

Submerged Aquatic Vegetation Indicator Quantile Report

SEACAR Analysis

Last compiled on 23 October, 2023

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Overview

Purpose

The purpose of the indicator quantiles is to flag records that are “unusual” relative to all of the data in the DDI for a given indicator in order to facilitate QA/QC. They are not used to filter any of the data for SEACAR analyses, and the presence of a LowerQuantile or UpperQuantile flag on a DDI record alone does not necessarily indicate there is any issue with the record (neither does the absence of a LowerQuantile or UpperQuantile flag necessarily mean that a data record is correct).

Relevant file locations

Current values can be found in the “LowQuantile” and “HighQuantile” columns of the “Ref_Parameters” worksheet.

The R script described below and the output file can be found in the *FloridaSEACAR IndicatorQuantiles* repository on GitHub:

- <https://github.com/FloridaSEACAR/IndicatorQuantiles>

Process steps

IQ_Report_Render.R & IQ_Report.Rmd

1. The *IQ_Report_Render.R* script lists all files in a given directory and filters it to a list of DDI exports to evaluate considering a list of parameters to skip (user-defined).
2. User sets the desired upper and lower quantile thresholds, as well as a number of standard deviations away from the mean to use for the calculations.
3. User sets the string value(s) in the DDI exports that should be considered as NA values.
4. The remainder of the script loops through the file list, returning the values listed below and binding them together by row into a single Excel spreadsheet that is saved to the User’s working directory.
5. For each habitat included in the User’s working directory a PDF report will be created in the “output” folder using *IQ_Report.Rmd*, which provides an overview of questionable / flagged values.
6. In addition to the PDF reports, each habitat will provide a .txt data output file in the “output/data” folder containing questionable values.

Summary

The following quantile thresholds are used for flagging “questionable” values:

- Lower quantile: **0.001**
- Upper quantile: **0.999**

Potential Included Parameters:

- Braun Blanquet Score
- Modified Braun Blanquet Score
- Percent Cover
- Percent Occurrence
- Presence/Absence
- Shoot Count

The data file used for the analysis: **All_SAV_Parameters-2023-Oct-12.txt**

Table 1: Indicator Quantile Overview

parameter	sub_parameter	q_low	q_high	mean	n_tot	n_q_low	n_q_high	%_flagged
Braun Blanquet Score		0	5	0.32	1196087	1	0	0
Modified Braun Blanquet Score		0	5	2.19	30211	0	1	0
Percent Cover	Total	0	100	16.02	58529	0	43	0
Percent Cover	Species	0	100	2.48	440212	0	1	0
Percent Occurrence	Total	0	100	37.96	55987	0	2	0
Percent Occurrence	Species	0	100	7.59	542084	0	0	0
Presence/Absence		0	1	0.19	1356796	0	0	0
Shoot Count		0	5000	136.85	126614	0	125	0

q_low: Value corresponding to the qval_low quantile for the parameter in the DDI export.

q_high: Value corresponding to the qval_high quantile for the parameter in the DDI export.

mean: Mean value for the parameter in the DDI export.

n_tot: Total number of records in the DDI export for the parameter.

n_q_low: Number of records in the DDI export that are below q_low for the parameter.

n_q_high: Number of records in the DDI export that are above q_high for the parameter.

%_flagged: Proportion of total records in the DDI export for the parameter which have been flagged as above q_high, or below q_low.

Low Quantile

Braun Blanquet Score

Table 2: Flagged Values - Low Indicator Quantile: **0**

RowID	ProgramID	ProgramLocationID	SampleDate	CommonIdentifier	ResultValue
4726550	296	276	2020-12-13	Thalassia testudinum	-0.69

Programs containing flagged data:

296 - Florida Keys National Marine Sanctuary Seagrass Monitoring Project

High Quantile

Shoot Count

Table 3: Flagged Values - High Indicator Quantile: **5000**

RowID	ProgramID	ProgramLocationID	SampleDate	CommonIdentifier	ResultValue
4736420	564	SG-W3-03-13	2013-09-13 00:00:00	Halodule wrightii	5170.00
4735262	564	W1-10-17	2017-10-11 00:00:00	Halodule wrightii	5830.00
4735270	564	W1-10-17	2017-10-11 00:00:00	Halodule wrightii	7970.00
4735271	564	W1-10-17	2017-10-11 00:00:00	Halodule wrightii	5600.00
4735741	564	W1-11-11	2011-10-14 00:00:00	Halodule wrightii	5570.00
4735755	564	W1-11-11	2011-10-14 00:00:00	Halodule wrightii	5300.00
4735579	564	W2-03-12	2012-09-13 00:00:00	Halodule wrightii	6330.00
4735719	564	W2-05-17	2017-09-01 00:00:00	Halodule wrightii	5100.00
4735057	564	W3-06-15	2015-10-05 00:00:00	Halodule wrightii	5170.00
4735059	564	W3-06-15	2015-10-05 00:00:00	Halodule wrightii	5170.00
8672052	565	S1T17	2015-10-13 00:00:00	Halodule wrightii	5333.30
8705200	565	S3T1	2003-11-05 14:55:00	Syringodium filiforme	9200.00
8709612	565	S3T1	2004-10-28 14:20:00	Syringodium filiforme	7233.00
8705187	565	S3T1	2004-10-28 14:59:00	Syringodium filiforme	7400.00
8704885	565	S3T1	2004-10-28 15:08:00	Syringodium filiforme	5533.00
8680802	565	S3T1	2010-10-11 00:00:00	Halodule wrightii	5400.00
8676070	565	S3T1	2011-10-17 10:21:00	Halodule wrightii	5066.70
8705122	565	S3T1	2011-10-17 10:42:00	Syringodium filiforme	6766.70
8704889	565	S3T1	2011-10-17 11:46:00	Syringodium filiforme	5700.00
8676286	565	S3T1	2012-09-20 11:35:00	Halodule wrightii	6400.00
8704884	565	S3T1	2022-08-16 11:22:00	Syringodium filiforme	6766.70
8674373	565	S3T7	2003-11-06 11:07:00	Halodule wrightii	7733.00
8674357	565	S3T7	2003-11-06 11:10:00	Halodule wrightii	6800.00
8674327	565	S3T7	2004-11-01 11:20:00	Halodule wrightii	10333.00
8704354	565	S3T7	2004-11-01 11:30:00	Syringodium filiforme	5100.00
8704314	565	S3T7	2004-11-01 11:40:00	Syringodium filiforme	5633.00
8674332	565	S3T7	2008-10-08 12:08:00	Halodule wrightii	5400.00
8704282	565	S3T7	2011-10-17 14:42:00	Syringodium filiforme	5233.30
8704343	565	S3T7	2011-10-17 15:34:00	Syringodium filiforme	7966.70
8704370	565	S3T7	2011-10-17 15:38:00	Syringodium filiforme	7000.00
8704397	565	S3T7	2022-08-16 15:12:00	Syringodium filiforme	7200.00
8673899	565	S3T8	2010-10-11 15:31:00	Halodule wrightii	8267.00
8673904	565	S3T8	2012-09-20 12:46:00	Halodule wrightii	5833.30
8703459	565	S3T8	2012-09-20 13:19:00	Syringodium filiforme	6433.30
8669828	565	S4T15	2001-10-18 09:15:00	Halodule wrightii	5500.00
8671007	565	S4T2	2004-10-25 13:42:00	Halodule wrightii	5533.00
8689954	565	S5T5	2006-10-02 14:15:00	Halodule wrightii	5167.00
8672222	565	S5T6	2006-10-03 15:34:00	Halodule wrightii	6833.00
8672263	565	S5T6	2010-09-27 00:00:00	Halodule wrightii	5367.00
8672242	565	S5T6	2022-08-22 10:20:00	Halodule wrightii	5100.00
6730919	570	GAS01	2006-10-05 00:00:00	Halodule wrightii	6140.00
6730997	570	GAS01	2009-08-17 00:00:00	Halodule wrightii	5620.00
6730913	570	GAS01	2010-08-20 00:00:00	Halodule wrightii	5260.00
6730978	570	GAS01	2011-08-08 00:00:00	Halodule wrightii	7960.00
6730968	570	GAS01	2012-10-12 00:00:00	Halodule wrightii	7500.00
6730975	570	GAS01	2013-09-05 00:00:00	Halodule wrightii	7020.00

