

Appendix 5. Summary tables for best subsets generated by GARP

All information generated as tabular output from the best subsets procedures are stored within GARP as an MS-Excel file. These files show a summary of all tasks, error messages, result parameters, preliminary statistical tests, and measures of accuracy (Figure 1) associated with predicted distributions maps included in Section 3.

Task	Run	Species	Atomic Rule	Range Rule	Negated Rule	Logit Rule	Corv.	CEF	Train Acc	Pr.Pr/Ac	FPr/Ab/Ac	FPr/Pr/Ac	A Pr/Ab/Ac	A Pr/Pr/Ac	Tc
1	1	1 Anatal	1	1	1	1	1001	0.022499	N/A	0.7772	1173	19	383	770	
2	2	2 Anatal	1	1	1	1	1001	0.073493	N/A	0.7216	1180	40	328	624	
3	3	3 Anatal	1	1	1	1	1001	0.073783	N/A	0.8308	1219	31	392	858	
4	4	4 Anatal	1	1	1	1	1001	0.071702	N/A	0.8108	1197	0	356	830	
5	5	5 Anatal	1	1	1	1	1001	0.072394	N/A	0.6188	1158	0	345	391	
6	6	6 Anatal	1	1	1	1	1001	0.070488	N/A	0.778	1192	22	422	753	
7	7	7 Anatal	1	1	1	1	1001	0.071453	N/A	0.668	1205	0	702	465	
8	8	8 Anatal	1	1	1	1	1001	0.071293	N/A	0.6824	901	50	305	805	
9	9	9 Anatal	1	1	1	1	1001	0.065744	N/A	0.6892	1181	24	602	542	
10	10	10 Anatal	1	1	1	1	1001	0.073028	N/A	0.6888	1191	0	694	456	
11	11	1 Anatal	1	1	1	1	1001	0.065601	N/A	0.794	1226	24	491	759	
12	12	2 Anatal	1	1	1	1	1001	0.027146	N/A	0.7904	1221	29	488	755	
13	13	3 Anatal	1	1	1	1	1001	0.025743	N/A	0.7984	1195	27	401	601	
14	14	4 Anatal	1	1	1	1	1001	0.02654	N/A	0.8175	1219	31	425	825	
15	15	5 Anatal	1	1	1	1	1001	0.027818	N/A	0.776	1250	0	470	690	
16	16	6 Anatal	1	1	1	1	1001	0.025903	N/A	0.712	1250	0	718	530	
17	17	7 Anatal	1	1	1	1	1001	0.025292	N/A	0.73	1227	0	565	598	
18	18	8 Anatal	1	1	1	1	1001	0.024958	N/A	0.8016	1232	0	394	772	
19	19	9 Anatal	1	1	1	1	1001	0.026437	N/A	0.7804	1174	0	378	777	
20	20	10 Anatal	1	1	1	1	1001	0.028927	N/A	0.758	1250	0	425	545	
21	21	1 Anatal	1	1	1	1	1001	0.010211	N/A	0.8916	1173	77	194	1056	
22	22	2 Anatal	1	1	1	1	1001	0.01217	N/A	0.8524	1180	70	299	951	
23	23	3 Anatal	1	1	1	1	1001	0.012321	N/A	0.7872	1150	100	431	818	
24	24	4 Anatal	1	1	1	1	1001	0.010488	N/A	0.8808	1205	44	254	996	
25	25	5 Anatal	1	1	1	1	1001	0.011493	N/A	0.83	1152	98	327	923	
26	26	6 Anatal	1	1	1	1	1001	0.010519	N/A	0.8252	1161	89	348	902	
27	27	7 Anatal	1	1	1	1	1001	0.010548	N/A	0.8356	1201	49	362	868	
28	28	8 Anatal	1	1	1	1	1001	0.011001	N/A	0.842	1141	109	286	954	
29	29	9 Anatal	1	1	1	1	1001	0.010049	N/A	0.8556	1250	0	358	889	
30	30	10 Anatal	1	1	1	1	1001	0.012753	N/A	0.8268	1131	119	314	936	
31	31	1 Anatal	1	1	1	1	556	0.004973	N/A	0.8252	1131	119	315	932	
32	32	2 Anatal	1	1	1	1	588	0.004937	N/A	0.8148	1195	55	408	842	
33	33	3 Anatal	1	1	1	1	558	0.004993	N/A	0.8404	1116	134	265	965	
34	34	4 Anatal	1	1	1	1	594	0.004951	N/A	0.8372	1000	250	157	1093	

Figure 1. Screen snapshot of GARP results table.

The first line of the file holds a label for each column, and each subsequent line shows information on a single task within the experiment (see <http://biodi.sdsc.edu/> and <http://beta.lifernapper.org/desktopgarp/> for detail). Below are column descriptions captured in Figure 1.

Output item	Explanation of output item
Task	Sequential number or identifier assigned to each task. The task identifier is attached to each prediction map file name or directory as a link back to the task information.
Run	Sequential number assigned to a group of tasks that are repetition of the same input parameters. For example, if 5 runs are selected on the optimization parameters panel, each unique task will be repeated 5 times, and they will be represented with different numbers in this column, from 1 to 5 in this example.
Species	Species name as provided in the input file and displayed on the list box on the species data points panel.
Atomic Rules	Indicates whether the atomic rules were used on the experiment. Possible values for that column are 0 (false) or 1 (true).
Range Rules	Indicates whether the range rules were used on the experiment. Possible values for that column are 0 (false) or 1 (true).
Negated Rules	Indicates whether the negated rules were used on the experiment. Possible values for that column are 0 (false) or 1 (true).
Logit Rules	Indicates whether the logistic regression rules were used on the experiment. Possible values for that column are 0 (false) or 1 (true).
Iter.	Number of iterations executed by the GARP algorithm for that task. The value is limited by the maximum number of iterations. The value may be lower if the convergence limit was reached before the maximum number of iterations. Because the final iteration sums up optimization results, this column often brings the maximum number of iterations plus one.
Conv.	Value of the convergence control variable when the task finished. Can be slightly below the convergence limit specified on the optimization parameter panel in cases where the task ended because the limit was reached. Can also be greater than that limit in cases where the maximum number of iterations was reached before the convergence limit.
CEF	Not used.
Train Acc	Accuracy calculated using the training data points. Accuracy is calculated

Output item	Explanation of output item
	using the expression: $(a+b)/(a+b+c+d)$, where the variables a, b, c and d are explained below.
Pr:Pr/Ac:Pr	Number of points where the model predicted presence and the input point (actual point) was a presence record. In this case, the model has predicted the point successfully. This is variable a on the accuracy expression. The mneumonics on the column label represents: Pr(edicted):Pr(esent)/Ac(tual record):Pr(esence).
Pr:Ab/Ac:Pr	Number of points where the model predicted absence and the input point (actual point) was a presence record. In this case, the model has predicted the point incorrectly. This value usually represents a real error, because of either low model quality or a misidentification of the specimen record. This is true when using presence only data, which is the case of the current release of DesktopGarp. This is variable c on the accuracy expression. The mneumonics on the column label represents: Pr(edicted):Ab(sent)/Ac(tual record):Pr(esence).
Pr:Pr/Ac:Ab	Number of points where the model predicted presence and the input point (actual point) was an absence record. At a first glance, the model has predicted the point incorrectly. However, when using presence points only, this error can be due to insufficient sampling of the interest area in cases where the point might be suitable for the species but no information is available about the occurrence of the species at this location. This is variable d on the accuracy expression. The mneumonics on the column label represents: Pr(edicted):Pr(esent)/Ac(tual record):Ab(sence).
Pr:Ab/Ac:Ab	Number of points where the model predicted absence and the input point (actual point) was an absence record. In this case, the model has predicted the point successfully. This is variable b on the accuracy expression. The mneumonics on the column label represents: Pr(edicted):Ab(sent)/Ac(tual record):Ab(sence).
Test Acc	These columns show the accuracy calculated using the data points set aside for

