



Little Swanport Catchment Plan

“Working Together to look after Our Catchment & Our Community”

2010 - 2015

Little Swanport
Catchment

Little Swanport Catchment Plan Implementation Committee

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Little Swanport Catchment Management Plan
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Marine Resources
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Department of Defence
Tasmanian Parks & Wildlife (PWS)

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Sandy Dunbabin – *Catchment Coordinator (07/08) and Local Resident*
Dr Phil Bell - *Threatened Species Section, Biodiversity Conservation Branch DPIPWE*



Introduction

This document is a review of the original Little Swanport Catchment Plan launched in 2003.

It is a guide for interested land managers.

The plan aims to:

- o give an overview of the catchment's natural, economic and social structure;
- o highlight some possible risks to its assets;
- o provide some advice for best practice natural resource management; and
- o present a framework that may allow on ground works to proceed in an integrated and coordinated way.

The plan has been produced by the NRM staff of Glamorgan Spring Bay and Southern Midlands Council in consultation with the voluntary members of the Little Swanport Catchment Plan Implementation Committee. Workshops were held with technical advisors using a risk assessment approach.

The draft reviewed plan was endorsed by both Councils prior to a public consultation period. A public meeting presenting the draft reviewed plan and inviting feedback was held in mid 2009. Any feedback received was considered by the committee for inclusion in the final plan.

It is a publication written by the catchment community for the catchment community.

Actions identified in the plan have been considered in context of being within the capacity of a voluntary committee to progress, with support from paid professional staff from the Catchment to Coasts program.

*It is important to note that the Little Swanport Catchment Management Plan is in no way a regulatory or statutory document. Nor is it intended as a comment on past management practices.

“Tasmania must continue to be a leader in best environmental practice, not just because it protects the integrity of ecosystems and the environment generally, but because increasingly these will provide market benefits in the future...” (Nixon 2007)





Key Achievements of the Little Swanport Catchment Management Plan Implementation Committee 2003 - 2010

- Continued to provide a forum for information exchange between Committee members and other organisations involved in projects and activities relevant to the catchment.
- Participated in the development of the State Government 'Water Management Plan' for the catchment.
- Developed and implemented the Sustainable Grazing on Saline Lands salinity trial in the lower catchment.
- Accessed and distributed funding on behalf of landholders for riparian fencing.
- Accessed funding for and developed a Community Water Quality Monitoring program.
- Maintained membership of the Tasmanian Landcare Association.
- Worked in partnership with the GSB and Southern Midlands Council in implementing the NRM South funded 'Whole of Catchment and Whole of Ecosystem' planning model project.
- Assisted with the implementation of the FRDC / LWA 'Water Use Across A Catchment' project.
- Organised community events including the 'Swanston Road Bushwalk' and the 'Woodsdale Hall Bush Dance'.
- Facilitated funding opportunities for landholders via the NRM Incentives program for riparian / saltmarsh fencing and weed control in priority vegetation.
- Facilitated participation of the upper catchment farmers group in the National Landcare / Serve Ag 'Sustainable Agriculture' project.
- Communicated NRM initiatives and activities to the entire catchment community via mailouts and three bi-annual newsletters.
- Facilitated the five year review of the Catchment Management Plan involving two workshops with technical advisors assisting.
- Linked in with the Council Weed Management Plans by organising a Serrated Tussock (and Salinity) Field Day.
- Formed partnerships with the Department of Defence and the Tasmanian Fire Service Volunteers to progress on ground works.
- Provided support for the Property Management Planning program run in the area by NRM South.
- Winners of the Toshiba Community Group Award at the Tasmanian Landcare Conference & Awards 2009.

Our Catchment

The Little Swanport Catchment is situated on the central east coast of Tasmania, Australia.

It is governed locally by Glamorgan Spring Bay Council in the east and Southern Midlands Council inland. It lies within the Southern NRM region - one of three NRM regions in Tasmania

The catchment area is approximately 87,600 ha and has an estimated population of 500-700 permanent residents. The catchment comprises of approximately 300 separate ownership titles.





Our Catchment

Geographically, the catchment can be divided into 3 broad scale landscapes:

The Upper Catchment

The upper catchment is a plateau interposed with hills.

It is home to a small number of large hectare traditional dry land grazing properties and a number of smaller residential and mixed farming holdings.

Heritage listed family properties like “Stonehenge”, “Inglewood”, “Fonthill” and “Ashgrove” are found in the upper catchment.

Woodsdale is the social centre of the smaller scale mixed farming operations and the historic town of Oatlands services the region.

Primary Production is the main industry in this area: wool, beef, prime lamb, and some vegetable, grain and seed cropping.

In recent years there has been an increasing level of plantation forestry.



The Mid-Catchment

The mid-catchment is primarily forested. It is mountainous and descends to the lower catchment.

There is a combination of old growth and regrowth forest in this area. Some under control of the Defence Department, part of the extensive Buckland Military Training Facility. There is also State Forest, managed by Forestry Tasmania, and large areas of private land.

Swanston, in the centre of the catchment, was proclaimed a town during early settlement days and once boasted 2 public bars. However, these days the area is farmed. The Swanston Road was formed in 1836 to service the growing district of Swanport (Swansea) which was administered from Oatlands. It became the main route through to the East Coast from the Midlands for the early European settlers.

There are large private nature reserves in the mid catchment, as well as three public Conservation Areas: Butlers Ridge, Pepper Creek and Little Swanport Nature Reserves.





Our Catchment

Lower Catchment

The lower-catchment is relatively flat low-lying agricultural land.

It is here that the Little Swanport River meets the sea and land use is more diverse with large coastal grazing properties, residential/holiday settlements, tourist accommodation, and olive and oyster farming enterprises.

The mouth of the Little Swanport River (estuary) is a popular spot for recreational fishing and other seaside holiday activities. It supports several successful oyster farming enterprises.

Pontypool and Saltworks house a cluster of permanent and semi-permanent 'lifestyle' residents: 50% retired or semi-retired. The peak summer population in this area can be up to 3 times that of the permanent population.



Review of the 2003 Little Swanport Catchment Management Plan

Two workshops were held by the Little Swanport Catchment Management Plan Implementation Committee along with other key stakeholders and providers of technical input and support.

These events were professionally facilitated and were held at the old Woodsdale School and the Buckland Military Training Facility both within the catchment.

A risk assessment approach to reviewing the plan was trialled. This was undertaken in light of any new governance, scientific and technical knowledge discussed by those present. The many changes that have occurred in the catchment since the plan was finalised in 2003 were also considered in the discussion.

This approach gives a formalised means of assessing risks to the many assets in the catchment. It also enables past and current actions to address these risks to be considered prior to determining actions to reduce risks or to find out further information.

A number of cross-cutting issues have emerged since this review process was undertaken. An example is an increasing understanding of climate change and the emerging implications such as sea level rise and carbon offsets trading. Already these issues have implications for the catchment and will require an adaptive management approach to be considered when progressing actions in the plan.

The revised plan provides only a snapshot of the values and issues in the catchment. Much detail in the 2003 plan is still relevant hence why it remains one of a number of valuable reference documents.

A broader public consultation of the revised plan enabled other stakeholders and catchment community members to input in the revision of the plan.

Recommended Action:

- Compile a DVD with electronic copies of reference documents including links to websites of relevance to the Little Swanport Catchment.



Table 1: Likelihood of a risk happening

Likelihood	Score	Definition
Remote	1	Never heard of, but not impossible
Rare	2	May occur in exceptional circumstances
Unlikely	3	Uncommon, but has been known to occur
Possible	4	Some evidence to suggest this may possibly occur
Occasional	5	May occur
Likely	6	It is expected to occur

Table 2: Consequence if the risk does occur

Consequence	Score	Definition
Negligible	0	Very insignificant impacts. Unlikely to be measurable
Minor	1	Possibly detectable but minimal impact on structure/function
Moderate	2	Maximum acceptable level of impact - recovery measured in months or years
Severe	3	Will result in wider and longer term impacts - recovery measured in years
Major	4	Very serious impacts with relatively long time frame likely to be needed to restore to an acceptable level - recovery measured in years to decades
Catastrophic	5	Widespread and permanent/irreversible damage or loss will occur - unlikely to ever be fixed

Table 3: Risk ranking = likelihood x consequence

Likelihood	C O N S E Q U E N C E					
	Negligible	Minor	Moderate	Severe	Major	Catastrophic
Remote	0	1	2	3	4	5
Rare	0	2	4	6	8	10
Unlikely	0	3	6	9	12	15
Possible	0	4	8	12	16	20
Occasional	0	5	10	15	20	25
Likely	0	6	12	18	24	30

Table 4: Risk ranking category

Score	Category
0	= Negligible risk
1 - 6	= Low risk
8 - 12	= Moderate risk
15 - 18	= High risk
20 - 30	= Extreme risk

Source: Seafood Services Australia (2004)

Community Care

Caring for the natural resource needs of any river catchment should also be about caring for the people that live, work and play within it.

