

Supplementary Information

Passive acoustic monitoring of beaked whale densities in the Gulf of Mexico

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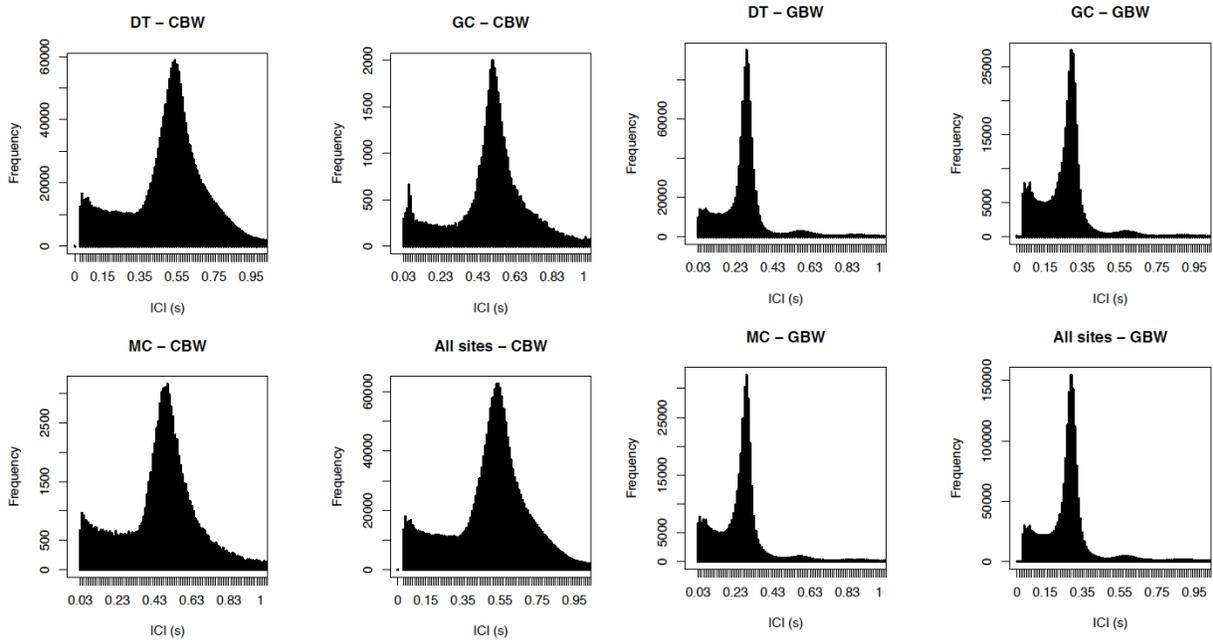
Miami, Florida 33149, USA

Danielle Harris, Tiago A. Marques, and Len Thomas

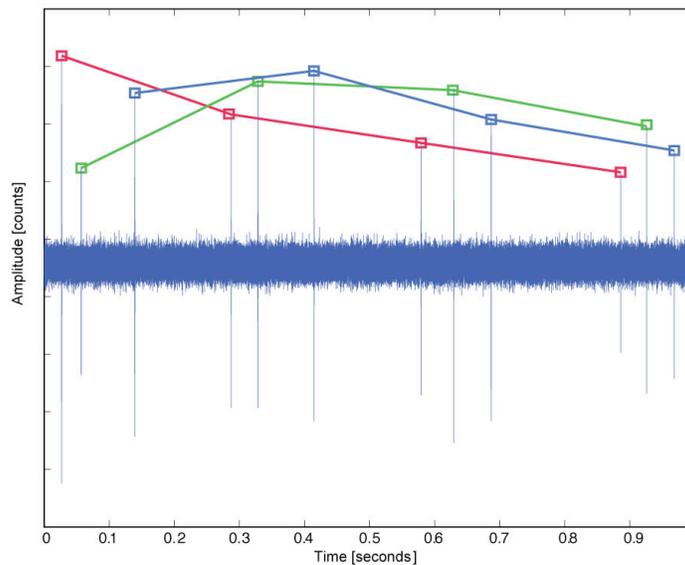
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The Observatory, University of St Andrews, St Andrews, KY16 9LZ, Scotland

