "classical" air pollutants for the time being in force.

The 1999 Guideline values for classical air quality parameters is as follows:
(Note: Exposure to particulate matter should be monitored and risk estimates made available at critical times for rowing activity):

| Substance | Time Weighted Average | Averaging Time |
|---|---|---|
| Carbon Monoxide | 100mg/m³ *<br>60 mg/m³ *<br>30 mg/m³ *<br>10 mg/m³ | 15 minutes<br>30 minutes<br>1 hour<br>8 hours |
| Lead | 0.5 µg/m³ | annual |
| Nitrogen Dioxide | 200 µg/m³<br>40 µg/m³ | 1 hour<br>annual |
| Ozone | 120µg/m³ | 8 hours |
| Sulphur Dioxide | 500 µg/m³<br>125 µg/m³<br>50 µg/m³ | 10 minutes<br>24 hours<br>annual |

** Exposure at these concentrations should be for no longer than the indicated times and should not be repeated within 8 hours*

### 3.5. Water Quality

(a) Maximise use of biodegradable materials and cleaning agents for boats and facilities.
(b) Ensure that sediment control procedures are in place to prevent erosion from temporary facilities and spectators.
(c) Ensures that all refueling activities are undertaken with the proper procedures to ensure that there is no pollution of the water body.
(d) Bacterial analysis of water samples should meet the relevant national, regional or local standards for swimming. If there is no such applicable standard, water quality will be proven by the analysis of not less than two samples for each 1000 linear metres of the relevant water body (aligned where applicable with any storm-water outfall discharging into it) and establishing that the level of Escherichia coli does not exceed 150 counts per 100 ml. Testing should occur two days before the event and immediately after any significant precipitation.
(e) During the event, notify in a conspicuous place water quality conditions for the information of participants, officials and medical staff.

### 3.6. Soil Quality

(a) Adopt natural programs for pest and weed management to reduce or eliminate the use of synthetic pesticides, herbicides and fertilisers (this can also protect or improve water quality.)
(b) Prevent compaction and erosion of soil in the construction and operation of temporary facilities and by spectators at outdoor events.
(c) Avoid the leaching of toxic materials and products into the soil.

### 3.7. Protecting Nature

(a) Develop plans to minimise the impact the event may have on flora and fauna species including those caused by temporary facilities, infrastructure and event activities.
(b) Undertake habitat protection and/or restoration projects for native flora and fauna in areas affected by events and temporary facilities.
(c) Minimise noise and light pollution.
(d) Avoid scheduling events during periods significant to wildlife such as nesting and spawning seasons.
(e) Avoid the use of chemical substances in order to get rid of weeds or other aquatic flora species in the water body.
(f) Ensure that biological matter such as weeds and mussels from other waterways are thoroughly cleaned off and removed from rowing plant before they enter the event water body.

(g) Promote the use of integrated pest management in all landscaping and turf-grass management. Avoid the use of pesticides.
(h) Minimise use of fertilisers that can have a negative effect on water quality
(i) Promote the use of locally-grown food.

### 3.8. Social and Cultural Sustainability

(a) Provide access to all facilities for people with disabilities.
(b) Ensure high standards of occupational health and safety in the food and beverage preparations, sanitation and waste storage.
(c) Encourage the participation of minority groups in the organisation and running of the event.
(d) Highlight the ethnic traditions and cultural heritage of the region, for example in cultural programs coordinated with the event.
(e) Involve and communicate with the general public about the environmental sustainability actions being undertaken.

### 3.9. Economic Sustainability

(a) Promote local business, products and tourism at the event.
(b) Promote the use of hotels and accommodations that have environmental initiatives in place.

## *4.0 ROWING AUSTRALIA SANCTIONED FACILITY DEVELOPMENT*

### Explanation

This section is provided for those organisations that wish to develop a facility that meets Rowing Australia's standards for environmental protection and sustainability and will be used for Rowing Australia sanctioned events. The guidelines which cover the development of new and renovated facilities (Section 5.0) and general rowing operations (Section 7.0) apply to any Rowing Australia sanctioned facility development. The additional guidelines set out below apply when the new or refurbished facilities are intended to be used for Rowing Australia sanctioned events.

Because the development works are likely to be significant, the scale of the investigation, assessment, public consultation and reporting is likely to be greater than for local or regional rowing facilities. Investigation and development will be undertaken in accordance with the rules and practices of the nation or region in which the facility is being developed.

### 4.1. Reporting and Consultation

Rowing Australia should be involved in the early consultation phase for the project, so that any special requirements or issues of particular concern to Rowing Australia can be identified and provided for in the planning phase. When construction works have been substantially completed a copy of the report on environmental outcomes and community responses in a detail which corresponds with the scale and significance of the project and its environmental impacts should be sent to Rowing Australia within six calendar months.

### 4.2. Water Quality

In addition to water quality testing in accordance with Clause 5.5 of these Guidelines, water samples should be analysed to determine the levels of the following:

- pH units;
- heavy metals; and,
- other contaminants (as defined in Clause 5.5 (a)) likely to be present and which may affect the suitability of the water body for contact recreation.

These results will be sent to Rowing Australia; if unsuitable levels of one or more of those parameters are disclosed, Rowing Australia may request more detailed water quality testing and reporting of data with an assessment from a duly qualified person as to whether there are any health related issues which should be of concern associated with rowing activity on that water body.

### 4.3. Endorsement

Failure to undertake adequate investigation, assessment and consultation and to ensure the environmental sustainability of the facility, or to report adequately within that time, are matters which Rowing Australia will take into account when considering any endorsement of the facility or proposals to conduct any Rowing Australia sanctioned event on that site.