Effective 'on ground' NRM progress is best initiated by local land managers that are well informed, well supported and fully committed to the task at hand.

In the past, property owners have become frustrated by the short term nature of government funded projects driven from *'the top down'*. It has been a hit and miss approach with constant changes in personnel, logos, expectations, etc.

In many instances, projects have been managed by *strangers* to the catchment with little knowledge and/or understanding of the region. Often, this has resulted in aims not being met or monies wasted. Boxes have been ticked with little real change in the landscape.

Extensive research findings have remained *housed* outside the catchment with no practical dissemination or implementation.

Expectations put on volunteers in our catchment over the last decade has been very high. Effective and enthusiastic individuals began hanging up their NRM boots. They were exhausted.

Our committee believes that successful, strategic, long term NRM progress can be made by working with, rather than against, a community.

Staff assisting with this progress should be individuals (or brands) that landowners know and trust - local paid personnel taking a genuine interest in a property manager's situation and working along side them.

By providing increased support at a grass roots level for a much longer period of time we may be able to build up the essential trust required to facilitate significant change.





Community Care continued

Over the past 18 months an extension officer was funded to assist land managers in the Little Swanport Catchment. This has allowed a variety of land managers to become re-engaged in NRM activities.

Having a local facilitator has allowed them to access information relative to their business or interests, talk honestly with someone about their strengths and weaknesses, discuss funding and/or project options, implement on ground works and begin to take some small but significant steps towards the better environmental management of their land.

*Sandy Dunbabin
Catchment Extension
Glamorgan Spring Bay Council*

Recommended Actions

- Encourage NRM South, state and local government to continue to support the Catchment Coordinator position and that of an independent facilitator (as required) eg. through the support of the 'Glamorgan Spring Bay Catchment To Coast' project
- Develop clear roles and responsibilities and protocols for the Committee eg. terms of reference
- Committee to develop a Terms of Reference.
- Develop communication protocols with other organisations and agencies undertaking activities in the catchment eg. researchers
- Subject to available resources undertake a public consultation of the redraft catchment management plan
- Continue to communicate the activities of the committee through the catchment newsletter
- Work with individuals and community groups to address issues of concern such as littering and illegal rubbish dumping. eg. Support Clean Up Australia Day events and encourage participation in Bushwatch.



Water Overview

The flow of water throughout the Little Swanport Catchment is highly variable.

Periods of low to zero flow during warmer months are a natural characteristic of the river.

Like most catchments on Tasmania's East Coast, the river system can be described as 'flashy'; it responds quickly to rainfall events with rapid increases and decreases in water level and flow.

Generally, water quality in this system, is most at risk in the upper and middle catchment where salinity and nutrient runoff can be significant.

The drainage system in the upper catchment has been modified over time, and this, coupled with past land clearing practices, can result in higher summer water temperatures, lower dissolved oxygen levels and increased groundwater influences on stream salinity.



Diagram above shows the major tributaries of the Little Swanport Catchment





Water Overview continued

The intermittent nature of flow throughout the catchment exacerbates these factors.

After rains, water quality downstream in the middle and lower catchment improves.

Inflows from relatively undisturbed tributaries help improve the water quality – a dilution effect occurs. Good riparian vegetation in this area reduces inputs of sediment, salts and nutrients.

During periods of high water flow, turbidity levels in the Little Swanport River increase.

'Turbidity' refers to the amount of suspended material in the water – ie, organic (plant material, algae) or inorganic (clay, silt etc).

At times of increased flow the transport of nutrients and suspended sediment throughout the catchment is significant.

Land clearing, reduction of riparian vegetation and/or stock access along river banks can lead to increased erosion and greater mobilization of this material into the river system.

Temperature influences the functioning of aquatic ecosystems eg. fish, plants & invertebrates (water bugs).

Riparian vegetation is one of the most important factors governing temperature fluctuations in river systems. Removal of this vegetation, removes shade.

High water temperatures that can lead to stress in some species of fish and aquatic organisms as well as diminished dissolved oxygen levels have been recorded at times during the summer in the Little Swanport River. Often these high readings coincide with warm periods of weather in areas of reduced riparian vegetation.



Conserving remnant riparian vegetation and trying to increase streamside verge and overhanging vegetation is an effective way to reduce fluctuations and extremes in water temperature.

Stream pH levels in the Little Swanport catchment are generally slightly alkaline, with values often ranging from 7.5 to 8.5. These levels are influenced by geology, soil chemistry, vegetation and land use practice. Once again, too much variance can be a concern.

Increased levels of nutrients, such as phosphorus and nitrogen, in rivers can lead to degradation in water quality through the formation of algal blooms and large increases in aquatic plant biomass. For example, over use of phosphorus and/or nitrogen based fertiliser may cause nuisance algal blooms.

Any re-vegetation projects in the upper catchment are highly beneficial to the overall health of the stream system.

Dr Adam Uytendaal
Senior Aquatic Ecologist
Water Resources
DPIPWE



Water Quality & Water Quantity Risk Assessment

ACTIVITY	RISK	LIKELIHOOD	CONSEQUENCE	RISK RANKING	FUTURE BARRIERS / ACTIONS	POSSIBLE FUTURE BARRIERS/ACTIVITIES TO REDUCE RISK
Over extraction of water from the river and tributaries.	Impacts on in stream, riparian, wetland and estuarine ecology.	5*	4**	20 (Extreme Risk)	<ul style="list-style-type: none"> Development and implementation of the Water Management Plan (WMP). Landcare funded Sustainable Grazing Project. 	<ul style="list-style-type: none"> Encourage participation in the review of the WMP Support research into relevant ecological elements of the system to help inform the review eg. flow requirements of wetlands. Support review into impacts of climate change on water management. Encourage regular communication between the Water Management Planning Section of DPIPWE, the LSCMPIC and the broader catchment community.
Stock access to waterways.	Erosion and faecal contamination.	5	2	10 (Moderate Risk)	<ul style="list-style-type: none"> Fencing has already been undertaken along various sections of the river and tributaries as a result of previous funding programs. Incentives for fencing and off-stream water points for stock are currently available. The Catchment Coordinator position currently assists in facilitating the linkage between funding opportunities for fencing and interested landholders. 	<p>Continue the Catchment Coordinator position to facilitate:</p> <ul style="list-style-type: none"> A strategic review of fencing requirements to determine priorities areas to be fenced (this is to maximise the effectiveness of public and private investment in on-ground works); Support for landholders in accessing funding for fencing and ongoing management of fenced areas. Continued production of the <i>Catchment Newsletter</i> to communicate with land managers the latest NRM information and opportunities.
Roads close to waterways or along drainage lines.	Impacts on water quality due to sedimentation and pollution.	3	1	3 (Low Risk)	Code of Forest Practice – requirement to ensure that building of forestry roads has minimal impact on water quality.	<ul style="list-style-type: none"> Request a presentation from the Forest Practices Authority on the Code; Encourage a review of existing roads in the catchment that were built prior to the Code. Encourage Council/s to develop policies and procedures detailing and documenting best practice in road design and maintenance.
Stock grazing management.	Impacts on water quality due to erosion and faecal contamination.	4	3	12 (Moderate Risk)	Landcare funded Sustainable Grazing Project.	Continue producing the <i>Catchment Newsletter</i> communicate with land managers the latest NRM information and opportunities.
Removal of / impact on riparian areas.	Impacts on water quality for example due to reduced filtration and increases in water temperature.	5	4	20 (Extreme Risk)	Landcare funded Sustainable Grazing Project.	Continue the Catchment Coordinator position to communicate with land managers the value of riparian vegetation and support them in accessing opportunities to protect it, and improve condition.