Output item	Explanation of output item
	accuracy testing, and that have not been used for training the model. The value is calculate by the same expression described for training points and the columns Pr:Pr/Ac:Pr, Pr:Ab/Ac:Pr, Pr:Pr/Ac:Ab and Pr:Ab/Ac:Ab represent the same concepts described above, applied to the test dataset.
Total Area	Total number of non-masked cells on the interest area.
Presence Area	Total number of cells where the species is predicted to be present.
Absence Area	Total number of cells where the species is predicted to be absent.
Non-predicted Area	Total number of cells where the algorithm could not define whether the species is present or absent; that is, no rule applied to that area.
Yes	Number of test points that fall inside the presence area.
No	Number of test points that fall outside the presence area.
ChiSq	Intermediate value for calculating the chi-square test value.
p	Chi-square test. Probability of a random predictions being similar, that is, having the same number of correct predicted points as the one generated by GARP on that task.
Commission	Percentage of the prediction area that exceeds the recorded occurrence.
Omission (int)	Intrinsic omission. Percentage of the training points that are omitted from the prediction; that is, those that are predicted absent but are presence records.
Omission (ext)	Extrinsic omission. Percentage of the test points that are omitted from the prediction; that is, those that are predicted absent but are presence records.
Status	Status of the task. Can be "Waiting to be processed," "Successfully processed" or "Failed."
Message	More detailed message to explain the status message.
Layers	Indicates which layers have been used on the prediction. Represented by 0 (false) or 1 (true) below the layer name.

For each of the biota of concern that presented data sufficient to developing a predicted species distribution, a summary results table for the best subsets implementation is included in this

appendix. Tabular output included in this appendix were generated for each of the models selected in the best subsets, and are associated with summary maps generated and included in figures of predicted species distributions included in Section 3.

Zebra mussel

Task	Run	Species	Atomic Rules	Range Rules	Negated Rules	Logit Rules	Iter.	Conv.	Train Acc
1	1	Zebra mussel	1	1	1	1	102	0.009685	0.4996
2	2	Zebra mussel	1	1	1	1	84	0.009406	0.4996
3	3	Zebra mussel	1	1	1	1	106	0.009017	0.4964
4	4	Zebra mussel	1	1	1	1	114	0.008987	0.4988
5	5	Zebra mussel	1	1	1	1	103	0.009662	0.4996
6	6	Zebra mussel	1	1	1	1	97	0.009761	0.5
7	7	Zebra mussel	1	1	1	1	97	0.009725	0.4992
8	8	Zebra mussel	1	1	1	1	99	0.009464	0.4988
9	9	Zebra mussel	1	1	1	1	114	0.008979	0.4996
10	10	Zebra mussel	1	1	1	1	92	0.009664	0.8816
11	11	Zebra mussel	1	1	1	1	108	0.009152	0.4988
12	12	Zebra mussel	1	1	1	1	104	0.008469	0.4984
13	13	Zebra mussel	1	1	1	1	97	0.009869	0.4992
14	14	Zebra mussel	1	1	1	1	103	0.009267	0.4972
15	15	Zebra mussel	1	1	1	1	96	0.009815	0.5
16	16	Zebra mussel	1	1	1	1	99	0.009554	0.7892
17	17	Zebra mussel	1	1	1	1	105	0.009985	0.498
18	18	Zebra mussel	1	1	1	1	91	0.009439	0.8476
19	19	Zebra mussel	1	1	1	1	112	0.009569	0.8512
20	20	Zebra mussel	1	1	1	1	88	0.008746	0.5

Task	Run	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Test Acc	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Total Area
1	1	1249	0	190	0	0.4996	1249	0	187	0	315910
2	2	1249	0	453	0	0.5	1250	0	459	0	315910
3	3	1241	0	172	0	0.4964	1241	0	150	0	315910
4	4	1247	0	160	0	0.4976	1244	0	183	0	315910

Task	Run	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Test Acc	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Total Area
5	5	1249	0	170	0	0.4992	1248	0	183	0	315910
6	6	1250	0	167	0	0.5	1250	0	174	0	315910
7	7	1248	0	174	0	0.4964	1241	0	177	0	315910
8	8	1247	0	141	0	0.4984	1246	0	176	0	315910
9	9	1249	0	166	0	0.4992	1248	0	176	0	315910
10	10	1242	5	176	962	0.8888	1246	4	160	976	315910
11	11	1247	0	180	0	0.4992	1248	0	194	0	315910
12	12	1246	0	190	0	0.5	1250	0	169	0	315910
13	13	1248	0	191	0	0.4972	1243	0	161	0	315910
14	14	1243	0	156	0	0.4996	1249	0	167	0	315910
15	15	1250	0	158	0	0.498	1245	0	153	0	315910
16	16	1244	4	184	729	0.7868	1241	0	182	726	315910
17	17	1245	0	169	0	0.5	1250	0	153	0	315910
18	18	1204	45	196	915	0.858	1222	28	169	923	315910
19	19	1249	0	149	879	0.858	1237	0	161	908	315910
20	20	1250	0	188	0	0.4972	1243	0	164	0	315910

Task	Run	Presence Area	Absence Area	Non-predicted Area	Yes	No	ChiSq	p
1	1	48211	0	267699	1214	1	6733.3756162	0
2	2	113954	0	201956	1216	0	2155.0669217	0
3	3	43344	0	272566	1212	3	7596.782535	0
4	4	45307	0	270603	1213	2	7228.9098631	0
5	5	44055	0	271855	1214	1	7483.198437	0
6	6	45098	0	270812	1216	0	7302.0398244	0
7	7	43483	0	272427	1212	3	7568.6143684	0
8	8	42524	0	273386	1213	2	7781.5245933	0
9	9	42617	0	273293	1215	1	7783.1092828	0
10	10	42388	246550	26972	1209	7	7742.6326955	0

Task	Run	Presence Area	Absence Area	Non-predicted Area	Yes	No	ChiSq	p
11	11	46060	0	269850	1214	1	7104.5643593	0
12	12	47600	0	268310	1214	0	6843.0323529	0
13	13	45292	0	270618	1213	2	7231.7063521	0
14	14	46173	0	269737	1215	1	7090.0456168	0
15	15	42074	0	273836	1213	2	7877.7463476	0
16	16	44987	187030	83893	1212	3	7274.9619589	0
17	17	42865	0	273045	1215	0	7739.4068587	0
18	18	45053	233515	37342	1177	38	6781.3463626	0
19	19	41162	223561	51187	1211	5	8039.9867816	0
20	20	46861	0	269049	1211	3	6929.7022239	0

