Target Weed	Computer vision technique	Drone imagery	Target morphology	Training and testing sites	Tested models	Selected model	Brief description	Link to GitHub repository	Link to models from GitHub repository	Link to report	Link to publication
Mouse Ear Hawkweed	Semantic segmentation	Micasense Altum Multispectral (0.65cm / pixel)	Flower	Sawdon Station in the McKenzie Region, south of Lake Tekapo, New Zealand	Classical ML models such as Extreme Gradient Boosting (XGBoost), Random Forest(RF), Support Vector Machine (SVM), and K-Nearest Neighbors (KNN)	XGBoost	The project was attempted to detect hawkweed using UAV-acquired multispectral imagery and AI at various sites. At the 15Mile site, using the M300 UAV with a Micasense Altum multispectral sensor, the model performance was low due to poor ground	https://github.com/Narmilan-A/Remote-Weed-Detection/tree/b204f1f3a5ff1d25365d15e645b955ae6276a945/hawkweed	https://github.com/Narmilan-A/Remote-Weed-Detection/blob/b204f1f3a5ff1d25365d15e645b955ae6276a945/hawkweed/models/flower/best_xgb_model.pkl	https://drive.google.com/file/d/1RjLhkti_QMQpVD6fnN82ID893NXms4Xa/view?usp=sharing	https://www.mdpi.com/2072-4292/15/6/1633
			Foliage			RF			https://github.com/Narmilan-A/Remote-Weed-Detection/blob/b204f1f3a5ff1d25365d15e645b955ae6276a945/hawkweed/models/foliage/best_rf_model.pkl		
Bitou bush	Semantic segmentation	Micasense Altum Multispectral (2.2cm / pixel)	Mixing of foliage and flowers	Birdie beach, New South Wales (NSW)	Classical ML models such as Extreme Gradient Boosting (XGBoost), Random Forest(RF), Support Vector Machine (SVM), and K-Nearest Neighbors (KNN), and DL model of U-Net	U-Net	The project was experimented to detect Bitou bush using UAV platforms with different sensors across various sites. At Birdies Beach, multispectral sensor achieved the best results using the U-Net model, while the hyperspectral sensor obtined good perfromace using RF, and SVM models. At Kiama and Red Cliff North and South, no models were developed due to poor quality data despite using the multispectral sensor. At Scotts Head, a same mdoel (U-Net) was selected using multispectral imagery. Finally, both sites (Birdies Beach and	https://github.com/Narmilan-A/Remote-Weed-Detection/tree/b204f1f3a5ff1d25365d15e645b955ae6276a945/bitou_bush	https://github.com/Narmilan-A/Remote-Weed-Detection/tree/b204f1f3a5ff1d25365d15e645b955ae6276a945/bitou_bush/models/multi	https://drive.google.com/file/d/1yHgyQGZLJZvlYJk3-jw5q7mzai308DhH/view?usp=sharing	https://www.sciencedirect.com/science/article/pii/S2352938524000156
				Scotts Head (NSW)					https://github.com/Narmilan-A/Remote-Weed-Detection/tree/b204f1f3a5ff1d25365d15e645b955ae6276a945/bitou_bush/models/multi		
				Both Birdie beach and Scotts head (NSW)					https://github.com/Narmilan-A/Remote-Weed-Detection/tree/b204f1f3a5ff1d25365d15e645b955ae6276a945/bitou_bush/models/multispectral/two_site%20(Birdie%20beach%20and%20Scotts%20Head)		
		Specim AFX VNIR Hyperspectral (3.5cm / pixel)		Birdie beach, New South Wales (NSW)	Classical ML models such as Extreme Gradient Boosting (XGBoost), Random Forest(RF), Support Vector Machine (SVM), and K-Nearest Neighbors (KNN)	RF			https://github.com/Narmilan-A/Remote-Weed-Detection/blob/b204f1f3a5ff1d25365d15e645b955ae6276a945/bitou_bush/models/hyperspectral/best_rf_model.pkl		
						SVM			https://github.com/Narmilan-A/Remote-Weed-Detection/blob/b204f1f3a5ff1d25365d15e645b955ae6276a945/bitou_bush/models/hyperspectral/best_svm_model.pkl		
		Fuji RGB Camera (0.5cm / pixel)		Birdie beach, New South Wales (NSW)	DeepLearning Models: UNet, FPN, DeepLab V3+	U-Net	The project was intended to detect Bitou Bush from RGB images that were collected with UAV sensors at different sites. Birdies Beach was used to label 21 training image crops of one	https://github.com/WeeddetectionAI/bitou_segmentation_rgb		https://docs.google.com/document/d/1be2psNhu-bgkujO1Ejzc1MORopeDKPVoUwu0VlFWis8/edit#	No publication was produced from this study
				Scott's Head, NSW			quarter full size at 5824	https://github.com/WeeddetectionAI/bitou_inference			
Orange Hawkweed	Object Detection	Sony A7 RIII RGB (0.24cm / pixel), (1cm / pixel)	Flowerheads	MacGregor's Creek, McKeahnies Creek, Cesjacks, Farm Ridge Trail, Ghost Gully, Fifteen Mile Ride, Barry's Block, FID 21, Mount Jagungagl, Brooke's Hut, Tabletop, O'keefe's Hut, Smith and Hamilton, Cool Plain, Digger's Creek, Doubtful Gap, etc. All in NSW	YoloV5 Dataset combinations.	Yolov5-m	This project was intended to detect Orange Hawkweed Flowers in 0.24cm and 1cm aerial imagery with a Yolov5 network. The developed model was embedded into the SAHI-hyperresolution detection package, to detect in high-resolution images.	github.com/WeeddetectionAI/asdc_mwe		https://docs.google.com/document/d/1pTwUBWIlqRA90uNRiDIUY6QzXqgR4V6__64MLuV2xDk/edit#heading=h.cegjkey140ou	No publication was produced from this study