ACTIVITY	RISK	LIKELIHOOD	CONSEQUENCE	RISK RANKING	FUTURE BARRIERS / ACTIONS	POSSIBLE FUTURE BARRIERS/ACTIVITIES TO REDUCE RISK
Minimal or uncoordinated and uncommunicated water quality monitoring program.	Limited understanding about the past, current and future ongoing health of the river and the impacts of various activities on water quality.	5	3	15 (High Risk)	<ul style="list-style-type: none"> Much data has been collected and communicated in an opportunistic way over a number of years. LSCMPIC has obtained funding for monitoring equipment and has developed a monitoring plan involving the community with support from DPIPWE technical specialists. 	<ul style="list-style-type: none"> Continue the Catchment Coordinator position to work as a liaison between professionals in DPIPWE, other organisations involved in water quality monitoring, NRM South and the community to progress a coordination and communication strategy for current and future monitoring. Utilise the Catchment Newsletter to communicate results of water quality monitoring activities.
Over extraction of water due to limited knowledge of the hydrology of the catchment.	Impacts on in stream, riparian and estuarine ecology.	4	4	16 (High Risk)	An initial hydrological study has been undertaken.	<ul style="list-style-type: none"> Continue to engage with researchers and relevant agencies to increase our understanding of the hydrology of the catchment, particularly in light of climate change. Utilise the Catchment to Coast newsletter to communicate this knowledge.
Reliance on and increased building of small water holes.	Possibility of cumulative impacts of small water holes on the overall health and quality of the river system.	6	3	18 (High Risk)	Currently only those water holes that have been registered with DPIPWE are known.	<ul style="list-style-type: none"> Work with State government specialists and other relevant specialists in working a way forward in getting a better understanding of the full extent of small water holes and the possible cumulative impacts.
Non compliance due to a limited knowledge or understanding of relevant legislation, codes of practice, planning schemes etc.	Community conflict and possibility of laws being broken and litigation.	5	3	15 (High Risk)	Landcare funded <i>Sustainable Grazing Project</i> . Other networks and media sources also communicate relevant laws, legislations etc. (ie local Council, TFGA, The Tas Country).	<ul style="list-style-type: none"> Continue producing the <i>Catchment Newsletter</i> communicate with land managers changes and updates of relevant policy and legislation.

* Reasons identified why the **Likelihood** was selected included:

- Currently it is not possible to determine the volume of water that is being extracted and whether it reflects users allocations due to the lack of resources available in DPIPWE Water Management Planning;
- Concerns that the current Water Management Plan has over allocated the available water resource;
- Inability to review the provisions in the WMP outside of the review period despite any mitigating circumstances ie. extended drought condition.

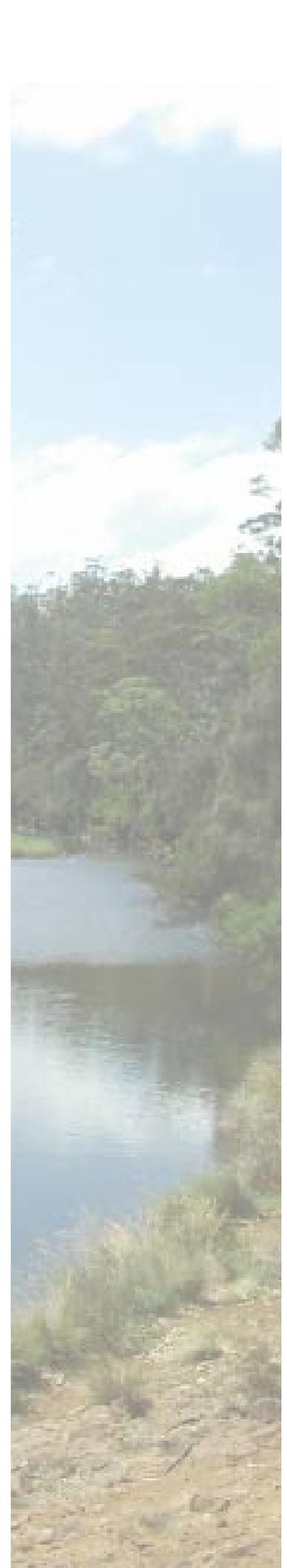
** Reasons identified why the **Consequence** was selected included:

- The significant *community conflict* that water management issues can cause;
- Potential *loss of economic viability* of land managers if there are significant impacts to water quality and quantity; and
- The *lack of knowledge* regarding the potential *impact of land use change* on water quality and quantity.



Recommended Actions

- Oversee the completion of the LWA / FRDC 'Water Use Across A Catchment' project.
- Encourage participation in any future review of the State Government's 'Little Swanport Water Management Plan'.
- Encourage and support coordinated water quality monitoring by government agencies, researchers and community.
- Support landholders with managing riparian vegetation through:
 - facilitating access to funding.
 - provide information.
 - linking to available programs and organisations.
- Improve communication between State Government water management and planning agencies, the committee and the broader community.
- Continue to provide communication to the broader community on water issues and activities through the Catchment to Coasts newsletter.



Soils of the Little Swanport Catchment

The soils of the catchment are highly diverse, derived from Jurassic Dolerite hills, with smaller areas of Triassic sandstone, Permian Mudstone, and flatter areas formed from weathering of surrounding hills and remnant river zones.

Jurassic dolerite dominates the catchment, and has formed soils which range from skeletal and stony brown profiles formed on hilltops, mountains and ridges, through to gradational or texture contrast soils on slopes. Gradational soils are fertile and well drained, gradually increasing in clay content from clay loam surfaces, to medium heavy clays at depth. Profiles are brown to red in colour, and very stony. The texture contrast profiles are found where sandier textured surfaces have accumulated, on exposed slopes, or in areas of preferential drainage where weathering has occurred. They comprise moderately well drained, shallow and stony profiles with grey sandy loams over mottled brownish yellow medium heavy clays. Exposed crests and ridges are extremely shallow and stony, directly overlying weathered or partially weathered dolerite bedrock. Dolerite soils are moderately prone to sheet, rill and gully erosion under major disturbance.

Soils formed from Triassic sandstone occur mainly around the southwest of the catchment near Woodsdale and the mouth of the catchment around Little Swanport, on low undulating hills and associated flats. Areas of mudstone and siltstone are also dispersed through the area, resulting in complex soil sequences. Hilltop and upper slope soils are shallow, stony uniform soils comprising brown and yellowish brown sandy loams, directly overlying sandstone bedrock. Hill slopes have developed moderately well drained texture contrast soils, with sandy loam surfaces overlying yellowish brown sandy clays. These soils are prone to erosion by water and wind where groundcover is not maintained, especially around streambanks. Soils of the flats consist of deep, greyish-brown silty or sandy clays, which are prone to waterlogging and flooding in wetter months.



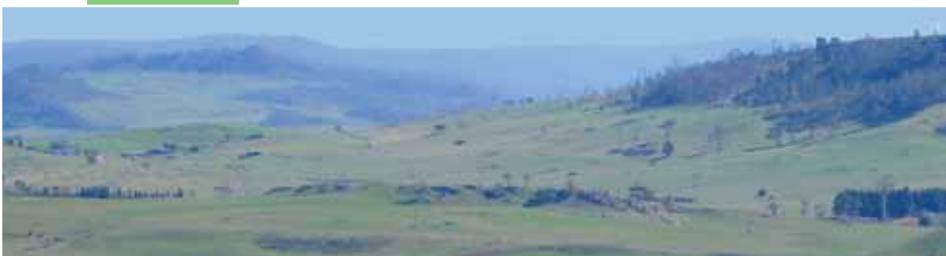


Soils continued

Deeply weathered Permian mudstone and siltstone hills to the west of the catchment around Whitefoord have formed relatively unproductive, grey silty clay duplex soils which are extremely prone to tunnel, gully and sheet erosion if devoid of ground cover. This is a major hazard during rainfall events after periods of drought. Mottled dark grey and black heavy clays have formed on the flats, which can also be susceptible to waterlogging.

In summary, the soils of the catchment are complex. On undulating hills and mountains soils can be extremely stony, while deeper and less stony soils with better land capability are found on lower slopes and flats, concentrated around Little Swanport.

