

Supplementary

DeepCottonWeeds (DCW): A Novel Benchmark of Deep Learning for Weed Detection in Cotton Production Systems

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This document includes the class-wise statistics for the YOLO detectors in our paper. For each YOLO detector, the results are presented on 5 repeated runs.

YOLOv3-TINY

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1419	0.87	0.786	0.872	0.663
Waterhemp	848	291	0.921	0.852	0.932	0.782
MorningGlory	848	185	0.872	0.775	0.888	0.605
Purslane	848	143	0.747	0.64	0.757	0.507
SpottedSpurge	848	143	0.842	0.79	0.845	0.55
Carpetweed	848	155	0.801	0.652	0.714	0.46
Ragweed	848	136	0.845	0.904	0.938	0.806
Eclipta	848	138	0.897	0.913	0.96	0.843
PricklySida	848	74	0.893	0.901	0.928	0.784
PalmerAmaranth	848	62	0.982	0.872	0.935	0.738
Sicklepod	848	40	0.844	0.825	0.94	0.726
Goosegrass	848	35	0.913	0.6	0.769	0.443
CutleafGroundcherry	848	17	0.886	0.706	0.857	0.707

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 100%
all	848	1475	0.867	0.827	0.885	0.682
Waterhemp	848	279	0.874	0.896	0.938	0.795
MorningGlory	848	181	0.888	0.834	0.91	0.622
Purslane	848	165	0.841	0.802	0.872	0.587
SpottedSpurge	848	186	0.838	0.704	0.827	0.563
Carpetweed	848	156	0.752	0.763	0.782	0.566
Ragweed	848	159	0.846	0.862	0.911	0.774
Eclipta	848	131	0.873	0.954	0.967	0.87
PricklySida	848	80	0.913	0.912	0.956	0.836
PalmerAmaranth	848	53	0.899	0.837	0.871	0.706
Sicklepod	848	25	0.836	0.815	0.851	0.626
Goosegrass	848	39	0.9	0.692	0.818	0.526
CutleafGroundcherry	848	21	0.951	0.857	0.914	0.714

Fusing layers...

Model Summary: 48 layers, 8692102 parameters, 0 gradients, 12.9 GFLOPs

test: Scanning '/localscratch2/zhengyu/Documents/DCW/datasets/Dataset_final/DATA_2/test.cac1'

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 100%
all	848	1459	0.859	0.837	0.887	0.69
Waterhemp	848	346	0.881	0.881	0.917	0.773
MorningGlory	848	223	0.903	0.838	0.92	0.627
Purslane	848	165	0.81	0.725	0.815	0.532
SpottedSpurge	848	125	0.753	0.808	0.836	0.592
Carpetweed	848	125	0.74	0.706	0.756	0.561
Ragweed	848	125	0.86	0.848	0.904	0.778
Eclipta	848	148	0.906	0.917	0.952	0.822
PricklySida	848	67	0.813	0.896	0.941	0.83
PalmerAmaranth	848	49	0.908	0.796	0.86	0.62
Sicklepod	848	34	0.87	1	0.991	0.78
Goosegrass	848	34	0.927	0.794	0.863	0.603
CutleafGroundcherry	848	18	0.938	0.841	0.894	0.763

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1421	0.837	0.838	0.885	0.692
Waterhemp	848	293	0.873	0.898	0.928	0.783
MorningGlory	848	222	0.898	0.875	0.937	0.672
Purslane	848	147	0.755	0.755	0.815	0.554
SpottedSpurge	848	159	0.81	0.804	0.869	0.643
Carpetweed	848	147	0.712	0.639	0.7	0.5
Ragweed	848	121	0.802	0.893	0.926	0.773
Eclipta	848	130	0.88	0.946	0.969	0.876
PricklySida	848	64	0.918	0.873	0.956	0.797
PalmerAmaranth	848	57	0.891	0.858	0.887	0.681
Sicklepod	848	22	0.884	1	0.977	0.823
Goosegrass	848	43	0.846	0.767	0.79	0.489
CutleafGroundcherry	848	16	0.781	0.75	0.868	0.708

