Supplemental Materials

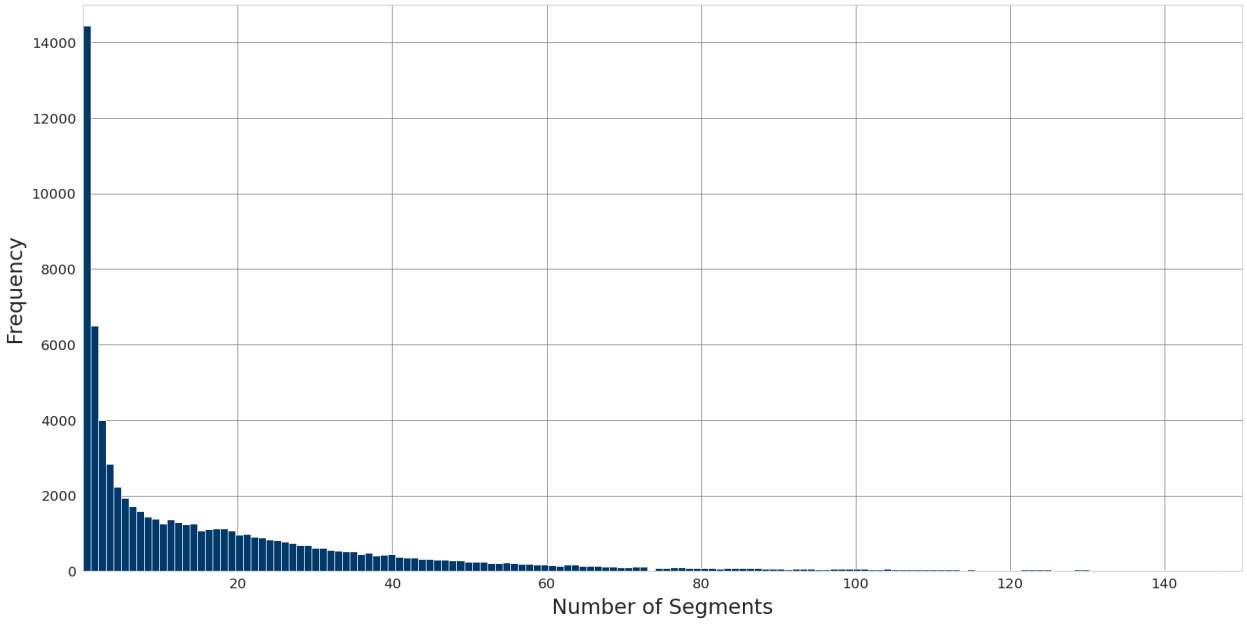

FIG S1. Distribution of the number of 2-second segments where sound production was detected for each 15-minute interval (n = 74,899) in pomacentrids at National Park American Samoa revealing zero-inflated data (19.3% of data have zero values; n = 14,453)