*Darren Kidd
Soils Officer
DPIPWE
April 08*



Soils Risk Assessment

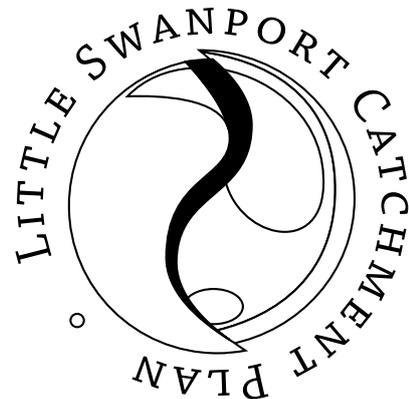
ACTIVITY	RISK	LIKELIHOOD	CONSEQUENCE	RISK RANKING	FUTURE BARRIERS/ ACTIONS	POSSIBLE FUTURE BARRIERS/ ACTIVITIES TO REDUCE RISK
Vegetation removal & irrigation practices.	Increase in salinity.	5	3	15 (High Risk)	<ul style="list-style-type: none"> • SGSL Trial • Sustainable Production Landcare Project 	<ul style="list-style-type: none"> • Encourage & support initiatives to monitor salinity, & provide education & awareness. • Encourage soil testing • Encourage landholders to plant & maintain perennial pastures / native vegetation
Vegetation removal & intensive grazing.	Erosion – tunnel	5	4	20 (Extreme)	Sustainable Production Landcare Project	<ul style="list-style-type: none"> • Encourage & support initiatives to monitor erosion, & provide education & awareness. • Encourage landholder to adopt best practice cultivation. • Encourage & support initiatives to maintain perennial pastures / native vegetation (including shelterbelts).
Vegetation removal & intensive grazing.	Erosion – gully.	5	4	20+ (Extreme)	Sustainable Production Landcare Project	As above
Vegetation removal & intensive grazing.	Erosion – wind.	5	2	10 (Moderate)	Sustainable Production Landcare Project	As above
Vegetation removal & intensive grazing.	Soil structure decline / carbon decline.	5	3	15 (High Risk)	Sustainable Production Landcare Project	Encourage & support monitoring education & awareness initiatives regarding soil management.





Recommended Actions

- Support the continuation of the NLP / Serve Ag 'Sustainable Agriculture' project.
- Investigate options to progress the Sustainable Grazing on Saline Lands trial in the lower catchment.
- Encourage and support monitoring, education and awareness initiatives regarding soil management.
- Encourage and support initiatives that further define soil type and capability throughout the catchment.



Fire management

As a result of the low average rainfall received across this catchment, the vast majority of the catchment is essentially a dry sclerophyll*, or modified dry sclerophyll environment.

The management of fire within the environment across the catchment is essential, as fire has been present in this landscape for thousands of years.

Prior to European settlement the Aboriginal occupants of the land regularly used fire to manipulate the vegetation to improve access through the landscape and to increase opportunities for food sources.

Management of fire in today's world is necessary for a number of reasons including, reduction of the threat and damage posed by uncontrolled wildfires, protection of structural assets and maintenance of fire dependant ecosystems.

There are a number of stakeholders which have a key role in fire management in the catchment and they include Tasmania Fire Service (TFS), Department of Defence (DofD), Forestry Tasmania (FT), Parks and Wildlife Service (PWS) and individual land owners.

The legislative responsibility of fire management lies with the TFS however it is only with community support and cooperation that fire management can be effective.

As indicated the catchment has isolated small communities and residents scattered through the area. These communities have been established in a range of vegetation types and as such have varying levels of threat from fire.

** Sclerophyll - is a type of plant that has hard stiff or leathery leaves. Dry sclerophyll forests are common in Australia and have a canopy of eucalyptus leaves.*



Fire management continued

The TFS promote two key approaches to fire management and the protection of assets in the rural environment.

1. To establish and maintain a DEFENDABLE SPACE around assets.
2. Broad scale REDUCTION OF FUEL LOADS in a strategic manner within suitable vegetation types. This is generally achieved by planned Low Intensity Fuel Reduction Burning.

Defendable Space

When large scale wildfires occur it is a practical impossibility for fire fighting agencies to help protect all of the homes and other assets which come under threat. It is therefore essential that all communities and residents focus on establishing a defendable space around their homes and other assets. TFS can provide guidance on how this can be achieved by way of pamphlets, DVD's and or by requesting a visit from a local brigade officer to provide advice.

Reduction of Fuel Loads

The aim of reducing fuel loads throughout the broader environment is primarily to reduce the potential of uncontrollable wildfires which have the potential to turn into "Mega Fires". Long term exclusion of fire from naturally dry environments have in recent years led to large scale fire events throughout Australia and other parts of the world. These wildfires result in a significant cost to society, both financially in containment costs and damage to property, and to the environment.

These impacts can be reduced by well planned and implemented Low Intensity Fuel Reduction Burns

As indicated in other sections of this plan there is a diverse range of vegetation communities across the catchment, ranging from crops and modified pastures to salt marshes , native grasslands, open woodlands and eucalypt dominated forests. Many of the native plant communities benefit and are maintained by low intensity fires.

With any use of fire, management of the frequency is critical to ensure that the floristic community structure is retained. If fires occur too frequently, species can be lost.



Species can also be lost if fire is excluded from the environment for long periods of time. The exclusion of fire in a dry sclerophyll environment leads to a significant build up of fuel loads over time. On average dry sclerophyll forests produce approximately 2 tonnes of litter and fine fuels per hectare per year. If this litter is not reduced, over time the fuel loads increase to the point where, when fires do occur, they are uncontrollable and often cover large areas in a short time. High intensity wildfires cause significant damage to the forest environment, including fauna which lives within that environment.

Fire is a natural way to reduce fuel accumulation and by introducing controlled fires, species diversity and communities can be maintained, with the added benefit of reducing the threat to other assets from wildfires.

Planning for Low Intensity Fuel Reduction Burns must involve all the stakeholders and must be carried out in a cooperative manner at appropriate times of the year to achieve the aims set out in the plan.

Wildfires do not respect land tenure boundaries and it is in everyone interest to manage fire within the catchment in a cooperative way.

David Tucker, Glamorgan Spring Bay NRM Committee

Recommended Actions

- Initiate the development of a holistic fire management plan for the catchment involving all relevant stakeholders.
- Encourage communication between key stakeholders with fire management responsibilities.

