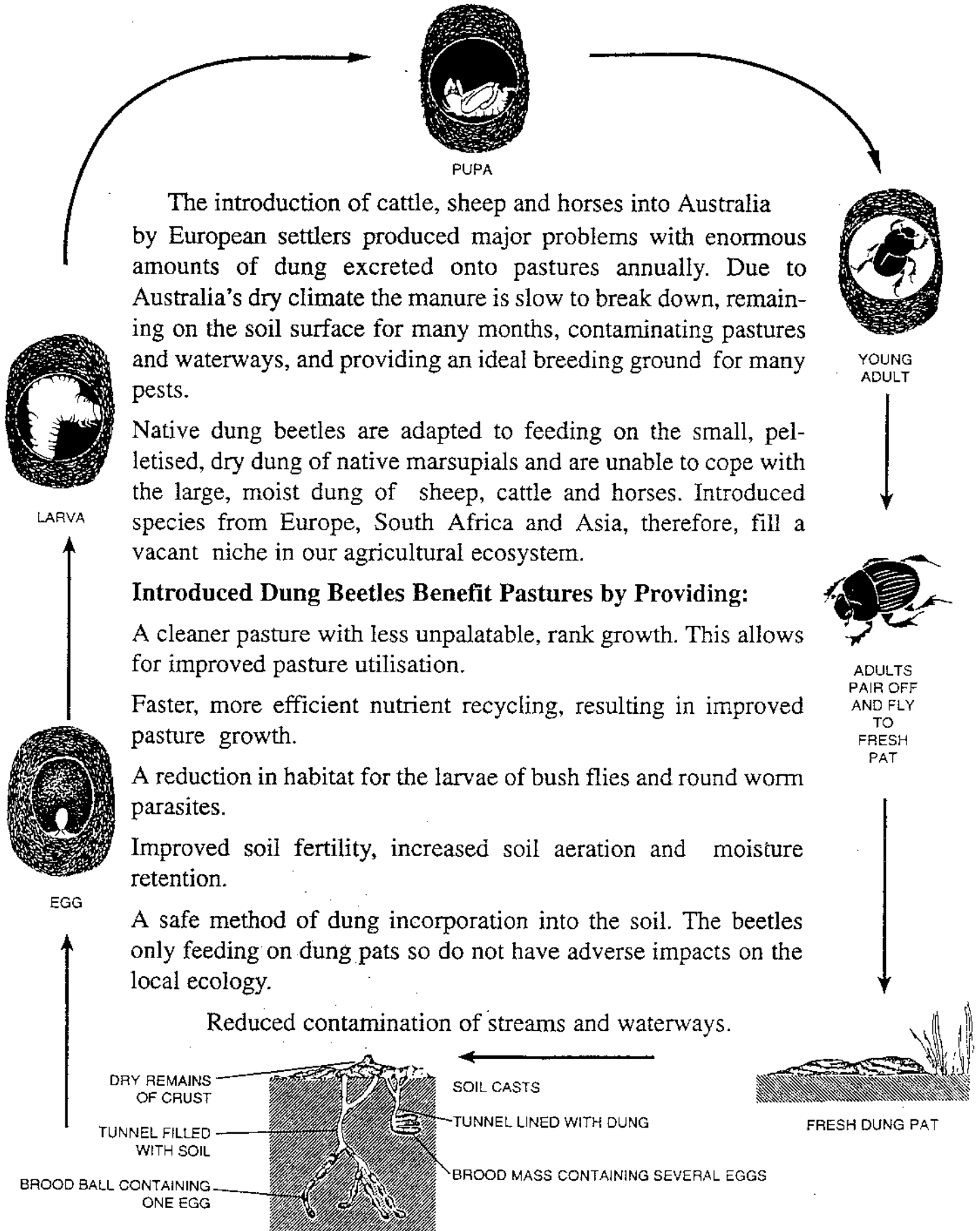


DUNG BEETLES

For Tasmanian Conditions



The introduction of cattle, sheep and horses into Australia by European settlers produced major problems with enormous amounts of dung excreted onto pastures annually. Due to Australia's dry climate the manure is slow to break down, remaining on the soil surface for many months, contaminating pastures and waterways, and providing an ideal breeding ground for many pests.

Native dung beetles are adapted to feeding on the small, pelletised, dry dung of native marsupials and are unable to cope with the large, moist dung of sheep, cattle and horses. Introduced species from Europe, South Africa and Asia, therefore, fill a vacant niche in our agricultural ecosystem.

Introduced Dung Beetles Benefit Pastures by Providing:

A cleaner pasture with less unpalatable, rank growth. This allows for improved pasture utilisation.

Faster, more efficient nutrient recycling, resulting in improved pasture growth.