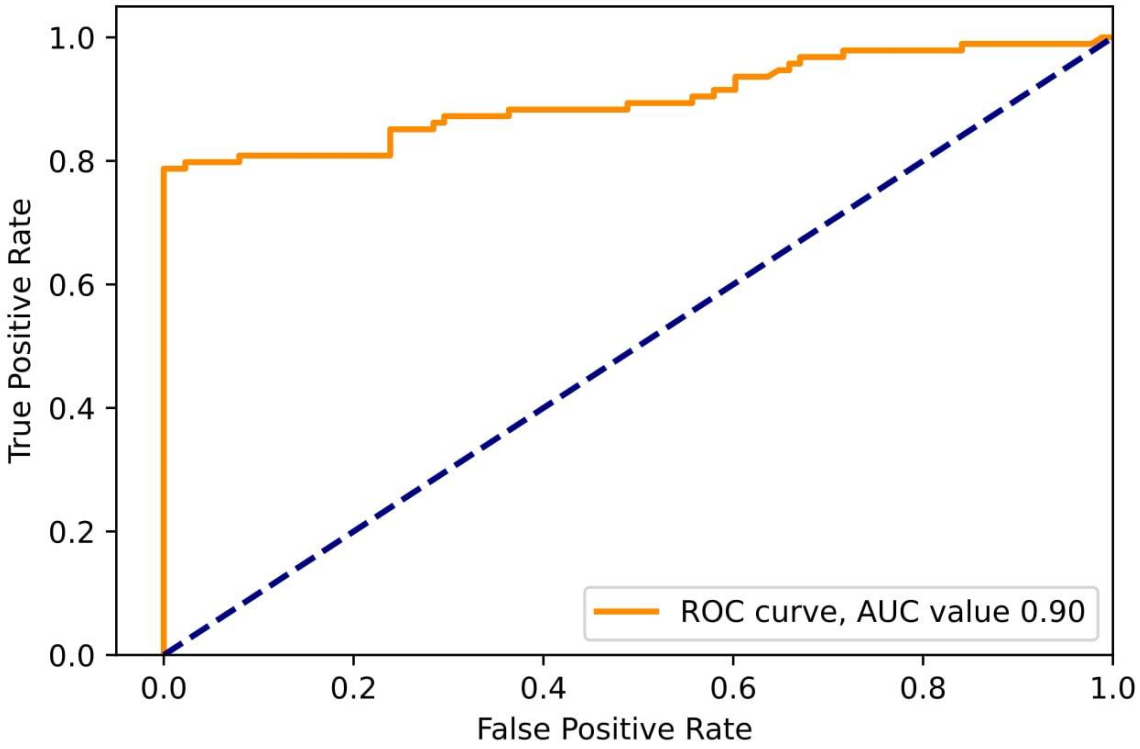

FIG S2. Trained Convolutional Neural Network ROC results (AUC) for detection of pomacentrid sound production based on the test data set

TABLE S1. Zero-Inflated Negative Binomial results for year, hour, and month as factors. Asterisk indicates statistical significance α = 0.05

	Count Model			**Zero Inflation Model**		
	coefficient	**SE**	**p-value**	**coeff**	**SE**	**p-value**
Intercept	4.8129	1.6074	0.0009*	0	7.4932	<0.0001*
Year 2016	1.6171	1.0224	<0.0001*	6.5732	1.1766	<0.0001*
Year 2017	0.7730	1.0164	<0.0001*	24.5325	1.1695	<0.0001*
Year 2018	1.2063	1.0191	<0.0001*	13.4637	1.1367	<0.0001*
Month 2	1.3014	1.0227	<0.0001*	0.3649	1.1396	<0.0001*
Month 3	0.6296	1.0222	<0.0001*	0.9400	1.1022	0.5250
Month 4	0.8854	1.0267	<0.0001*	1.1523	1.1064	0.1607
Month 5	0.8169	1.0285	<0.0001*	2.6335	1.0980	<0.0001*
Month 6	0.5257	1.0258	<0.0001*	6.2090	1.1017	<0.0001*
Month 7	0.4048	1.0262	<0.0001*	4.5814	1.1209	<0.0001*
Month 8	0.4601	1.0259	<0.0001*	3.4938	1.1073	<0.0001*
Month 9	0.4317	1.0276	<0.0001*	1.8623	1.1278	<0.0001*
Month 10	0.5898	1.0229	<0.0001*	1.0866	1.1203	0.4646
Month 11	0.6958	1.0251	<0.0001*	1.0493	1.1220	0.6755
Month 12	1.1703	1.0273	<0.0001*	0.7414	1.1379	0.0205*
Hour 1	0.9085	1.0376	0.0093*	0.9465	1.0918	0.5314
Hour 2	0.9535	1.0376	0.1975	1.0182	1.0903	0.8344
Hour 3	1.0649	1.0378	0.0899	1.1336	1.0893	0.1427
Hour 4	0.8743	1.0377	0.0003*	0.8989	1.0933	0.2321
Hour 5	1.1178	1.0365	0.0019*	0.6143	1.0931	<0.0001*
Hour 6	2.6775	1.0345	<0.0001*	0.1337	1.1176	<0.0001*
Hour 7	3.7833	1.0340	<0.0001*	0.0000	3.03E+229	0.9705
Hour 8	4.1092	1.0341	<0.0001*	0.0000	9.35E+373	0.9807

Hour 9	4.2777	1.0341	<0.0001*	0.0000	4.88E+199	0.9659
Hour 10	4.6299	1.0341	<0.0001*	0.0000	2.39E+166	0.9602
Hour 11	4.9487	1.0344	<0.0001*	0.0000	1.82E+464	0.9842
Hour 12	4.8857	1.0343	<0.0001*	0.0000	2.33E+253	0.9730
Hour 13	4.8709	1.0343	<0.0001*	0.0000	2.86E+213	0.9679
Hour 14	4.8440	1.0342	<0.0001*	0.0000	3.82E+294	0.9760
Hour 15	4.6960	1.0343	<0.0001*	0.0000	1.52E+263	0.9735
Hour 16	4.5110	1.0341	<0.0001*	0.0000	7.57E+532	0.9860
Hour 17	4.4083	1.0339	<0.0001*	0.0000	2.18E+665	0.9886
Hour 18	3.5231	1.0343	<0.0001*	0.0152	1.4730	<0.0001*
Hour 19	1.0426	1.0369	0.2497	0.4769	1.0996	<0.0001*
Hour 20	0.7441	1.0380	<0.0001*	0.7689	1.0959	0.0041*
Hour 21	0.8749	1.0378	0.0003*	0.9100	1.0918	0.2829
Hour 22	0.9987	1.0380	0.9726	0.9693	1.0907	0.7193
Hour 23	0.9925	1.0376	0.8374	0.9415	1.0906	0.4874