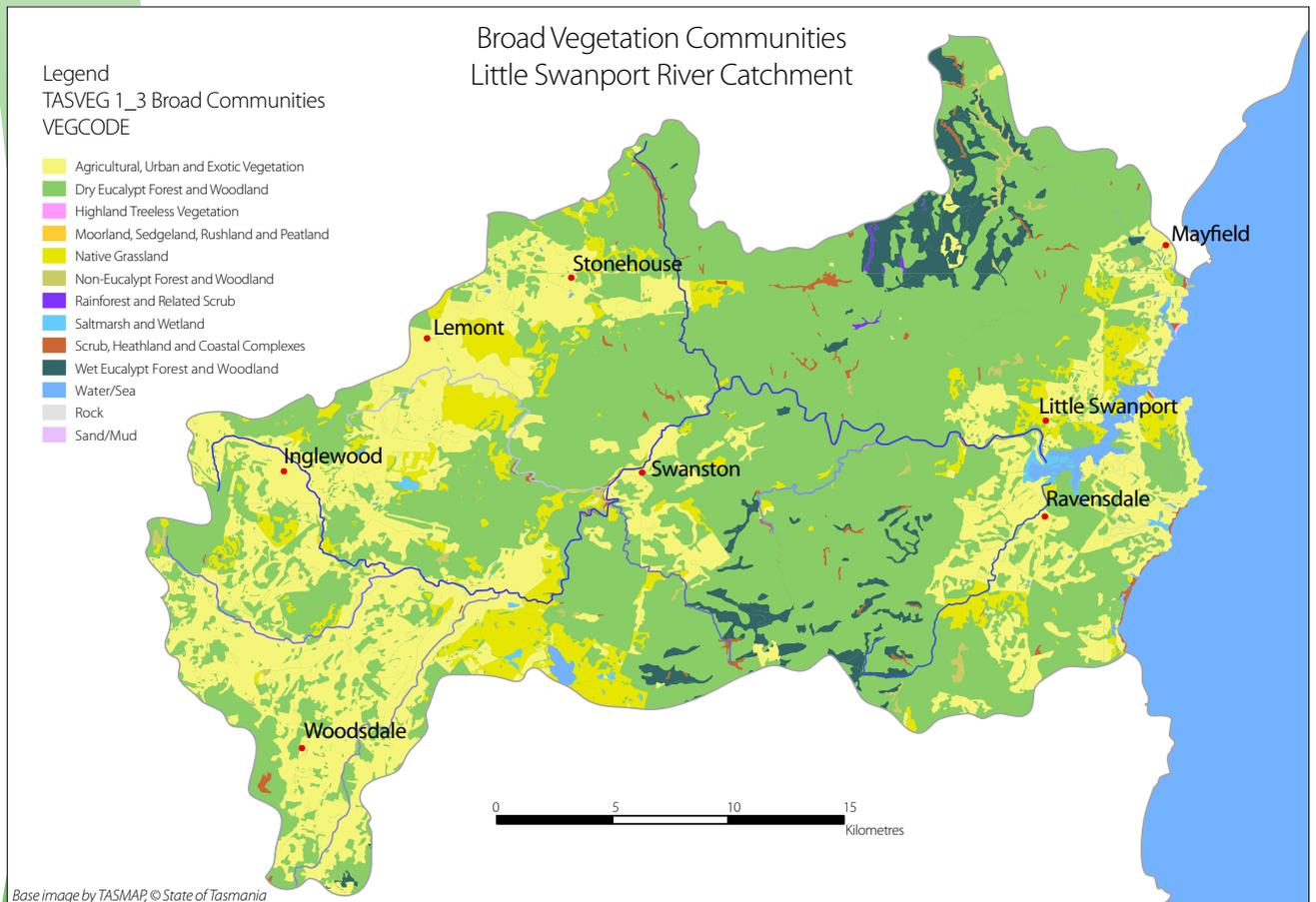


Native Vegetation

The vegetation of the Little Swanport catchment is highly diverse in structure and species composition, this variation being the result of substantial variation in climate, soils, topography and disturbance history. Many rare or threatened plant species and communities are found in the catchment, especially in the drier areas and in the vegetation beside the major streams.

There are several small areas of rainforest of two types, these being situated in deep south-facing valleys in the hills. The more conventional rainforest is dominated by sassafras (*Atherosperma moschatum*) and musk (*Olearia argophylla*). This occurs in the wettest of places at relatively high altitude. In drier, fire-protected deep valleys a form of 'dry' rainforest, dominated by species such as native olive (*Notelaea ligustrina*), native pear (*Pomaderris apetala*), pinkwood (*Beyeria viscosa*) and kurrajong (*Asterotrichion discolor*) can be found. This community is regarded as rare on a Statewide basis.

Wet eucalypt forests, usually dominated by one of gum-topped stringybark (*Eucalyptus delegatensis*), stringybark (*E. obliqua*) or Brookers gum (*E. brookerana*) and with understories of broad-leaved small trees including those that dominate dry rainforest occur on the more productive sites in the higher elevations of the catchment. However, the dry eucalypt forests dominate



most of the remaining natural area of the catchment. These have an amazing diversity of understorey types, ranging from pastel blue tussock grasslands to dense thickets of prickly shrubs, and a wide variety of mixture of eucalypts, some of which are the white peppermint (*Eucalyptus pulchella*), the black peppermint (*Eucalyptus amygdalina*), the silver peppermint (*E. tenuiramis*), the black gum (*E. ovata*), the blue gum (*E. globulus*) and the white gum (*E. viminalis*).

Woodland, scrub and forest dominated by non-eucalypts area also scattered through the catchment. Dominant species include the Oyster Bay pine (*Callitris rhomboidea*), the she-oak (*Allocasuarina verticillata*) and the lemon bottlebrush (*Callistemon pallidus*).

The Little Swanport River has outstanding riparian heath and scrub, some of it containing the threatened conifer, the South Esk pine (*Callitris oblonga*), and most of it dominated by narrow-leaved wattle (*Acacia mucronata*) and woolly ti-tree (*Leptospermum lanigerum*). Inland heaths also occur on poorly-drained, relatively infertile flats among the forests of the Eastern Tiers.

Saltmarshes are found in the Little Swanport estuary, including extensive areas of shrub samphire (*Sclerostegia arbuscula*). Some native grasslands dominated by kangaroo grass (*Themeda triandra*) or tussock grass (*Poa labillardierei*) have survived on the runs of grazing properties. These are threatened with imminent extinction, although not officially so.

Land clearance and clear felling of forests has taken place in the catchment over the last three decades, much of it concentrated in plant communities that are not only threatened in themselves but also contain many rare or threatened species. However, many people in the community of the catchment have taken action to preserve much of its outstanding native vegetation for the future, with some of the most valuable private reserves in Tasmania being found there.

Professor Jamie Kirkpatrick, University of Tasmania



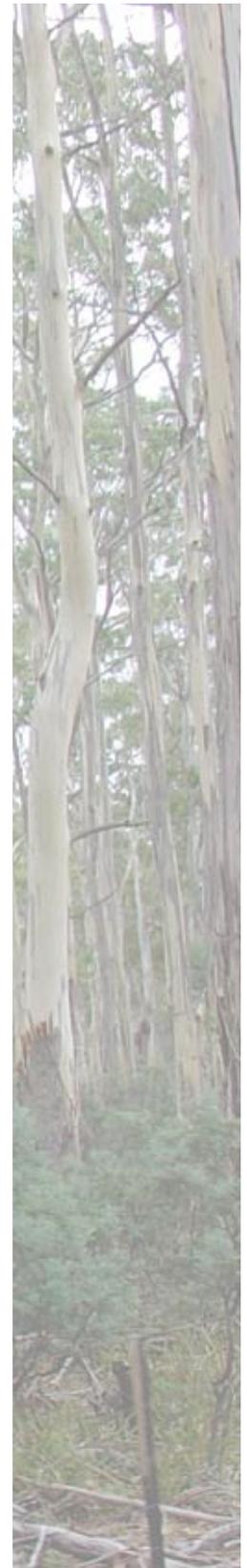
Callitris oblonga ssp. oblonga. Courtesy of A. Zacharek.

Native Vegetation Risk Assessment

ACTIVITY	RISK	LIKELIHOOD	CONSEQUENCE	RISK RANKING	FUTURE BARRIERS / ACTIONS	POSSIBLE FUTURE BARRIERS/ACTIVITIES TO REDUCE RISK
Extreme fire event	Loss of vegetation. May result in potential erosion & weed invasion issues as well as impact on threatened species & vegetation communities. Broader risks include impacts on structures, homes & businesses.	4	4	16 (High Risk)	Fire management planning undertaken by the Dept. of Defence.	<ul style="list-style-type: none"> Development of a holistic fire management plan for the catchment in consultation with relevant stakeholders. Coordination of existing / future fire management plans.
Weed invasion	Loss of biodiversity & structural integrity in remnant vegetation.	6	3	18 (High Risk)	<ul style="list-style-type: none"> GSB & SM Weed Management Plans Private landholder efforts, in weed control Weed control activities via NRM funded projects focusing on priority weeds such as Patterson's Curse & Spanish Heath. 	Refer to Weed Management Section
Land clearing	Loss of native vegetation which may include threatened vegetation communities & have potential impacts on threatened flora & fauna.	4	3	12 (Moderate Risk)	<ul style="list-style-type: none"> Forest Practices Code Relevant legislation such as the Native Conservation Act. 	Communication of requirements under the relevant legislation.
Grazing pressure on remnant vegetation	Loss of integrity & resilience. May exacerbate dieback & limit chance for revegetation.	5	3	15 (High Risk)	Funding incentives past & present continue to slowly increase the amount of remnant vegetation managed through fencing.	<ul style="list-style-type: none"> Ongoing support of landholders in accessing available funding. Ongoing communication of the success of such initiatives to the broader catchment community.
Spread of root rot fungus Phytophthora cinnamomi through vehicle & walking traffic.	Die back in vulnerable communities such as heathlands.	3	5	15 (High Risk)	Forest Practices Code	<ul style="list-style-type: none"> Find out if and where Phytophthora occurs in the catchment. Determine extent of vulnerable vegetation communities. Develop management plan to protect priority areas from future invasion.
Clearing over time resulting in isolated remnants.	Remnants susceptible to edge effects, such as weed invasion & exposure to wind, which over time reduces resilience which may result in loss of integrity & dieback.	6	4	24 (Extreme Risk)	<ul style="list-style-type: none"> Southern Midlands Bushcare Strategy has identified the locations of remnants & recommends a 'corridor' concept to link strategic areas. Past & current fencing & revegetation initiatives in the Southern Midlands refer to this strategy. 	<ul style="list-style-type: none"> Extend this 'corridor' strategy to the GSB end of the catchment. Continue to seek funding to progress an strategic approach to revegetation & remnant protection.
Native grasslands management.	Overgrazing or grazing at the wrong time may result in weed invasion & loss of species diversity & community integrity.	4	4	16 (High Risk)	Support for managing remnant vegetation including grasslands has been available.	<ul style="list-style-type: none"> Continue to link interested landholders with the appropriate programs & the relevant information.
Management of remnant vegetation communities.	May result in reduction in biodiversity & structural integrity perhaps through weed invasion, use of inappropriate fire regimes, or firewood collection (permitted or illegal)	4	4	16 (High Risk)	<ul style="list-style-type: none"> Past & current vegetation conservation programs offer landholders advice & support for managing remnant vegetation. The 'Managing Your Bush' publication is an excellent guide to assist landholders. 	<ul style="list-style-type: none"> Continue to link interested landholders with the appropriate programs, relevant references & available resources to assist in improving management techniques. Encourage participation in the 'Bushwatch' program to curb illegal firewood collection activities.
Landscapes & areas suffering tree decline requiring revegetation.	Increases in tree dieback, & soil loss due to lack of vegetation cover.	6	4	24 (Extreme Risk)	<ul style="list-style-type: none"> Southern Midlands Bushcare Strategy has identified the locations of remnants & recommends a 'corridor' concept to link strategic areas. Various landcare initiatives have been trialled to re-establish vegetation cover in eroded areas eg. 	<ul style="list-style-type: none"> Extend this 'corridor' strategy to the GSB end of the catchment & seek funding to enable strategic fencing & revegetation.. Continue to seek funding to assist landholders in revegetating eroded landscapes.

