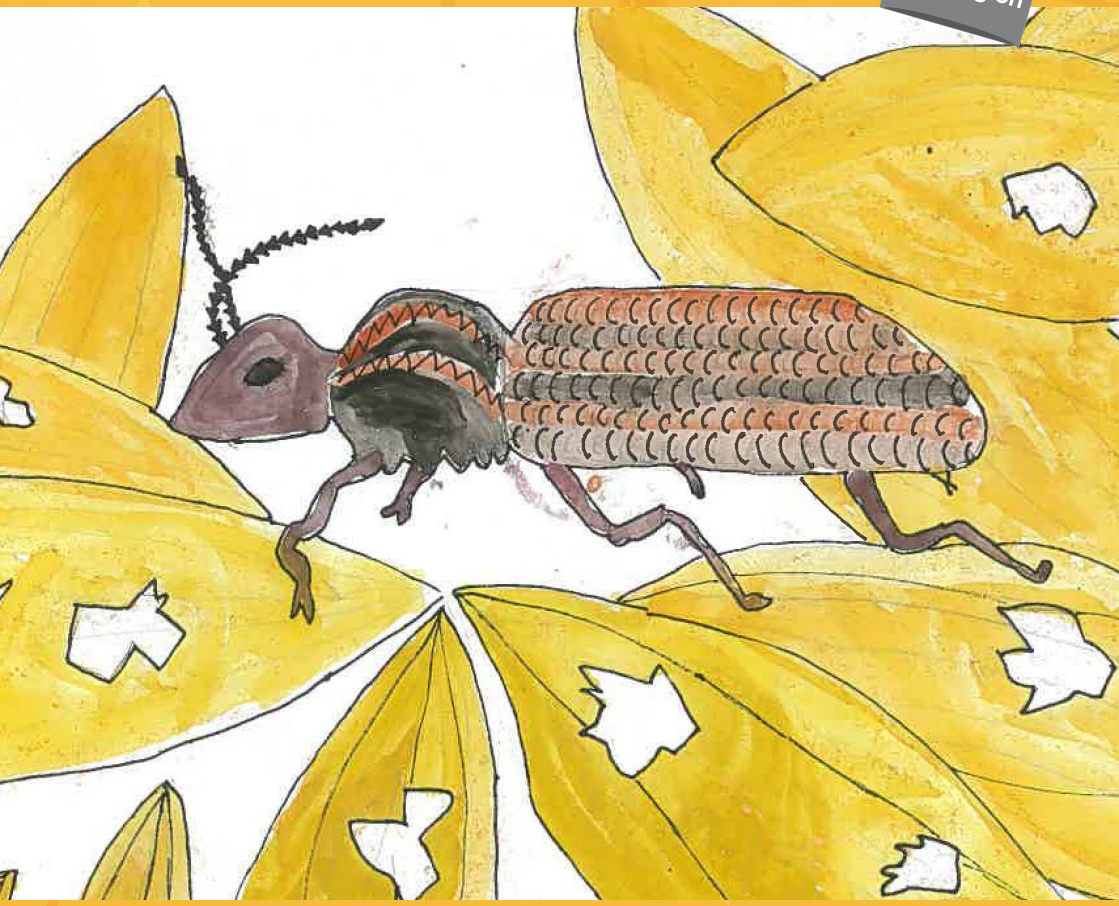
The Busy Weevils

Securing Our Region



Chloe Kuhne, Kate Webster,
Harry Kreutzberger and Jack Collier

Rand Public School

Creative Catchment Kids

Creative Catchment Kids is an initiative of Wirraminna Environmental Education Centre. It aims to improve engagement between our funding partners and school students by providing opportunities for positive and authentic ventures that encourage students to develop creative solutions to agriculture and natural resource management issues.
www.wirraminna.org/creative-catchment-kids/

Wirraminna Environmental Education Centre

The Wirraminna Environmental Education Centre is located in Burrumbuttock, north of Albury in southern NSW. Since 1995, the centre, which is adjacent to Burrumbuttock Public School, has provided opportunities for discovery and learning about the natural environment, the ecology of the local woodlands and the beauty of native plants.
www.wirraminna.org

