

No	Metadata element name	Your input	Help reference no.
1	Submission Date		1
2	Accession no. of related data sets		2
3	Investigator-1 name	Rusty Brainard	3.1
4	Investigator-1 institution	NMFS/PIFSC/ESD	3.2
5	Investigator-1 address	1845 Wasp Blvd, Honolulu, HI 96818	3.3
6	Investigator-1 phone	(808) 725-5419	3.4
7	Investigator-1 email	<input type="text" value="Rusty.Brainard@noaa.gov"/>	3.5
8	Investigator-1 researcher ID		3.6
9	Investigator-1 ID type (ORCID, Researcher ID, etc.)		3.7
10	Investigator-2 name	Thomas A Oliver	3.1
11	Investigator-2 institution	NMFS/PIFSC/ESD	3.2
12	Investigator-2 address	1845 Wasp Blvd, Honolulu, HI 96818	3.3
13	Investigator-2 phone	(808) 725-5444	3.4
14	Investigator-2 email	<input type="text" value="Thomas.Oliver@noaa.gov"/>	3.5
15	Investigator-2 researcher ID		3.6
16	Investigator-2 ID type (ORCID, Researcher ID, etc.)		3.7
17	Investigator-3 name	Charles W Young	3.1
18	Investigator-3 institution	NMFS/PIFSC/ESD	3.2
19	Investigator-3 address	1845 Wasp Blvd, Honolulu, HI 96818	3.3
20	Investigator-3 phone	(808) 725-5408	3.4
21	Investigator-3 email	<input type="text" value="Charles.Young@noaa.gov"/>	3.5
22	Investigator-3 researcher ID		3.6
23	Investigator-3 ID type (ORCID, Researcher ID, etc.)		3.7
24	Data submitter name	Kevin L Trick	4.1
25	Data submitter institution	National Marine Fisheries Service/Pacific Island Fisheries Science Center/Ecosystem Sciences Division	4.2
26	Data submitter address	1845 Wasp Blvd, Honolulu, HI 96818	4.3
27	Data submitter phone	808-725-5421	4.4
28	Data submitter email	<input type="text" value="Kevin.Trick@NOAA.gov"/>	4.5
29	Data submitter researcher ID		4.6
30	Data submitter ID type (ORCID, Researcher ID, etc.)		4.7
31	Title	National Coral Reef Monitoring Program - Ocean Acidification Enterprise_Class 0 and II	5
32	Abstract	This project monitors changes to coral reef carbonate chemistry over time, at US affiliated coral reef sites, through quantifying key chemical parameters that are expected to be impacted by ocean acidification. This effort addresses OAP programmatic themes 1 and 5 by maintaining the coral reef portion of the OA monitoring network and developing a procedure for data synthesis, assimilation, and distribution. Incorporating an interdisciplinary approach, this project will collect, process, analyze, and steward dissolved inorganic carbon (DIC) and total alkalinity (TA) water sample data to document seawater carbonate chemistry at Class 0, II, III climate monitoring sites in coral reef areas of the US Atlantic and Pacific regions.. Provide high-quality carbonate chemistry data (dissolved inorganic carbon and total alkalinity) for US coral reef areas at a several spatial and temporal scales, in close partnership with the larger CRCP NCRMP and OAP/PMEL NOAA-ON efforts.	6
33	Purpose		7
34	Start date	4/2/2017	8.1
35	End date	4/22/2017	8.2
36	Westbd longitude	166.8415547	9.1
37	Eastbd longitude	-176.8057244	9.2
38	Northbd latitude	19.50094272	9.3
39	Southbd latitude	-0.55446667	9.4
40	Spatial reference system		10
41	Geographic names	Pacific Ocean, Hawaiian Archipelago	11

42	Location of organism collection	n/a	12
43	Funding agency name	NOAA's Ocean Acidification Program	13.1
44	Funding project title	National Coral Reef Monitoring Program - Ocean Acidification Enterprise	13.2
45	Funding project ID (Grant no.)		13.3
46	Research projects		14
47	Platform-1 name		15.1
48	Platform-1 ID		15.2
49	Platform-1 type		15.3
50	Platform-1 owner		15.4
51	Platform-1 country		15.5
52	Platform-2 name		15.1
53	Platform-2 ID		15.2
54	Platform-2 type		15.3
55	Platform-2 owner		15.4
56	Platform-2 country		15.5