Recommended Actions

- Initiate the development of a holistic fire management plan for the catchment involving all relevant stakeholders.
- Communicate current native vegetation legislation to landholders eg. via catchment newsletter.
- Support landholders with managing native vegetation through:
 - facilitating access to funding;
 - provide information;
 - linking to available programs and organisations.
- Find out the existence and distribution of *Phytophthora cinnamomi* in the catchment.
- Support strategic vegetation management initiatives to maintain and connect remnant vegetation in the landscape eg. Southern Midlands Bushcare Strategy.
- Raise awareness of the 'Bushwatch' program to encourage reporting of illegal firewood collection.



Weeds

Weeds are among the most serious threats to primary production and the natural environment in the Little Swanport Catchment. They reduce farm and forest productivity, displace and degrade native species and communities, and contribute significantly to land and water degradation.

The effects of weeds may be direct, such as:

- o the loss of agricultural production as a result of weed competition with crops;
- o the loss of conservation values when native bushland is replaced by weeds;
- o the time and money spent on removing weeds from paddocks and gardens.

Or indirect, for example:

- o the higher price of food due to increased production costs caused by weeds;
- and
- o ncreased severity of bushfires due to flammable weeds.

In the Little Swanport Catchment many of our current weed problems come from plants that were deliberately introduced to the area for a variety of reasons. A classic example is gorse which was planted for hedgerows and stock fodder in early settlement days.

Our future weeds may be some of the plants that we are currently planting in our gardens which may become 'garden escapees'. An example of this is *Agapanthus* which is a popular hardy garden plant which has the potential to spread in bush areas. There are concerns that the introduction of the Bumble Bee into Tasmania is increasing the viability of *Agapanthus* seed and may result in increased weedy potential in the future.

The Little Swanport Catchment has many challenges with weed management due to a diverse population with different understandings of what the issues are and different capacities to manage existing and emerging problem weeds.

The Glamorgan Spring Bay and Southern Midlands Council's have both developed Weed Management Plans that provide a strategic approach to addressing these complex issues.



Weeds continued

These weed management plans identify a variety of ways to improve weed management especially through the pooling of resources and knowledge by all land managers. They recognize that communication is a key element of successful weed management as often land managers and the general community are not aware of significant weed threats and what to do about them.

These plans have assisted the Council's to obtain funding and work with public and private land managers to control priority weeds.

Throughout Tasmania Declared weeds under the Tasmanian Weed Management Act 1999 are prioritised for management according to zones.

ZONE A – Declared weeds are highest priority. The aim is to eradicate these weeds which have a huge potential to spread and become very costly to control, but are currently in low numbers. Examples include:



Serrated Tussock (*Nassella trichotoma*)



Spanish Heath (*Erica lusitanica*)

ZONE B – These weeds are already widespread and the aim is to contain their spread. An example of this is gorse, and both Councils have a roadside control program in place.

*Helen Geard & Mel Kelly, NRM Officers,
Southern Midlands and Glamorgan
Spring Bay Council*



Gorse (*Ulex europaeus*)



Weed Risk Assessment

ACTIVITY	RISK	LIKELIHOOD	CONSEQUENCE	RISK RANKING	FUTURE BARRIERS / ACTIONS	POSSIBLE FUTURE BARRIERS/ACTIVITIES TO REDUCE RISK
Uncoordinated & ad hoc weed control activities.	Misuse of limited weed management resources due to inappropriate prioritising of control activities.	5	4	20 (Extreme)	<ul style="list-style-type: none"> Weed mapping undertaken by Council NRM officers as part of implementing WMPs. SM Council roadside gorse control program in partnership with adjoining landholders. GSB roadside spraying program. GSB NRM review of WMP & resources for implementation. 	<ul style="list-style-type: none"> Build upon and review existing mapping based on current understanding of priority weeds. Work in partnership with both Councils & DPIPWEE to ensure any weed mapping information is included into any existing databases of weed information.
Use of plants in gardens with weed potential.	Increase spread of potentially invasive plants.	4	4	16 (High Risk)	<ul style="list-style-type: none"> Many years of information via ongoing Council newsletters & through information brochures on 'environmental weeds'. Development of the GSB 'Grow Local' poster which gives information on suitable alternative native plants. 	<ul style="list-style-type: none"> Work with relevant organisations in developing & distributing targeted information on environmental weeds & suitable replacement plants. Develop a demonstration native plant garden at the 'Ravensdale Hall' in the lower catchment & at Woodsdale in the middle catchment.
Accidental spread of weeds due to lack of awareness.	Increase spread of potentially invasive plants.	4	4	16 (High Risk)	<ul style="list-style-type: none"> Many years of information via Council newsletters & through information brochures on weeds. Increased understanding of the types, locations & priority of weeds throughout the catchment (& the assets that they may threaten) as a result of the development of the two Council Weed Management Plans as well as improved knowledge of weeds in general. Development of the DPIPWEE 'Washdown Guidelines'. NRM South funded project on weed hygiene for local government, Hydro, PWS & contractors. 	<ul style="list-style-type: none"> Continue to work with relevant organisations in developing & distributing information on priority weeds in the catchment & best practice to prevent spread & protect priority assets. Support education and training initiatives that encourage best practice to avoid weed spread. eg. vehicle hygiene.
Accidental spread of weeds due to poor equipment hygiene.	Increase spread of potentially invasive plants.	4	4	16 (High Risk)	<ul style="list-style-type: none"> Current NRM South funded project on weed hygiene for local government, Hydro, PWS & contractors. 	<ul style="list-style-type: none"> Participate in programs & projects that focus on best practice hygiene practices to prevent weed spread. Organise a Best Practice Weed Management Demonstration day that incorporates information on weed hygiene protocols.
Spread of weeds due to lack of time & resources.	Increase spread of potentially invasive plants.	4	4	16 (High Risk)	<ul style="list-style-type: none"> During NHT 1 significant funding was available for strategic on ground work for weed control. Weed management plans have been developed in both Council areas which have resulted in additional resources 	<ul style="list-style-type: none"> Continue to work in partnership with NRM Officers & NRM South to access funding for control of priority weeds.
Spread of weeds due to lack of knowledge of how to control.	Increase spread of potentially invasive plants.	4	4	16 (High Risk)	<ul style="list-style-type: none"> Over the last ten years there has been an increase in knowledge of best practice control measures of priority weeds such as gorse. 	<ul style="list-style-type: none"> Organise a Best Practice Weed Management Demonstration day focusing on control of priority weeds. Work with relevant organisations in developing & distributing best practice control information.
Importation of contaminated grain & animal feed.	Increase spread of potentially invasive plants.	4	4	16 (High Risk)	<ul style="list-style-type: none"> Quarantine measures exist but unsure of what they are & how effective they are. Property Management Planning process looks at how to address farm scale issues such as dealing with contaminated grain & animal feed. 	<ul style="list-style-type: none"> Need to find out what Quarantine measures are in place & how effective they are. Encourage landholders to put in place strategies to immediately control & prevent the spread of any weeds which may arrive through contaminated grain, animal feed or soil.