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 100
all	848	1360	0.878	0.836	0.884	0.682
Waterhemp	848	274	0.914	0.854	0.908	0.771
MorningGlory	848	203	0.91	0.818	0.903	0.633
Purslane	848	142	0.77	0.662	0.77	0.505
SpottedSpurge	848	123	0.901	0.812	0.875	0.603
Carpetweed	848	111	0.848	0.829	0.861	0.655
Ragweed	848	155	0.896	0.877	0.94	0.792
Eclipta	848	146	0.909	0.959	0.978	0.884
PricklySida	848	65	0.92	0.954	0.971	0.845
PalmerAmaranth	848	64	0.9	0.766	0.854	0.647
Sicklepod	848	37	0.894	0.917	0.94	0.729
Goosegrass	848	26	0.84	0.805	0.773	0.363
CutleafGroundcherry	848	14	0.833	0.786	0.833	0.753

YOLOv3

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 100
all	848	1419	0.919	0.911	0.939	0.854
Waterhemp	848	291	0.927	0.917	0.954	0.905
MorningGlory	848	185	0.968	0.941	0.967	0.902
Purslane	848	143	0.918	0.888	0.919	0.808
SpottedSpurge	848	143	0.885	0.867	0.903	0.78
Carpetweed	848	155	0.79	0.703	0.799	0.642
Ragweed	848	136	0.851	0.919	0.953	0.863
Eclipta	848	138	0.963	0.941	0.976	0.911
PricklySida	848	74	0.94	0.946	0.945	0.874
PalmerAmaranth	848	62	0.974	0.952	0.98	0.949
Sicklepod	848	40	0.973	0.975	0.993	0.98
Goosegrass	848	35	0.912	0.883	0.883	0.775
CutleafGroundcherry	848	17	0.926	1	0.995	0.858

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 100%
all	848	1475	0.931	0.902	0.933	0.872
Waterhemp	848	279	0.952	0.923	0.958	0.911
MorningGlory	848	181	0.994	0.947	0.969	0.901
Purslane	848	165	0.955	0.903	0.962	0.888
SpottedSpurge	848	186	0.951	0.833	0.905	0.799
Carpetweed	848	156	0.726	0.763	0.809	0.687
Ragweed	848	159	0.88	0.912	0.948	0.844
Eclipta	848	131	0.884	0.933	0.949	0.923
PricklySida	848	80	0.966	0.95	0.953	0.932
PalmerAmaranth	848	53	0.942	0.915	0.952	0.897
Sicklepod	848	25	0.98	0.92	0.918	0.914
Goosegrass	848	39	0.944	0.872	0.913	0.826
CutleafGroundcherry	848	21	0.993	0.952	0.956	0.935

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 100%
all	848	1459	0.958	0.901	0.936	0.872
Waterhemp	848	346	0.963	0.897	0.943	0.9
MorningGlory	848	223	0.986	0.924	0.956	0.891
Purslane	848	165	0.978	0.821	0.898	0.814
SpottedSpurge	848	125	0.919	0.902	0.933	0.843
Carpetweed	848	125	0.865	0.818	0.887	0.774
Ragweed	848	125	0.937	0.856	0.934	0.864
Eclipta	848	148	0.979	0.951	0.964	0.932
PricklySida	848	67	0.97	0.966	0.974	0.949
PalmerAmaranth	848	49	0.992	0.878	0.9	0.872
Sicklepod	848	34	0.987	1	0.995	0.97
Goosegrass	848	34	0.924	0.853	0.897	0.782
CutleafGroundcherry	848	18	0.999	0.944	0.946	0.874

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 100%
all	848	1421	0.951	0.895	0.936	0.867
Waterhemp	848	293	0.954	0.911	0.949	0.906
MorningGlory	848	222	0.986	0.947	0.981	0.912
Purslane	848	147	0.963	0.816	0.886	0.791
SpottedSpurge	848	159	0.928	0.843	0.932	0.837
Carpetweed	848	147	0.803	0.728	0.804	0.664
Ragweed	848	121	0.902	0.908	0.933	0.84
Eclipta	848	130	0.967	0.938	0.959	0.937
PricklySida	848	64	0.984	0.958	0.978	0.936
PalmerAmaranth	848	57	1	0.914	0.965	0.931
Sicklepod	848	22	0.953	1	0.995	0.929
Goosegrass	848	43	0.996	0.837	0.859	0.791
CutleafGroundcherry	848	16	0.982	0.938	0.991	0.936