## PART III – GUIDELINES FOR THE GENERAL ROWING COMMUNITY

### *5.0 NEW AND RENOVATED FACILITIES*

**Explanation**

The aim of this section is to ensure that the construction and operation of new and renovated rowing facilities are adequately investigated and planned to be environmentally sustainable. This should involve the wider local community at an early stage in the planning for a new development or re-development of rowing facilities. In order to meet Rowing Australia's Environmental Sustainability Policy:

(i) The extent to which investigation of environmental and social impacts is required will correspond to the scale and significance of the proposed development or redevelopment; and
(ii) Investigation will be undertaken in accordance with the rules and practices of the nation or region in which the facility is located.

### 5.1. Environmental Sustainability Issues

Depending on the nature of the work, the issues for investigation will include:
(a) Hydrology of any existing and/or new water body.
(b) Nature and quality of the ecology and habitat within any water body.
(c) Water quality in any water body.
(d) Nature and quality of fauna, flora and habitat of land intended to be used for the rowing facility.
(e) Nature and quality of the existing landscape.
(f) Cultural and heritage values which attach to the site of the facility and its vicinity.
(g) Meteorological conditions (rainfall, temperature, humidity, etc) and air quality.
(h) Accessibility of the rowing facility and the nature of associated existing or proposed transportation infrastructure.
(i) Capacity to maximise energy efficiency of the facility (including natural lighting and ventilation of buildings and use of solar or other viable renewable energy sources).
(j) Matters pertaining to public health, including sanitation, waste storage and disposal, safe storage of foods and beverages, and a safe supply of drinking water.

## 5.2. Investigating Suitability

To establish the suitability of the site and the facility for rowing activities the investigation will show that Rowing Australia's environmental standards can be met and will include:

(a) Consideration of alternative sites to ensure that the one chosen is the most appropriate;
(b) Identification of potential short and long term social, economic and environmental effects;
(c) Evaluation of positive and negative effects, including potential long term and cumulative effects, which may be environmental, social, cultural, heritage or economic;
(d) Suggest mitigation measures that will minimise environmental impacts; and,
(e) Confirmation that the facility will adequately meet the rowing purposes for which it is proposed.

## 5.3. Consultation with Local Community

In respect of any facility construction:
(a) Good environmental practice requires the involvement of the local community at an early stage in the planning for new construction or major reconstruction of rowing facilities;
(b) Local community input on matters of environmental, cultural, social and economic concerns will be sought and considered in the implementation of the works; and,
(c) In the event of any dispute or disagreement on environmental concerns or outcomes it is recommended that recourse be to a process of mediation or other method of alternative dispute resolution wherever possible.

## 5.4. Reporting

When construction or any stage of construction is completed, a report on social, economic and environmental outcomes and community responses should be created.

Such a report will:
(a) Be in such detail as corresponds with the scale and significance of the project and the effects which may impact on the environment;
(b) Report on all relevant matters identified in the guidelines; and,
(c) Confirm that the rowing facility meets the environmental sustainability objectives of the Rowing Australia policy.

## 5.5. Water Quality

Water quality of the rowing water body is or can attain the following state:
(a) For the purpose of the standard the term “contaminant” includes any substance (including gas, liquid, scum, bone, oil or grease film, floatable suspended solids, water borne debris, algal bloom or other micro-organism) or energy (excluding noise) or heat which by itself, or in combination with any other contaminant, changes the physical, chemical, or biological condition of the water. Bacterial analysis of water samples will meet any relevant national, regional or local standard. In the absence of such a standard, a minimum sampling of not less than two samples for each 1000 linear metres of relevant water body (aligned where applicable with any stormwater outfall discharging into it) should be undertaken and tested for contaminants which may render the water unsuitable for swimming, including escherichia coliforms (e.coli).
(b) The visual clarity of the water not so poor as to render it unsuitable for swimming;
(c) The water not rendered unsuitable for swimming by the presence of contaminants. E.coli levels should not exceed 150 counts per 100 mls;
(d) No undesirable biological growth (such as sewage fungus) arising from the presence of any contaminant in the water; and,
(e) No biological growth or vegetation which impedes or otherwise renders unfair any competition.

## 5.6. Air Quality

Air Quality in (or in the general vicinity of) the rowing facility is, or can reasonably be relied upon during any period of rowing activity to be, in the following state:
(a) Free from the discharge of smoke or vapour likely to adversely affect visibility or safety.
(b) The air quality should at least meet the World Health Organisation guidelines for “classical” air pollutants for the time being in force. The 1999 Guideline values for classical air quality parameters is as follows:

| Substance | Time Weighted Average | Averaging Time |
|---|---|---|
| Carbon Monoxide | 100mg/m³ *<br>60 mg/m³ *<br>30 mg/m³ *<br>10 mg/m³ | 15 minutes<br>30 minutes<br>1 hour<br>8 hours |
| Lead | 0.5 µg/m³ | annual |
| Nitrogen Dioxide | 200 µg/m³<br>40 µg/m³ | 1 hour<br>annual |
| Ozone | 120µg/m³ | 8 hours |
| Sulphur Dioxide | 500 µg/m³<br>125 µg/m³<br>50 µg/m³ | 10 minutes<br>24 hours<br>annual |

** Exposure at these concentrations should be for no longer than the indicated times and should not be repeated within 8 hours*

(c) No objectionable or offensive odour

**5.7. Drinking Water** – Water quality of the potable water supply is, in accordance with the applicable national standard, fit for human consumption.

**5.8. Solid Waste** – Provision is made for the on-site collection of solid waste in appropriate containers for the safe and hygienic collection, recycling or disposal off site of all such waste.

**5.9. Food and Beverage Storage** – Appropriate facilities are provided for the safe and sanitary storage of all food and beverages.