Recommended Actions

NB: All actions to link in with the Glamorgan Spring Bay and Southern Midlands Weed Management Plans.

- o Encourage and support NRM regional and local / state government initiatives to digitise existing weed mapping data and review weed maps with landholders.
- o Encourage and support further mapping as required.
- o Work in partnership with NRM regional and local / state government initiatives in communication and education initiatives eg. field days
- o Support landholders with managing weeds through:
 - development of property based weed action plans;
 - facilitating access to funding;
 - access to relevant information;
 - linking to available programs and organisations.



Estuary/Coastal Marine

At the bottom of the catchment the Little Swanport River flows into Great Oyster Bay via the estuary.

The estuary sits approximately 60km downstream from the headwaters. Two other smaller rivers in the catchment, the Buxton River and the Lisdillon Rivulet, also flow directly into the Bay through smaller estuaries. The Little Swanport estuary, approximately 8km in length, is a relatively unimpacted estuary, with no surrounding towns, and is highly valued for its natural beauty and recreational opportunities.

The estuary is classified as wave dominated or bar built. A barrier at the mouth restricts water exchange with Great Oyster Bay to a narrow channel and encloses a large central basin. The estuary is predominately marine influenced during normal river flows but is freshwater dominated during flooding of the Little Swanport River. The head of the estuary is typical of this type of system with shallow mudflats flanked by salt marsh wetlands. These form from the deposition of land-based sediments at the entrance of the river to the estuary. The tidal influence extends to several km above the bridge.

The estuary is a highly dynamic and productive system. It contains extensive seagrass beds which provide shelter and food for a wide diversity of animal life. Forty three species of fish have been recorded from the estuary. Most are transitory marine species that occupy the estuary during part of their life cycle. A few species spend their entire life in the estuary. For example black bream are the most abundant fish in the estuary and a popular target fish for recreational fishers. There are also several migratory species that move between freshwater and the ocean, including eels, whitebait and the Australian grayling.

Aquaculture is an important commercial activity in the estuary with 60 hectares leased for Pacific oyster farming. The oysters are grown on racks installed in the lower intertidal area. An oyster nursery which supplies approximately 70% of the oyster juveniles (spat) to marine farms in Tasmania and South Australia is also located on the banks of the estuary and uses the estuarine water to grow the spat.

Although the estuary and coastal waters are relatively unaffected by human activities, there are still issues of concern. Lack of freshwater flow into the



estuary, whether naturally due to changing climatic conditions resulting in lower rainfall or increasing demand for irrigation, changes the estuary to a more marine dominated system. There is some concern that the lower freshwater flows are reducing the nutrient input into the estuary, especially nitrogen and silicates, which are important to the production of the microalgal food of oysters. On the other hand, large floods transport high loads of nutrients and sediment from the land into the estuary and coastal waters, which can lead to the production of nuisance algal blooms and altered habitat. Changing climatic conditions are likely to affect the estuary and coastal systems. Lower rainfall and stronger influence of the nutrient poor East Australian Current may produce some changes in the species that occur in the estuary and coastal waters and a reduction in productivity. Already we are seeing massive algal blooms, never seen before, in local waters.

*Dr Christine Crawford Program Leader
- Marine Environment Tasmanian Aquaculture and Fisheries Institute*

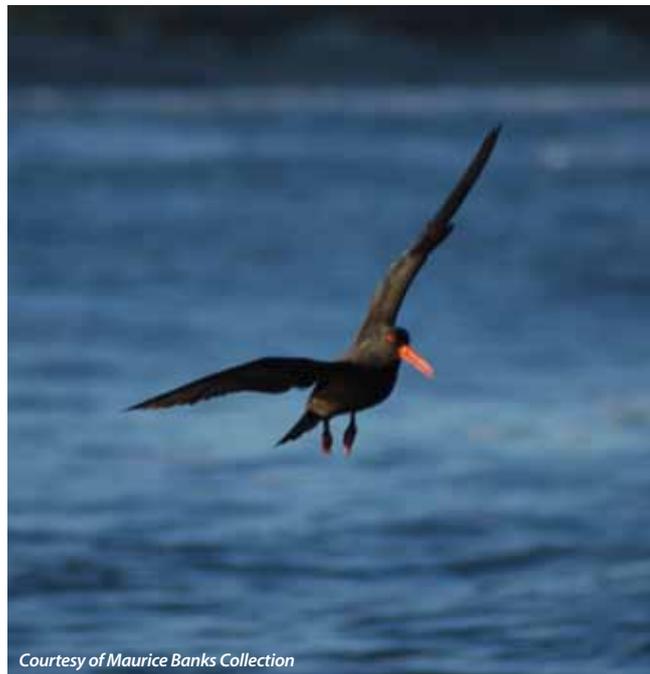


Estuary/Coastal Marine Risk Assessment

ACTIVITY	RISK	LIKELIHOOD	CONSEQUENCE	RISK RANKING	FUTURE BARRIERS / ACTIONS	POSSIBLE FUTURE BARRIERS/ACTIVITIES TO REDUCE RISK
Increase in coastal development.	Potential to impact on significant coastal values eg. Residential development adjacent to beaches which are significant shorebird breeding sites.	6	3	18 (High Risk)	<ul style="list-style-type: none"> GSBC Planning Scheme State Coastal Policy Coastal Values Database Parks & Wildlife Service Rangers NRM / PWS initiatives such as involving landholders in goose removal projects along the foreshore. 	<ul style="list-style-type: none"> Proactive communication to new residents and developers of the significant coastal values in the catchment eg. Development of a booklet similar to <i>Living at Nine Mile Beach</i> developed by Coastcare for residents at Dolphin Sands. Create opportunities for involvement in activities such as weeding & revegetation, which protect and improve coastal values.
Limited knowledge or understanding of relevant legislation, codes of practice, planning schemes etc.	Community conflict & possible mismanagement, laws being broken & fines/litigation.	5	3	13 (High Risk)	<ul style="list-style-type: none"> Property owners are informed by Council about certain parameters as defined in the Planning Scheme upon undertaking any development. Signage in certain locations instructing what is & is not allowed. Word of mouth with regard to what is & is not acceptable. Increased availability & usage of the internet which enables access & communication of rules & guidelines. 	<ul style="list-style-type: none"> Ensure that information on what legislation etc of relevance to the area is included in the <i>Living at Saltworks & Pony Pool</i> booklet. Ensure clear details on where to go should you be unsure of what is acceptable is also communicated to all residents.
Fishing for bream at the mouth of the Little Swanport River	Possibility of overfishing especially during the spawning season which could have a serious impact in the numbers of bream into the future.	4	4	16 (High Risk)	<ul style="list-style-type: none"> A PhD research project on the biology, habits & movements of the Black Bream in the estuary. 	<ul style="list-style-type: none"> Communicate the outcomes of research to the necessary management agencies & the fishing community. Work with the appropriate management agencies & the recreational fishing lobby to develop management actions to protect this and other fish species into the future.
Access of stock to saltmarsh along the estuary.	Impacts on saltmarsh integrity through grazing, trampling & nitritication. Faecal contamination which may impact on water quality.	6	3	18 (High Risk)	<ul style="list-style-type: none"> Previous Landcare funding has resulted in sections being fenced from stock. Current NRM incentives program is likely to result in more landholders fencing off saltmarsh. CEV database has increased knowledge of saltmarsh locations & quality & this information will be available for landholders involved in Property Management Planning. Catchment Coordinator position has been invaluable in communicating value of saltmarsh & assisting in linking landholders to funding opportunities. 	<ul style="list-style-type: none"> Work with NRM South in developing simple information on the value of saltmarsh in the estuary. Ensure the Catchment Coordinator continues to enable landholders to get assistance in sourcing funding for fencing to protect the saltmarsh from grazing pressure.

Recommended Actions

- Support the development of a 'Living At' booklet that covers the coastal communities of Pontypool and Saltworks, as well as others living around the estuary.
- Continue to keep abreast of research of estuarine, coastal and marine research and use catchment meetings as an opportunity for information exchange.
- Continue to use the Catchmant to Coasts newsletter as a means to communicate to the broader community information about estuary, coastal and marine issues, values and activities.