		Sony RX1R RGB (1cm / pixel)									
		FujiFilm GFX100 RGB (0.24 cm / pixel)									
		Sony A7RIV RGB (0.24cm / pixel), (1cm / pixel)									
African Lovegrass (ALG)	Binary Image Classification	Fujifilm GFX100 RGB (0.22cm/pixel)	Flowering	McDonald's (NSW)	ResNet 18, 34, 50, 101, 152, pretrained through self-supervised autoencoders	ResNet 50 transfer learning	The project was intended to classify patches of 256 x 256 pixels to detect whether they contained ALG or not. The imagery was generated from orthomosaics. The orthomosaics have been overlaid with Multispectral data, which were used to train	https://github.com/WeeddetectionAI/ALG		https://docs.google.com/document/d/1hj09u8cWjpgI9kltO1wQSaOBht-yJpVFvYGX9Ns2ZpQ/edit#heading=h.bucapy8yee8z	No publication was produced from this study
		DJI P1 TGB(0.5cm/pixel)		Gliding Club (NSW)							
		Fujifilm GFX100 RGB (0.22cm/pixel)	Vegetative	Kuma Nature Reserve (NSW)							
		Fujifilm GFX100 RGB (0.24cm/pixel)		Cooma TSR (NSW)							
	Semantic segmentation	MicaSense Altum - Multispectral	Flowering	McDonald's (NSW)	M,XGBoost,Custom CNN,	Custom CNN	Objectives of this study were to (1) Compare the performance of supervised AI models for ALG segmentation from MS imagery, including	https://github.com/ckpirunthan/ALG	s://github.com/ckpirunthan/ALG/tree/main/m	https://drive.google.com/file/d/1im6vvuB4y0rNAJ4IC2NB7efTmQkEgDKo/view?usp=sharing	https://doi.org/10.3390/rs16132363
		Specim AFX VNIR - Hyperspectral		Gliding Club (NSW)							

		MicaSense RedEdgeP Multispectral	Vegetative	Kuma Nature Reserve (NSW) Cooma TSR (NSW)			MS imagery, including extreme gradient boosting (XGBoost), random forests (RF)				
African Lovegrass (ALG)	Binary Image Classification	50cm SkySat Satellite imagery	Flowering	Kuma Nature Reserve and TSR (NSW)	Support Vector Machine, Random Forest, Gradient Boosting	Gradient Boosting	SkySat satellite imagery (50cm GSD/pixel) and classical machine learning algorithms, including Support Vector Machine, Random Forest and Gradient Boosting, within the Google Earthe Engine	https://github.com/richardcrabbe/mapping-aussie-weeds.git	https://github.com/richardcrabbe/mapping-aussie-weeds/blob/ec68f62e1e13d501a8b04e0ecdca0c3dcfae39c1/MappingAfricanlovegrass%40Cooma2NSW.md	https://docs.google.com/document/d/1Ed_5p_uSuKoQ8KLas3j0LaD75g3Pys72/edit?usp=drive_link&ouid=111803296342880238875&rtpof=true&sd=true	***NOTE: The authors kindly request that this report is to be kept private within the confines of this final report just until it has been accepted for publication - currently under preparation for journal submission.***
African Lovegrass (ALG)	Binary Image Classification	50cm SkySat Satellite imagery	Flowering	Gliding Club and McDonalds (NSW)	Support Vector Machine, Random Forest, Gradient Boosting	Gradient Boosting	This study leveraged SkySat satellite imagery (50cm GSD/pixel) and classical machine learning algorithms, including Support Vector Machine, Random Forest	https://github.com/richardcrabbe/mapping-aussie-weeds.git	https://github.com/richardcrabbe/mapping-aussie-weeds/blob/ec68f62e1e13d501a8b04e0ecdca0c3dcfae39c1/MappingAfricanlovegrass%40CoomaNSW.md		
Bitou bush	Binary Image Classification	50cm SkySat Satellite imagery	Vegetative	Birdie beach, New South Wales (NSW)	Support Vector Machine, Random Forest, Gradient Boosting	Gradient Boosting	This study leveraged SkySat satellite imagery (50cm GSD/pixel) and classical machine learning algorithms, including Support Vector Machine, Random Forest and Gradient Boosting,	https://github.com/richardcrabbe/mapping-aussie-weeds.git	https://github.com/richardcrabbe/mapping-aussie-weeds/blob/ec68f62e1e13d501a8b04e0ecdca0c3dcfae39c1/MappingBitoubush%40BirdiesBeachNSW.md		
Bitou bush	Binary Image Classification	50cm SkySat Satellite imagery	Flowering	Scotts head (NSW)	Support Vector Machine, Random Forest, Gradient Boosting	Gradient Boosting	SkySat satellite imagery (50cm GSD/pixel) and classical machine learning algorithms, including Support Vector Machine, Random Forest and Gradient Boosting, within the Google Earthe	https://github.com/richardcrabbe/mapping-aussie-weeds.git	https://github.com/richardcrabbe/mapping-aussie-weeds/blob/ec68f62e1e13d501a8b04e0ecdca0c3dcfae39c1/MappingBitoubush%40ScottsHeadNSW.md		