57	Platform-3 name		15.1
58	Platform-3 ID		15.2
59	Platform-3 type		15.3
60	Platform-3 owner		15.4
61	Platform-3 country		15.5
62	EXPCODE		16
63	Cruise ID		17
64	Section		18
65	Author list for citation	Oliver, Thomas A; Barkley, Hannah C; Young, Charles W; Pomeroy, Noah V; Halperin, Ariel A	19
66	References		20
67	Supplemental information		21
68	DIC: Variable abbreviation in data files	DIC	22.1
69	DIC: Observation type	discrete water sample	22.2
70	DIC: In-situ observation / manipulation condition / response variable (SPECIAL USE ONLY)	in-situ observation	22.3
71	DIC: Manipulation method (SPECIAL USE ONLY) (SPECIAL USE ONLY)	Not applicable	22.4
72	DIC: Variable unit	micromoles/kg	22.5
73	DIC: Measured or calculated	Measured	22.6
74	DIC: Calculation method and parameters	none	22.7
75	DIC: Sampling instrument	Niskin bottle - transferred to Borosilicate bottle	22.8
76	DIC: Analyzing instrument	SOMMA (Single Operator Multiparameter Metabolic Analyzer) systems, PMEL1 and PMEL2, each utilizing a 5011 coulometer (UIC, Inc.). The SOMMA systems were originally developed by Ken Johnson (Johnson et al., 1985,1987,1993; Johnson, 1992; Wilke et al., 1993) of Brookhaven National Laboratory (BNL). Analyses conducted at PMEL. Measurements drawn according to procedures in the Guide to best practices for ocean CO2 measurements (Dickson et al., 2007). Borosilicate bottle were rinsed and filled from bottom, leaving a minimal amount of headspace while making sure no bubbles were introduced. Then 0.2 ml of saturated HgCl2 solution was added, bottles were sealed with glass stoppers lightly covered with Apiezon-L grease, and were stored at room temperature to be sent to PMEL for analysis.	22.9
77	DIC: Detailed sampling and analyzing information		22.10
78	DIC: Field replicate information	duplicate samples analyzed	22.11
79	DIC: Standardization technique description	Each coulometer was calibrated by injecting aliquots of pure CO2 (99.999%) by means of an 8-port valve (Wilke et al. 1993) outfitted with two calibrated sample loops of different sizes (~1 mL and ~2 mL). The instruments were each separately calibrated at the beginning of each cell with a minimum of two sets of these gas loop injections. 1) Gas loops were run near the beginning of each cell; 2) CRM's supplied by Dr. A. Dickson of SIO, were also measured near the beginning; and 3) Duplicate samples were typically run throughout the life of the cell solution.	22.12.1
80	DIC: Frequency of standardization		22.12.2
81	DIC: CRM manufacturer	Andrew Dickson's lab at Scripps Institute of Oceanography	22.12.3.1

82	DIC: Batch number	154	22.12.3.2
83	DIC: Poison used to kill the sample	saturated Mercury Chloride (HgCl ₂)	22.13.1
84	DIC: Poison volume	200um	22.13.2
85	DIC Poisoning correction description	The DIC values were corrected for dilution by 0.2 ml of saturated HgCl ₂ used for sample preservation. The total water volume of the sample bottles was 540 ml. The correction factor used for dilution was 1.0003705.	22.13.3
86	DIC: Uncertainty	±0.1%	22.14
87	DIC: Data quality flag description		22.15
88	DIC: Method reference (citation)	Dickson, A.G., Sabine, C.L. and Christian, J.R. (Eds.) 2007. Guide to best practices for ocean CO ₂ measurements. PICES Special Publication 3, 191 pp.	22.16
89	DIC: Researcher Name	Dana Greeley, Julian Herndon, and Morgan Ostendorf (contact PI Simone Alin for all inquiries)	22.17.1
90	DIC: Researcher Institution	Pacific Marine Environmental Laboratory, National Oceanic and Atmospheric Administration; and Joint Institute for the Study of the Atmosphere and Ocean, University of Washington	22.17.2
