Slime Moulds for Healthy, Thriving Jirdarup Bushland Ecosystem

Over the cold, wet and wintry month of July 2022, the Friends of Jirdarup Bushland spotted some brightly coloured slime moulds, found in leaf litter and old logs on the Bushland floor. (https://www.linkedin.com/feed/update/urn:li:activity:6955887415941062657/)

Image credit: Friends of Jirdarup Bushland

The fact that the Friends were able to “see” these tiny life forms (you would normally need to take back the old, wet log or leaf litter and place it under a microscope) is even more impressive.

Whilst they may be tiny in form, slime moulds have an important role in a thriving ecosystem like the Town’s Jirdarup Bushland. They are the food source – during both stages of its development – for tiny invertebrates such as springtails, beetles and other insects and molluscs, which in turn becomes the food source for larger insects and small vertebrates such as lizards which help aerate the soil, pollinate blossoms, and control insect and plant pests.

Slime moulds are poorly studied in many parts of the southern hemisphere but particularly here in Australia, despite the fact that we have such a large proportion of species.

Hence, the Urban Forest team members were very lucky to have secured an interview with Karina Knight of the WA Herbarium (https://www.facebook.com/WesternAustralianHerbarium) who refers to herself as a citizen scientist but is the driving force for slime mould in our state.

These are some initial insights that Karina provided as a resource for us on slime moulds.

First and foremost, what are slime moulds?

Slime moulds originally were thought to be a type of fungi as they have spores. They were even classified as part of the animal kingdom at one stage. Now they belong informal group known as protists,” said Karina.

“Slime moulds are essentially organisms that live mostly in moist terrestrial habitats and produce a plasmodium that feeds on

bacteria, fungi and decayed organic matter."

"Now for the most part, slime moulds exist in microscopic form but during this plasmodial stage they coalesce to have eye-catching and spore-containing fruiting bodies that can sometimes span up to a metre."

"In fact, one species, with the common name of dog vomit, is bright yellow and you cannot miss it."

What role do slime moulds play for the Jirdarup Bushland?

"Slime moulds are part of an ecosystem and play a role in the Jirdarup Bushland and anywhere else in the world where there is vegetation, as part of the web of life in this Bushland ecosystem," explained Karina.

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explained Karina.

“They are the food source for small invertebrates in this Bushland that then become the major food source for other insects that cycle nutrients, pollinate plants, disperse seeds, maintain soil structure and fertility, control populations of other organisms, and provide a major food source for other important and more visible fauna.”

An interesting fact that Karina shared is that slime moulds can get ‘smarter’ as they get bigger. They also can move quite fast and able speed up the journey to find food.

Scientists from around the world have learnt from slime moulds’ optimal pathways capabilities to optimise complicated rail systems in Japan and help NASA map the cosmic web! (https://www.wired.com/2010/01/slime-mold-grows-network-just-like-tokyo-rail-system/)

What can we do to preserve slime moulds in our Jirdarup ecosystems?

“There is still very little known about slime moulds in Australia, as there is hardly anyone truly dedicated just to collecting and documenting slime moulds,” said Karina.

“Yet there are 250 species recorded in WA out of 1000 species globally and so far two considered currently endemic to just our state, mainly found through the work of citizen scientists.”

“We probably still have a lot to learn about slime moulds, and especially in Australia as they rely on growing on vegetation and of course being an old country with endemic plant species, just here in the Jirdarup Bushland there might be some very unique slime moulds.”

“If you have some spare time and/or would like to learn more, I can recommend getting in touch with the Slime Mold Identification and Appreciation Facebook group (https://www.facebook.com/groups/SlimeMold/) to kick-off your learning on the basics such as where to find slime moulds in a Slime Safari event.”

“You can also head to iNaturalists (https://www.inaturalist.org/) online to record your observations and share your findings for discussions with scientists and other fellow naturalists around the world.”

Get in touch with Karina for a Slime Safari and more information

Karina has kindly provided an avenue to get in touch with her directly for more information on Slime Moulds or if you would like to find out how to hold a Slime Safari event. Please email Karina at wamyxophile@gmail.com

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Image Gallery of Slime Moulds

The following close-up images of Slime Moulds found in WA by Karina Knight and colleagues have been kindly provided with permission.