Enviro-Stories

Enviro-Stories is an innovative literacy education program that inspires learning about natural resource and catchment management issues. Developed by PeeKdesigns, this program provides students with an opportunity to publish their own stories that have been written for other kids to support learning about their local area.
www.envirostories.com.au

The Busy Weevils

Authors: Chloe Kuhne, Kate Webster,
Harry Kreutzberger and Jack Collier

Teacher: Carol Rose and Bambi Cunningham

School: Rand Public School

Local Land Heroes - Securing Our Region

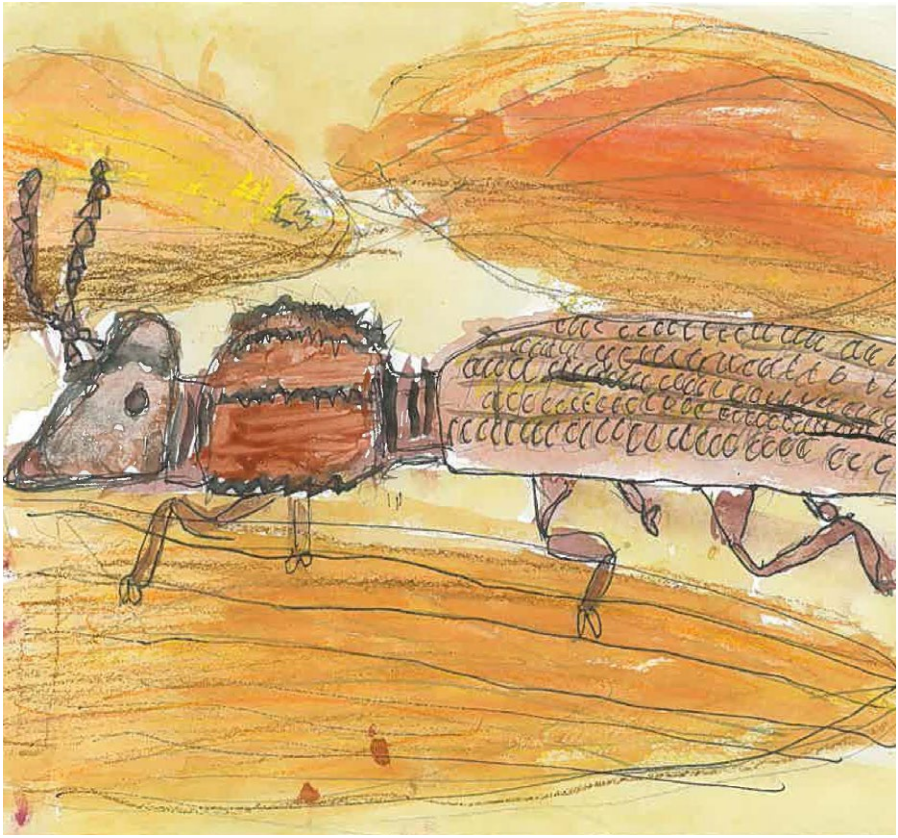
In 2015, students involved in the Creative Catchment Kids program researched and wrote stories about their 'Local Land Heroes' who are involved in pest management in the Murray and Murrumbidgee regions. These heroes are local individuals, couples, a business or industries that have made a difference in their local community by contributing to the management of pest animals and plants. The program was generously funded by Murray Local Land Services and Riverina Local Land Services.

Local Land Heroes is part of Enviro-Stories, a PeeKdesigns education program.

Weevils

A weevil is a small type of beetle. There are over 6000 different types of weevils worldwide. Weevils damage the inside of the grain and leave behind their droppings.