Task	Run	Commission	Omission (int)	Omission (ext)	Status	Message
1	1	15.260992055	0	8.23e-02	Processed	Success (506 unique points used)
2	2	36.071665981	0	0	Processed	Success (563 unique points used)
3	3	13.720363395	0	0.24691358025	Processed	Success (563 unique points used)
4	4	14.341742901	0	0.1646090535	Processed	Success (526 unique points used)
5	5	13.945427495	0	8.23e-02	Processed	Success (534 unique points used)
6	6	14.275584818	0	0	Processed	Success (550 unique points used)
7	7	13.764363268	0	0.24691358025	Processed	Success (531 unique points used)
8	8	13.460795796	0	0.1646090535	Processed	Success (571 unique points used)
9	9	13.49023456	0	8.22e-02	Processed	Success (548 unique points used)
10	10	13.41774556	0.4	0.57565789474	Processed	Success (542 unique points used)
11	11	14.580101928	0	8.23e-02	Processed	Success (533 unique points used)
12	12	15.067582539	0	0	Processed	Success (541 unique points used)
13	13	14.336994714	0	0.1646090535	Processed	Success (536 unique points used)
14	14	14.615871609	0	8.22e-02	Processed	Success (553 unique points used)
15	15	13.318350163	0	0.1646090535	Processed	Success (541 unique points used)
16	16	14.240448229	0.32	0.24691358025	Processed	Success (523 unique points used)

Task	Run	Commission	Omission (int)	Omission (ext)	Status	Message
17	17	13.568737932	0	0	Processed	Success (557 unique points used)
18	18	14.261340255	3.6	3.12757201646	Processed	Success (527 unique points used)
19	19	13.029660346	0	0.41118421053	Processed	Success (541 unique points used)
20	20	14.833655155	0	0.2471169687	Processed	Success (554 unique points used)

New Zealand mudsnail

Task	Run	Species	Atomic Rules	Range Rules	Negated Rules	Logit Rules	Iter.	Conv.	Train Acc
1	1	New Zealand mudsnail	1	1	1	1	113	0.00828	0.5
2	2	New Zealand mudsnail	1	1	1	1	108	0.009405	0.4948
3	3	New Zealand mudsnail	1	1	1	1	95	0.009377	0.5
4	4	New Zealand mudsnail	1	1	1	1	78	0.009892	0.5
5	5	New Zealand mudsnail	1	1	1	1	99	0.009848	0.4928
6	6	New Zealand mudsnail	1	1	1	1	114	0.009266	0.5
7	7	New Zealand mudsnail	1	1	1	1	106	0.008523	0.838
8	8	New Zealand mudsnail	1	1	1	1	100	0.009925	0.5536
9	9	New Zealand mudsnail	1	1	1	1	105	0.009773	0.4976
10	10	New Zealand mudsnail	1	1	1	1	107	0.009555	0.4936
11	11	New Zealand mudsnail	1	1	1	1	109	0.008098	0.496
12	12	New Zealand mudsnail	1	1	1	1	98	0.009924	0.4956
13	13	New Zealand mudsnail	1	1	1	1	108	0.009743	0.5
14	14	New Zealand mudsnail	1	1	1	1	100	0.009934	0.5
15	15	New Zealand mudsnail	1	1	1	1	103	0.009214	0.4972
16	16	New Zealand mudsnail	1	1	1	1	112	0.009955	0.8588
17	17	New Zealand mudsnail	1	1	1	1	105	0.009887	0.4948
18	18	New Zealand mudsnail	1	1	1	1	113	0.009175	0.5
19	19	New Zealand mudsnail	1	1	1	1	100	0.009887	0.5204
20	20	New Zealand mudsnail	1	1	1	1	109	0.008015	0.8192

Task	Run	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Test Acc	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Total Area
1	1	1250	0	303	0	0.4928	1232	0	321	0	315910
2	2	1237	0	163	0	0.4832	1208	0	207	0	315910
3	3	1250	0	303	0	0.4828	1207	0	319	0	315910
4	4	1250	0	244	0	0.4892	1223	0	249	0	315910
5	5	1232	0	199	0	0.4852	1213	0	182	0	315910

Task	Run	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Test Acc	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Total Area
6	6	1250	0	285	0	0.4784	1196	0	281	0	315910
7	7	1250	0	159	845	0.8324	1212	38	158	869	315910
8	8	1239	0	186	145	0.5436	1222	8	189	137	315910
9	9	1244	0	247	0	0.4896	1224	0	224	0	315910
10	10	1234	0	228	0	0.4848	1212	0	261	0	315910
11	11	1240	0	289	0	0.4824	1206	0	255	0	315910
12	12	1239	0	195	0	0.492	1230	0	207	0	315910
13	13	1250	0	143	0	0.476	1190	0	166	0	315910
14	14	1250	0	230	0	0.4864	1216	0	268	0	315910
15	15	1243	0	298	0	0.494	1235	0	293	0	315910
16	16	1216	34	236	931	0.8668	1227	23	229	940	315910
17	17	1237	0	244	0	0.49	1225	0	261	0	315910
18	18	1250	0	345	0	0.4944	1236	0	354	0	315910
19	19	1241	0	140	60	0.502	1194	0	139	61	315910
20	20	1203	47	206	845	0.8356	1220	30	203	869	315910

Task	Run	Presence Area	Absence Area	Non-predicted Area	Yes	No	ChiSq	p
1	1	80436	0	235474	144	1	416.66458939	1.298508e-92
2	2	45139	0	270771	142	3	828.31281158	3.771190e-182
3	3	79730	0	236180	142	4	401.37097	2.770084e-89
4	4	64946	0	250964	142	2	537.15736455	7.831498e-119
5	5	48621	0	267289	139	3	742.13287748	2.060674e-163
6	6	73182	0	242728	139	4	440.39282192	8.891051e-98
7	7	43555	214935	57420	143	3	869.95656457	3.334462e-191
8	8	45828	35876	234206	138	3	790.12149802	7.583014e-174
9	9	61854	0	254056	141	2	567.09923474	2.400567e-125
10	10	62721	0	253189	140	3	547.43028344	4.560477e-121
11	11	70164	0	245746	141	3	477.700041	6.764132e-106

Task	Run	Presence Area	Absence Area	Non-predicted Area	Yes	No	ChiSq	p
12	12	50312	0	265598	143	2	740.54769415	4.557120e-163
13	13	38040	0	277870	140	4	986.48544696	1.555473e-216
14	14	65756	0	250154	141	3	519.36934154	5.804304e-115
15	15	76890	0	239020	144	1	442.56677785	2.991025e-98
16	16	57475	239360	19075	141	2	621.19820584	4.103478e-137
17	17	65208	0	250702	140	3	521.10139714	2.437355e-115
18	18	89158	0	226752	145	1	364.26329159	3.321081e-81
19	19	35960	16562	263388	140	4	1051.8667937	9.562593e-231
20	20	55850	215339	44721	141	2	643.43194959	5.991614e-142