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 100%
all	848	1360	0.941	0.919	0.936	0.884
Waterhemp	848	274	0.89	0.909	0.939	0.893
MorningGlory	848	203	0.98	0.941	0.965	0.908
Purslane	848	142	0.946	0.86	0.896	0.822
SpottedSpurge	848	123	0.936	0.878	0.908	0.816
Carpetweed	848	111	0.891	0.919	0.948	0.864
Ragweed	848	155	0.898	0.912	0.954	0.87
Eclipta	848	146	0.956	0.979	0.982	0.945
PricklySida	848	65	0.978	0.985	0.986	0.97
PalmerAmaranth	848	64	0.95	0.875	0.901	0.857
Sicklepod	848	37	0.946	1	0.974	0.974
Goosegrass	848	26	1	0.846	0.85	0.789
CutleafGroundcherry	848	14	0.924	0.929	0.926	0.901

YOLOv3-SPP

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 100
all	848	1419	0.954	0.899	0.94	0.865
Waterhemp	848	291	0.966	0.886	0.948	0.902
MorningGlory	848	185	0.983	0.935	0.967	0.902
Purslane	848	143	0.947	0.867	0.922	0.828
SpottedSpurge	848	143	0.912	0.846	0.897	0.797
Carpetweed	848	155	0.861	0.69	0.807	0.636
Ragweed	848	136	0.906	0.904	0.945	0.851
Eclipta	848	138	0.949	0.95	0.969	0.926
PricklySida	848	74	0.97	0.946	0.951	0.894
PalmerAmaranth	848	62	0.993	0.952	0.985	0.952
Sicklepod	848	40	0.989	0.975	0.995	0.984
Goosegrass	848	35	0.967	0.846	0.899	0.791
CutleafGroundcherry	848	17	1	0.989	0.995	0.913
Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 100
all	848	1475	0.939	0.884	0.939	0.873
Waterhemp	848	279	0.962	0.903	0.97	0.92
MorningGlory	848	181	0.994	0.918	0.972	0.892
Purslane	848	165	0.987	0.909	0.969	0.891
SpottedSpurge	848	186	0.954	0.78	0.896	0.798
Carpetweed	848	156	0.732	0.769	0.838	0.711
Ragweed	848	159	0.897	0.876	0.954	0.858
Eclipta	848	131	0.946	0.969	0.978	0.946
PricklySida	848	80	0.974	0.942	0.977	0.923
PalmerAmaranth	848	53	0.898	0.906	0.913	0.885
Sicklepod	848	25	1	0.892	0.916	0.896
Goosegrass	848	39	1	0.836	0.945	0.885
CutleafGroundcherry	848	21	0.929	0.905	0.945	0.865
Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 100
all	848	1459	0.941	0.913	0.952	0.883
Waterhemp	848	346	0.958	0.934	0.956	0.904
MorningGlory	848	223	0.981	0.942	0.965	0.893
Purslane	848	165	0.929	0.875	0.919	0.815
SpottedSpurge	848	125	0.914	0.912	0.934	0.848
Carpetweed	848	125	0.862	0.798	0.898	0.77
Ragweed	848	125	0.933	0.88	0.95	0.858
Eclipta	848	148	0.953	0.946	0.97	0.927
PricklySida	848	67	0.953	0.97	0.985	0.961
PalmerAmaranth	848	49	0.941	0.878	0.945	0.925
Sicklepod	848	34	0.963	1	0.995	0.961
Goosegrass	848	34	0.909	0.882	0.921	0.817
CutleafGroundcherry	848	18	1	0.941	0.986	0.913
Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 100
all	848	1421	0.951	0.895	0.938	0.864
Waterhemp	848	293	0.96	0.904	0.961	0.914
MorningGlory	848	222	0.991	0.944	0.973	0.915
Purslane	848	147	0.925	0.844	0.89	0.775
SpottedSpurge	848	159	0.92	0.867	0.936	0.84
Carpetweed	848	147	0.805	0.714	0.803	0.672
Ragweed	848	121	0.894	0.909	0.951	0.839
Eclipta	848	130	0.953	0.938	0.985	0.94
PricklySida	848	64	0.984	0.965	0.966	0.927
PalmerAmaranth	848	57	0.978	0.947	0.964	0.931
Sicklepod	848	22	0.997	1	0.995	0.913
Goosegrass	848	43	1	0.814	0.866	0.79
CutleafGroundcherry	848	16	1	0.89	0.967	0.917
Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 100
all	848	1360	0.956	0.905	0.945	0.89
Waterhemp	848	274	0.939	0.9	0.943	0.894
MorningGlory	848	203	0.985	0.954	0.979	0.908
Purslane	848	142	0.959	0.826	0.896	0.828
SpottedSpurge	848	123	0.969	0.87	0.906	0.822
Carpetweed	848	111	0.93	0.883	0.954	0.878
Ragweed	848	155	0.92	0.893	0.945	0.842
Eclipta	848	146	0.972	0.968	0.993	0.961
PricklySida	848	65	0.985	0.985	0.985	0.968
PalmerAmaranth	848	64	0.933	0.875	0.912	0.856
Sicklepod	848	37	0.947	1	0.987	0.985
Goosegrass	848	26	1	0.849	0.921	0.835
CutleafGroundcherry	848	14	0.928	0.857	0.916	0.909