**5.10. Stormwater and Liquid Waste**

(a) Wherever possible, wastewater and storm water initiatives should be enhanced to improve water flow management and water quality. This may involve capture and use of rainwater and/or recycling of wastewater.

(b) If enhancement is not viable, then wastewater and storm water needs to be managed to ensure that there are no adverse environmental impacts unless some impact is unavoidable; in that case any environmental effects must be minimised.

**5.11. Landscape -** Earthworks, removal of vegetation, planting of vegetation and the use of physical screens and barriers are undertaken in conformity with a landscape plan which takes appropriate account of the scale, context and features of the existing landscape prior to the commencement of any works. The plan should also take into account:
(a) The character of existing buildings and the landscape features of the site of the rowing facility;
(b) The character of both the nearby landscape and any dominant background features;
(c) The scale of any carpark, boatpark, building or utility and the need to screen them or introduce land features and/or planting within them or around them;
(d) The availability and suitability of indigenous species of vegetation for planting and their ability to thrive and/or meet landscape imperatives proposed in the plan; and,
(e) The overall integration of the water body, buildings and structures, site works and planting into a quality landscape.

**5.12. Dredging -** Any excavation by dredging within a water body is undertaken in accordance with a management plan which:
(a) Establishes the appropriate time for such work having regard to spawning of aquatic fauna or the nesting of birds in the vicinity;
(b) Identifies the quality and composition of the sediment prior to dredging;
(c) Minimises the period over which the dredging and any deposition of material takes place subject to (a) above;
(d) Establishes the shape and form of banks and beds which will remain stable after completion of the work;
(e) Allows dredging to be carried out when water flows are generally at a minimum, particularly where the dredged material contains silt;
(f) During the dredging period, proposes monitoring on at least a weekly basis beyond the dredging site to ensure that suspended sediment in environmentally harmful quantities is not being carried from the dredging site to other parts of the water body;
(g) If the material dredged is discharged onto land, provides for appropriate control and management of the settled dredged water to ensure that it does not compromise the quality of the water in any water body that it may flow into and in particular does not allow the quality to fall below appropriate national or regional standards;
(h) Provides for the appropriate disposal of dredge material if the studies for point (b) above indicate the dredge material contains contamination.

**5.13. Structures within the Water Body -** All structures located within a water body are constructed from material which does not adversely affect the water quality of the water body and takes into account the Landscape Plan. Structures should:
(a) Avoid or minimise impacts on any identified critical aquatic habitat;
(b) Be constructed using materials which will not corrode or require coating with any outer film containing toxic chemicals;
(c) Be safe to use and structurally sound;
(d) Be designed and located so as not to hinder public access to the water body at times when the facility is not being used exclusively for rowing;
(e) Be constructed in a manner and using appropriate techniques which avoid the deposit on or into the water body, of sediment or waste materials; and,
(f) Be constructed in such a manner as will facilitate the least possible environmental impact when removed or dismantled.

**5.14. Construction on Land -** Construction works on land are undertaken in a manner which:
(a) Protects the banks of any adjacent water body from adverse impacts;
(b) Prevents entry into the water body of sediment, waste material or any toxic or hazardous matter from the construction site;
(c) If it creates any new ecosystem, does so in a manner which is compatible with nearby established ecosystems;
(d) Avoids use of contaminated land unless it is part of a properly managed and controlled site remediation project;
(e) Provides for recycling or appropriate disposal of all construction waste; and,
(f) Will facilitate the least possible environmental impact when removed or dismantled.

**5.15. Transportation -** Transport to the rowing facility of athletes, officials and members of the public is provided with due regard to good environmental practice, taking into account existing infrastructure and social and economic considerations in conjunction with good environmental outcomes. This requires due consideration to be given to:
(a) Non-motorised modes of transportation (such as walking or cycling);
(b) Maintaining air quality by minimising the use of fossil fuels; and,
(c) Avoiding adverse environmental impacts from any new infrastructure works.

**5.16. Heritage and Culture -** In order to avoid adverse effects on or harm to identified sites or water bodies with heritage and/or significant cultural values:
(a) There is a need to define, through investigation or consultation with the appropriate people of organisations, the presence and significance of any cultural or heritage resources that are in the project area or in close proximity to the project.

(b) Project design and construction needs to be planned to avoid or minimise impact on significant heritage and cultural resources; and,
(c) All works or structures should be designed and undertaken or built in a manner which is sensitive and sympathetic to the heritage or cultural values which are relevant to the site.

## *6.0 ROWING EVENTS*

**Explanation**

The aim of this section is to provide guidance on how to organise and host a regatta to minimise adverse environmental outcomes and ensure the health and safety of participants in keeping with Rowing Australia's Environmental Sustainability Policy.

### 6.1. Organisational Planning

(a) Develop a simple environmental sustainability management system, which clarifies the goals, objectives for environmental sustainability for the event, outlines the plan of action and how that plan will be monitored and reported on.
(b) Place the responsibility for environmental sustainability with someone in a senior position within the management structure.
(c) Undertake an assessment for all aspects of environmental sustainability related to the preparation, hosting & decommissioning of the event outlined in following sections.
(d) Consult and involve local community and stakeholders who are affected by your event in your planning.
(e) Give staff and volunteers information on the pertinent sustainability issues.
(f) Ensure that the event meet the requirements of federal, regional and local environmental legislation.

### 6.2. Energy Conservation

(a) Maximise the use of public and mass transit and non-motorized modes of transportation such as biking and walking to your event.
(b) Adopt a non-idling policy for events vehicles including transportation vehicles.
(c) Ensure motorised equipment on the water uses the efficient engines that meet best standards.

