

Dataset Documentation

Dataset Name: Crop Type Classification Dataset for Western Cape, South Africa

Location and boundaries

Overall Location Method

- Ground collection only
- Ground collection with boundary drawn using imagery
- Ground collection with spatial buffer added
- Boundary drawn from imagery
- Other: _____
- Unknown

GeoLocation Device

- Industrial grade GPS (List model) _____
- Retail grade GPS
- Mobile Phone GPS
- N/A
- Unknown

Ground Boundary Method (Details explained in Appendix A)

- Live/Continuous point capture of walk-around
- Manual point capture of walk-around
- Manual point capture of polygon boundaries (not whole field)
- Manual point capture for later image annotation
- Manual point capture for spatial buffer within field
- Manual point capture while looking at but not in field, with heading recorded
- Other N/A
- Unknown

Imagery used (Skip if no imagery used)

Sensor: Aerial

Date(s): 2016

List scenes used in Appendix B

Imagery Annotation methods

- Boundaries drawn based on a single ground point captured
- Boundaries drawn/edited based on multiple ground points captured
- Buffer validated from ground point captured
- Boundary drawn without ground reference data (Include description of methods in Appendix C)
- Pixels annotated without ground reference data (Include description of methods in Appendix C)
- Unknown

Boundary inclusion

- Captured polygon includes the entire field/area
- Captured polygon includes only a sample of the field/area

Classification

Classification Type

- Land cover
- Crop type
- Other _____

Classes/fields used

Describe in Appendix D

Ground Referenced Classification

- Observation (Describe methods of determination in Appendix E)
- Survey/interview with land holder (Describe methods in Appendix E)
- Other (Describe methods in Appendix E)

Image Referenced Classification

Describe methods used in Appendix C

Data Properties

Property name	Property Description	Parameters/Allowed responses (optional)
Label Crop	Crop Type	0, 1, 2, 3, 4, 5, 6, 7, 8, 9
Field ID	Field ID	Integer

Citation

Western Cape Department of Agriculture and Radiant Earth Foundation (2021), "Crop Type Classification Dataset for Western Cape, South Africa", Version 1.0, Radiant MLHub, [Date Accessed] <https://doi.org/10.34911/rdnt.j0co8q>

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Appendix A: Describe the method of geographic ground data collection

Except for specified instances, digitizing was done from 50 cm aerial photography. For horticulture, viticulture, shade netting and tunnels the minimum digitizing scale was set to 1:2,500 and for other types of fields, the minimum digitizing scale was 1:7,500.

Digitizing of crop field boundaries was done from aerial photography dated the end of 2016, except in some specified cases where other sources of imagery were used, such as Sentinel satellite images of January 2018. This process was done from May 2017 to August 2017.

Appendix B: List imagery scenes used for annotation (ideally also included in metadata)

N/A

Appendix C: Describe how boundaries and classes were determined without ground reference data

N/A

Appendix D: List all top-level classes or the classification guidance used

This dataset contains the following classes:

0: No Data, 1: Lucerne/Medics, 2: Planted pastures (perennial), 3: Fallow, 4: Wine grapes, 5: Weeds, 6: Small grain grazing, 7: Wheat, 8: Canola, 9: Rooibos

Appendix E: Describe methods for determining classes based on direct/ground observation

Crop information that is included in the dataset was obtained through aerial and vehicle surveys from May 2017 to March 2018.