



## **History**

The Swan Marsh mine site was originally a wetlands area. These wetlands were completely destroyed by extensive clearing more than 100 years ago. The land has been in constant use for a variety of agricultural uses including crop production (peas) and dairy farming. The original wetland ecosystem has long been lost to farming practices and the site is now commonly referred to as a dead peat bog.

Biogreen seeks to clarify the distinct difference between mining Biogreen peat and mining peat from an endangered, unique or biologically diverse ecosystem.

## **Background**

The peat bog was drained in the early 1900's predominantly for a returned soldiers' program.

The site of the peat mine occupies approximately 236 hectares from which Biogreen mines reed sedge peat and humic clay peat. The area currently being mined consists of about 5 hectares with the rest of the land being used for peat stockpiles, production facilities, offices or dairy pasture.

The combined effect of clearing and agricultural use has been to replace the original wetlands vegetation with introduced non-native species including a large area infested with a scrubby willow. A large drainage scheme has altered the flow of surface water over the area substantially and therefore lowered the water table. Flooding still often occurs on a seasonal basis, which can be June, July, August and September. All other wetland characteristics have disappeared.

## **Peat Deposit**

The peat deposit at Biogreen's Tirrengower mine is a black sedge peat and has its origins in sedges, reeds and other swamp plants.

Biogreen peat is a basin peat, derived predominantly from reed and sedge species. As a result of its formation process, it is more humified (decomposed) than blanket (sphagnum) peat and has higher nitrogen content. It is an ideal soil conditioner and potting mix additive and it is BFA certified.

## **Rehabilitation**

Mining and rehabilitation proceed concurrently. A series of off-stream pondages suitable for irrigation or aquaculture will be produced and included in the rehabilitation plan.

Mining the land for Biogreen peat and humic clay, which is currently a slow process due to their small market shares, offers two major benefits. One is the use of the peat and clay in agricultural and environmental situations for improving soil health and thereby reducing water and fertiliser use as well as reducing soil erosion.

The second is based on the fact that the mining licence requires the open mining pits be dug to about 2 metres depth. The reason the pits must be dug to such a depth is that by being dug into the clay profile (below the 75 centimetre deep surface peat) the pits are able to hold water. These ponds fill with rainwater and revert to a wetland environment. Over time this leads to regrowth of indigenous reed and sedge species. By mining the land for peat and clay, we have a practical means of returning the land to a wetland environment. These areas will offer re-charge points for the underlying groundwater aquifer and are a haven for local wildlife, especially birds.

The rehabilitation of the mine site consists of creating three ponds of approximately 10 hectares each. The ponds will be created successively at the rate of one every six to seven years over the life of the mine or as required as production levels increase.

## Land Restoration Program

Biogreen is actively investing in a land restoration program that is delivering improved environmental outcomes for the site.

The program includes:

- Planting of trees
- Converting refuse areas to active farmland
- Creation of new wetlands to attract thriving fauna and flora populations

The following photos depict the stages the land goes through before finally returning to a revegetated wetland at the Biogreen Swan Marsh peat mine. Allowing a disused pit to return to the state presented in photo 4 naturally is a slow process.

**Photo 1:** Much of the land is currently being used for farming purposes.



**Photo 2:** Excavators are used to dig the peat and clay before loading into trucks for unloading onto stockpiles.



**Photo 3:** Once a pit has been dug to a suitable depth, it is allowed to re-flood after which the process of revegetation can commence.



**Photo 4:** A ten year old pit where reeds and sedges have been able to recolonise the area.



Regards

A handwritten signature in black ink, appearing to read 'M. Walker'.

Mike Walker

General Manager Biogreen Group