Task	Run	Commission	Omission (int)	Omission (ext)	Status	Message
1	1	25.461682125	0	0.68965517241	Processed	Success (93 unique points used)
2	2	14.288563198	0	2.06896551724	Processed	Success (96 unique points used)
3	3	25.238200753	0	2.7397260274	Processed	Success (101 unique points used)
4	4	20.558386882	0	1.38888888889	Processed	Success (97 unique points used)
5	5	15.390775854	0	2.11267605634	Processed	Success (97 unique points used)
6	6	23.165458517	0	2.7972027972	Processed	Success (99 unique points used)
7	7	13.787154569	0	2.05479452055	Processed	Success (98 unique points used)
8	8	14.50666329	0	2.12765957447	Processed	Success (101 unique points used)
9	9	19.579627109	0	1.3986013986	Processed	Success (108 unique points used)
10	10	19.854072362	0	2.0979020979	Processed	Success (98 unique points used)
11	11	22.210123136	0	2.08333333333	Processed	Success (96 unique points used)
12	12	15.926054889	0	1.37931034483	Processed	Success (108 unique points used)
13	13	12.041404197	0	2.77777777778	Processed	Success (100 unique points used)
14	14	20.814789022	0	2.08333333333	Processed	Success (101 unique points used)
15	15	24.339210535	0	0.68965517241	Processed	Success (99 unique points used)
16	16	18.193472825	2.72	1.3986013986	Processed	Success (101 unique points used)
17	17	20.641321895	0	2.0979020979	Processed	Success (100 unique points used)

Task	Run	Commission	Omission (int)	Omission (ext)	Status	Message
18	18	28.222595043	0	0.68493150685	Processed	Success (100 unique points used)
19	19	11.382988826	0	2.77777777778	Processed	Success (98 unique points used)
20	20	17.679085816	3.76	1.3986013986	Processed	Success (92 unique points used)

New Zealand mudsnail (based on points from HUC10 only)

Task	Run	Species	Atomic Rules	Range Rules	Negated Rules	Logit Rules	Iter.	Conv.	Train Acc
1	1	New Zealand mudsnail	1	1	1	1	105	0.009468	0.5
2	2	New Zealand mudsnail	1	1	1	1	91	0.009272	0.5
3	3	New Zealand mudsnail	1	1	1	1	95	0.009152	0.5
4	4	New Zealand mudsnail	1	1	1	1	79	0.009271	0.5
5	5	New Zealand mudsnail	1	1	1	1	100	0.009511	0.5
6	6	New Zealand mudsnail	1	1	1	1	103	0.00872	0.5
7	7	New Zealand mudsnail	1	1	1	1	87	0.008962	0.5
8	8	New Zealand mudsnail	1	1	1	1	102	0.009844	0.5
9	9	New Zealand mudsnail	1	1	1	1	91	0.009911	0.5
10	10	New Zealand mudsnail	1	1	1	1	104	0.009546	0.5
11	11	New Zealand mudsnail	1	1	1	1	94	0.0099	0.5
12	12	New Zealand mudsnail	1	1	1	1	87	0.009954	0.5
13	13	New Zealand mudsnail	1	1	1	1	107	0.009482	0.9768
14	14	New Zealand mudsnail	1	1	1	1	86	0.009949	0.5348
15	15	New Zealand mudsnail	1	1	1	1	90	0.009987	0.5
16	16	New Zealand mudsnail	1	1	1	1	102	0.009258	0.5
17	17	New Zealand mudsnail	1	1	1	1	87	0.009886	0.5
18	18	New Zealand mudsnail	1	1	1	1	95	0.009889	0.5
19	19	New Zealand mudsnail	1	1	1	1	106	0.009899	0.5
20	20	New Zealand mudsnail	1	1	1	1	96	0.009274	0.5

Task	Run	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Test Acc	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Total Area
1	1	1250	0	10	0	0.5	1250	0	11	0	315910
2	2	1250	0	16	0	0.4728	1182	0	25	0	315910
3	3	1250	0	18	0	0.5	1250	0	16	0	315910
4	4	1250	0	20	0	0.5	1250	0	26	0	315910
5	5	1250	0	18	0	0.4736	1184	0	16	0	315910

Task	Run	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Test Acc	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Total Area
6	6	1250	0	16	0	0.4768	1192	0	14	0	315910
7	7	1250	0	16	0	0.5	1250	0	22	0	315910
8	8	1250	0	10	0	0.476	1190	0	19	0	315910
9	9	1250	0	16	0	0.5	1250	0	7	0	315910
10	10	1250	0	11	0	0.5	1250	0	10	0	315910
11	11	1250	0	15	0	0.4728	1182	0	12	0	315910
12	12	1250	0	16	0	0.4204	1051	0	20	0	315910
13	13	1250	0	16	1192	0.974	1250	0	14	1185	315910
14	14	1250	0	18	87	0.488	1114	0	14	106	315910
15	15	1250	0	24	0	0.4864	1216	0	27	0	315910
16	16	1250	0	20	0	0.4752	1188	0	15	0	315910
17	17	1250	0	17	0	0.5	1250	0	23	0	315910
18	18	1250	0	18	0	0.5	1250	0	20	0	315910
19	19	1250	0	14	0	0.476	1190	0	27	0	315910
20	20	1250	0	16	0	0.5	1250	0	17	0	315910

Task	Run	Presence Area	Absence Area	Non-predicted Area	Yes	No	ChiSq	p
1	1	3257	0	312653	37	0	3551.7841572	0
2	2	4526	0	311384	36	1	2407.8767588	0
3	3	3827	0	312083	37	0	3017.2644369	0
4	4	5645	0	310265	37	0	2033.6235607	0
5	5	4142	0	311768	35	2	2488.2622321	0
6	6	4272	0	311638	35	2	2411.4200846	0
7	7	4905	0	311005	37	0	2346.011213	0
8	8	4286	0	311624	35	2	2403.4228084	0
9	9	3780	0	312130	37	0	3055.2407407	0
10	10	3856	0	312054	37	0	2994.2940871	0
11	11	4172	0	311738	35	2	2470.1043853	0

Task	Run	Presence Area	Absence Area	Non-predicted Area	Yes	No	ChiSq	p
12	12	3499	0	312411	32	5	2462.4036498	0
13	13	4307	299389	12214	37	0	2676.8774089	0
14	14	3230	25131	287549	34	3	3018.9897104	0
15	15	5336	0	310574	35	2	1923.2266133	0
16	16	5073	0	310837	35	2	2024.8450257	0
17	17	4611	0	311299	37	0	2497.9533724	0
18	18	4066	0	311844	37	0	2837.7343827	0
19	19	4828	0	311082	35	2	2129.4690304	0
20	20	4459	0	311451	37	0	2584.3657771	0

