ON THE LAND

The only way is up for drones

EVERY so often it's good to look back to gain some direction on where you are heading.

The other morning as I set up the P4 drone up to aerial map a paddock, it struck me how fast we have moved.

Ten years ago, this type of work didn't exist at all.

Three years ago, remotely piloted aerial work existed mainly at the high end of the market – generally in large scale mining by those who had the budget to adopt drones.

Since the early days, drones have moved from being expensive, and potentially dangerous, to an amazingly complex data capture tool for the farm.

Disruptive technology is one that displaces an established technology and shakes up the industry.

Placing drones in this context, I think about aerial photography. Some dairy farms I visit have an aerial photograph of the farm hanging on the hallway wall.

Just about anyone can put a drone in the air, point the camera at the farmhouse and instantly get a fantastic image. The costs are low and technology has moved so that anyone can fly.

They can be a boy, but as you spend a few more dollars, the drone moves a long way from being a toy and becomes a complex system of technology and mechanics.

Before you fly, there are rules and regulations controlled by CASA. These regulations are about to change and there'll be a significant impact on farm operations once they are introduced.

Within the current rules, there are conditions about how high you can fly, how close you can fly near people and where you can fly.

Before flying over your farm, you can refer to CASA's Can I fly There App to see if there are any restrictions in place.

Once we've got the all clear, we conduct a site check - and look for obstacles - powerlines, trees and buildings, and minimise the impact on wildlife.

Drones have many benefits for farmers.

At its simplest form, it might be checking fences, or troughs or other farm infrastructure.

The fantastic thing is that everything you capture is locked to a GPS signal, so by using something like Google Earth you can create a dynamic map of your farm assets.

The images are geotagged so you can also add them to any farm mapping application.

We aren't talking about happy snaps here. If we take a look at the camera, most modern drones can shoot hi-res video/photo at 4k quality, stabilised and GPS locked.

The cameras themselves are 18-22 megapixels which makes them great for detailed mapping of revegetation, soil and pasture condition.

Other sensors can be added such as FLIR for accurate crop/moisture mapping.

Our drones are currently using InfraRed and Near InfraRed cameras to create high-resolution NDVI images.

An NDVI composite image can distinguish areas of the paddock where a crop is growing well from those where it is not, enabling zones to be created to target the right amount of treatment to each spot.

Due to the way vegetation reacts to stresses, an NDVI image can also reveal the presence of weeds, pests and water damage.

The other critical thing about drone mapping is repeatability.

Once a flight path has been created for a paddock, the drone can be programmed to fly the exact path over and over again.

This can build up a sequence of data sets such as the growth in paddocks via season, or the effect of fertiliser in one particular area of a paddock.

By using GPS waypoints, the flight path can also talk to other bits of farm equipment and the farm equipment can talk back.

So the drone might highlight an area of the paddock that might not be performing too well and could send the coordinates of the area in question to a GPS equipped tractor sprayer, which could then apply a remedy to that section only.

Drones can shift the way we approach farming, but not by themselves.

They are simply a tool which gathers an amazing amount of data.

It's what we do with the data that is the critical part.

- MICK GREEN, DRIFT MEDIA

NO LIMITS: Drift Media's Mick Green has watched the rapid growth of the drone industry.