91	TA: Variable abbreviation in data files	TA	23.1
92	TA: Observation type	discrete water sample	23.2
93	TA: In-situ observation / manipulation condition / response variable (SPECIAL USE ONLY)	in-situ observation	23.3
94	TA: Manipulation method (SPECIAL USE ONLY)	none	23.4
95	TA: Variable unit	micromoles/kg	23.5
96	TA: Measured or calculated	Measured	23.6
97	TA: Calculation method and parameters	none	23.7
98	TA: Sampling instrument	Niskin bottle - transferred to Borosilicate bottle	23.8
99	TA: Analyzing instrument	Custom instrument built in Dr. Andrew Dickson's lab at Scripps-UCSD in 2016.	23.9
100	TA: Type of titration	Two-stage, potentiometric, open-cell titration using coulometrically analyzed hydrochloric acid.	23.10
101	TA: Cell type (open or closed)	Open	23.11
102	TA: Curve fitting method	Non-linear least squares	23.12
103	TA: Detailed sampling and analyzing information	Analyses conducted at PMEL. Samples run using remaining water from the same sample bottles used for DIC. Refer to DIC for more information on sampling and conservation of samples. Water samples were titrated with HCl solution provided by Dr. Andrew Dickson of UCSD (0.25175 moles per kilogram-solution).	23.13
104	TA: Field replicate information	500-ml sets of duplicate samples	23.14
105	TA: Standardization technique description	Duplicate samples are run in addition to Certified Reference Material (CRM), supplied by Dr. A. Dickson of UCSD	23.15.1
106	TA: Frequency of standardization	Along with duplicate samples being run throughout, CRMs are run at the beginning and end of each sampling period	23.15.2
107	TA: CRM manufacturer	Andrew Dickson's lab at Scripps Institute of Oceanography	23.15.3.1
108	TA: Batch Number	154	23.15.3.2
109	TA: Poison used to kill the sample	saturated Mercury Chloride (HgCl ₂)	23.16.1
110	TA: Poison volume	200um	23.16.2
111	TA: Poisoning correction description	The TA values were corrected for the resulting dilution of the added 0.2 ml of saturated HgCl ₂ used for sample preservation.	23.16.3
112	TA: Magnitude of blank correction	NA	23.17
113	TA: Uncertainty	±0.1%	23.18
114	TA: Data quality flag description		23.19
115	TA: Method reference (citation)	Used spectrometric method from Dickson, A.G., Sabine, C.L. and Christian, J.R. (Eds.) 2007. Guide to best practices for ocean CO ₂ measurements. PICES Special Publication 3, 191 pp.	23.20
116	TA: Researcher Name	Dana Greeley, Julian Herndon, and Morgan Ostendorf (contact PI Simone Alin for all inquiries)	23.21.1
117	TA: Researcher Institution	Pacific Marine Environmental Laboratory, National Oceanic and Atmospheric Administration; and Joint Institute for the Study of the Atmosphere and Ocean, University of Washington	23.21.2
118	pH: Variable abbreviation in data files	pH	24.1
119	pH: Observation type	discrete water sample	24.2

120	pH: In-situ observation / manipulation condition / response variable (SPECIAL USE ONLY)	in-situ observation	24.3
121	pH: Manipulation method (SPECIAL USE ONLY)	none	24.4
122	pH: Measured or calculated	calculated	24.5
123	pH: Calculation method and parameters	R package - seacarb. DIC, TA, T, S, P	24.6
124	pH: Sampling instrument	NA	24.7
125	pH: Analyzing instrument	NA	24.8
126	pH: pH scale	Total	24.9
127	pH: Temperature of measurement	in-situ observation	24.10
128	pH: Detailed sampling and analyzing information	Refer to DIC for more information on sampling and conservation of samples.	24.11
129	pH: Field replicate information	500-ml sets of duplicate samples	24.12
130	pH: Standardization technique description	NA - calculated	24.13.1
131	pH: Frequency of standardization	NA - calculated	24.13.2