Task	Run	Commission	Omission (int)	Omission (ext)	Status	Message
1	1	1.0309898389	0	0	Processed	Success (20 unique points used)
2	2	1.4326865246	0	2.7027027027	Processed	Success (19 unique points used)
3	3	1.2114209743	0	0	Processed	Success (21 unique points used)
4	4	1.7869013327	0	0	Processed	Success (21 unique points used)
5	5	1.3111329176	0	5.40540540541	Processed	Success (20 unique points used)
6	6	1.3522838783	0	5.40540540541	Processed	Success (19 unique points used)
7	7	1.5526574024	0	0	Processed	Success (22 unique points used)
8	8	1.3567155202	0	5.40540540541	Processed	Success (19 unique points used)
9	9	1.1965433193	0	0	Processed	Success (22 unique points used)
10	10	1.220600804	0	0	Processed	Success (21 unique points used)
11	11	1.3206292932	0	5.40540540541	Processed	Success (19 unique points used)
12	12	1.107593935	0	13.5135135135	Processed	Success (22 unique points used)
13	13	1.3633629831	0	0	Processed	Success (17 unique points used)
14	14	1.0224431009	0	8.10810810811	Processed	Success (18 unique points used)
15	15	1.6890886645	0	5.40540540541	Processed	Success (20 unique points used)
16	16	1.6058371055	0	5.40540540541	Processed	Success (20 unique points used)
17	17	1.459592922	0	0	Processed	Success (21 unique points used)

18	18	1.2870754329	0	0 Processed	Success (17 unique points used)
19	19	1.5282833718	0	5.40540540541 Processed	Success (17 unique points used)
20	20	1.4114779526	0	0 Processed	Success (19 unique points used)

Asian carp (prediction based on joint distributions of all carp)

Task	Run	Species	Atomic Rules	Range Rules	Negated Rules	Logit Rules	Iter.	Conv.	Train Acc
1	1	Asian carp	1	1	1	1	109	0.00911	0.5
2	2	Asian carp	1	1	1	1	107	0.00965	0.5
3	3	Asian carp	1	1	1	1	89	0.009727	0.5
4	4	Asian carp	1	1	1	1	102	0.009998	0.5
5	5	Asian carp	1	1	1	1	107	0.009094	0.5
6	6	Asian carp	1	1	1	1	102	0.008899	0.5
7	7	Asian carp	1	1	1	1	110	0.009807	0.7688
8	8	Asian carp	1	1	1	1	110	0.008994	0.5
9	9	Asian carp	1	1	1	1	115	0.009911	0.5
10	10	Asian carp	1	1	1	1	105	0.009988	0.5
11	11	Asian carp	1	1	1	1	87	0.009848	0.5
12	12	Asian carp	1	1	1	1	105	0.009306	0.5
13	13	Asian carp	1	1	1	1	87	0.009979	0.5
14	14	Asian carp	1	1	1	1	104	0.009112	0.5
15	15	Asian carp	1	1	1	1	115	0.009498	0.5572
16	16	Asian carp	1	1	1	1	109	0.00943	0.5
17	17	Asian carp	1	1	1	1	105	0.009704	0.5
18	18	Asian carp	1	1	1	1	96	0.009289	0.5
19	19	Asian carp	1	1	1	1	84	0.009805	0.5
20	20	Asian carp	1	1	1	1	111	0.009566	0.5324

Task	Run	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Test Acc	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Total Area
1	1	1250	0	278	0	0.45	1125	0	316	0	1470219
2	2	1250	0	233	0	0.4248	1062	0	243	0	1470219
3	3	1250	0	188	0	0.4292	1073	0	204	0	1470219
4	4	1250	0	353	0	0.4484	1121	0	322	0	1470219
5	5	1250	0	234	0	0.408	1020	0	237	0	1470219

Task	Run	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Test Acc	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Total Area
6	6	1250	0	207	0	0.394	985	0	217	0	1470219
7	7	1250	0	319	672	0.7236	1124	0	310	685	1470219
8	8	1250	0	241	0	0.4416	1104	0	240	0	1470219
9	9	1250	0	369	0	0.4112	1028	0	404	0	1470219
10	10	1250	0	191	0	0.4148	1037	0	184	0	1470219
11	11	1250	0	469	0	0.4516	1129	0	494	0	1470219
12	12	1250	0	294	0	0.3848	962	0	300	0	1470219
13	13	1250	0	275	0	0.438	1095	0	278	0	1470219
14	14	1250	0	286	0	0.4272	1068	0	319	0	1470219
15	15	1250	0	402	143	0.54	1173	0	376	177	1470219
16	16	1250	0	250	0	0.3888	972	0	236	0	1470219
17	17	1250	0	368	0	0.4724	1181	0	374	0	1470219
18	18	1250	0	228	0	0.4692	1173	0	258	0	1470219
19	19	1250	0	224	0	0.3992	998	0	200	0	1470219
20	20	1250	0	520	81	0.5468	1250	0	493	117	1470219

Task	Run	Presence Area	Absence Area	Non-predicted Area	Yes	No	ChiSq	p
1	1	342736	0	1127483	25	2	72.490738912	1.678176e-17
2	2	274630	0	1195589	23	3	83.34785967	6.881327e-20
3	3	240346	0	1229873	22	4	88.607696954	4.814124e-21
4	4	388465	0	1081754	24	2	58.054499057	2.549557e-14
5	5	275976	0	1194243	22	5	69.637465123	7.127023e-17
6	6	250937	0	1219282	22	5	79.14299634	5.777321e-19
7	7	378440	781958	309821	22	3	50.697342083	1.077654e-12
8	8	296251	0	1173968	24	2	84.136620628	4.617382e-20
9	9	446100	0	1024119	22	4	36.234467185	0.0000000017
10	10	222970	0	1247249	22	4	97.471470729	5.463785e-23
11	11	559720	0	910499	24	2	32.440027205	0.0000000123
12	12	338920	0	1131299	23	4	58.761868371	1.779569e-14

Task	Run	Presence Area	Absence Area	Non-predicted Area	Yes	No	ChiSq	p
13	13	304636	0	1165583	24	2	81.111837615	2.132985e-19
14	14	354444	0	1115775	21	4	49.013294177	2.542335e-12
15	15	465927	203311	800981	25	1	49.908966443	1.610470e-12
16	16	290409	0	1179810	22	4	69.008747869	9.802766e-17
17	17	428346	0	1041873	24	1	54.137015049	1.869855e-13
18	18	289984	0	1180235	26	1	99.983925184	1.536390e-23
19	19	259107	0	1211112	21	4	75.869406143	3.030593e-18
20	20	604700	117279	748240	26	0	37.214311229	0.0000000011

Task	Run	Commission	Omission (int)	Omission (ext)	Status	Message
1	1	23.311901152	0	7.40740740741	Processed	Success (18 unique points used)
2	2	18.679530056	0	11.5384615385	Processed	Success (19 unique points used)
3	3	16.347632564	0	15.3846153846	Processed	Success (17 unique points used)
4	4	26.4222541	0	7.69230769231	Processed	Success (19 unique points used)
5	5	18.771081043	0	18.5185185185	Processed	Success (15 unique points used)
6	6	17.068001434	0	18.5185185185	Processed	Success (18 unique points used)
7	7	25.740382895	0	12	Processed	Success (20 unique points used)
8	8	20.150127294	0	7.69230769231	Processed	Success (20 unique points used)
9	9	30.342418374	0	15.3846153846	Processed	Success (21 unique points used)
10	10	15.165767821	0	15.3846153846	Processed	Success (17 unique points used)
11	11	38.070518746	0	7.69230769231	Processed	Success (18 unique points used)
12	12	23.052347984	0	14.8148148148	Processed	Success (21 unique points used)
13	13	20.720450491	0	7.69230769231	Processed	Success (20 unique points used)
14	14	24.108245098	0	16	Processed	Success (17 unique points used)
15	15	31.690992975	0	3.84615384615	Processed	Success (21 unique points used)
16	16	19.752771526	0	15.3846153846	Processed	Success (19 unique points used)
17	17	29.134843176	0	4	Processed	Success (23 unique points used)
18	18	19.723864268	0	3.7037037037	Processed	Success (20 unique points used)