Yolov5n

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1419	0.927	0.873	0.935	0.827
Waterhemp	848	291	0.958	0.88	0.961	0.886
MorningGlory	848	185	0.959	0.897	0.957	0.848
Purslane	848	143	0.906	0.809	0.917	0.765
SpottedSpurge	848	143	0.89	0.832	0.902	0.76
Carpetweed	848	155	0.827	0.71	0.804	0.604
Ragweed	848	136	0.903	0.888	0.955	0.868
Eclipta	848	138	0.901	0.949	0.975	0.908
PricklySida	848	74	0.935	0.932	0.945	0.87
PalmerAmaranth	848	62	0.957	0.919	0.978	0.909
Sicklepod	848	40	0.969	0.95	0.971	0.928
Goosegrass	848	35	0.962	0.886	0.908	0.767
CutleafGroundcherry	848	17	0.951	0.824	0.943	0.811
Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1475	0.912	0.876	0.925	0.831
Waterhemp	848	279	0.933	0.91	0.961	0.891
MorningGlory	848	181	0.971	0.91	0.96	0.838
Purslane	848	165	0.942	0.886	0.962	0.823
SpottedSpurge	848	186	0.91	0.774	0.897	0.753
Carpetweed	848	156	0.678	0.782	0.805	0.66
Ragweed	848	159	0.919	0.887	0.954	0.842
Eclipta	848	131	0.908	0.969	0.977	0.929
PricklySida	848	80	0.916	0.952	0.975	0.918
PalmerAmaranth	848	53	0.943	0.906	0.933	0.88
Sicklepod	848	25	0.957	0.896	0.918	0.906
Goosegrass	848	39	0.968	0.787	0.888	0.744
CutleafGroundcherry	848	21	0.899	0.851	0.867	0.789
Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1459	0.915	0.899	0.939	0.844
Waterhemp	848	346	0.932	0.896	0.948	0.892
MorningGlory	848	223	0.976	0.897	0.959	0.846
Purslane	848	165	0.929	0.799	0.895	0.729
SpottedSpurge	848	125	0.852	0.872	0.917	0.795
Carpetweed	848	125	0.839	0.816	0.865	0.714
Ragweed	848	125	0.903	0.893	0.946	0.846
Eclipta	848	148	0.939	0.941	0.978	0.919
PricklySida	848	67	0.943	0.982	0.978	0.94
PalmerAmaranth	848	49	0.94	0.898	0.911	0.867
Sicklepod	848	34	0.94	1	0.995	0.938
Goosegrass	848	34	0.935	0.853	0.926	0.787
CutleafGroundcherry	848	18	0.847	0.944	0.95	0.858
Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1421	0.919	0.876	0.928	0.838
Waterhemp	848	293	0.95	0.9	0.96	0.885
MorningGlory	848	222	0.98	0.932	0.981	0.882
Purslane	848	147	0.932	0.75	0.892	0.756
SpottedSpurge	848	159	0.898	0.886	0.928	0.801
Carpetweed	848	147	0.759	0.707	0.792	0.639
Ragweed	848	121	0.868	0.901	0.944	0.84
Eclipta	848	130	0.967	0.969	0.989	0.95
PricklySida	848	64	0.869	0.929	0.965	0.911
PalmerAmaranth	848	57	0.943	0.875	0.94	0.865
Sicklepod	848	22	0.961	1	0.995	0.936
Goosegrass	848	43	1	0.79	0.858	0.743
CutleafGroundcherry	848	16	0.906	0.875	0.897	0.85
Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1360	0.926	0.877	0.93	0.842
Waterhemp	848	274	0.905	0.854	0.925	0.86
MorningGlory	848	203	0.964	0.919	0.968	0.857
Purslane	848	142	0.907	0.824	0.9	0.747
SpottedSpurge	848	123	0.949	0.837	0.935	0.794
Carpetweed	848	111	0.907	0.856	0.928	0.812
Ragweed	848	155	0.925	0.877	0.956	0.857
Eclipta	848	146	0.946	0.953	0.984	0.934
PricklySida	848	65	0.912	0.985	0.981	0.941
PalmerAmaranth	848	64	0.949	0.865	0.892	0.814
Sicklepod	848	37	0.945	1	0.974	0.941
Goosegrass	848	26	0.949	0.769	0.88	0.725
CutleafGroundcherry	848	14	0.856	0.786	0.839	0.817

