

## 2. Seagrass Restoration Trade-offs Paper - Using PrioritizR for identifying potential areas for conservation and restoration to optimize multiple ecosystem service outcomes

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### Paper Resources

Click **here** to see the latest meeting notes in the Google Doc.

Click **here** to see a tutorial on PrioritizR

Click **here** to see a tutorial about calibrating tradeoffs in PrioritizR

To Do List: - Run the set of PrioritizR configs we discussed at last meeting. i.e., run for 1 ES, 2 ES, 3 ES, . . . up to 5 to see how much area it takes to select for 5% of each of the ES considered.

### Setup (i.e., loading data, setting targets etc).

## Functionalizing a prioritization for 1 ES from Confirmed Beds

##	no_ES	n	relative_held	absolute_held	total_amount
## 1	1	41	0.05068972	10.881945	214.6776
## 2	1	161	0.05024091	672.472287	13384.9536
## 3	1	28	0.05076342	6.682237	131.6349
## 4	1	184	0.05016813	785.555802	15658.4625
## 5	1	145	0.05024775	134.498116	2676.6991

## Functionalizing a prioritization for 2 ES from Confirmed Beds

##	no_ES	feature	Order	solution_area	relative_held
## 1	2	NursHab_EV_Raw_Confirmed	1 2	162	0.05042655
## 2	2	BlueCarbon_EV_Raw_Confirmed	1 2	162	0.05055297
## 3	2	NursHab_EV_Raw_Confirmed	1 3	49	0.05101165
## 4	2	Rec_EV_Raw_Confirmed	1 3	49	0.05088522
## 5	2	NursHab_EV_Raw_Confirmed	1 4	184	0.07842457
## 6	2	Exposure_EV_Raw_Confirmed	1 4	184	0.05016813
## 7	2	NursHab_EV_Raw_Confirmed	1 5	147	0.05058348
## 8	2	BioDiv_EV_Raw_Confirmed	1 5	147	0.05044738
## 9	2	BlueCarbon_EV_Raw_Confirmed	2 3	162	0.05052843
## 10	2	Rec_EV_Raw_Confirmed	2 3	162	0.05206384
## 11	2	BlueCarbon_EV_Raw_Confirmed	2 4	192	0.05029716
## 12	2	Exposure_EV_Raw_Confirmed	2 4	192	0.05024813
## 13	2	BlueCarbon_EV_Raw_Confirmed	2 5	165	0.05029726
## 14	2	BioDiv_EV_Raw_Confirmed	2 5	165	0.05031616
## 15	2	Rec_EV_Raw_Confirmed	3 4	188	0.05016905
## 16	2	Exposure_EV_Raw_Confirmed	3 4	188	0.05017739
## 17	2	Rec_EV_Raw_Confirmed	3 5	148	0.05095827
## 18	2	BioDiv_EV_Raw_Confirmed	3 5	148	0.05042345
## 19	2	Exposure_EV_Raw_Confirmed	4 5	187	0.05026908
## 20	2	BioDiv_EV_Raw_Confirmed	4 5	187	0.05028963

## Functionalizing a prioritization for 3 ES from Confirmed Beds

##	no_ES	feature	Order	solution_area	relative_held
## 1	3	NursHab_EV_Raw_Confirmed	1 2 3	163	0.05074573
## 2	3	BlueCarbon_EV_Raw_Confirmed	1 2 3	163	0.05065927
## 3	3	Rec_EV_Raw_Confirmed	1 2 3	163	0.05190787
## 4	3	NursHab_EV_Raw_Confirmed	1 2 4	192	0.05857147
## 5	3	BlueCarbon_EV_Raw_Confirmed	1 2 4	192	0.05029716
## 6	3	Exposure_EV_Raw_Confirmed	1 2 4	192	0.05024813
## 7	3	NursHab_EV_Raw_Confirmed	1 2 5	165	0.05278452
## 8	3	BlueCarbon_EV_Raw_Confirmed	1 2 5	165	0.05029726
## 9	3	BioDiv_EV_Raw_Confirmed	1 2 5	165	0.05031616
## 10	3	NursHab_EV_Raw_Confirmed	1 3 4	188	0.08256601
## 11	3	Rec_EV_Raw_Confirmed	1 3 4	188	0.05016905
## 12	3	Exposure_EV_Raw_Confirmed	1 3 4	188	0.05017739
## 13	3	NursHab_EV_Raw_Confirmed	1 3 5	148	0.05065968
## 14	3	Rec_EV_Raw_Confirmed	1 3 5	148	0.05041510
## 15	3	BioDiv_EV_Raw_Confirmed	1 3 5	148	0.05038118

