



Kaluta Pty Ltd

Capability Statement for Ecological/
Environmental works

&

Drone/RPAS/UAV works

25-09-2020

CAPABILITY STATEMENT



Core Competencies

Kaluta Pty Ltd was founded on a strong background in ecological knowledge and field experience in a diverse range of environments and situations; both meeting and exceeding expectations for you, the client by solving problems in:

Ecological surveying

Nathan Litjens, the Director of Kaluta Pty Ltd has a strong and diverse history in surveying for fauna: in particular mammal, amphibian, reptile and aquatic. With a proven track record of surveying in Victoria, Western Australia, the Northern Territory and Queensland on a variety of projects and expeditions, you can be assured of a high level of competence in meeting your surveying needs. Working for clients directly and through other companies has strengthened Kaluta Pty Ltd's ability to draw on past experience to solve problems now and mitigate or prevent them entirely in the future.

We are experienced in and able to deliver:

- Spotlighting/Nocturnal surveys:
 - Frog surveys,
 - General vertebrate surveys,
 - Nocturnal mammals by red or white light, thermal on request,
 - Nocturnal fish and invertebrate spotlighting,
 - Mammal roost emergence stakeouts,
- Mammal/reptile trapping:
 - Pitfall trapping,
 - Elliott trapping,
 - Funnel trapping,
 - Cage trapping,
- Camera trapping,
- Acoustic monitoring:
 - Bat ultrasonic monitoring either stationary or by transect,
 - Bird call monitoring,
 - Frog call identification,
- Aquatic surveying:
 - Invertebrate surveys,
 - Fish and turtle surveys,
 - Aquatic mammal surveys,
- Habitat assessments

These surveys will be designed to Queensland Government ethical standards and reporting methodologies and handled accordingly.

In addition to the knowledge base already within Kaluta Pty Ltd, we are flexible enough to bring in additional permits, personnel and equipment where required through our partners to increase the range of surveying capabilities.

Drone/UAV/RPAS operations

With the following endorsements, Kaluta Pty Ltd is fully licenced and certified by CASA to undertake UAV/RPAS/Drone services on your site:

- RePL (Remote Pilot Licence)

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- ReOC (Remote Operators Certificate)
- AROC (Aeronautical Radio Operators Certificate)
- Fully insured, the rate can be adjusted on request

We specialise in:

- Aerial photography:
 - Compliance checks,
 - Progress reports,
 - Imagery on demand for any purpose,
 - Panoramas,
- Mapping:
 - Stockpile assessments,
 - Cut and fill estimates,
 - Larger area progress reports,
 - Photogrammetry generated 3D landscapes/quarries etc,
 - Crop loss estimates,
- Ecological mapping:
 - Seagrass and other aquatic vegetation assessments,
 - Habitat value assessments,
 - Vegetation assessments,
 - Erosion,
 - Pollution plumes,
 - Regeneration/rehabilitation progress,
 - Changes over time,
 - **Many additional options**, ask us today.

Management of fauna

Kaluta Pty Ltd provides your organisation a high level of service and experience in spotter catching and dangerous reptile relocation by being fully licenced in:

- QLD Government issued Rehabilitation permit;
- QLD Government issued Damage Mitigation permit;

For all staff in the field:

- Mandatory 22262VIC Reptile and Venomous Snake Control or equivalent;
- Mandatory First Aid training;
- Construction White Card;
- RIIV305E or equivalent 4WD certificate;
- Workwear and PPE as directed by the Client;
- Toolkit including as minimum:
 - Handheld UHF radio,
 - Snake handling tools,
 - Catch bags,
 - Fauna transport box,
 - First aid kit including snakebite kit,
 - Hydration packs,
 - Phone or tablet for data logging,
 - Jimmy bar



Past Performance

Ecological Surveying

Examples of past surveying experience include:

- Museum and Art Gallery of the NT – 2014 Kimberley Bush Blitz aquatic team;
- Museum and Art Gallery of the NT – 2015 Cape York freshwater fish survey;
- Museum and Art Gallery of the NT – 2012 to 2017 numerous small field trips;
- TactEcol – 2019 VicForests Greater Glider nocturnal surveys;
- BioLogic – 2019 BHP Pilbara vertebrate surveys;
- BioLogic – 2019 Atlas Iron Pilbara vertebrate surveys.