YOLOv5s

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1419	0.932	0.898	0.939	0.857
Waterhemp	848	291	0.959	0.888	0.964	0.908
MorningGlory	848	185	0.97	0.941	0.967	0.895
Purslane	848	143	0.911	0.874	0.938	0.811
SpottedSpurge	848	143	0.898	0.866	0.913	0.799
Carpetweed	848	155	0.838	0.671	0.772	0.616
Ragweed	848	136	0.859	0.895	0.957	0.87
Eclipta	848	138	0.936	0.964	0.975	0.941
PricklySida	848	74	0.96	0.932	0.966	0.892
PalmerAmaranth	848	62	1	0.945	0.959	0.9
Sicklepod	848	40	0.968	0.975	0.979	0.968
Goosegrass	848	35	0.921	0.886	0.885	0.774
CutleafGroundcherry	848	17	0.97	0.941	0.987	0.912
Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 100
all	848	1475	0.937	0.877	0.935	0.859
Waterhemp	848	279	0.945	0.896	0.965	0.919
MorningGlory	848	181	0.955	0.935	0.968	0.877
Purslane	848	165	0.955	0.9	0.96	0.844
SpottedSpurge	848	186	0.935	0.78	0.882	0.776
Carpetweed	848	156	0.785	0.749	0.839	0.711
Ragweed	848	159	0.926	0.865	0.957	0.86
Eclipta	848	131	0.939	0.942	0.972	0.935
PricklySida	848	80	0.972	0.925	0.955	0.918
PalmerAmaranth	848	53	0.978	0.887	0.942	0.89
Sicklepod	848	25	0.979	0.92	0.919	0.906
Goosegrass	848	39	0.97	0.818	0.906	0.806
CutleafGroundcherry	848	21	0.9	0.905	0.948	0.867
Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1459	0.935	0.903	0.948	0.879
Waterhemp	848	346	0.946	0.899	0.948	0.901
MorningGlory	848	223	0.966	0.905	0.953	0.88
Purslane	848	165	0.939	0.842	0.928	0.817
SpottedSpurge	848	125	0.876	0.888	0.928	0.839
Carpetweed	848	125	0.811	0.79	0.858	0.733
Ragweed	848	125	0.874	0.864	0.946	0.862
Eclipta	848	148	0.956	0.926	0.978	0.931
PricklySida	848	67	0.964	0.985	0.985	0.963
PalmerAmaranth	848	49	1	0.875	0.926	0.887
Sicklepod	848	34	0.962	1	0.995	0.945
Goosegrass	848	34	0.981	0.882	0.936	0.859
CutleafGroundcherry	848	18	0.946	0.976	0.992	0.934

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 100
all	848	1421	0.942	0.88	0.94	0.863
Waterhemp	848	293	0.942	0.898	0.959	0.915
MorningGlory	848	222	0.99	0.93	0.979	0.889
Purslane	848	147	0.92	0.83	0.908	0.796
SpottedSpurge	848	159	0.913	0.862	0.925	0.816
Carpetweed	848	147	0.774	0.707	0.801	0.664
Ragweed	848	121	0.897	0.835	0.95	0.83
Eclipta	848	130	0.952	0.946	0.986	0.936
PricklySida	848	64	0.979	0.984	0.99	0.944
PalmerAmaranth	848	57	0.981	0.917	0.968	0.924
Sicklepod	848	22	0.955	1	0.993	0.941
Goosegrass	848	43	1	0.776	0.842	0.786
CutleafGroundcherry	848	16	1	0.875	0.979	0.914

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 100
all	848	1360	0.947	0.903	0.939	0.872
Waterhemp	848	274	0.929	0.883	0.937	0.884
MorningGlory	848	203	0.98	0.943	0.979	0.89
Purslane	848	142	0.96	0.847	0.903	0.79
SpottedSpurge	848	123	0.938	0.854	0.92	0.813
Carpetweed	848	111	0.888	0.874	0.938	0.865
Ragweed	848	155	0.894	0.897	0.943	0.844
Eclipta	848	146	0.961	0.959	0.992	0.962
PricklySida	848	65	0.938	0.985	0.986	0.953
PalmerAmaranth	848	64	0.983	0.885	0.937	0.873
Sicklepod	848	37	0.957	1	0.974	0.963
Goosegrass	848	26	0.956	0.846	0.881	0.775
CutleafGroundcherry	848	14	0.985	0.857	0.883	0.846