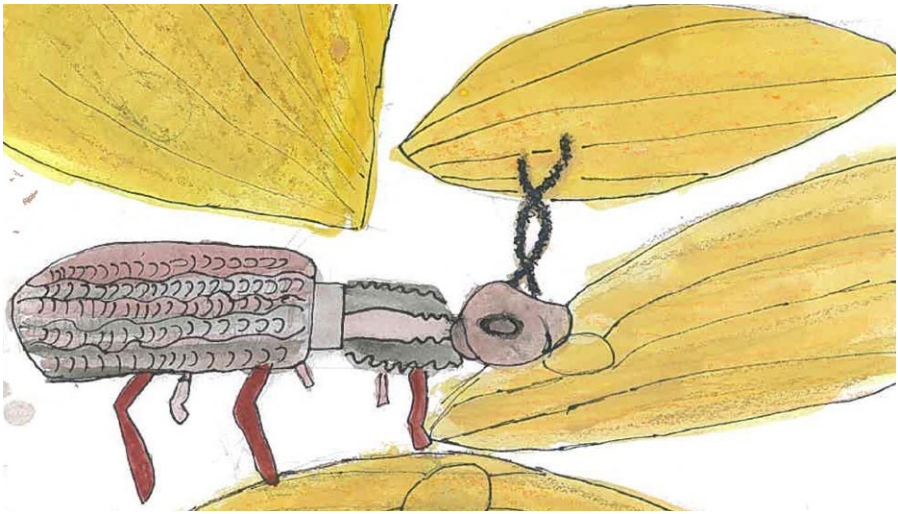
There are a many ways to get rid of weevils or control them. You can keep grain storage cool and clean, gas them or use chemical poisons. Jason Collier "Jacko" is our local agronomist, an expert on weevils.



Sawtoothed Weevil

The Sawtoothed grain beetle's scientific name is *Oryzaephilus surinamensis*. They are dark brown in colour and about 2.5-3.5 mm in length. They are slender and flat making it easy for them to crawl into cracks and holes.

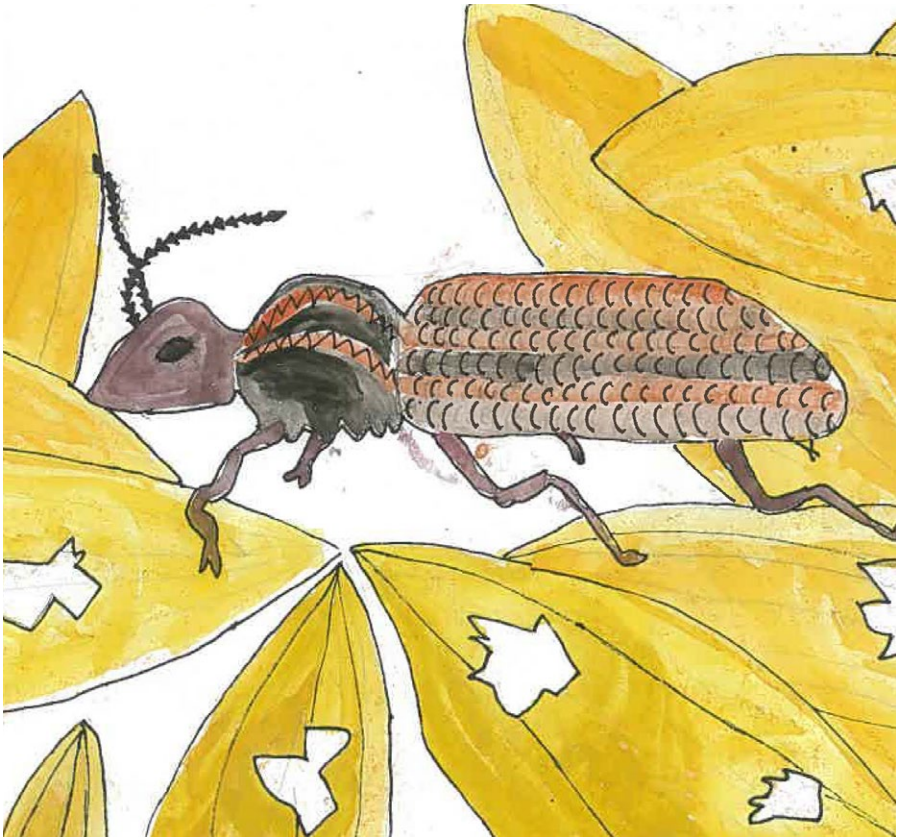
Sawtoothed grain beetle larvae are a yellowish white except for their heads, which are brown. Eggs are laid singly or in small masses in food.