Courtesy of Maurice Banks Collection



Threatened Species

The Little Swanport River Catchment supports a diversity of habitats for native fauna reflecting the high diversity of vegetation types and plant communities present. Most of the native vegetation remaining in the catchment is dominated by dry eucalypt forest types with other well represented habitats including riparian heaths and scrubs, and extensive saltmarshes in the Little Swanport estuary.

The Little Swanport catchment supports important habitat for several threatened fauna species with a widespread distribution in Tasmania. The population of Tasmanian devils (*Sarcophilus harrisii*) in the catchment is currently low, though they are still apparent, particularly younger animals dispersing at the end of summer. This area is noteworthy for the presence of occasional devils with pale grey fur. The density of Spotted-tailed quolls (*Dasyurus maculatus maculatus*) is low though they occur throughout the catchment with some records close to the coast. The catchment supports a high density of Wedge-tailed eagles (*Aquila audax fleayi*), and White-bellied sea eagles (*Haliaeetus leucogaster*) are common along the coastline. The Tasmanian Masked owl (*Tyto novaehollandiae castanops*) is common in the lower catchment and near coastal areas with several records of nesting. Swift Parrots (*Lathamus discolor*) occur in the breeding season between September and February in near coastal areas where they rely primarily on forests supporting blue gum for food, and old forests supporting hollows for nesting.

Few threatened invertebrates have been recorded in the Little Swanport catchment except for Chaostola skipper (*Antipodia chaostola*). Chaostola skipper is a small butterfly with only a few isolated colonies known along the east coast. The foodplant of the caterpillar is the thatch sawsedge (*Gahnia radula*) which is found on sandstone and mudstone substrates, usually associated with black peppermint (*Eucalyptus amygdalina*) forest.

Additional species and new localities within the Little Swanport catchment may be revealed by further dedicated surveys for threatened species. Conservation management of potential habitat for threatened fauna is an important action for species recovery for most of the threatened fauna recorded within the catchment.



Little Swanport catchment is known to be home to 35–40 threatened flora species. Many of these have specific habitat and disturbance requirements. Dry eucalypt woodlands and forests on dolerite substrates, for example, may contain a strong endemic component with species such as *Deyeuxia apsleyensis* (apsley bentgrass), *Eucalyptus barberi* (barbers gum) and *Ozothamnus lycopodioides* (clubmoss everlasting bush). Species associated with other habitats include: grassy woodlands — *Desmodium gunnii* (slender ticktrefoil), *Eryngium ovinum* (blue devil) and *Scleranthus fasciculatus* (spreading knawel); riparian systems — *Baumea gunnii* (slender twigsedge) and *Pomaderris phyllicifolia* (narrowleaf dogwood); rockplates — *Pellaea calidirupium* (hotrock fern) and *Poa mollis* (soft tussockgrass). Species such as *Gyrostemon thesioides* (broom wheelfruit) and *Cyphanthera tasmanica* (Tasmanian rayflower) may be locally abundant after fire, but rarely seen at other times.

Our knowledge of the distribution of threatened flora within the catchment is relatively poor, reflecting the limited survey effort to date, and it is considered highly likely that additional species will be uncovered given a targeted and well-resourced survey effort. In addition, site assessments are required to determine the status of recorded sites and the needs for specific management actions.

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Narrow Dogwood
Pomaderris phyllicifolia ssp.
phyllicifolia. Courtesy H & A
Wapstra



Clubmoss Everlasting Bush
Ozothamnus lycopodioides.
Courtesy G. Jordan

Threatened Species continued

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Dr Phil Bell
Section Head
Threatened Species Section
Biodiversity Conservation Branch
Department of Primary Industries and Water



Tasmanian Ray Flower *Cyphanthera tasmanica*.
 Courtesy G. Jordan

Recommended Actions

- Continue to provide support for land managers to protect, manage and establish remnant vegetation because it provides the best habitat for fauna;
- Encourage and support research and monitoring of threatened species in the catchment.
- Communicate information about the importance and value of threatened species in the catchment;



Barbers Gum *Eucalyptus barberi* flowers. Courtesy M. Hanson



Game Management

The Game Management Services Unit (GMSU) sits within the Department of Primary Industries, Park, Water and Environment (DPIPWE). The GMSU is dedicated to implementing sustainable management programs for a range of species including Bennett's & Rufous Wallaby, Brushtail Possum, Fallow Deer, Wild Duck, Ringneck Pheasant & Brown Quail.

The management objectives of the above species are directed through the allocation of licensed game seasons and/or species control through the issuing of crop protection permits. Species, licences and permits are covered under the Nature Conservation Act 2002 and the Wildlife Regulations 1999, with the onus being on hunters and landowners to be familiar with this legislation.

The Little Swanport Catchment region encompasses a majority of the species managed by the GMSU. As with other regions in Tasmania, the pathway to successful game management is to find a balance between the needs of game and the needs of farmers, foresters and community.

Species in the Little Swanport Catchment such as Wild Duck and Fallow Deer are regarded as having significant recreational value. These species are actively pursued by local and visiting recreational hunters during the game season periods.

Native browsing animals such as Bennett's & Rufous Wallaby and Brushtail Possum are in very high abundance in the catchment and are a source of direct conflict for farmers, foresters and their resources.

In unmanaged situations, Wallaby and Possum can cause high level browsing damage on agricultural and forestry resources. This impact can be proactively managed through the use of control methods such as shooting and game fencing. The way forward for landowners is to develop a damage management strategy and this may be delivered through a Property based Wildlife Management Plan (PBWMP).

The ability of landowners or managers to control Wallaby and Possum numbers at an individual property level is vital for successful browsing animal management to be achieved across the region. They are encouraged to contact the GMSU to discuss game management on their properties.

Recreational hunters can play a big role in assisting landowners to control browsing animals on their properties. In a similar way, recreational hunters can also assist in managing the game resource through sending their game harvest data forms to the GMSU.

Matt Byrne
Game Management Officer, Game Management Services Unit

Recommended Action

- o Inform landholders of the services of Game Management Services Unit in developing property based game management plans.





Aboriginal Heritage & Culture

The Oyster Bay Tribe's territory extended from St. Patrick's Head in the north to the Derwent River estuary in the south.

There were ten bands in the tribe of which the *Pordeareme* lived around Little Swanport during the winter eating shellfish and marine vegetables until July.

At the end of August the band would join the *Laremairemener* band from Grindstone Bay, the *Portmairemener* from the Prosser River and the *Tyreddeme* from Maria Island and move inland along the Little Swanport and Prosser Rivers to the Eastern Marshes to hunt birds, kangaroos and wallabies.

The bands would move further west with the approach of summer as far as the Clyde and Ouse Rivers and then return through the Midlands arriving back at the coast in June (Ryan, 1982).

Values and Risk

There are a range of Aboriginal values in the Little Swanport catchment.

These include a high concentration of quarry sites along the middle reaches of the Swanport River, coastal middens, and important cultural landscapes and cultural resources.

Significant Aboriginal cultural heritage places tend to aggregate around water ways, and this is particularly the case surrounding the river and waterways of the Little Swanport catchment.

Development, particularly the rapid increase in coastal development is a potential threat to Aboriginal cultural heritage sites. Intensive agriculture, grazing and hydro activities are also a potential threat.

Risk to aboriginal heritage can be minimized when management processes are undertaken in consultation with the Aboriginal community through the Tasmanian Aboriginal Land and Sea Council (TALSC).

All Aboriginal sites are protected under the Tasmanian Government's *Aboriginal Relics Act 1975*.

New aboriginal Heritage Legislation is being developed that will replace this act.

The new legislation will require local government to address Aboriginal cultural heritage protection within their planning schemes.

Paul Dawson
Aboriginal NRM Support Officer
NRM South/Tasmanian Aboriginal Land and Sea Council

Recommended Action

- Develop a positive relationship with the Tasmanian Aboriginal Community eg. organise a presentation on the Aboriginal Heritage of the catchment from representatives of the Tasmanian Aboriginal Land and Sea Council.

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Contact Information:

Chair, Little Swanport Catchment Management
Plan Implementation Committee: 6254 6153

Glamorgan Spring Bay NRM Officer, Glamorgan Spring Bay
Council: 6257 4777 www.gsbctas.gov.au

Southern Midlands NRM Officer, Southern Midlands Council:
6256 5046 www.southernmidlands.tas.gov.au

NRM South: 6221 6111 www.nrmsouth.org.au



LITTLE SWANPORT CATCHMENT PLAN



Australian Government