YOLOv5m

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 100
all	848	1419	0.946	0.893	0.937	0.867
Waterhemp	848	291	0.949	0.889	0.955	0.912
MorningGlory	848	185	0.983	0.94	0.975	0.907
Purslane	848	143	0.946	0.864	0.919	0.826
SpottedSpurge	848	143	0.892	0.864	0.921	0.822
Carpetweed	848	155	0.842	0.621	0.762	0.617
Ragweed	848	136	0.894	0.89	0.956	0.869
Eclipta	848	138	0.956	0.942	0.976	0.941
PricklySida	848	74	0.978	0.946	0.965	0.902
PalmerAmaranth	848	62	0.996	0.935	0.951	0.903
Sicklepod	848	40	0.953	0.975	0.993	0.988
Goosegrass	848	35	0.967	0.857	0.872	0.792
CutleafGroundcherry	848	17	0.99	1	0.995	0.926

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 100
all	848	1475	0.946	0.88	0.932	0.861
Waterhemp	848	279	0.951	0.908	0.969	0.919
MorningGlory	848	181	0.965	0.902	0.969	0.889
Purslane	848	165	0.944	0.912	0.961	0.85
SpottedSpurge	848	186	0.936	0.788	0.885	0.777
Carpetweed	848	156	0.842	0.717	0.849	0.714
Ragweed	848	159	0.943	0.862	0.949	0.847
Eclipta	848	131	0.929	0.931	0.977	0.925
PricklySida	848	80	0.961	0.927	0.97	0.932
PalmerAmaranth	848	53	0.954	0.906	0.944	0.887
Sicklepod	848	25	1	0.915	0.916	0.888
Goosegrass	848	39	0.995	0.846	0.847	0.792
CutleafGroundcherry	848	21	0.937	0.952	0.951	0.916

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1459	0.959	0.899	0.944	0.879
Waterhemp	848	346	0.957	0.901	0.946	0.903
MorningGlory	848	223	0.981	0.918	0.962	0.891
Purslane	848	165	0.944	0.823	0.908	0.812
SpottedSpurge	848	125	0.92	0.92	0.939	0.843
Carpetweed	848	125	0.867	0.784	0.875	0.748
Ragweed	848	125	0.947	0.848	0.935	0.852
Eclipta	848	148	0.958	0.926	0.974	0.922
PricklySida	848	67	0.991	0.985	0.985	0.968
PalmerAmaranth	848	49	0.993	0.878	0.94	0.917
Sicklepod	848	34	0.984	1	0.995	0.967
Goosegrass	848	34	0.967	0.861	0.925	0.798
CutleafGroundcherry	848	18	0.999	0.944	0.945	0.921

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1421	0.939	0.892	0.932	0.871
Waterhemp	848	293	0.946	0.908	0.959	0.909
MorningGlory	848	222	0.973	0.956	0.982	0.923
Purslane	848	147	0.934	0.837	0.892	0.81
SpottedSpurge	848	159	0.912	0.862	0.923	0.817
Carpetweed	848	147	0.751	0.716	0.793	0.663
Ragweed	848	121	0.875	0.893	0.943	0.843
Eclipta	848	130	0.963	0.946	0.961	0.934
PricklySida	848	64	1	0.959	0.986	0.953
PalmerAmaranth	848	57	0.952	0.912	0.94	0.918
Sicklepod	848	22	0.989	1	0.995	0.935
Goosegrass	848	43	1	0.837	0.843	0.797
CutleafGroundcherry	848	16	0.975	0.875	0.968	0.953

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1360	0.949	0.906	0.939	0.878
Waterhemp	848	274	0.906	0.877	0.928	0.884
MorningGlory	848	203	0.975	0.947	0.973	0.906
Purslane	848	142	0.952	0.859	0.897	0.809
SpottedSpurge	848	123	0.946	0.862	0.925	0.826
Carpetweed	848	111	0.933	0.874	0.935	0.863
Ragweed	848	155	0.906	0.871	0.944	0.847
Eclipta	848	146	0.979	0.963	0.992	0.953
PricklySida	848	65	0.984	0.985	0.985	0.955
PalmerAmaranth	848	64	0.964	0.891	0.922	0.852
Sicklepod	848	37	0.957	1	0.977	0.969
Goosegrass	848	26	0.953	0.885	0.873	0.807
CutleafGroundcherry	848	14	0.937	0.857	0.913	0.861