Management of Fauna

Kaluta Pty Ltd was built on the foundations of a range of successful jobs as a subcontractor or employee in the civil and construction field prior to the creation of the company. Examples include:

- Ecolibrium – MPC Kinetic – Santos – 2018 Roma East Backbone project;
- Biodiversity Australia – Various projects in QLD;
- TactEcol – 2018 City of Melbourne, University Square modifications;
- TactEcol – 2019 CFA Fiskville contaminated site dewatering;
- PDB Ecological – 2019-2020 various works around SEQ.

The first two examples being longer term it is worth noting that Nathan moved to team leader positions, the first being to Environmental Advisor supervising Erosion Sediment controls and rehabilitation and the second being to team leader of a team of Ecologists/Fauna spotters.

Aquatic works

Kaluta Pty Ltd, as shown elsewhere in this document was built on strong foundations in aquatic works. Combining knowledge in erosion and sediment control with aquatic ecosystem knowledge and actual experience in actioning plans to effectively manage issues – either preventative or remedial, we can assure you that we will work hard to ensure excellent outcomes and compliance for your project.

Communication with Clients and the broader community

"MAGNT has been working with Nathan for some time undertaking aquatic biodiversity surveys, and then to digitally capture and communicate our science to wide audiences. From discovery of new freakish worm gobies, assisting with remote fish sampling and animal identification on projects like Bush Blitz, to production of graphics and videos to support our media and exhibitions. We have found him professional, versatile, punctual and enthusiastic, bringing high resolution and cutting edge technology to our projects."
- **Dr Michael Hammer. Curator of vertebrates at the Museum and Art Gallery of the NT**

Listen to Nathan and Michael on podcast at: <https://www.magnt.net.au/thecollection-s01e05>
See the worm goby video at: <https://youtu.be/4vRqAVK0ViI>

Prior to the establishment of the company, Nathan took pride in communicating with the Clients, their employees and subcontractors as well as colleagues by drawing upon past experiences on flora and fauna, creating useful tools such as:

- Information packs,

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- Field guides,
- Assisting colleagues on fauna ID, including during time off,
- Prestart and toolbox presentations

This has been backed up by experience in designing and delivering multimedia presentations and packages to Government including:

- Museum and Art Gallery of the NT – 2015 Sweetheart crocodile display background,
- Museum and Art Gallery of the NT – 2015 CopyCat octopus exhibition media,
- Museum and Art Gallery of the NT – 2020 Worm of Death video outreach and contribution to "The Collection" podcast,
- Federal Government/EarthWatch/BHP – 2016 Bush Blitz Kimberley video series,

As a result, throughout a project Kaluta Pty Ltd is able to present information to your workforce and partners that will increase knowledge of the natural world and in doing so will:

- Reduce the chances of costly work stoppages due to unexpected fauna issues,
- Streamline existing ecological/fauna works and save time,
- Raise the profile of ecological/fauna work in general,
- Make prestarts, toolboxes or rain days more interesting for workers,
- Promote innovative safety practices that will save time and money.

In addition, Kaluta Pty Ltd has all of the hardware, software and experience you need to strengthen your brand.

UAV/RPAS/Drone services

Kaluta Pty Ltd has delivered UAV/Drone/RPAS outcomes to a number of local businesses.

A great example of Kaluta's service and organisation comes from Endemol Shine Australia, the multinational television production company. See the additional page at the back.

Why we are different

Kaluta Pty Ltd prides itself in being preferentially different. Unlike our competitors we are able to deliver a range of services in-house from start to finish; minimising the need to outsource and complicate workflows.

Kaluta Pty Ltd is the only company that will **bundle ecological** and fully **licenced aerial services** in together as an end-to-end solutions package. Our competitors either operate in the sub 2kg range and avoid licences at the expense of higher quality hardware or outsource, adding unnecessary complications to their workflow.

Kaluta Pty Ltd is also unique in having a **solid foundation in public speaking** and **multimedia presentations**. As a result we can confidently present information to your workers and stakeholders.