A reduction in habitat for the larvae of bush flies and round worm parasites.

Improved soil fertility, increased soil aeration and moisture retention.

A safe method of dung incorporation into the soil. The beetles only feeding on dung pats so do not have adverse impacts on the local ecology.

Reduced contamination of streams and waterways.

DRY REMAINS OF CRUST

TUNNEL FILLED WITH SOIL

BROOD BALL CONTAINING ONE EGG

SOIL CASTS

TUNNEL LINED WITH DUNG

BROOD MASS CONTAINING SEVERAL EGGS

FRESH DUNG PAT

YOUNG ADULT

ADULTS PAIR OFF AND FLY TO FRESH PAT

LARVA

EGG

PUPA

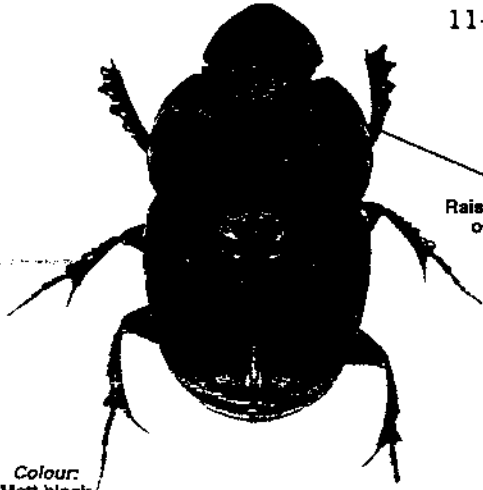
INTRODUCED DUNG BEETLES IN TASMANIA

BINODIS

(*Onthophagus binodis*)

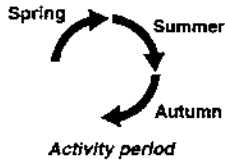


Actual size
11-13mm



Colour:
Matt black

Raised projection
on the head



Flight time:
Bright sunny days

TAURUS

(*Onthophagus taurus*)

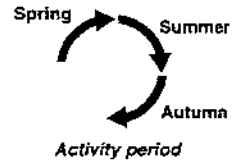


Actual size
8-10mm



Curved front
horns
extending
backwards
(Males only)

Colour:
Black



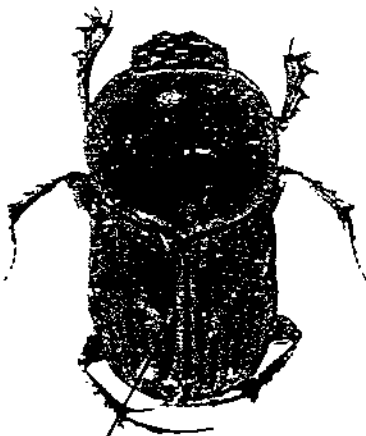
Flight time:
Bright sunny days

FULVUS

(*Euoniticellus fulvus*)

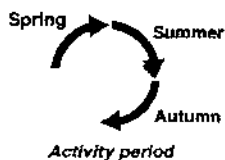


Actual size
8-12mm



Colour:
Light to
mid-brown

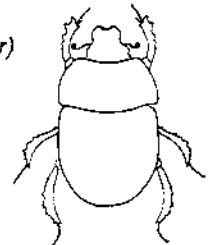
Wings may have
dark brown markings,
not speckled



Flight time:
Bright sunny days

SPINIGER

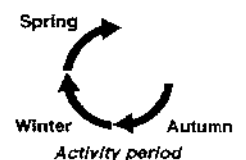
(*Geotrupes spiniger*)



Actual size
20-25mm



Colour:
Back surface
is black,
underside blue



Flight time:
Dawn and dusk

INTRODUCING THEM TO YOUR PROPERTY

Collection:

Collect beetles from properties of known high populations (see map overleaf).

For a successful introduction at least 1000 (summer active) and 300 (winter active) beetles are required. The collection of multiple species for release on your property will ensure a more even overlap with seasonal activity.

Summer Active Species

Collection of BINODIS, TAURUS and FULVUS is most successfully undertaken between January and February.

Initially, beetle traps will need to be set up. Cut a thin layer of turf and turn it upside down. Place fresh manure on the up-turned turf daily for a couple of days. This should be done at about 10 a.m. each day as these species are most active around midday. Create a number of these traps in an area where stock have not been for at least ten days. The beetles will be attracted to the fresh manure and can be collected after several days.

To collect the beetles, place wire netting over a plastic sheet. Lift the dung and turf with a spade onto the sheet, dung side up. The beetles will burrow down through the turf to the sheet. Lift the wire onto another sheet and tip the beetles left behind into a bucket with slightly moist soil in it (**not wet** dung or soil). Keep lid on to prevent the beetles from flying.