### 6.3. Materials and Wastes

(a) Create a waste management and recycling plan for the event administration and events operations.
(b) Reduce, reuse and recycle materials.
(c) Purchase items that have less packaging, reusable and/or recyclable packaging.
(d) Reduce the amount of toxic materials and compounds purchased.

**6.4. Air Quality**

(a) Ensure good indoor air quality at all event related facilities.
(b) Provide smoke-free indoor and outdoor environments.
(c) Adopt a no idling policy for event fleet vehicles and boats.
(d) Post information on daily levels of air quality for the information of participants and medical staff where possible.
(e) Events should only be conducted when the air quality meets the standards set by the national authority for safe exposure levels.

**6.5. Water Quality**

(a) Maximise use of biodegradable materials and cleaning agents for boats and facilities.
(b) Ensure that biological matter such as weeds and mussels are thoroughly cleaned off and removed before letting boats from other water bodies enter the event water body.
(c) During the event, water quality levels should meet the national standards for primary contact.
(d) Post water quality levels for the information of participants and medical staff.

**6.6. Soil Quality**

(a) Prevent compaction and erosion of soil in the construction and operation of temporary facilities and by spectators at outdoor events.
(b) Avoid the leaching of toxic materials and products into the soil.

**6.7. Protecting Nature**

(a) Develop plans to minimise the impact on flora and fauna species that will be affected by temporary facilities, infrastructure and event activities.
(b) Develop plans to minimise the effect of the event on flora and fauna.
(c) Minimise noise and light pollution.
(d) Avoid scheduling events during periods significant to wildlife such as nesting and spawning seasons.
(e) Avoid the use of chemical substances for the minimisation of weeds or other aquatic flora species in the water body. Once a specific assessment determines the necessity to remove the weeds harvest them by hand or mechanically.

**6.8 Social and Cultural Sustainability**

(a) Provide access to all facilities for people with disabilities.
(b) Ensure high standards of occupational health and safety in the food and beverage preparations, sanitation and waste storage.
(c) Encourage the participation of minority groups in the organisation and running of the event.
(d) Involve and communicate with the general public about the environmentally sustainable actions being undertaken.

**6.9 Economic Sustainability**
(a) Promote local business, products and tourism at the event.
(b) Promote the use of hotels and accommodations that have environmental initiatives in place.

***7.0 GENERAL ROWING OPERATIONS***

**Explanation**
The aim of this section is to encourage the rowing community to develop sound environmentally sustainable practices in their normal rowing activities.

**7.1. General Organisation**
(a) Every club and rowing organisation should develop an environmental sustainability management program.
(b) A senior official of the club or organisation should be responsible for the environmental sustainability management program.
(c) The environmentally sustainable management program should be communicated to all people involved in rowing activities.
(d) All individuals should be encouraged to take responsibility.
(e) The club or organisation should involve and maintain open communications with other individuals and organisations that have a vested interest in the water body and surrounding areas.
(f) Clubs and rowing organisations should develop safety and risk management policies and plans for all of their rowing activity and ensure that knowledge of these is actively communicated to all participants.

**7.2. Transportation**
(a) Those associated with rowing activity should be encouraged to carpool or use public and non-motorised modes of transportation such as walking and cycling to the club or rowing water body.
(b) Car pooling and mass transit should be encouraged for participating in away events.

**7.3. Waste Management**
(a) The club or organisation should implement appropriate recycling systems based on local capacity for recycling.
(b) Where possible, organic waste should be separated for composting.
(c) Provision should be made for the on-site collection of solid waste in appropriate containers for the safe and hygienic collection and disposal off site of all such waste and in particular:

(ii) Food and kitchen waste stored in solid containers with a lid which can be securely closed pending collection and disposal of the waste.
(iii) Any on-site solid waste storage area screened from general view and should be maintained in a safe and sanitised state and free of vermin.

**7.4. Office Practices**
The club or organisation should make their office practices more environmentally sustainable by:

(a) Reducing energy consumption;
(b) Using energy efficient equipment with standby capabilities (photocopiers etc); and,
(c) Reuse and recycle paper, envelopes and stationery etc.

**7.5. General Boathouse Operations**
(a) Use timers and or motion sensors on lighting systems and energy efficient bulbs to ensure energy conservation.
(b) Install water efficient fixtures in washrooms, showers and kitchens to conserve water.
(c) Make provision for safe and sanitary storage of all food and beverages (See 5.7 to 5.9 for more details).
(d) Avoid excessive use of water for landscaping uses.
(e) Avoid the use of disposable utensils, plates cups etc.
(f) Use biodegradable cleaning materials around the boathouse.
(g) Provide a smoke-free environment.

**7.6. Rowing Equipment Maintenance – Cleaning, Repairs and Recycling**
(a) When transporting boats to a different water body, ensure the equipment has been cleaned thoroughly and is free of plant material, contaminants, greases, oils etc.
(b) When cleaning boats, equipment and the boathouse areas, minimise consumption of water.
(c) Cleaning agents used for equipment should be biodegradable and the use minimised.
(d) Avoid discharge of water used to wash boats or equipment directly into the water body. Cleaning of boats should take place at least 30 metres from shore if possible and on a permeable surface so that wash water is filtered through ground before reaching the water body.
(e) Hazardous goods such as solvents, resins, paints and other petroleum and chemical products should be stored in a secured and well-ventilated locker or room.
(f) Clubs or rowing organisations should ensure that in the use of such products instructions on the containers are read carefully and materials which give off noxious or hazardous fumes are used or applied in a well ventilated area of the boathouse or in the open air and that those using them wear appropriate protective masks or clothing.