Task	Run	Commission	Omission (int)	Omission (ext)	Status	Message
19	19	17.623700959	0		16 Processed	Success (18 unique points used)
20	20	41.129926902	0		0 Processed	Success (18 unique points used)

Gizzard shad

Task	Run	Species	Atomic Rules	Range Rules	Negated Rules	Logit Rules	Iter.	Conv.	Train Acc
1	1	Gizzard shad	1	1	1	1	97	0.009974	0.498
2	2	Gizzard shad	1	1	1	1	96	0.009751	0.9404
3	3	Gizzard shad	1	1	1	1	104	0.009785	0.5
4	4	Gizzard shad	1	1	1	1	118	0.009547	0.4944
5	5	Gizzard shad	1	1	1	1	105	0.009592	0.886
6	6	Gizzard shad	1	1	1	1	114	0.009975	0.8856
7	7	Gizzard shad	1	1	1	1	116	0.009648	0.5
8	8	Gizzard shad	1	1	1	1	101	0.008692	0.4968
9	9	Gizzard shad	1	1	1	1	104	0.009922	0.8004
10	10	Gizzard shad	1	1	1	1	107	0.009608	0.5
11	11	Gizzard shad	1	1	1	1	98	0.009263	0.492
12	12	Gizzard shad	1	1	1	1	109	0.009878	0.4944
13	13	Gizzard shad	1	1	1	1	104	0.009775	0.5
14	14	Gizzard shad	1	1	1	1	118	0.009761	0.4956
15	15	Gizzard shad	1	1	1	1	96	0.009735	0.4924
16	16	Gizzard shad	1	1	1	1	116	0.009787	0.5
17	17	Gizzard shad	1	1	1	1	103	0.009226	0.4916
18	18	Gizzard shad	1	1	1	1	103	0.009167	0.9324
19	19	Gizzard shad	1	1	1	1	98	0.009847	0.5
20	20	Gizzard shad	1	1	1	1	104	0.009477	0.5

Task	Run	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Test Acc	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Total Area
1	1	1245	0	147	0	0.4928	1232	0	170	0	315910

Task	Run	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Test Acc	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Total Area
2	2	1234	16	133	1117	0.9348	1191	59	104	1146	315910
3	3	1250	0	185	0	0.4936	1234	0	155	0	315910
4	4	1236	0	194	0	0.5	1250	0	189	0	315910
5	5	1223	27	147	992	0.896	1211	36	137	1029	315910
6	6	1237	13	125	977	0.8592	1183	59	127	965	315910
7	7	1250	0	397	0	0.4944	1236	0	405	0	315910
8	8	1242	0	136	0	0.4916	1229	0	136	0	315910
9	9	1242	0	197	759	0.7976	1250	0	175	744	315910
10	10	1250	0	293	0	0.4952	1238	0	330	0	315910
11	11	1230	0	166	0	0.4936	1234	0	161	0	315910
12	12	1236	0	160	0	0.4952	1238	0	166	0	315910
13	13	1250	0	146	0	0.4904	1226	0	140	0	315910
14	14	1239	0	145	0	0.4804	1201	0	134	0	315910
15	15	1231	0	166	0	0.496	1240	0	172	0	315910
16	16	1250	0	152	0	0.4896	1224	0	162	0	315910
17	17	1229	0	124	0	0.4752	1188	0	142	0	315910
18	18	1250	0	167	1081	0.9092	1178	67	149	1095	315910
19	19	1250	0	359	0	0.4972	1243	0	349	0	315910
20	20	1250	0	161	0	0.486	1215	0	161	0	315910

Task	Run	Presence Area	Absence Area	Non-predicted Area	Yes	No	ChiSq	p
1	1	41373	0	274537	226	2	1482.541114	0
2	2	29731	286056	123	222	7	2058.0158766	0
3	3	43937	0	271973	227	2	1388.911089	5.396098e-304
4	4	46798	0	269112	231	0	1328.3659985	7.743607e-291
5	5	37470	251860	26580	224	7	1600.5585532	0
6	6	33708	243421	38781	221	8	1770.159401	0
7	7	98070	0	217840	226	1	497.80644637	2.852629e-110

Task	Run	Presence Area	Absence Area	Non-predicted Area	Yes	No	ChiSq	p
8	8	38727	0	277183	225	3	1583.3004471	0
9	9	45806	188866	81238	228	0	1344.4464044	2.480382e-294
10	10	82560	0	233350	228	1	639.62206393	4.037714e-141
11	11	42252	0	273658	229	2	1466.3843818	0
12	12	41515	0	274395	227	1	1491.7941756	0
13	13	37867	0	278043	227	3	1639.1178401	0
14	14	37497	0	278413	224	5	1617.1056318	0
15	15	42723	0	273187	229	1	1455.955301	0
16	16	39339	0	276571	228	2	1585.0419573	0
17	17	33265	0	282645	217	12	1724.512112	0
18	18	42247	272185	1478	218	9	1338.917526	3.944507e-293
19	19	88896	0	227014	229	1	580.26583172	3.282895e-128
20	20	38777	0	277133	226	4	1579.2444315	0

Task	Run	Commission	Omission (int)	Omission (ext)	Status	Message
1	1	13.096451521	0	0.87719298246	Processed	Success (125 unique points used)
2	2	9.4112247159	1.28	3.05676855895	Processed	Success (131 unique points used)
3	3	13.908075085	0	0.87336244541	Processed	Success (129 unique points used)
4	4	14.813712766	0	0	Processed	Success (123 unique points used)
5	5	11.860973062	2.16	3.0303030303	Processed	Success (127 unique points used)
6	6	10.670127568	1.04	3.49344978166	Processed	Success (125 unique points used)
7	7	31.043651673	0	0.44052863436	Processed	Success (130 unique points used)
8	8	12.258871197	0	1.31578947368	Processed	Success (128 unique points used)
9	9	14.499699281	0	0	Processed	Success (126 unique points used)
10	10	26.134025514	0	0.43668122271	Processed	Success (128 unique points used)
11	11	13.374695325	0	0.8658008658	Processed	Success (125 unique points used)
12	12	13.141401032	0	0.43859649123	Processed	Success (125 unique points used)
13	13	11.986641765	0	1.30434782609	Processed	Success (126 unique points used)