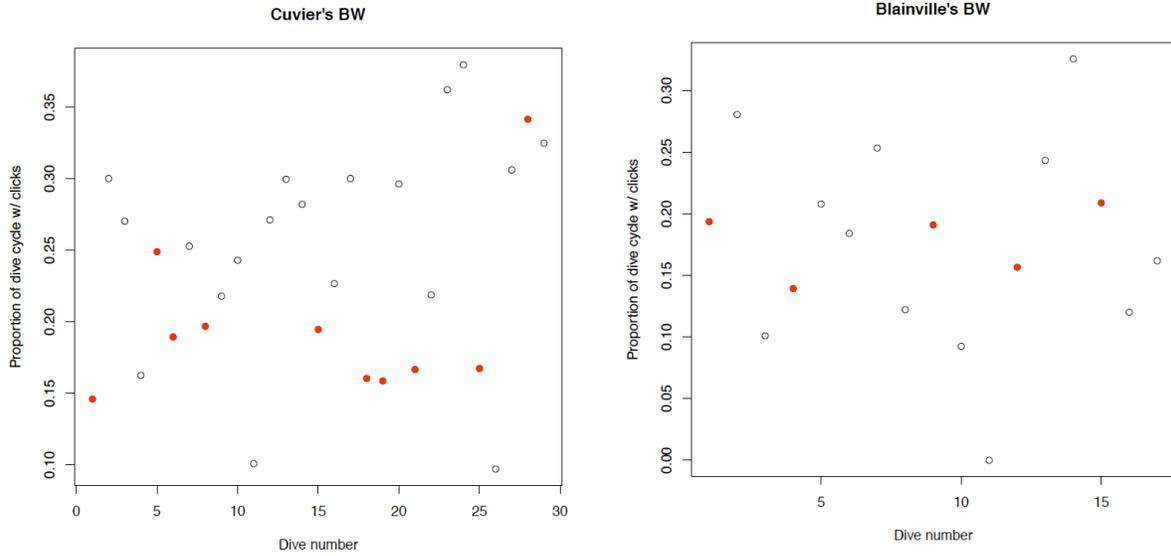
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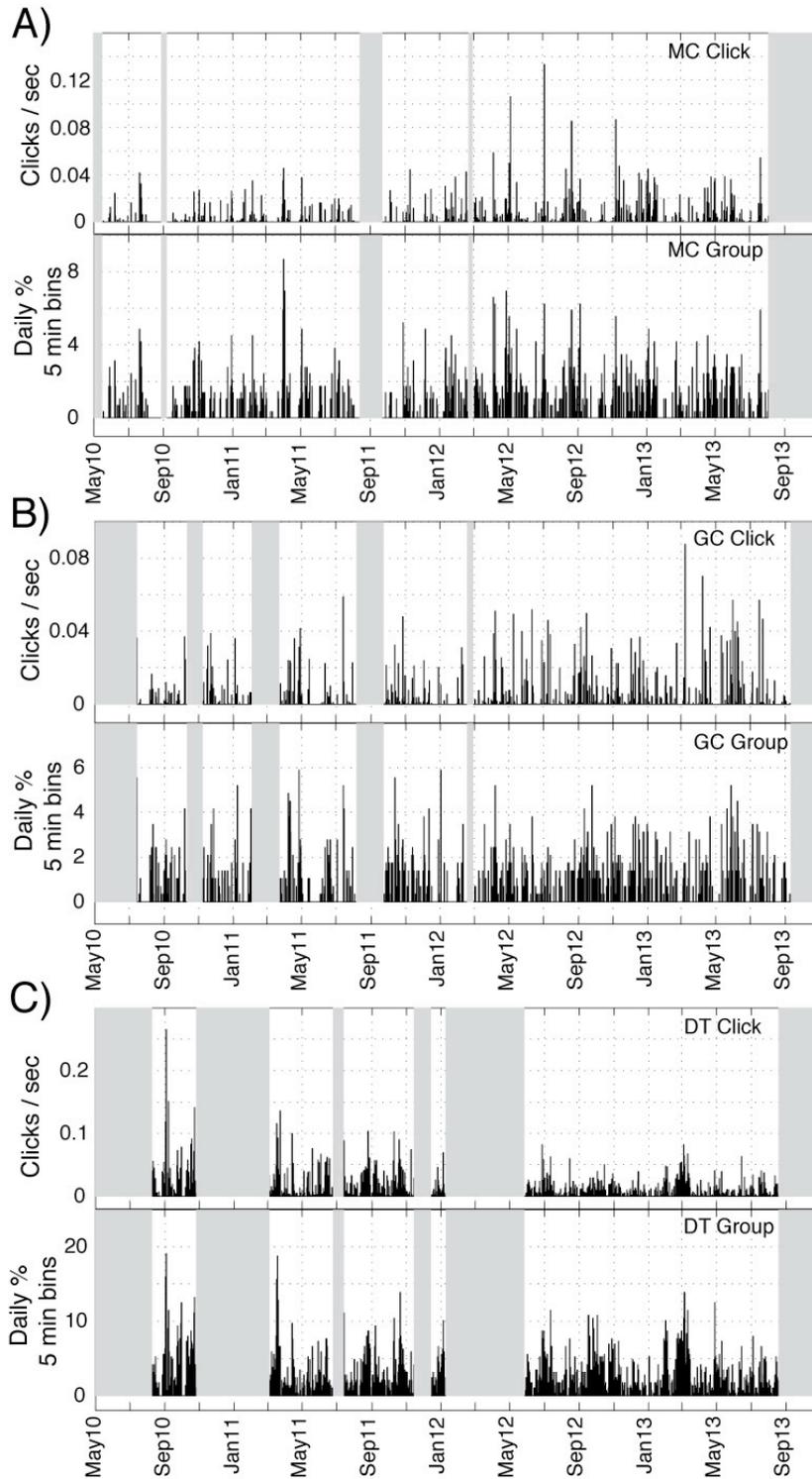
Supplementary Figure S1. Inter-click interval histogram for Cuvier's beaked whale (CBW on left) and Gervais' beaked whale (GBW on right) by site (MC, GC and DT) and for all sites.