132	pH: pH values of the standards	NA - calculated	24.13.3
133	pH: Temperature of standardization	NA - calculated	24.13.4
134	pH: Temperature correction method	NA - calculated	24.14
135	pH: at what temperature was pH reported	in-situ temperature	24.15
136	pH: Uncertainty		24.16
137	pH: Data quality flag description		24.17
138	pH: Method reference (citation)	Refer to DIC for more information on sampling and conservation of samples.	24.18
139	pH: Researcher Name	Thomas Oliver	24.19.1
140	pH: Researcher Institution	Pacific Island Fisheries Science Center, National Oceanic and Atmospheric Administration	24.19.2
141	pCO2A: Variable abbreviation in data files	pCO2	25.1
142	pCO2A: Observation type	discrete water sample	25.2
143	pCO2A: In-situ observation / manipulation condition / response variable (SPECIAL USE ONLY)	in-situ observation	25.3
144	pCO2A: Manipulation method (SPECIAL USE ONLY)	none	25.4
145	pCO2A: Variable unit		25.5
146	pCO2A: Measured or calculated	calculated	25.6
147	pCO2A: Calculation method and parameters	R package - seacarb. DIC, TA, T, S, P	25.7
148	pCO2A: Sampling instrument	NA	25.8
149	pCO2A: Location of seawater intake	NA - calculated	25.9
150	pCO2A: Depth of seawater intake	NA - calculated	25.10
151	pCO2A: Analyzing instrument	NA - calculated	25.11
152	pCO2A: Detailed sampling and analyzing information	NA - calculated	25.12
153	pCO2A: Equilibrator type	NA - calculated	25.13.1
154	pCO2A: Equilibrator volume (L)	NA - calculated	25.13.2
155	pCO2A: Vented or not	NA - calculated	25.13.3
156	pCO2A: Water flow rate (L/min)	NA - calculated	25.13.4
157	pCO2A: Headspace gas flow rate (L/min)	NA - calculated	25.13.5
158	pCO2A: How was temperature inside the equilibrator measured .	NA - calculated	25.13.6
159	pCO2A: How was pressure inside the equilibrator measured.	NA - calculated	25.13.7
160	pCO2A: Drying method for CO2 gas	NA - calculated	25.14
161	pCO2A: Manufacturer of the gas detector	NA - calculated	25.15.1
162	pCO2A: Model of the gas detector	NA - calculated	25.15.2
163	pCO2A: Resolution of the gas detector	NA - calculated	25.15.3
164	pCO2A: Uncertainty of the gas detector	NA - calculated	25.15.4
165	pCO2A: Standardization technique description	NA - calculated	25.16.1
166	pCO2A: Frequency of standardization	NA - calculated	25.16.2
167	pCO2A: Manufacturer of standard gas	NA - calculated	25.16.3.1
168	pCO2A: Concentrations of standard gas	NA - calculated	25.16.3.2
169	pCO2A: Uncertainties of standard gas	NA - calculated	25.16.3.3

170	pCO2A: Water vapor correction method	NA - calculated	25.17
171	pCO2A: Temperature correction method	NA - calculated	25.18
172	pCO2A: at what temperature was pCO2 reported	NA - calculated	25.19
173	pCO2A: Uncertainty		25.20
174	pCO2A: Data quality flag description		25.21
175	pCO2A: Method reference (citation)	Refer to DIC for more information on sampling and conservation of samples.	25.22
176	pCO2A: Researcher Name	Thomas Oliver	25.23.1
177	<u>pCO2A: Researcher Institution</u>	Pacific Island Fisheries Science Center, National Oceanic and Atmospheric Administration	25.23.2
178	pCO2D: Variable abbreviation in data files	none	26.1
179	pCO2D: Observation type	none	26.2
180	pCO2D: In-situ observation / manipulation condition / response variable (SPECIAL USE ONLY)	none	26.3
181	pCO2D: Manipulation method (SPECIAL USE ONLY)	none	26.4
182	pCO2D: Variable unit	none	26.5
183	pCO2D: Measured or calculated	none	26.6
184	pCO2D: Calculation method and parameters	none	26.7
185	pCO2D: Sampling instrument	none	26.8
186	pCO2D: Analyzing instrument	none	26.9
187	pCO2D: Storage method	none	26.10
188	pCO2D: Seawater volume (mL)	none	26.11