Winter Active Species

Collection of SPINIGER is most successfully undertaken in the autumn months as they will fly for half an hour at dusk and dawn.

Place wire netting on a plastic sheet, then place fresh dung on the wire just before flying time. At the end of the flying time, lift the wire with the dung off the plastic sheet. The beetles will have burrowed through the dung onto the sheet and so can be collected as before.

Releasing Dung Beetles:

The beetles should be released on the downwind side of the area to be colonised as they fly from a meter to several kilometres into the wind in search of fresh manure. Release beetles on 10 to 20 fresh dung pats in the one area in the cool of the evening. Do not release beetles on paddocks due to be ploughed within one month of release.

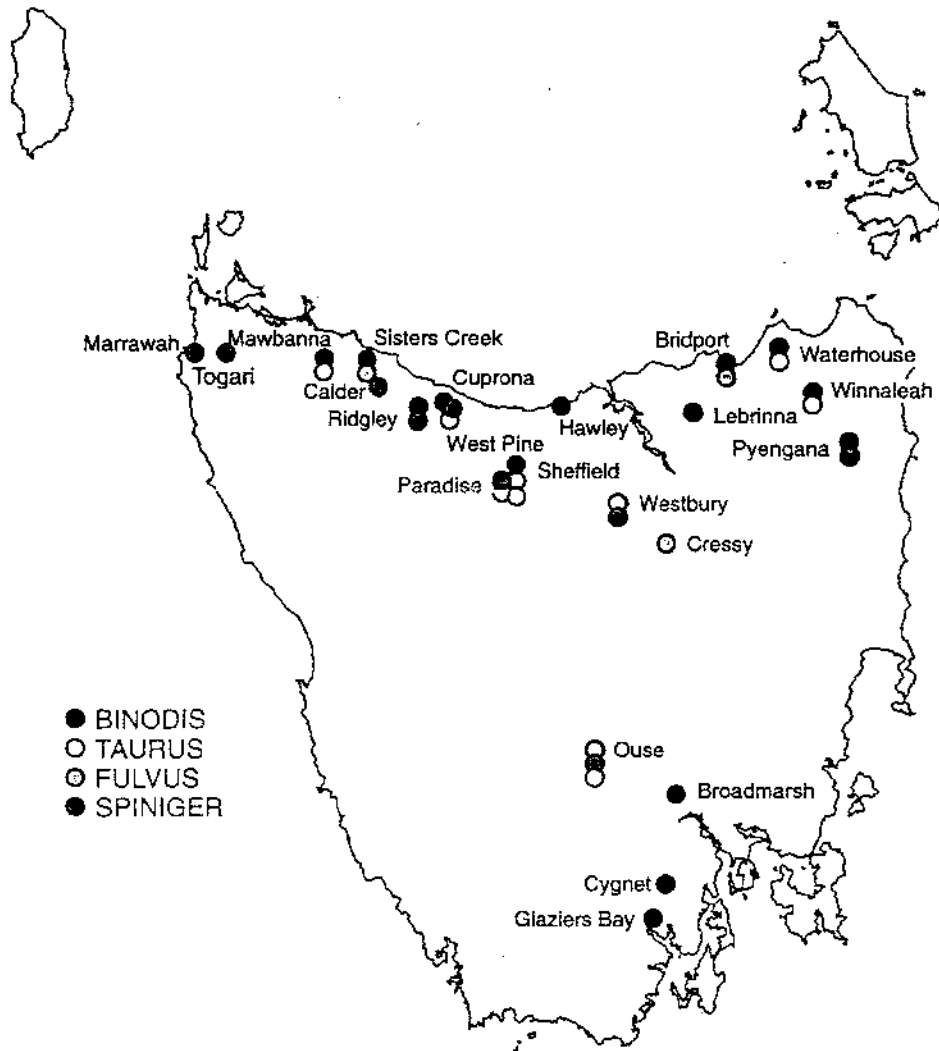
Management of Introduced Dung Beetles:

Beetles will follow livestock around your property.

Avoid harrowing during periods of peak activity as this will destroy the beetles and disrupt colonisation of pats.

Chemicals:

Caution - Ivermectin (e.g. Ivomec®) drenches will kill all larvae and juvenile beetles in pats excreted within 6 days of drenching. It is advisable to isolate treated animals in one area for this period.



Collection Areas for Introduced Dung Beetles in Tasmania

For further information

Contact the Department of Primary Industry & Fisheries
Prospect office, Launceston on 003 36 5407

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Department of Primary Industry & Fisheries National Landcare Program
Tasmania (Farmnote 370, Agdex 612)

Source Material

Tyndale-Biscoe, M. (1990)
Common dung beetles in pastures of south-eastern Australia
CSIRO Australia Division of Entomology