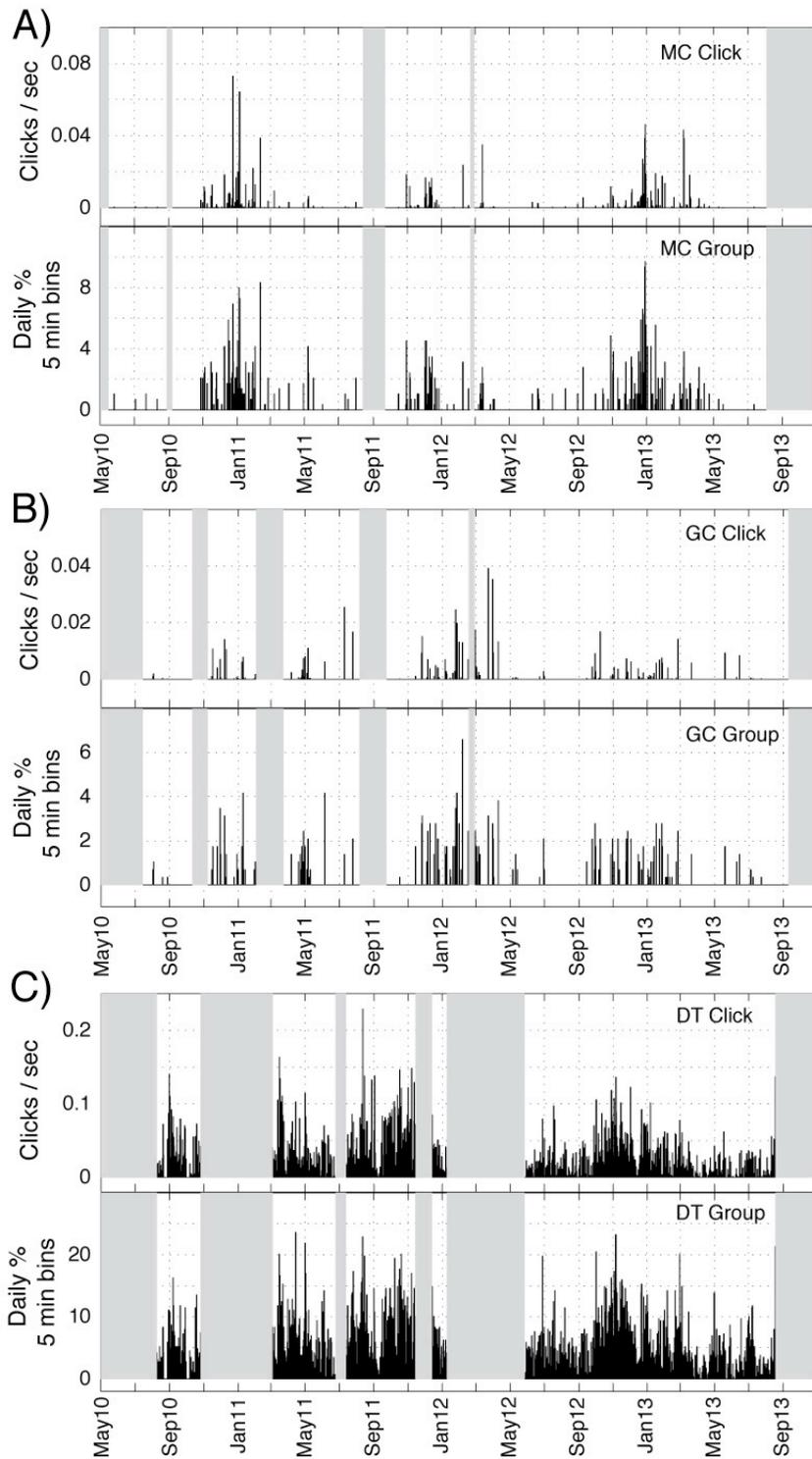
Supplementary Figure S2. Gervais' beaked whale click sequence detected at the DT site. Individual animal assignment is based on click amplitude and consistent timing. Colored lines join the clicks (boxes) from each of the three animals identified.