189	pCO2D: Headspace volume (mL)	none	26.12
190	pCO2D: Temperature of measurement	none	26.13
191	pCO2D: Detailed sampling and analyzing information	none	26.14
192	pCO2D: Field replicate information	none	26.15
193	pCO2D: Manufacturer of the gas detector	none	26.16.1
194	pCO2D: Model of the gas detector	none	26.16.2
195	pCO2D: Resolution of the gas detector	none	26.16.3
196	pCO2D: Uncertainty of the gas detector	none	26.16.4
197	pCO2D: Standardization technique description	none	26.17.1
198	pCO2D: Frequency of standardization	none	26.17.2
199	pCO2D: Temperature of standardization	none	26.17.3
200	pCO2D: Manufacturer of standard gas	none	26.17.4.1
201	pCO2D: Concentrations of standard gas	none	26.17.4.2
202	pCO2D: Uncertainties of standard gas	none	26.17.4.3
203	pCO2D: Water vapor correction method	none	26.18
204	pCO2D: Temperature correction method	none	26.19
205	pCO2D: at what temperature was pCO2 reported	none	26.20
206	pCO2D: Uncertainty	none	26.21
207	pCO2D: Data quality flag description	none	26.22
208	pCO2D: Method reference (citation)	none	26.23
209	pCO2D: Researcher Name	none	26.24.1
210	<u>pCO2D: Researcher Institution</u>	none	26.24.2
211	Var1: Variable abbreviation in data files	Temperature_C	27.1
212	Var1: Full variable name	Temperature measured during sample collection in degrees Celsius	27.2
213	Var1: Observation type	CTD Profile	27.4
214	Var1: In-situ observation / manipulation condition / response variable (SPECIAL USE ONLY)	in-situ observation	27.5
215	Var1: Variable unit	oC	27.7
216	Var1: Measured or calculated	measured	27.8
217	Var1: Calculation method and parameters		27.9
218	Var1: Sampling instrument	NA	27.10
219	Var1: Analyzing instrument	Seabird 19+	27.11

220	Var1: Duration (for settlement/colonization methods) (SPECIAL USE ONLY)	one-time measurement	27.12
221	Var1: Detailed sampling and analyzing information		27.13
222	Var1: Field replicate information		27.14
223	Var1: Uncertainty		27.15
224	Var1: Data quality flag description		27.16
225	Var1: Method reference (citation)		27.17
226	Var1: Biological subject (SPECIAL USE ONLY)		27.18
227	Var1: Species Identification code (SPECIAL USE ONLY)		27.19
228	Var1: Life stage of the Biological subject (SPECIAL USE ONLY)		27.20
229	Var1: Researcher Name	Thomas Oliver	27.21.1
230	Var1: Researcher Institution	Pacific Island Fisheries Science Center, National Oceanic and Atmospheric Administration	27.21.2
231	Var2: Variable abbreviation in data files	Salinity_CTD	27.1
232	Var2: Full variable name	Salinity measured during sample collection in psu	27.2
233	Var2: Observation type	CTD Profile	27.4
234	Var2: In-situ observation / manipulation condition / response variable (SPECIAL USE ONLY)		27.5
235	Var2: Variable unit	psu	27.7
236	Var2: Measured or calculated	calculated from conductivity and temperature	27.8
237	Var2: Calculation method and parameters		27.9
238	Var2: Sampling instrument		27.10
239	Var2: Analyzing instrument	Seabird 19+	27.11
240	Var2: Duration (for settlement/colonization methods) (SPECIAL USE ONLY)	one-time measurement	27.12
241	Var2: Detailed sampling and analyzing information		27.13
242	Var2: Field replicate information		27.14
243	Var2: Uncertainty		27.15
244	Var2: Data quality flag description		27.16
245	Var2: Method reference (citation)		27.17
246	Var2: Biological subject (SPECIAL USE ONLY)		27.18
247	Var2: Species Identification code (SPECIAL USE ONLY)		27.19
248	Var2: Life stage of the Biological subject (SPECIAL USE ONLY)		27.20
249	Var2: Researcher Name	Thomas Oliver	27.21.1
250	Var2: Researcher Institution	Pacific Island Fisheries Science Center, National Oceanic and Atmospheric Administration	27.21.2