Rice Weevil

Sitophilus oryzae is the Latin name for a Rice weevil. Rice weevils grow to 2.5-3.5 millimetres and have very hard slender shelled bodies. They have a slim, one centimetre long snout. Rice weevils have tiny wings and can fly only as high as three millimetres.

They lay four eggs a day and 300 to 600 eggs in their lifetime. In only weeks, a weevil can become a fully grown adult that can breed.



Lesser Grain Borer

The Lesser grain borer (*Rhyzopertha dominica*) is black-brown, about 2.5 to 3 millimetres long. The body is slim and the head is hidden under its round neck-shield.

The larvae are whitish with a yellow head. In hot summer conditions, it may only take 30 days for these borers to start breeding.

Grain infested with borers will stink. Borers eat wheat and corn, nuts, biscuits, spices, even dried fish or meat.

Damage

Weevils damage grain by eating the inside of the grain and leaving the husk. The adult lays eggs in the grain. When a weevil larvae has eaten the inside of one grain, it goes to another bit of grain. Weevils breed quickly and one can soon become a thousand. Damaged grain is useless for making food products and no one will buy it.

Grain Storage

There are many types of grain storage - silos, bunkers, field bins, trucks and headers. Grain is stored and then transported to mills where it is made into flour and cereal products.

Silos are made from metal or concrete. Bunkers store grain and workers put tarps on the top to keep weevils out of the grain.

Poisons

Fumigated gas is used to get rid of weevils in silos. Fumigation is done by using special tablets. The silos are made especially for gassing. It takes 24 hours before the grain can be transported.

When weevils are in grain bunkers, workers cut the tarp open, lay the poison blankets in and weld the tarp with the tarp welder. It takes 28 days before the grain can be touched.

PPE

PPE stands for Personal Protective Equipment. PPE keeps people safe from poisonous gases. Only qualified people are allowed to poison weevils because it is a VERY dangerous job. Sealed overalls cover their body, sealed boots protect their feet and a mask goes over their face to keep their airways clear. Normal workers also wear Hi-Vis vests, helmets, glasses and paper masks.

Silo Temperature

A silo temperature under 16°C reduces the activity of the weevils. Increasing temperatures will make the weevils more active. When the grain is delivered to the silos it has to be immediately cooled by blowing cold air through the grain. Silos are cooled by a special cooling machine.

Biography

Jason "Jacko" Collier is an agronomist. He was born in 1974. Jason has lived in Rand for most of his life. He went to primary school at Rand then Corowa High School. Jason's favourite subject was agricultural science. He became an agronomist because he liked being around farms and doing hands-on things.

Jason has four children, Jack, Jazmine, Alex, Beth and a wife Linda.

Facts

- The world has over 6,000 weevil species.
- Weevils came in grain on the First Fleet in 1788.
- Weevils are related to the beetle family.
- Weevil larvae grow into pupae.
- Weevil larvae have no legs.
- Eggs hatch between 6 and 14 days.
- Between one quarter and one third of the world's grain crop is lost each year to weevils.
- An adult weevil has a 'snout' at the front of its head. The antenna comes off the snout.

Chloe Kuhne, Kate Webster, Harry Kreutzberger and Jack Collier

2015 Year 4-5, Rand Public School

CONGRATULATIONS

Wirraminna Environmental Education Centre and the Creative Catchment Kids Program won the 2015 NSW Junior Landcare Team Award and will be competing in the 2016 National Landcare Awards.

WIRRAMINNA ENVIRONMENTAL EDUCATION CENTRE BURRUMBUTTOCK

CREATIVE CATCHMENT KIDS

peek designs

NSW GOVERNMENT Local Land Services

Australian Government

National Landcare Programme