YOLOv5l

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1419	0.942	0.901	0.936	0.868
Waterhemp	848	291	0.97	0.893	0.95	0.911
MorningGlory	848	185	0.978	0.942	0.961	0.904
Purslane	848	143	0.921	0.897	0.923	0.858
SpottedSpurge	848	143	0.905	0.874	0.921	0.816
Carpetweed	848	155	0.859	0.671	0.807	0.644
Ragweed	848	136	0.911	0.904	0.938	0.857
Eclipta	848	138	0.949	0.948	0.973	0.94
PricklySida	848	74	0.981	0.946	0.97	0.895
PalmerAmaranth	848	62	0.983	0.946	0.965	0.944
Sicklepod	848	40	0.951	0.966	0.974	0.952
Goosegrass	848	35	1	0.823	0.879	0.788
CutleafGroundcherry	848	17	0.895	1	0.976	0.91
Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1475	0.94	0.888	0.934	0.875
Waterhemp	848	279	0.955	0.909	0.958	0.914
MorningGlory	848	181	0.971	0.929	0.973	0.926
Purslane	848	165	0.939	0.931	0.962	0.883
SpottedSpurge	848	186	0.947	0.796	0.881	0.781
Carpetweed	848	156	0.765	0.731	0.842	0.718
Ragweed	848	159	0.928	0.855	0.948	0.858
Eclipta	848	131	0.949	0.924	0.969	0.938
PricklySida	848	80	0.97	0.963	0.975	0.922
PalmerAmaranth	848	53	0.908	0.926	0.948	0.921
Sicklepod	848	25	0.985	0.92	0.916	0.91
Goosegrass	848	39	0.971	0.865	0.888	0.835
CutleafGroundcherry	848	21	0.988	0.905	0.951	0.894
Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1459	0.954	0.897	0.949	0.881
Waterhemp	848	346	0.943	0.907	0.95	0.913
MorningGlory	848	223	0.984	0.919	0.961	0.904
Purslane	848	165	0.931	0.812	0.928	0.845
SpottedSpurge	848	125	0.886	0.888	0.933	0.857
Carpetweed	848	125	0.869	0.8	0.877	0.752
Ragweed	848	125	0.94	0.87	0.949	0.861
Eclipta	848	148	0.986	0.951	0.983	0.946
PricklySida	848	67	0.987	0.985	0.985	0.974
PalmerAmaranth	848	49	0.996	0.898	0.956	0.916
Sicklepod	848	34	0.991	1	0.995	0.969
Goosegrass	848	34	1	0.847	0.945	0.804
CutleafGroundcherry	848	18	0.937	0.889	0.92	0.829
Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1421	0.93	0.903	0.939	0.88
Waterhemp	848	293	0.944	0.917	0.957	0.92
MorningGlory	848	222	0.973	0.962	0.976	0.926
Purslane	848	147	0.962	0.869	0.906	0.829
SpottedSpurge	848	159	0.885	0.874	0.925	0.832
Carpetweed	848	147	0.738	0.721	0.82	0.671
Ragweed	848	121	0.858	0.893	0.937	0.838
Eclipta	848	130	0.962	0.961	0.99	0.959
PricklySida	848	64	0.984	0.968	0.984	0.94
PalmerAmaranth	848	57	0.948	0.96	0.972	0.94
Sicklepod	848	22	0.979	1	0.995	0.972
Goosegrass	848	43	0.965	0.837	0.835	0.782
CutleafGroundcherry	848	16	0.958	0.875	0.966	0.949
Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1360	0.97	0.886	0.932	0.881
Waterhemp	848	274	0.96	0.866	0.93	0.896
MorningGlory	848	203	0.984	0.924	0.965	0.899
Purslane	848	142	0.937	0.845	0.897	0.816
SpottedSpurge	848	123	0.981	0.854	0.917	0.842
Carpetweed	848	111	0.927	0.838	0.943	0.871
Ragweed	848	155	0.929	0.826	0.932	0.847
Eclipta	848	146	0.993	0.962	0.984	0.955
PricklySida	848	65	0.984	0.974	0.985	0.976
PalmerAmaranth	848	64	0.982	0.859	0.919	0.867
Sicklepod	848	37	0.965	1	0.974	0.958
Goosegrass	848	26	1	0.827	0.846	0.771
CutleafGroundcherry	848	14	0.996	0.857	0.892	0.87