RowID	ProgramID	ProgramLocationID	SampleDate	CommonIdentifier	ResultValue
6730966	570	GAS01	2014-08-20 00:00:00	Halodule wrightii	6340.00
6730989	570	GAS01	2015-09-04 00:00:00	Halodule wrightii	7380.00
6730930	570	GAS01	2017-08-16 00:00:00	Halodule wrightii	5960.00
6730942	570	GAS01	2021-09-21 00:00:00	Halodule wrightii	5500.00
6730988	570	GAS01	2021-09-21 00:00:00	Halodule wrightii	6580.00
6736803	570	GAS03	2008-10-10 00:00:00	Halodule wrightii	5280.00
6736835	570	GAS03	2010-08-03 00:00:00	Halodule wrightii	7520.00
6736734	570	GAS03	2011-09-16 00:00:00	Halodule wrightii	7980.00
6736751	570	GAS03	2012-09-07 00:00:00	Halodule wrightii	6600.00
6736798	570	GAS03	2012-09-07 00:00:00	Halodule wrightii	7460.00
6736752	570	GAS03	2013-09-12 00:00:00	Halodule wrightii	6100.00
6736783	570	GAS03	2013-09-12 00:00:00	Halodule wrightii	11580.00
6736765	570	GAS03	2014-08-20 00:00:00	Halodule wrightii	11780.00
6736739	570	GAS03	2015-09-23 00:00:00	Halodule wrightii	10440.00
6736817	570	GAS03	2016-08-12 00:00:00	Halodule wrightii	5260.00
6736725	570	GAS03	2017-08-16 00:00:00	Halodule wrightii	5280.00
6736810	570	GAS03	2017-08-16 00:00:00	Halodule wrightii	5580.00
6736762	570	GAS03	2021-10-05 00:00:00	Halodule wrightii	5200.00
6736812	570	GAS03	2022-08-25 00:00:00	Halodule wrightii	5160.00
6733437	570	GAS04	2010-09-14 00:00:00	Halodule wrightii	5300.00
6731461	570	ICW02	2009-10-01 00:00:00	Halodule wrightii	5100.00
6731517	570	ICW02	2011-09-27 00:00:00	Halodule wrightii	5080.00
6731518	570	ICW02	2013-10-21 00:00:00	Halodule wrightii	5240.00
6731470	570	ICW02	2014-08-11 00:00:00	Halodule wrightii	8780.00
6731488	570	ICW02	2017-08-21 00:00:00	Halodule wrightii	6120.00
6740389	570	ICW04	2011-10-20 00:00:00	Syringodium filiforme	6320.00
6736046	570	MC02	2015-09-29 00:00:00	Halodule wrightii	5260.00
6736089	570	MC02	2016-09-09 00:00:00	Halodule wrightii	7020.00
6736038	570	MC02	2017-10-10 00:00:00	Halodule wrightii	5900.00
6737102	570	MC07	2013-09-06 00:00:00	Halodule wrightii	8186.67
6732455	570	PI01	2009-09-04 00:00:00	Halodule wrightii	5060.00
6731643	570	PI09	2018-10-15 00:00:00	Halodule wrightii	5580.00
6733315	570	PIS02	2019-08-23 00:00:00	Halodule wrightii	5660.00
6734481	570	PIS06	2011-10-12 00:00:00	Halodule wrightii	5820.00
6734486	570	PIS06	2015-08-05 00:00:00	Halodule wrightii	5360.00
6737040	570	PIS07	2009-08-25 00:00:00	Halodule wrightii	8020.00
6731802	570	SC01	2013-09-10 00:00:00	Halodule wrightii	9140.00
6731783	570	SC01	2014-09-16 00:00:00	Halodule wrightii	5080.00
6731810	570	SC01	2014-09-16 00:00:00	Halodule wrightii	5120.00
5999323	3013	IRLSG014	1996-02-22 12:00:00	Halodule wrightii	5732.76
6459028	3013	IRLSG015	1996-02-22 13:50:00	Halodule wrightii	5010.00
6460321	3013	IRLSG015	2010-07-21 09:30:00	Halodule wrightii	5512.50
5898503	3013	IRLSG034	2003-07-29 09:30:00	Halodule wrightii	5500.00
5954574	3013	IRLSG041	2010-06-01 09:15:00	Halodule wrightii	7550.00
6094565	3013	IRLSG045	2000-06-06 12:00:00	Halophila decipiens	5680.00
7406070	3013	IRLSG069	2010-07-13 11:40:00	Halophila johnsonii	5250.00
7406090	3013	IRLSG069	2010-07-13 11:40:00	Halophila johnsonii	5462.50
7406110	3013	IRLSG069	2010-07-13 11:40:00	Halophila johnsonii	5250.00
7034221	3013	IRLSG069	2019-08-01 10:55:00	Halophila decipiens	5300.00
7034246	3013	IRLSG069	2019-08-01 10:55:00	Halophila decipiens	5500.00
7034281	3013	IRLSG069	2019-08-01 10:55:00	Halophila decipiens	6462.50
7035041	3013	IRLSG069	2019-08-01 10:55:00	Halophila decipiens	5100.00