(g) Disposal of hazardous goods should be to an approved disposal location and never to a local drain or sewer or directly into a water body.
(h) A record should be kept, preferably by clearly visible plaque or label affixed on all boats, oars and sculls, of the principal materials from which they are manufactured, and appropriate advice taken to ensure that these products are recycled if practicable or otherwise safely disposed of when no longer of any use for rowing activity.

**7.7. Motor Boats and Fuels**

(a) Preference should be given to the use of four stroke motors over two stroke on coaching launches and safety boats to avoid pollution of the water, air as well as noise pollution.
(b) Engines should be well maintained to they are ensure energy efficiency, and produce as little air and water pollution as possible
(c) Maintenance should be undertaken in an area which is prepared to contain oil and fuel spills.
(d) Storage of fuels should be separate of the boathouse in a secure compound designed to contain any fuel leakage or spills.
(e) Refueling should be undertaken as far as possible from the water body in a specified area, which is prepared to contain fuel spills.
(f) Refueling should never take place on water or dock or over permeable surfaces.
(g) Appropriate techniques and equipment should be used to avoid spills.
(h) The club or organisation should develop a spill contingency plan and have appropriate clean up material readily available at all times.
(i) Smoking should be banned and the ban strictly enforced in and around fuel storage areas and refueling areas.

**7.8. On Water Practices**

(a) All rowers should be aware of locations of sensitive habitat in and around the water body used for rowing.
(b) Due attention should be paid to avoid disturbing sensitive habitat, flora and fauna from activities such as motorboat wake.
(c) Be aware that there are certain seasons of significant wildlife activity such as nesting and spawning seasons.
(d) Care should be taken to avoid erosion of the shore of the water body. Any evidence of such should be promptly notified to relevant authorities.
(e) No material or human waste should be discarded into the water body.
(f) Rowing practices should ensure that water bottles and other equipment are secured in rowing and coaching craft to prevent their loss into the water body.
(g) Care should be taken to avoid excessive noise on the water, which can negatively affect flora and fauna in and around the water body.

(h) Be aware, particularly in the morning, of the effect of noise on other stakeholders, users and residents around the water body.
(i) Voices should be directed away from residential areas.
(j) Where possible a direct communication system between the boat and the coach should be used.

**Glossary for Rowing Australia's Environmental Sustainability Policy and Guidelines**
**Term Definition**

**air pollutant** - Any substance in the air that could, in high enough concentration, harm man, other animals, vegetation, or material. Pollutants may include almost any natural or artificial composition of airborne matter capable of being airborne. They may be in the form of solid particles, liquid droplets, gases, or in combination thereof.

**air quality** - The level of pollutants prescribed by law or regulation that cannot be exceeded during a specified time in a defined area.

**biodegradable** - Capable of being broken down by living organisms into inorganic compounds. Ideally all waste should be biodegradable.

**biodiversity** - The variety of different living organisms from all sources including terrestrial, marine and other aquatic ecosystems and the variety of different ecosystems that they form. This includes diversity within species, between species and of ecosystems, and the genetic variability of each species.

**biological growth** - The growth of algae or other organisms in water often caused by an excessive amount of nutrients.

**carbon dioxide** - Colourless, odourless, very toxic gas produced by any process that involves the incomplete combustion of carbon-containing substances. One of the major air pollutants, it is primarily emitted through the exhaust of gasoline powered vehicles.

**compaction** - The deterioration of soil structure by trampling by a heavy weight. Soil compaction is primarily caused by construction and development activities and is most prevalent under wet conditions.

**critical aquatic habitat** - Areas which support important natural biological process such as shoreline fish nurseries, food production areas and spawning areas as well as nesting and feeding areas for waterfowl. They are affected by various types of chemical, biological, and physical stressors such as physical destruction, poor water quality, shade from structures, decreased light levels because of increased sediment or plankton/algae in the water and changes in wave exposure.

**cultural and heritage values**
Something which possesses historical, archaeological, architectural, technological, aesthetic, scientific, spiritual, social, traditional or other special cultural significance, associated with human activity.

**dredging** - The removal of mud and other matter from the bottom of water bodies. This can disturb the ecosystem and a cause silting that kills aquatic life. Dredging of contaminated mud can expose biota to heavy metals and other toxics.

**E coli** - Escherichia coli is a rod shaped bacteria commonly found in the gastrointestinal tract and faeces of warm blooded animals. It is a preferred indicator for freshwater recreational waters and its presence provides direct evidence of faecal contamination.
ecology The relationship of living things to one another and their environment, or the study of such relationships.

**energy conservation** - Wise use and careful management of energy resources by reducing wasteful energy use, using energy for a given purpose more efficiently, or reducing energy use altogether.

**energy efficiency** - Using less energy/electricity to perform the same function.

**Environmental management system (EMS)** - Systems that provide a framework for monitoring and reporting on an organisation's environmental performance integrating all aspects of event planning, set up/construction, operation and decommissioning.

**Environmental sustainability** - Social cultural economic and ecological responsibility meeting present needs while allowing future generations to meet their needs.

**erosion** - The wearing away of land surface by wind, water, glaciers, chemicals, and exposure to the atmosphere. Erosion occurs naturally but can be intensified by practices such as farming, residential or industrial development, road building and deforestation.

**Fauna** - The animals of a given region or period of time.

**fertiliser** - Any of a large number of natural and synthetic materials, including manure and nitrogen, phosphorus, and potassium compounds, which increases the soil's capacity to support plant growth. Plant fertilisers are mildly toxic in small doses, though larger doses can be harmful.

**flora** - All the plant life in a particular region.

**habitat** - The place or type of site where plant, animal, or micro-organism populations normally occur. The concept of habitat includes the characteristics of that place, such as climate and the availability of water and other life requisites (e.g., soil nutrients for plants and suitable food and shelter for animals), which make it especially well suited to meet the life cycle needs of the particular organism.