251	Var3: Variable abbreviation in data files	Density_Sigmat	27.1
252	Var3: Full variable name	Calculated Density based on the Temperature and Salinity measured during sample collection	27.2
253	Var3: Observation type		27.4
254	Var3: In-situ observation / manipulation condition / response variable (SPECIAL USE ONLY)	in-situ observation	27.5
255	Var3: Variable unit	kg/m3	27.7
256	Var3: Measured or calculated	calculated	27.8
257	Var3: Calculation method and parameters	calculated from temperature	27.9
258	Var3: Sampling instrument		27.10
259	Var3: Analyzing instrument	Seabird 19+	27.11
260	Var3: Duration (for settlement/colonization methods) (SPECIAL USE ONLY)	one-time measurement	27.12
261	Var3: Detailed sampling and analyzing information		27.13
262	Var3: Field replicate information		27.14
263	Var3: Uncertainty		27.15
264	Var3: Data quality flag description		27.16
265	Var3: Method reference (citation)		27.17

266	Var3: Biological subject (SPECIAL USE ONLY)		27.18
267	Var3: Species Identification code (SPECIAL USE ONLY)		27.19
268	Var3: Life stage of the Biological subject (SPECIAL USE ONLY)		27.20
269	Var3: Researcher Name	Thomas Oliver	27.21.1
270	Var3: Researcher Institution	Pacific Island Fisheries Science Center, National Oceanic and Atmospheric Administration	27.21.2
271	Var4: Variable abbreviation in data files	Pressure_db	27.1
272	Var4: Full variable name	Pressure measured during sample collection in decibars	27.2
273	Var4: Observation type	CTD Profile	27.4
274	Var4: In-situ observation / manipulation condition / response variable (SPECIAL USE ONLY)	in-situ observation	27.5
275	Var4: Variable unit	db	27.7
276	Var4: Measured or calculated	measured	27.8
277	Var4: Calculation method and parameters		27.9
278	Var4: Sampling instrument	NA	27.10
279	Var4: Analyzing instrument	Seabird 19+	27.11
280	Var4: Duration (for settlement/colonization methods) (SPECIAL USE ONLY)	one-time measurement	27.12
281	Var4: Detailed sampling and analyzing information		27.13
282	Var4: Field replicate information		27.14
283	Var4: Uncertainty		27.15
284	Var4: Data quality flag description		27.16
285	Var4: Method reference (citation)		27.17
286	Var4: Biological subject (SPECIAL USE ONLY)		27.18
287	Var4: Species Identification code (SPECIAL USE ONLY)		27.19
288	Var4: Life stage of the Biological subject (SPECIAL USE ONLY)		27.20
289	Var4: Researcher Name	Thomas Oliver	27.21.1
290	Var4: Researcher Institution	Pacific Island Fisheries Science Center, National Oceanic and Atmospheric Administration	27.21.2
291	Var5: Variable abbreviation in data files	Salinity_Bottle	27.1
292	Var5: Full variable name	Salinity measured in Lab - Not used for 2017	27.2
293	Var5: Observation type		27.4
294	Var5: In-situ observation / manipulation condition / response variable (SPECIAL USE ONLY)		27.5
295	Var5: Variable unit		27.7
296	Var5: Measured or calculated		27.8
297	Var5: Calculation method and parameters		27.9
298	Var5: Sampling instrument		27.10
299	Var5: Analyzing instrument		27.11
300	Var5: Duration (for settlement/colonization methods) (SPECIAL USE ONLY)		27.12
301	Var5: Detailed sampling and analyzing information		27.13
302	Var5: Field replicate information		27.14
303	Var5: Uncertainty		27.15
304	Var5: Data quality flag description		27.16
305	Var5: Method reference (citation)		27.17
306	Var5: Biological subject (SPECIAL USE ONLY)		27.18
307	Var5: Species Identification code (SPECIAL USE ONLY)		27.19
308	Var5: Life stage of the Biological subject (SPECIAL USE ONLY)		27.20
309	Var5: Researcher Name		27.21.1
310	Var5: Researcher Institution		27.21.2