## 16	3	NursHab_EV_Raw_Confirmed	1 4 5	187	0.07844691
## 17	3	Exposure_EV_Raw_Confirmed	1 4 5	187	0.05026908
## 18	3	BioDiv_EV_Raw_Confirmed	1 4 5	187	0.05028963
## 19	3	BlueCarbon_EV_Raw_Confirmed	2 3 4	194	0.05014198
## 20	3	Rec_EV_Raw_Confirmed	2 3 4	194	0.05036528
## 21	3	Exposure_EV_Raw_Confirmed	2 3 4	194	0.05021619
## 22	3	BlueCarbon_EV_Raw_Confirmed	2 3 5	166	0.05044138
## 23	3	Rec_EV_Raw_Confirmed	2 3 5	166	0.05141653
## 24	3	BioDiv_EV_Raw_Confirmed	2 3 5	166	0.05047331
## 25	3	BlueCarbon_EV_Raw_Confirmed	2 4 5	192	0.05020840
## 26	3	Exposure_EV_Raw_Confirmed	2 4 5	192	0.05018812
## 27	3	BioDiv_EV_Raw_Confirmed	2 4 5	192	0.05023427
## 28	3	Rec_EV_Raw_Confirmed	3 4 5	191	0.05067055
## 29	3	Exposure_EV_Raw_Confirmed	3 4 5	191	0.05027660
## 30	3	BioDiv_EV_Raw_Confirmed	3 4 5	191	0.05030375

## Functionalizing a prioritization for 4 ES from Confirmed Beds

##	no_ES	feature	Order	solution_area	relative_held
## 1	4	NursHab_EV_Raw_Confirmed	1 2 3 4	194	0.06564523
## 2	4	BlueCarbon_EV_Raw_Confirmed	1 2 3 4	194	0.05014198
## 3	4	Rec_EV_Raw_Confirmed	1 2 3 4	194	0.05036528
## 4	4	Exposure_EV_Raw_Confirmed	1 2 3 4	194	0.05021619
## 5	4	NursHab_EV_Raw_Confirmed	1 2 3 5	166	0.06141540
## 6	4	BlueCarbon_EV_Raw_Confirmed	1 2 3 5	166	0.05044138
## 7	4	Rec_EV_Raw_Confirmed	1 2 3 5	166	0.05141653
## 8	4	BioDiv_EV_Raw_Confirmed	1 2 3 5	166	0.05047331
## 9	4	NursHab_EV_Raw_Confirmed	1 2 4 5	192	0.06589930
## 10	4	BlueCarbon_EV_Raw_Confirmed	1 2 4 5	192	0.05020840
## 11	4	Exposure_EV_Raw_Confirmed	1 2 4 5	192	0.05018812
## 12	4	BioDiv_EV_Raw_Confirmed	1 2 4 5	192	0.05023427
## 13	4	NursHab_EV_Raw_Confirmed	1 3 4 5	191	0.08183486
## 14	4	Rec_EV_Raw_Confirmed	1 3 4 5	191	0.05067055
## 15	4	Exposure_EV_Raw_Confirmed	1 3 4 5	191	0.05027660
## 16	4	BioDiv_EV_Raw_Confirmed	1 3 4 5	191	0.05030375
## 17	4	BlueCarbon_EV_Raw_Confirmed	2 3 4 5	196	0.05062805
## 18	4	Rec_EV_Raw_Confirmed	2 3 4 5	196	0.05154196
## 19	4	Exposure_EV_Raw_Confirmed	2 3 4 5	196	0.05055248
## 20	4	BioDiv_EV_Raw_Confirmed	2 3 4 5	196	0.05054859

## Functionalizing a prioritization for 5 ES from Confirmed Beds

##	no_ES	feature	Order	solution_area	relative_held
## 1	5	NursHab_EV_Raw_Confirmed	1 2 3 4 5	196	0.07636112
## 2	5	BlueCarbon_EV_Raw_Confirmed	1 2 3 4 5	196	0.05062805
## 3	5	Rec_EV_Raw_Confirmed	1 2 3 4 5	196	0.05154196
## 4	5	Exposure_EV_Raw_Confirmed	1 2 3 4 5	196	0.05055248
## 5	5	BioDiv_EV_Raw_Confirmed	1 2 3 4 5	196	0.05054859





Plotting out the number of services vs solution area