RowID	ProgramID	ProgramLocationID	SampleDate	CommonIdentifier	ResultValue
7063427	3015	PISCntrl_1	2013-08-28 00:00:00	Halodule wrightii	7900.00
7063430	3015	PISCntrl_1	2016-09-20 00:00:00	Halodule wrightii	6100.00
7063528	3015	PISCntrl_1	2017-06-26 00:00:00	Halodule wrightii	5250.00
7063490	3015	PISCntrl_1	2017-09-25 00:00:00	Halodule wrightii	5085.00
7063462	3015	PISCntrl_1	2018-06-08 00:00:00	Halodule wrightii	5250.00
7063476	3015	PISCntrl_1	2018-09-17 00:00:00	Halodule wrightii	8100.00
7063437	3015	PISCntrl_1	2019-07-25 00:00:00	Halodule wrightii	21400.00
7063539	3015	PISCntrl_1	2020-06-17 00:00:00	Halodule wrightii	8900.00
7063471	3015	PISCntrl_1	2020-09-24 00:00:00	Halodule wrightii	9200.00
7063448	3015	PISCntrl_1	2021-06-29 00:00:00	Halodule wrightii	7200.00
7063478	3015	PISCntrl_1	2022-06-17 00:00:00	Halodule wrightii	6500.00
7064031	3015	PISCntrl_2	2013-06-25 00:00:00	Halodule wrightii	5400.00
7063979	3015	PISCntrl_2	2014-07-30 00:00:00	Halodule wrightii	7550.00
7063951	3015	PISCntrl_2	2014-09-29 00:00:00	Halodule wrightii	7700.00
7063975	3015	PISCntrl_2	2017-09-25 00:00:00	Halodule wrightii	5900.00
7064011	3015	PISCntrl_2	2018-06-08 00:00:00	Halodule wrightii	5200.00
7064079	3015	PISCntrl_2	2018-09-17 00:00:00	Halodule wrightii	6800.00
7063981	3015	PISCntrl_2	2019-07-25 00:00:00	Halodule wrightii	12500.00
7064000	3015	PISCntrl_2	2019-09-06 00:00:00	Halodule wrightii	5800.00
7063982	3015	PISCntrl_2	2020-09-24 00:00:00	Halodule wrightii	7000.00
7063987	3015	PISCntrl_2	2021-06-29 00:00:00	Halodule wrightii	5500.00
7064073	3015	PISCntrl_2	2022-06-17 00:00:00	Halodule wrightii	6400.00
6753153	3017	NB	2017-06-16 00:00:00	Halodule wrightii	6063.00
6854255	3017	NB	2017-06-16 00:00:00	Halophila johnsonii	5088.00
6759865	3017	SB	2017-06-23 00:00:00	Halodule wrightii	9075.00
6759879	3017	SB	2017-06-23 00:00:00	Halodule wrightii	7150.00
6680240	4018	BH29	1995-06-08 00:00:00	Halodule wrightii	10525.00

Programs containing flagged data:

564 - Western Pinellas County Seagrass Monitoring
565 - Tampa Bay Seagrass Monitoring
570 - Charlotte Harbor Seagrass Monitoring
3013 - Seagrass (SJRWMD)
3015 - SCCF Seagrass Surveys
3017 - Loxahatchee River District Bi-Monthly Seagrass Monitoring
4018 - Miami-Dade County DERM Benthic Habitat Monitoring Program