**habitat restoration** - Returning an ecosystem or habitat to a close approximation of its condition prior to disturbance.

**heavy metals** - Metallic elements with high atomic weights; (e.g. mercury, chromium, cadmium, arsenic, and lead). These can damage living things at low concentrations and tend to accumulate in the food chain.

**Herbicides** - A chemical pesticide designed to control or destroy plants, weeds, or grasses. See pesticides.

**hydrology** - The science dealing with the properties, distribution, and circulation of water.

**leaching -** The process by which nutrient chemicals or contaminants are dissolved and carried away by water, or are moved into a lower layer of soil.

**lead** - A soft heavy toxic malleable metallic element which accumulates in the environment and has high acute and chronic toxic effects on plants, animals and micro-organisms.

**light pollution** - Any artificial light that is emitted either directly or indirectly by reflection which has a negative effect. Light pollution can affect the normal behavior and processes of organisms.
mass transit A public transportation system generally involving a subway or over ground rail lines. See public transit.

**mitigation** - Minimising or avoiding impacts by limiting the degree or magnitude of the action and its implementation.

**nitrogen dioxide** - A suffocating, brownish gas, nitrogen dioxide is a strong oxidizing agent that reacts in the air to form corrosive nitric acid, as well as toxic organic nitrates. It also plays a major role in the atmospheric reactions that produce ground-level ozone (or smog). The gas forms when fuel is burned at high temperatures, and comes principally from motor vehicle exhaust and stationary sources such as electric utilities and industrial boilers.

**noise pollution** - Harmful or unwanted sounds in the environment.

**non-idling** - A practice of turning off engines that are not being used in order to reduce the amount of pollution being produced.

**non-renewable** - resources Resources which have a finite supply. Once consumed they will not be replenished within the time-span of human history. Some examples are oil, natural gas, minerals, coal and metal ores.

**off gassing** - Gaseous effluent, possibly containing contaminant vapours, that is emitted from a process or product.

ozone A gas composed of three atoms of oxygen. Ozone is a desirable gas in the stratosphere. However, in high concentrations at ground level, it is toxic to living organisms and is the main component of smog.

**pesticides** - A substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest. Pesticides can accumulate in the food chain and/or contaminate the environment if they are misused.

**Ph** - An expression of both acidity and alkalinity on a scale of zero to 14, with seven representing neutrality; numbers less than seven indicate increasing acidity and numbers greater than seven indicate increasing alkalinity.

**primary contact** - Waters suitable or intended to become suitable for recreational activities in when the ingestion of small quantities of water is likely to occur. Such waters include but are not limited to those used for swimming, rafting, kayaking, rowing and water-skiing.

**public transit** - A public transportation system for moving passengers which can include buses, ferries, mass transit, railways or others forms of transporting groups of people.
quality landscape The nature of an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors renewable resources Renewable resources are generally living resources (fish and forests, for example), which can restock (renew) themselves at approximately the rate at which they are extracted. The supply of renewable resources can, in theory, never be exhausted, usually because it is continuously produced.

**sediment control procedures** - A scheme that minimises soil erosion and sedimentation resulting from development.

**storm water** - Rainfall that does not infiltrate the ground or evaporate because of impervious land surfaces but instead flows onto adjacent land or watercourses or is routed into drain/sewer systems.

**sulphur dioxide** - A pungent, colourless, gas formed primarily by the combustion of fossil fuels; becomes a pollutant when present in large amounts.

**Sustainable development** - Development that meets the needs of the people today without compromising the ability of future generations to meet their own needs.

**toxic compounds** - A combination of two or more elements which may prove toxic at certain levels of dose and exposure, e.g. sulphuric acid toxic emissions Materials that cause death, disease, or birth defects in organisms that ingest or absorb them. The quantities and exposures necessary to cause these effects can vary widely.

**toxic materials** - A chemical or mixture of chemicals that may present an unreasonable risk of injury to health or the environment.

**visual clarity** - The distance objects can be seen through the lake water. Visual clarity impacts the behavior of aquatic organisms and also influences human perception of water quality.

**waste management** - Administration of the reduction, collection, separation, storage, transportation, transfer, processing, treatment and disposal of wastes and recyclable material

**waste water** - Water that carries wastes from homes, businesses, and industries. It is usually a mixture of water and dissolved or suspended solids.

**water quality** - A term used to describe the chemical, physical, and biological characteristics of water with respect to its suitability for a particular use.

**Developing an Environmental Management System for Rowing Events**

The Rowing Australia Environmental Sustainability Policy and Guidelines (dated April 2004) formally presents Rowing Australia's commitment to the environment and the broader principles of sustainability including the social, economic and cultural aspects. The April 2004 document provides general guidelines to protect the natural environment during the set up and running of regattas.

The central theme is the development of an environmental management system (EMS) in the organisation of an event. This document provides further information and advice for the development of an EMS for rowing events in general and specifically for Rowing Australia sanctioned events.

To meet the commitment to environmental sustainability, organisers of Rowing Australia sanctioned events are expected to run the event that is respectful of the environment. The suggested way to do this is to institute an integrated environmental management system. However, it is also recognised that a full EMS can be costly and time consuming to set up. Therefore, event organisers can determine the approach and level of detail applied to the EMS as long as it is consistent with Rowing Australia's policy and the nature of the event.