Slime Mould 1

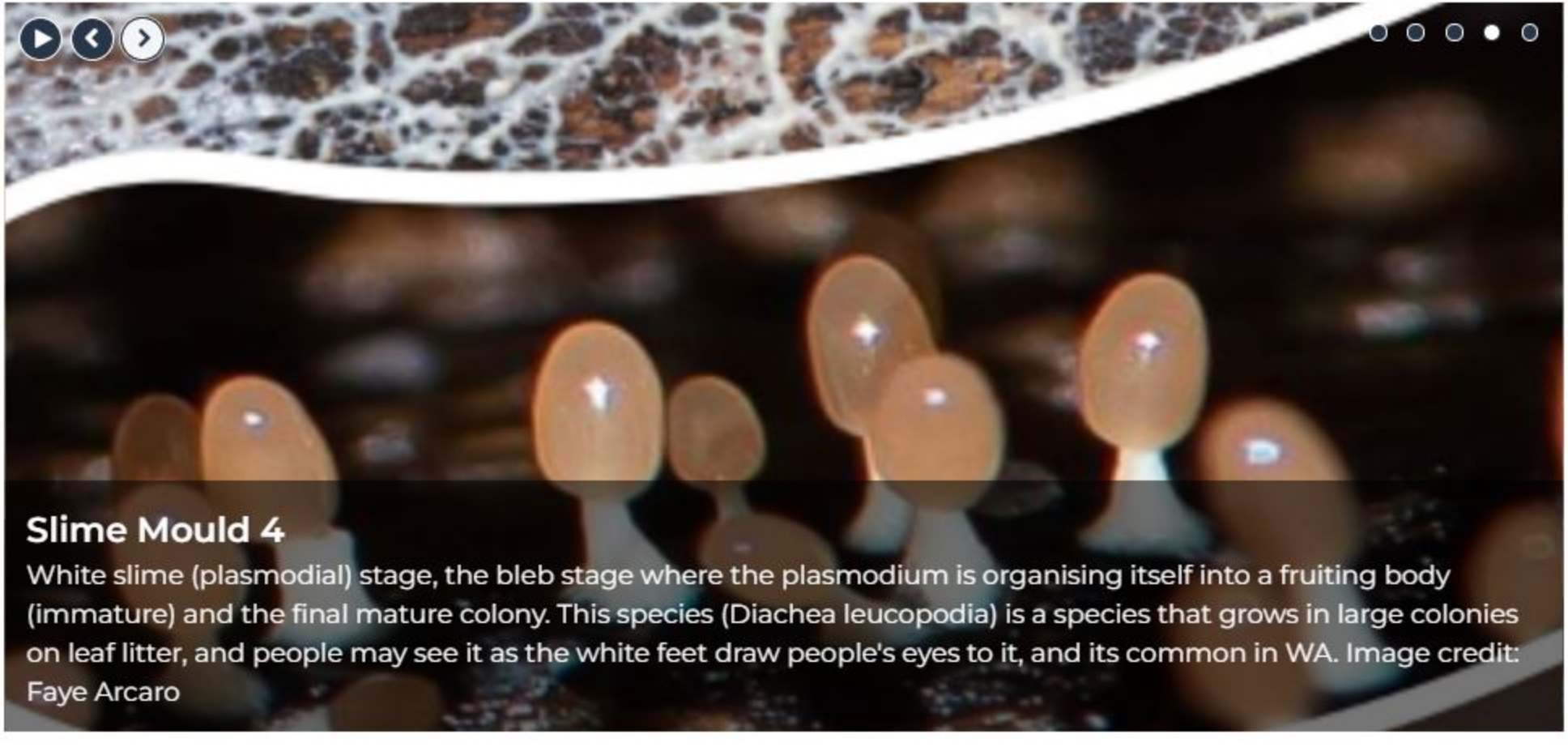
Physarum melleum. Image credit: Karina Knight

Slime Mould 2

Hemitrichia sp. Image credit: Karina Knight

Slime Mould 3

Physarum flavicomum. The plasmodium and bleb stage is bright yellow and quite easy to see with the naked eye, but once it fruits it blends into the environment, like many species do. It grows on rotting wood. Image credit: Karina Knight



Slime Mould 4

White slime (plasmodial) stage, the bleb stage where the plasmodium is organising itself into a fruiting body (immature) and the final mature colony. This species (Diachea leucopodia) is a species that grows in large colonies on leaf litter, and people may see it as the white feet draw people's eyes to it, and its common in WA. Image credit: Faye Arcaro

Slime Mould 5

Fuligo septica (dog vomit slime mould). Image credit: Herman Anderson