YOLOv5x

Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1419	0.933	0.9	0.94	0.876
Waterhemp	848	291	0.96	0.89	0.961	0.915
MorningGlory	848	185	0.976	0.957	0.971	0.913
Purslane	848	143	0.92	0.888	0.935	0.859
SpottedSpurge	848	143	0.886	0.846	0.912	0.828
Carpetweed	848	155	0.877	0.69	0.831	0.654
Ragweed	848	136	0.902	0.919	0.95	0.879
Eclipta	848	138	0.935	0.943	0.965	0.926
PricklySida	848	74	0.958	0.935	0.954	0.898
PalmerAmaranth	848	62	0.999	0.952	0.984	0.96
Sicklepod	848	40	0.974	0.95	0.973	0.945
Goosegrass	848	35	0.918	0.829	0.859	0.806
CutleafGroundcherry	848	17	0.891	1	0.983	0.924
Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1475	0.947	0.897	0.937	0.886
Waterhemp	848	279	0.962	0.918	0.967	0.929
MorningGlory	848	181	0.972	0.934	0.98	0.925
Purslane	848	165	0.945	0.93	0.967	0.888
SpottedSpurge	848	186	0.956	0.812	0.891	0.8
Carpetweed	848	156	0.799	0.776	0.868	0.747
Ragweed	848	159	0.909	0.877	0.95	0.872
Eclipta	848	131	0.917	0.931	0.953	0.931
PricklySida	848	80	0.974	0.938	0.973	0.933
PalmerAmaranth	848	53	0.961	0.935	0.93	0.903
Sicklepod	848	25	0.989	0.92	0.916	0.907
Goosegrass	848	39	0.999	0.846	0.89	0.855
CutleafGroundcherry	848	21	0.987	0.952	0.955	0.938
Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1459	0.951	0.894	0.953	0.887
Waterhemp	848	346	0.957	0.902	0.954	0.908
MorningGlory	848	223	0.985	0.924	0.975	0.911
Purslane	848	165	0.966	0.87	0.942	0.868
SpottedSpurge	848	125	0.902	0.879	0.925	0.839
Carpetweed	848	125	0.836	0.792	0.872	0.766
Ragweed	848	125	0.946	0.847	0.953	0.874
Eclipta	848	148	0.957	0.907	0.986	0.95
PricklySida	848	67	0.985	0.97	0.984	0.967
PalmerAmaranth	848	49	0.993	0.898	0.95	0.911
Sicklepod	848	34	0.98	1	0.995	0.954
Goosegrass	848	34	0.931	0.853	0.915	0.822
CutleafGroundcherry	848	18	0.974	0.889	0.989	0.87
Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 10
all	848	1421	0.946	0.909	0.944	0.889
Waterhemp	848	293	0.951	0.922	0.952	0.919
MorningGlory	848	222	0.981	0.949	0.971	0.913
Purslane	848	147	0.943	0.896	0.918	0.854
SpottedSpurge	848	159	0.927	0.874	0.941	0.843
Carpetweed	848	147	0.768	0.742	0.823	0.687
Ragweed	848	121	0.893	0.876	0.942	0.855
Eclipta	848	130	0.977	0.969	0.984	0.945
PricklySida	848	64	0.965	0.969	0.99	0.956
PalmerAmaranth	848	57	1	0.941	0.965	0.944
Sicklepod	848	22	0.984	1	0.995	0.949
Goosegrass	848	43	0.999	0.837	0.865	0.828
CutleafGroundcherry	848	16	0.964	0.938	0.986	0.978
Class	Images	Labels	P	R	mAP@.5	mAP@.5:.95: 100
all	848	1360	0.953	0.906	0.947	0.897
Waterhemp	848	274	0.948	0.88	0.935	0.896
MorningGlory	848	203	0.994	0.931	0.979	0.92
Purslane	848	142	0.952	0.88	0.926	0.831
SpottedSpurge	848	123	0.967	0.87	0.928	0.84
Carpetweed	848	111	0.922	0.856	0.953	0.868
Ragweed	848	155	0.907	0.858	0.933	0.843
Eclipta	848	146	0.992	0.966	0.986	0.965
PricklySida	848	65	0.985	0.98	0.985	0.966
PalmerAmaranth	848	64	0.951	0.905	0.93	0.889
Sicklepod	848	37	0.935	1	0.979	0.979
Goosegrass	848	26	0.992	0.885	0.908	0.846
CutleafGroundcherry	848	14	0.893	0.857	0.916	0.916