Consideration should be given to:

- Frequency of the event at a site - once a year (I.E. Rowing Australia National Championships) or once in a life time,
- Profile of the event (Nationals vs. State Championships)
- Sensitivity of the environment in which the event will be held (i.e. lake in a nature park vs. man made course in industrial area)
- Level of local public concern regarding the event

An EMS provides the framework to integrate all aspects of event planning, set up/construction, operation and decommissioning. The environmental policy and commitments of the organizing committee must be implemented throughout the project. The organizing committee's environmental policy will set the intentions and principles in relation to the organisation's overall environmental performance.

The EMS should follow the approach of plan, implement, check and review as a continuum ensuring control and striving for continual improvement:
Plan > Implement > Check > Review > Continual Improvement

• **Plan:**
The planning stage involves the identification of the environmental issues, developing a policy and commitment to the environment. The planning phase will contribute the establishment of the objectives and practical environmental performance targets established by the organisation as well as the development of the formal control measures to be applied in subsequent stages.

• **Implementation:**
This stage involves the development and application of appropriate internal controls, document management, development of operating procedures and training required to ensure the environmental commitments are applied through out the organisation.

• **Check:**
This stage involves routine monitoring during the development, execution and wrap up of the event. This is achieved through routine checks of actions to ensure that the environmental aspects identified during the planning phase are adequately protected during the day to day activities. This stage also requires an effective reporting mechanism to ensure that any malfunction or environmental degradation is reported and corrective action is taken. Monitoring at the day-to-day operations level and reporting findings up through the organisation to the point where appropriate changes can be made is an appropriate approach to ensure compliance and improvement.

• **Review:**
The cornerstone of an effective sustainability program and EMS is striving for and achieving continual improvement from year to year or from one event to the next. In on going industrial operations this is achieved through routine internal and external audits. This approach would be appropriate for events that recur annually. For one-time events at a specific location, Rowing Australia would expect that the organisation provide a summary of the effectiveness of the EMS, which would include a summary of the EMS used for the event, the successes of the EMS, and recommendations for improvement.

**Plan - Environmental Policy and Commitments**

The development of an environmental policy is an important first step in developing an EMS. The policy has to be accepted by all parties responsible for hosting the event and must be signed by the board or other appropriate, senior level of the organisation. The policy must then be communicated throughout the organisation. Suggested commitments that a policy could include are:

• a commitment to sustainability,
• promoting environmental awareness

• minimising impact to the environment, pursue a goal of causing no harm to the environment
• meeting or exceeding all environmental, health and safety regulations that would apply
• recognise that hosting the event in a healthy environment is important for the well being athletes, coaches, officials and spectators, etc.
• implement an effective environmental management system,
• adopt best available practices and
• recognise the opportunity to work with partners to achieve goals and objectives
• commit to continuous improvement of environmental performance.

Plan - Environmental Aspects and Issues of the Event

The environmental management of a Rowing Australia Sanctioned event must be founded on an understanding of the significant environmental aspects and the regulatory requirements imposed by local, regional and national governments. Environmental aspects and issues associated with the venue, the surrounding area and the operations of the event should be identified.

The Rowing Australia Policy and Guidelines provides a list of the most likely aspects and issues associated with organizing and running a Rowing Australia Event.

These include:
- Energy use
- Water use
- Waste
    - o liquid
    - o solid (waste generation, recycling, disposal)
- Air quality
- Water quality
- Ecological conditions
    - o Aquatic
    - o Terrestrial – wildlife, vegetation
- Amenity impacts
    - o Noise
    - o Traffic
    - o Visual
- Additional areas related to sustainable benefits of the project:
    - o Social issues
    - o Cultural and heritage resources
    - o Economic activity

The above aspects should be considered in the context of event operation and potential remedies developed during the planning stages. This includes a consideration of the flow of goods, services and people to and from the venue.

For example:
• Types of goods purchased and the type of waste product that it will create and consider alternatives that can reduce the waste stream
• Consider how people will get to and from the venue – consider opportunities to maximise the use of public transport, the use of non-polluting forms of transportation, etc.

Event organisers would likely focus on a subset of the environmental aspects identified. Generally, these would be the ones that the event is most likely to have a negative impact on, and/or most critical to the area either from a regulatory perspective, or are important from a public or stakeholder perspective. The organisers should also determine if any environmental conditions have the potential to impact athletes, officials and spectators of the event and include such environmental conditions in the environmental management plan.

Rowing Australia expects that organisations bidding for a Rowing Australia Sanctioned event will conduct an initial environmental review and incorporate the results into their submission. The purpose of the review would be to determine if there might be any environmental issues that could affect the hosting of the event.

Once the important environmental aspects are identified, specific objectives or targets should be set and used to gauge the success of the EMS. These targets should be incorporated into the environmental policy and be communicated to the entire organisation and to the public.

Implementation - Environmental Management Structure, Programs & Responsibilities

The EMS should be set up to be seamless with all other aspects of the event organisation rather than having a separate organisational structure, reporting lines, and responsibilities. A senior member of the organising committee should be delegated the responsibility of overseeing the implementation of the EMS. Programs that specifically focus on attaining the targets should be developed. Clear lines of responsibility should be established and communicated to all paid staff and volunteers working on setting up and running the event.

Simple check lists could be used to ensure that environmental aspects are addressed for various work activities and to track any problems that might need further investigation (example attached). Another example would be to provide boat operators with a check list related to fuel handling, fuel spill containment, areas where boat wake must be minimised, etc.

Implementation - Training, Awareness and Competence

An important factor in implementing an EMS is through effective environmental training and awareness programs. These programs will ensure that all members of the organisation are fully aware of the sustainability goals and the environmental commitments of the organising committee. All members of the organisation should receive environmental training appropriate to their role on the project. Specific roles and responsibilities within the EMS should be reviewed with each management team member. The EMS should outline the environmental training and orientation requirements for project staff, contractors, and subcontractors during the building and running of the event.