Company Information

Kaluta Pty Ltd

Established 2020

PO BOX 207, Taigum QLD 4018

ACN: 639 447 920

ABN: 19 639 447 920

Founder/Managing Director: Nathan Litjens

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CASA ARN: RePL, AROC and ReOC: 1061579
Damage Mitigation Permit: WA0016897
Rehabilitation Permit: WA0017703

Your point of contact

Currently your point of contact will be Nathan Litjens. As the company grows, we will be adding the best people we can find to assist with managing projects.

Nathan Litjens

Company email: info@kaluta.com.au

Mobile phone: 0409008661

And Finally...

*Kaluta Pty Ltd is ready to answer your questions and solve your problems.
Call or email today!*

Example: De-fishing and dewatering in a highly sensitive area.

Client: Due to privacy, the client has not and will not be disclosed in this document.

Problem: Works had been started in the waterway which were detrimental to aquatic life. Trees had been felled into the water which changed the water quality, especially the turbidity by stirring up and suspending very fine particulates and releasing anoxic sediments from under the substrate. This caused a fish-kill that claimed most of the fish in the waterway.

The waterway is in a culturally and environmentally sensitive area, adding to complications. Nathan was called by telephone to give advice. Advice over the telephone was limited as no images were sent. Upon arrival at the site, it was clearly evident that the water quality had fallen. Oxygen was down to 23% and turbidity was over 1000 nephelometric turbidity units (NTU).

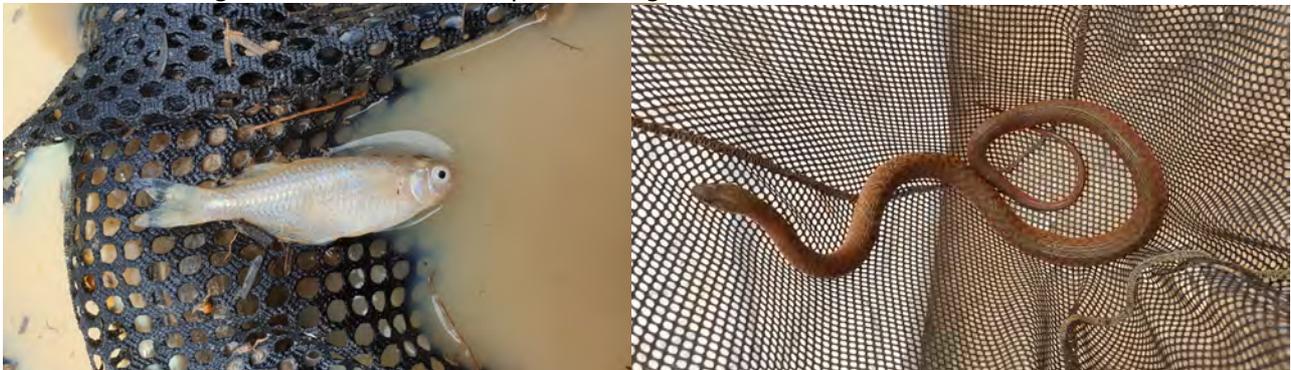
Immediate sampling showed four fish species present, none of which were threatened species in Queensland, however as this incident had already been reported to government agencies, there was a strict directive to not cause any further non-natural fish deaths.

Solution: The initial fish rescue removed around 30 fish from a largely shallow 50m x 14m pool by dip net in the deeper pockets. Due to the remote location, deep mud and multitude of sticks in the water, more conventional methods such as electrofishing, frame nets and drag nets were not possible. As the fine sediments were being disturbed by netting, the initial fish rescue was immediately stopped.

Works had been halted on the waterway after a sump was carefully excavated and some water removed. With the water level naturally falling in the dry conditions, it was monitored for any further fish kills. No such event followed and one small deep pool remained and the shallow regions showed no sign of any fish alive or dead due to natural predation by native birds and mammals which left abundant tracks in the mud.

As works were due to restart, the client requested another small survey be taken in the remaining deep pool. This showed a number of fish remained, so the client asked for advice on how to dewater and remove all remaining fish with zero harm. Following Nathan's advice, a flexi-drive pump was installed on the bank, the impeller guarded with hessian and placed in the existing sump. As water was not to leave site untreated, the logical choice was to pump it to the deeply cracked mud and sand at the other end of the same works area. This would allow the water to soak downwards and delay its return to the sump for long enough to allow for fish removal.