Task	Run	Commission	Omission (int)	Omission (ext)	Status	Message
14	14	11.8695198	0	2.18340611354	Processed	Success (125 unique points used)
15	15	13.523788421	0	0.4347826087	Processed	Success (129 unique points used)
16	16	12.452597259	0	0.86956521739	Processed	Success (128 unique points used)
17	17	10.529897756	0	5.24017467249	Processed	Success (120 unique points used)
18	18	13.373112595	0	3.96475770925	Processed	Success (118 unique points used)
19	19	28.13966003	0	0.4347826087	Processed	Success (118 unique points used)
20	20	12.27469849	0	1.73913043478	Processed	Success (121 unique points used)

Rainbow smelt

Task	Run	Species	Atomic Rules	Range Rules	Negated Rules	Logit Rules	Iter.	Conv.	Train Acc
1	1	Rainbow smelt	1	1	1	1	91	0.009969	0.5
2	2	Rainbow smelt	1	1	1	1	70	0.009809	0.494
3	3	Rainbow smelt	1	1	1	1	97	0.009928	0.5
4	4	Rainbow smelt	1	1	1	1	109	0.008601	0.5
5	5	Rainbow smelt	1	1	1	1	104	0.009121	0.4952
6	6	Rainbow smelt	1	1	1	1	113	0.008306	0.5
7	7	Rainbow smelt	1	1	1	1	99	0.009274	0.5
8	8	Rainbow smelt	1	1	1	1	110	0.009761	0.5
9	9	Rainbow smelt	1	1	1	1	104	0.009028	0.4956
10	10	Rainbow smelt	1	1	1	1	103	0.01	0.4932
11	11	Rainbow smelt	1	1	1	1	110	0.009165	0.8624
12	12	Rainbow smelt	1	1	1	1	112	0.008141	0.5
13	13	Rainbow smelt	1	1	1	1	109	0.009755	0.5
14	14	Rainbow smelt	1	1	1	1	99	0.009736	0.5
15	15	Rainbow smelt	1	1	1	1	110	0.009919	0.5
16	16	Rainbow smelt	1	1	1	1	109	0.009448	0.5
17	17	Rainbow smelt	1	1	1	1	103	0.009402	0.5
18	18	Rainbow smelt	1	1	1	1	107	0.009421	0.5
19	19	Rainbow smelt	1	1	1	1	103	0.008763	0.5
20	20	Rainbow smelt	1	1	1	1	102	0.00938	0.5

Task	Run	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Test Acc	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Total Area
1	1	1250	0	132	0	0.4856	1214	0	133	0	315910
2	2	1235	0	176	0	0.4812	1203	0	179	0	315910
3	3	1250	0	98	0	0.46	1150	0	93	0	315910
4	4	1250	0	146	0	0.4596	1149	0	174	0	315910
5	5	1238	0	153	0	0.4528	1132	0	123	0	315910

Task	Run	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Test Acc	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Total Area
6	6	1250	0	355	0	0.4932	1233	0	330	0	315910
7	7	1250	0	249	0	0.488	1220	0	223	0	315910
8	8	1250	0	187	0	0.464	1160	0	167	0	315910
9	9	1239	0	208	0	0.4796	1199	0	197	0	315910
10	10	1233	0	221	0	0.4904	1226	0	199	0	315910
11	11	1250	0	181	906	0.8352	1184	34	192	904	315910
12	12	1250	0	106	0	0.4624	1156	0	100	0	315910
13	13	1250	0	524	0	0.5	1250	0	497	0	315910
14	14	1250	0	146	0	0.4804	1201	0	149	0	315910
15	15	1250	0	130	0	0.474	1185	0	132	0	315910
16	16	1250	0	251	0	0.488	1220	0	225	0	315910
17	17	1250	0	251	0	0.4908	1227	0	249	0	315910
18	18	1250	0	152	0	0.4704	1176	0	142	0	315910
19	19	1250	0	217	0	0.4928	1232	0	219	0	315910
20	20	1250	0	237	0	0.4784	1196	0	229	0	315910

Task	Run	Presence Area	Absence Area	Non-predicted Area	Yes	No	ChiSq	p
1	1	32350	0	283560	112	4	940.16151215	1.825575e-206
2	2	43121	0	272789	119	4	720.60844825	9.870825e-159
3	3	27204	0	288706	115	6	1148.5572768	9.235124e-252
4	4	39368	0	276542	113	8	726.42506409	5.364761e-160
5	5	33435	0	282475	108	8	834.67819727	1.558096e-183
6	6	83977	0	231933	121	1	329.46560357	1.256550e-73
7	7	61077	0	254833	119	2	484.37381176	2.387926e-107
8	8	45356	0	270554	114	6	634.67282962	4.814261e-140
9	9	54032	0	261878	115	4	530.93427992	1.768852e-117
10	10	53071	0	262839	120	1	587.41755366	9.133334e-130
11	11	49819	229213	36878	114	4	580.54784526	2.850449e-128

Task	Run	Presence Area	Absence Area	Non-predicted Area	Yes	No	ChiSq	p
12	12	30471	0	285439	112	7	974.31879056	6.862901e-214
13	13	130524	0	185386	120	0	170.43854004	5.934521e-39
14	14	37565	0	278345	116	4	823.15788531	4.979765e-181
15	15	34801	0	281109	111	4	857.72388705	1.521899e-188
16	16	58415	0	257495	119	2	511.95870001	2.377164e-113
17	17	59303	0	256607	119	2	502.48155742	2.741802e-111
18	18	38943	0	276967	119	4	811.09655166	2.086852e-178
19	19	54303	0	261607	116	1	552.07740926	4.447037e-122
20	20	59375	0	256535	115	4	472.46637805	9.312575e-105

Task	Run	Commission	Omission (int)	Omission (ext)	Status	Message
1	1	10.240258301	0	3.44827586207	Processed	Success (77 unique points used)
2	2	13.64977367	0	3.25203252033	Processed	Success (77 unique points used)
3	3	8.6113133487	0	4.95867768595	Processed	Success (84 unique points used)
4	4	12.461777088	0	6.61157024793	Processed	Success (84 unique points used)
5	5	10.58371055	0	6.89655172414	Processed	Success (89 unique points used)
6	6	26.582570985	0	0.81967213115	Processed	Success (78 unique points used)
7	7	19.333670982	0	1.65289256198	Processed	Success (75 unique points used)
8	8	14.357253648	0	5	Processed	Success (85 unique points used)
9	9	17.103605457	0	3.36134453782	Processed	Success (80 unique points used)
10	10	16.799404894	0	0.82644628099	Processed	Success (78 unique points used)
11	11	15.769997784	0	3.38983050847	Processed	Success (80 unique points used)
12	12	9.6454686461	0	5.88235294118	Processed	Success (76 unique points used)
13	13	41.316830743	0	0	Processed	Success (78 unique points used)
14	14	11.891044918	0	3.33333333333	Processed	Success (75 unique points used)
15	15	11.016112184	0	3.47826086957	Processed	Success (85 unique points used)
16	16	18.491025925	0	1.65289256198	Processed	Success (82 unique points used)
17	17	18.772118641	0	1.65289256198	Processed	Success (81 unique points used)

Task	Run	Commission	Omission (int)	Omission (ext)	Status	Message
18	18	12.327245101	0	3.25203252033	Processed	Success (76 unique points used)
19	19	17.189389383	0	0.8547008547	Processed	Success (79 unique points used)
20	20	18.794909943	0	3.36134453782	Processed	Success (84 unique points used)