The education and communication that takes place during the implementation phase should not only be directed to the organisers, athletes, coaches, spectators, etc. but also the media. The presentation of positive environmental stories in the press can enhance the public perception of the event and rowing in general.

**Review and Continual Improvement**

After the completion of each event there should be review of the EMS in relation to the objectives and targets that were set for the event. The review should be in the form of a report that includes:

- The original objectives and targets
- A measure of how well they were achieved
- A review of what worked and what didn't work
- Suggestions for future organisers

For Rowing Australia sanctioned events, a copy of the report should be submitted to Rowing Australia and it will be used to contribute to Rowing Australia's ongoing effort to provide organisers with relevant information for running environmentally sustainable events. For those events that are ongoing (i.e. held annually) and at the same venue, the review report should be used by the organisers to refine the EMS and goals and targets

for the next event. Continual improvement of an events environmental and sustainability performance is the ultimate objective of the EMS.

**Conclusion**

These guidelines have been provided by FISA, the International Rowing Federation and communicated in the expectation that incorporating an EMS into event organisation will have an overall positive benefit to the organisation, competitors, and local stakeholder and contribute to hosting a cost effective event. Organisers of Rowing Australia sanctioned events are expected to actively set out to minimise the potential negative impacts of hosting a rowing event. However, organisers must be practical in what can be accomplished and the environmental programs that are developed should be consistent with the scope of the project, the environment it is set in and the financial resources available.

The development and implementation of an EMS has benefits beyond environmental protection and meeting specified environmental objectives. Often, in the process of carrying out an EMS, more efficient ways of doing things are found and usually improved efficiency translates into reduced costs.

**Suggested Additional Information Sources:**

Chernushenko, D., A. Van der Kamp, D. Stubbs. 2001. Sustainable Sports Management – Running an Environmentally, Socially and Economically Responsible Organisation. United Nations Environment Programme.

Greenpeace 2000. Greenpeace Environmental Guidelines: a guide to sustainable events.

UK Sport (no date). Practical Environmental Guidelines World Class Events, a 'Blueprint' for Success. Prepared by UK Sport (www.uksport.gov.uk)

**ENVIRONMENTAL MANAGEMENT CHECK LIST (DRAFT)**

DATE:
EVENT DAY:

TIME PERIOD FROM: TO:
PERSON RESPONSIBLE:

**1 RESTRICTION OF IMPROPER ENERGY USE**

1.1 Are security lights switched on during daytime?
1.2 Are general use lights switched on during daytime?
1.3 Are lights in indoor areas needlessly switched on? If yes, record the functional areas where it was observed.
1.4 Is air-conditioning needlessly switched on? If yes, record the functional areas where it was observed.
1.5 Are there any open doors or windows in areas where the air conditioning is switched on? If yes, record the functional areas where it was observed.
1.6 Is electronic equipment needlessly switched on? If yes, record the functional areas where it was observed.

**2 RESTRICTION OF IMPROPER WATER USE**

2.1 Are water taps needlessly left running?
2.2 Are water taps in kitchens and toilets needlessly left running? If yes, record the functional areas where it was observed.
2.3 Do you observe any leaks in the water mains? If yes, record the functional areas where it was observed.
2.4. Do you observe any leaks in chemical or sewage connected toilets? If yes, record the functional areas where it was observed.
2.5 Do you observe any leaks in the rest of the main drainage system? If yes, record the functional areas where it was observed.
2.6 Do you detect unpleasant odour coming from the main drainage system? If yes, record the functional areas where it was observed.
2.7 Is the irrigation system functioning properly? Is corrective action needed? If yes, report the functional areas where you think it is needed.

## 3 OBSERVATION AND MAINTENANCE OF GREEN AREAS

3.1 Are there green areas that need remediation? If yes, report the conditions and the corrective actions needed to be taken.
3.2 Is the green area protection signage system working effectively? Is corrective action needed?
3.3 Are current measures for green areas protection being effectively? If they are not, then suggest improvement measures that can be implemented by Site Management.

## 4. AIR QUALITY OBSERVATION – NOISE OBSERVATION

4.1 Is noise during venue operation limited to the lowest level permitted?
4.2 Can you detect any visible air pollution incidents (i.e. gas emissions) originating from cleaning materials, fuels or dust?
4.3 Can you detect excessive air emissions from car, bus or boat engines? Environmental Management Checklist

## 5 CLEANING AND WASTE MANAGEMENT

5.1 Are waste bins emptied according to the operational plan?
5.2 Is the main waste compound kept in a clean and odourless condition? Can you detect any discharges from waste bins, containers or waste storage areas? If yes, suggest corrective actions.
5.3 Is the waste management signage properly placed? Do you believe that waste separation signage is comprehensive enough (by athletes, staff, spectators)? Are there any alternatives?
5.4 Is spectator information about the waste separation and recycling system adequate?
5.5 Are spectator holding areas kept in a clean condition? Is the number of waste bins and the respective signage adequate for spectator service? Is waste separation by spectators performed in the desirable levels?
5.6 Do Food Services and Logistics comply with the waste minimisation regulations?
5.7 Is the medical waste management procedure followed according to the operation plan?
5.8 Is management of cleaning chemicals and fuels performed according to the safety regulations?

## 6 POLLUTION PREVENTION – ENVIRONMENT PROTECTION

6.1 Are the necessary environmental terms and conditions followed? If not, report the corrective actions needed.
6.2 Is management of hazardous waste compliant with the appropriate safety regulations?
6.3 Do you observe any liquid fuels leakage incidents in the ground or in the water? Record the corrective actions taken.
6.4 Is the smoking policy adhered to? If not, suggest appropriate solutions. .