This method worked spectacularly well with the fish being easily scooped up from the shallow water and moved. Nearly 80 fish of 5 species were successfully moved with no fatalities whatsoever. The water flowed back through the sand and the sump was full again within an hour.



Above left: An Eastern Rainbowfish to be relocated. **Above right:** A keelback snake found during works



Example: Cinematic television sequence by RPAS/Drone

Client: Endemol Shine Australia. Endemol Shine is a large multinational company that produces much of what Australians watch on television.

Problem: An executive producer required urgent, high quality footage for an episode of the series "Ambulance" in a restricted area.

The job had to be arranged as quickly as possible and meet all of the site requirements and safety concerns.

Site access had been arranged by the production team prior to the job request.

Solution: Kaluta used the existing templates on file it had constructed to arrange Job Hazard Analyses and Risk Assessments which included airspace requirements, weather reports, flight plans and more. Also included was a running sheet of all of the required settings for the camera so it could be set up the night before to save time on site.

The paperwork was sent by email and printed to be included in a folder for hardcopy delivery and signing off.

Kaluta met the client on site. The flights were successful, the footage was buttery smooth, captured in great detail and readied for delivery.

Kaluta differs from its competitors in that the vehicle is also a portable office. Chairs and a table were set up and the fridge slid out with cool drinks while the files were transferred to the client's representative on site.

When the job was completed, the executive producer in Sydney called to ask about delivery of the files and was surprised to learn that delivery had already been made and there would be no further waiting. A fantastic short testimonial was posted on the Drones For Hire website.



Example: Mapping a sand dune system

Client: In-house experiment with benefits to QPWS

Problem: No problem in this instance but may be used to detect and diagnose future problems.

A gap existed in software trials for Kaluta's RPAS/drone solutions in that it had never been tested on sand dunes. With the rather uniform nature of sand it was suspected that there may be issues. Also, the opportunity existed for some additional experiments such as baseline data collection for future dune movements, rubbish management and visitor impacts to the site. Carlo Sandblow at Rainbow Beach was chosen as the site.

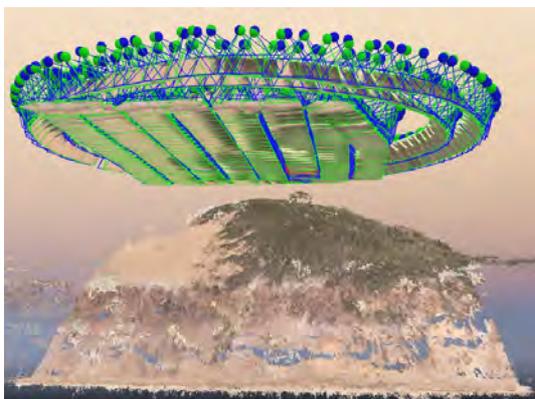
Queensland Parks and Wildlife Service was engaged to take part in this experiment. Kaluta provided assurances to address safety, privacy and environmental concerns and the experiment was permitted to proceed.

Risk Assessments and Job Hazard Analyses were generated with existing tools and implemented. Flights were postponed due to paraglider activity at the site. The following day the flights commenced.

A sign was erected at the entrance to the sandblow with a UHF radio attached to it so the public could speak with the pilot as an additional layer of safety. Liason by telephone with the local scenic flight company ensured that their flights would not overlap with the mapping flights.

The area was flown as a grid, then as an orbit of the centre of that grid in two concentric layers with the camera at an angle. Over 300 images were generated and uploaded to the Drone Deploy online processing software. The images were also processed offline with PIX4D to compare results. The following outcomes were achieved:

- Baseline data of the sand dune system as it appeared in October 2019
- Ability to count dead trees
- Cut/fill data of the wind scoured areas
- Human impacts such as rubbish/erosion from visitation
- Ability to compare the leading edge of the dune over time
- 2D orthomosaic compatible with QGIS/ARCGIS
- Immediate 2D map that was loaded to Avenza Maps mobile app for site navigation at high resolution
- Real 3D foam carving, painted and prepared as a representation of the site in solid form



Above left: Pix 4D building the 3D image showing drone positions. **Above right:** 3D carving of site