Rainbow trout (and associated whirling disease)

Task	Run	Species	Atomic Rules	Range Rules	Negated Rules	Logit Rules	Iter.	Conv.	Train Acc
1	1	Rainbow trout	1	1	1	1	110	0.009864	0.6488
2	2	Rainbow trout	1	1	1	1	108	0.009623	0.488
3	3	Rainbow trout	1	1	1	1	109	0.009918	0.496
4	4	Rainbow trout	1	1	1	1	120	0.009641	0.75
5	5	Rainbow trout	1	1	1	1	92	0.009712	0.7288
6	6	Rainbow trout	1	1	1	1	100	0.009483	0.7404
7	7	Rainbow trout	1	1	1	1	118	0.009954	0.668
8	8	Rainbow trout	1	1	1	1	110	0.009827	0.7056
9	9	Rainbow trout	1	1	1	1	106	0.009715	0.7636
10	10	Rainbow trout	1	1	1	1	99	0.009617	0.6484
11	11	Rainbow trout	1	1	1	1	97	0.009772	0.762
12	12	Rainbow trout	1	1	1	1	95	0.009251	0.7916
13	13	Rainbow trout	1	1	1	1	98	0.009873	0.606
14	14	Rainbow trout	1	1	1	1	100	0.009711	0.4952
15	15	Rainbow trout	1	1	1	1	103	0.009706	0.6712
16	16	Rainbow trout	1	1	1	1	108	0.009605	0.7356
17	17	Rainbow trout	1	1	1	1	111	0.008796	0.6596
18	18	Rainbow trout	1	1	1	1	108	0.009759	0.6692
19	19	Rainbow trout	1	1	1	1	95	0.009412	0.6956
20	20	Rainbow trout	1	1	1	1	93	0.009973	0.6764

Task	Run	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Test Acc	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Total Area
1	1	1223	4	608	399	0.6584	1216	12	584	430	315910
2	2	1220	0	465	0	0.48	1200	0	483	0	315910
3	3	1240	0	566	0	0.4956	1239	0	583	0	315910
4	4	1203	37	453	672	0.7524	1202	41	411	679	315910

Task	Run	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Test Acc	Pr:Pr/Ac:Pr	Pr:Ab/Ac:Pr	Pr:Pr/Ac:Ab	Pr:Ab/Ac:Ab	Total Area
5	5	1220	22	448	602	0.7208	1206	30	484	596	315910
6	6	1233	12	501	618	0.7264	1194	29	503	622	315910
7	7	1221	8	466	449	0.676	1211	19	440	479	315910
8	8	1229	9	477	535	0.7012	1223	21	506	530	315910
9	9	1139	106	387	770	0.732	1065	170	410	765	315910
10	10	1238	6	560	383	0.6524	1232	18	541	399	315910
11	11	1200	46	424	705	0.7664	1188	56	405	728	315910
12	12	1173	77	441	806	0.802	1185	65	422	820	315910
13	13	1229	0	546	286	0.5892	1212	0	549	261	315910
14	14	1238	0	590	0	0.49	1225	0	556	0	315910
15	15	1209	19	514	469	0.6728	1193	46	482	489	315910
16	16	1211	32	464	628	0.7232	1200	38	478	608	315910
17	17	1234	4	488	415	0.644	1200	16	505	410	315910
18	18	1229	11	541	444	0.6796	1217	16	500	482	315910
19	19	1205	45	514	534	0.6728	1163	70	516	519	315910
20	20	1238	9	547	453	0.6948	1233	5	506	504	315910

Task	Run	Presence Area	Absence Area	Non-predicted Area	Yes	No	ChiSq	p
1	1	147394	105589	62927	405	9	435.53410456	1.014865e-96
2	2	120726	0	195184	409	15	609.24777481	1.630646e-134
3	3	147783	0	168127	409	3	455.9782306	3.606667e-101
4	4	111433	171484	32993	400	11	693.09555306	9.487070e-153
5	5	118147	149713	48050	404	11	637.077209	1.444132e-140
6	6	125539	156566	33805	399	14	557.8069959	2.521580e-123
7	7	115372	118180	82358	405	11	664.09994781	1.917346e-146
8	8	123548	130826	61536	411	6	618.94019541	1.271338e-136
9	9	99801	192538	23571	318	96	391.72427862	3.487400e-87
10	10	141791	99226	74893	395	7	462.95576971	1.093123e-102

Task	Run	Presence Area	Absence Area	Non-predicted Area	Yes	No	ChiSq	p
11	11	109150	176146	30614	400	15	701.6930328	1.280984e-154
12	12	105799	208455	1656	394	18	714.24590239	2.387169e-157
13	13	140209	65746	109955	401	7	480.22227063	1.911517e-106
14	14	142500	0	173410	402	10	458.00987234	1.303105e-101
15	15	122130	124776	69004	397	19	565.42063319	5.564921e-125
16	16	120130	156032	39748	408	12	622.82970038	1.812633e-137
17	17	124209	101282	90419	401	12	577.83404549	1.109740e-127
18	18	132002	114960	68948	406	9	535.9112465	1.461970e-118
19	19	126379	136907	52624	398	20	530.87492048	1.822239e-117
20	20	136853	118973	60084	415	5	526.68203228	1.488658e-116

Task	Run	Commission	Omission (int)	Omission (ext)	Status	Message
1	1	46.656959261	0.32	2.17391304348	Processed	Success (284 unique points used)
2	2	38.215314488	0	3.53773584906	Processed	Success (285 unique points used)
3	3	46.780095597	0	0.72815533981	Processed	Success (300 unique points used)
4	4	35.273653889	2.96	2.67639902676	Processed	Success (290 unique points used)
5	5	37.398942737	1.76	2.65060240964	Processed	Success (299 unique points used)
6	6	39.738849672	0.96	3.38983050847	Processed	Success (287 unique points used)
7	7	36.520527998	0.64	2.64423076923	Processed	Success (287 unique points used)
8	8	39.108606882	0.72	1.43884892086	Processed	Success (292 unique points used)
9	9	31.591592542	8.48	23.1884057971	Processed	Success (281 unique points used)
10	10	44.883352854	0.48	1.74129353234	Processed	Success (293 unique points used)
11	11	34.550979709	3.68	3.61445783133	Processed	Success (292 unique points used)
12	12	33.49023456	6.16	4.36893203883	Processed	Success (285 unique points used)
13	13	44.382577316	0	1.71568627451	Processed	Success (295 unique points used)
14	14	45.107783862	0	2.42718446602	Processed	Success (285 unique points used)
15	15	38.659744864	1.52	4.56730769231	Processed	Success (293 unique points used)
16	16	38.026653161	2.56	2.85714285714	Processed	Success (290 unique points used)

Task	Run	Commission	Omission (int)	Omission (ext)	Status	Message
17	17	39.31784369	0.32	2.90556900726	Processed	Success (295 unique points used)
18	18	41.784685512	0.88	2.1686746988	Processed	Success (286 unique points used)
19	19	40.004748188	3.6	4.78468899522	Processed	Success (282 unique points used)
20	20	43.320249438	0.72	1.19047619048	Processed	Success (289 unique points used)