Modified Braun Blanquet Score

Table 4: Flagged Values - High Indicator Quantile: **5**

RowID	ProgramID	ProgramLocationID	SampleDate	CommonIdentifier	ResultValue
4669136	559	KB06-2016	2016-06-30	Laurencia spp.	5.3

Programs containing flagged data:

559 - Northern Big Bend Seagrass Monitoring

Percent Cover

Table 5: Flagged Values - High Indicator Quantile: **100**

RowID	ProgramID	ProgramLocationID	SampleDate	CommonIdentifier	ResultValue
4742956	564	W1-06-12	2012-09-26	Total_SAV	105
4743445	564	W1-12-11	2011-10-05	Total_SAV	105
4741165	564	W1-16-17	2017-10-06	Total_SAV	101
4741893	564	W1-17-11	2011-09-30	Total_SAV	105
4741888	564	W1-18-14	2014-10-10	Total_SAV	101
4743589	564	W1-22-19	2019-11-10	Total_SAV	104
4743590	564	W1-22-19	2019-11-10	Total_SAV	150
4741145	564	W1-23-11	2011-10-03	Total_SAV	101
4741131	564	W1-24-11	2011-10-05	Total_SAV	105
4742264	564	W1-25-15	2015-10-02	Total_SAV	105
4743778	564	W1-26-12	2012-09-26	Total_SAV	101
4742245	564	W1-27-11	2011-10-04	Total_SAV	101
4742255	564	W1-27-11	2011-10-04	Total_SAV	140
4737539	564	W1-27-16	2016-09-30	Drift algae	590
4743008	564	W1-28-12	2012-09-26	Total_SAV	105
4743015	564	W1-28-12	2012-09-26	Total_SAV	105
4741395	564	W1-28-19	2019-12-31	Total_SAV	101
4743339	564	W1-31-15	2015-10-07	Total_SAV	110
4743349	564	W1-31-15	2015-10-07	Total_SAV	110
4743350	564	W1-31-15	2015-10-07	Total_SAV	110
4742415	564	W1-31-19	2019-12-31	Total_SAV	180
4743332	564	W1-34-15	2015-10-02	Total_SAV	125
4741656	564	W1-35-19	2019-12-31	Total_SAV	105
4741657	564	W1-35-19	2019-12-31	Total_SAV	110
4741658	564	W1-35-19	2019-12-31	Total_SAV	105
4741664	564	W1-35-19	2019-12-31	Total_SAV	105
4741665	564	W1-35-19	2019-12-31	Total_SAV	105
4741667	564	W1-35-19	2019-12-31	Total_SAV	110
4742039	564	W1-40-19	2019-12-31	Total_SAV	120
4742179	564	W2-01-12	2012-09-14	Total_SAV	105
4742855	564	W2-04-11	2011-09-29	Total_SAV	120
4741526	564	W2-04-12	2012-09-13	Total_SAV	140
4741521	564	W2-04-15	2015-10-21	Total_SAV	120
4741383	564	W2-2-19	2019-03-10	Total_SAV	130
4741393	564	W2-2-19	2019-03-10	Total_SAV	110
4743170	564	W2-5-19	2019-12-31	Total_SAV	120
4744197	564	W2-5-19	2019-12-31	Total_SAV	180
4741387	564	W2-9-19	2019-03-10	Total_SAV	122
4743236	564	W2-ALT-01-17	2017-09-29	Total_SAV	105
4743229	564	W3-03-15	2015-10-05	Total_SAV	110
4743231	564	W3-03-15	2015-10-05	Total_SAV	106
4743232	564	W3-03-15	2015-10-05	Total_SAV	125
4743238	564	W3-03-15	2015-10-05	Total_SAV	115
4743240	564	W3-03-15	2015-10-05	Total_SAV	135

Programs containing flagged data:

564 - Western Pinellas County Seagrass Monitoring

Percent Occurrence

Table 6: Flagged Values - High Indicator Quantile: **100**

RowID	ProgramID	ProgramLocationID	SampleDate	CommonIdentifier	ResultValue
6085887	3013	IRLSG045	2021-08-12 09:15:00	Total seagrass	139
6100083	3013	IRLSG045	2021-08-12 09:15:00	Total seagrass	161

Programs containing flagged data:

3013 - Seagrass (SJRWMD)