Supplementary Figure S3. Proportion of dive cycle with clicks for Cuvier's (left) and Blainville's (right) beaked whales. The red points show the first complete deep dive cycle of each tag deployment, giving a visual assessment of whether a tagging effect may be occurring.



Supplementary Figure S4. Gervais' beaked whale at (A) MC, (B) GC, and (C) DT site. Average click rate daily (Above). Detections in percentage of 5-min bins daily (Below). Shaded areas lack recording effort.



Supplementary Figure S5. Cuvier's beaked whale at (A) MC, (B) GC, and (C) DT site. Average click rate daily (Above). Detections in percentage of 5-min bins daily (Below). Shaded areas lack recording effort.

Supplementary Table S1. Modal inter-click interval (ICI) for Cuvier's, Gervais', Blainville's and BWG beaked whale at GOM recording sites, MC, GC and DT.

Site	Cuvier's	Gervais'	Blainville's	BWG
	ICI (s)	ICI (s)	ICI (s)	ICI (s)
MC	0.50	0.29	--	0.14
GC	0.52	0.29	0.32	0.14
DT	0.53	0.29	--	0.17

Supplementary Table S2. HARP deployment periods and locations. Site designations are: MC = Mississippi Canyon, GC = Green Canyon, DT = Dry Tortugas.*

Site	ID	Start Date MM/DD/YY	End Date MM/DD/YY	Recording Duration (Days)	Deployment Long. W	Deployment Lat. N	Deployment Depth (m)
MC	01	5/16/10	8/28/10	104.766	88-27.927	28-50.746	980
MC	02	9/7/10	12/19/10	103.774	88-27.907	28-50.771	980
MC	03	12/20/10	3/21/11	91.201	88-27.909	28-50.775	980
MC	04	3/22/11	8/13/11	144.467	88-27.946	28-50.775	980
MC	05	9/22/11	2/21/12	152.067	88-27.991	28-50.797	980
MC	06	2/28/12	12/11/12	286.868	88-28.041	28-50.853	980
MC	07	12/11/12	8/3/13	231.734 [#]	88-28.059	28-50.781	980
GC	01	7/15/10	10/11/10	88.828	91-10.010	27-33.470	1115
GC	02	11/8/10	2/2/11	86.595	91-10.014	27-33.466	1160
GC	03	3/23/11	8/6/11	136.131	91-10.073	27-33.424	1100
GC	04	9/23/11	2/17/12	146.649	91-10.060	27-33.426	1100
GC	05	2/28/12	12/12/12	288.657	91-10.562	27-33.440	1100
GC	06	12/13/12	9/10/13	271.135	91-10.092	27-33.347	1100
DT	01	8/9/10	10/26/10	78.421	84-38.251	25-31.911	1320
DT	02	3/4/11	6/24/11	112.352	84-38.251	25-31.911	1320
DT	03	7/13/11	11/14/11	124.421	84-38.262	25-31.859	1300
DT	04	12/14/11	1/9/12	26.205	84-38.265	25-31.867	1300
DT	05	5/27/12	12/7/12	193.556	84-38.041	25-31.938	1300
DT	06	12/7/12	8/18/13	253.214	84-38.046	25-31.941	1300

* Two additional monitoring sites on the continental shelf did not yield detections of beaked whales (Main Pass = 29-15.204 N, 88-17.753 W, depth 86 m; and DeSoto Canyon = 29-03.134 N, 86-05.773 W, depth 268 m). [#]Accounts for recording gap.