
Bangalow Bamboo - Innovation in Water Cycle Management



The **Bangalow Sewage Treatment Plant (STP)** is going through changes, as is the village as a whole. Byron Shire Council is, in accordance with its adopted policies and strategies, planning to **construct a new STP** and commission **an effluent reuse scheme**. This will better meet Bangalow's changing needs and at the same time stop effluent discharge to Maori Creek.

The existing sewage plant was originally built in 1975, so is now over 30 years old. The new STP should be completed in 2007 with site construction expected to commence early in the year. The effluent reuse scheme saw over 900 bamboo plants planted before the end of November.

A SUSTAINABLE FUTURE

This project is an integral part of Byron Shire Council's Integrated Water Cycle Management and has many benefits for a sustainable future.

The project will

- address the needs of Bangalow's increasing population - there will be **an increase in the plant's capacity to treat effluent from the current 400 kL/day to 850kL/day**

- address community expectations of sustainable water management and the desire to use treated effluent as a valuable resource
- offer best practice and innovation for protection, conservation and education about our precious water resources.
- offer greater compliance to today's stringent environmental standards – there will be a **significant improvement in the quality of the effluent** discharged
- reduce the demand for potable water from our existing water supply
- **reduce the discharges** of treated effluent into Maori Creek - Current discharges will be reduced initially by 12% of dry weather flows with ultimate aim to have 100% dry weather reuse in the future.
- end Bangalow's sewerage moratorium which is currently in place

BAMBOO..... ITS NO ORDINARY PLANT!



A trial conducted by Byron Shire Council and Southern Cross University found that bamboo offered the best response to effluent irrigation. Other potential crops investigated for sustainable effluent reuse included Hemp and Kenaf.

Crops of bamboo will be irrigated with treated effluent from the sewage treatment plant. The bamboo plants will uptake nutrients through natural processes of growth. The end result means that the nutrient discharge to the waterway will be minimized.

Irrigation rates, while conservative at first, may be increased substantially if ongoing monitoring confirms sustainability of higher rates. It is hoped that the bamboo crops will utilize full dry weather flows from the STP in the coming years.

A number of different species of non-invasive clumping-type bamboos are being evaluated for their potential to use effluent productively. Some of the advantages of clumping bamboos are that they are **predictable, easily controlled and easily harvested**. They also have **very high growth rates** and an ability to use added water and nutrients.

Bamboo traditionally has hundreds of uses including; paper, textiles, clothing, furniture, building and mulch applications. The potential of these bamboo products is beginning to be realised in Australia. To ensure maximum resource recovery a goal of this project will be to maximise the value of the end products.

INNOVATION AND SAFETY

Effluent reuse in NSW is governed by the requirements of the NSW Department Environment and Heritage, NSW Department of Health and guidelines from a range of organisations including NSW Recycled Water Co-ordination Committee and the Australian and New Zealand Environment and Conservation Council (ANZECC).

The most innovative aspect of the Bangalow facility is however, the attention paid to what happens to the effluent after it leaves the treatment system.

This treated effluent will be managed in an ecologically sustainable way that has no adverse impact on the natural environment, protects public health, achieves maximum resource recovery and meets the needs and expectations of existing and future communities.