311	Var6: Variable abbreviation in data files	Aragonite_Sat	27.1
312	Var6: Full variable name	Calculated Aragonite Saturation based on CTD measurements made during sample collection	27.2
313	Var6: Observation type		27.4
314	Var6: In-situ observation / manipulation condition / response variable (SPECIAL USE ONLY)	in-situ observation	27.5
315	Var6: Variable unit		27.7
316	Var6: Measured or calculated	calculated	27.8
317	Var6: Calculation method and parameters	R package - seacarb. DIC, TA, T, S, P	27.9
318	Var6: Sampling instrument		27.10
319	Var6: Analyzing instrument	Seabird 19+	27.11
320	Var6: Duration (for settlement/colonization methods) (SPECIAL USE ONLY)	one-time measurement	27.12
321	Var6: Detailed sampling and analyzing information		27.13
322	Var6: Field replicate information		27.14
323	Var6: Uncertainty		27.15
324	Var6: Data quality flag description		27.16
325	Var6: Method reference (citation)		27.17
326	Var6: Biological subject (SPECIAL USE ONLY)		27.18
327	Var6: Species Identification code (SPECIAL USE ONLY)		27.19
328	Var6: Life stage of the Biological subject (SPECIAL USE ONLY)		27.20
329	Var6: Researcher Name	Thomas Oliver	27.21.1
330	Var6: Researcher Institution	Pacific Island Fisheries Science Center, National Oceanic and Atmospheric Administration	27.21.2
331	Var7: Variable abbreviation in data files	Conductivity_Sm	27.1
332	Var7: Full variable name	Conductivity measured during sample collection in Siemens per meter	27.2
333	Var7: Observation type	CTD Profile	27.4
334	Var7: In-situ observation / manipulation condition / response variable (SPECIAL USE ONLY)	in-situ observation	27.5
335	Var7: Variable unit	Sm	27.7
336	Var7: Measured or calculated	measured	27.8
337	Var7: Calculation method and parameters		27.9
338	Var7: Sampling instrument	NA	27.10
339	Var7: Analyzing instrument	Seabird 19+	27.11
340	Var7: Duration (for settlement/colonization methods) (SPECIAL USE ONLY)	one-time measurement	27.12
341	Var7: Detailed sampling and analyzing information		27.13
342	Var7: Field replicate information		27.14
343	Var7: Uncertainty		27.15
344	Var7: Data quality flag description		27.16
345	Var7: Method reference (citation)		27.17
346	Var7: Biological subject (SPECIAL USE ONLY)		27.18
347	Var7: Species Identification code (SPECIAL USE ONLY)		27.19
348	Var7: Life stage of the Biological subject (SPECIAL USE ONLY)		27.20
349	Var7: Researcher Name	Thomas Oliver	27.21.1
350	Var7: Researcher Institution	Pacific Island Fisheries Science Center, National Oceanic and Atmospheric Administration	27.21.2
351	Var8: Variable abbreviation in data files		27.1
352	Var8: Full variable name		27.2
353	Var8: Observation type		27.4
354	Var8: In-situ observation / manipulation condition / response variable (SPECIAL USE ONLY)		27.5
355	Var8: Variable unit		27.7
356	Var8: Measured or calculated		27.8

357	Var8: Calculation method and parameters	27.9
358	Var8: Sampling instrument	27.10
359	Var8: Analyzing instrument	27.11
360	Var8: Duration (for settlement/colonization methods) (SPECIAL USE ONLY)	27.12
361	Var8: Detailed sampling and analyzing information	27.13
362	Var8: Field replicate information	27.14
363	Var8: Uncertainty	27.15
364	Var8: Data quality flag description	27.16
365	Var8: Method reference (citation)	27.17
366	Var8: Biological subject (SPECIAL USE ONLY)	27.18
367	Var8: Species Identification code (SPECIAL USE ONLY)	27.19
368	Var8: Life stage of the Biological subject (SPECIAL USE ONLY)	27.20
369	Var8: Researcher Name	27.21.1
370	Var8: Researcher Institution	27.21.2
371	Var9: Variable abbreviation in data files	27.1
372	Var9: Full variable name	27.2
373	Var9: Observation type	27.4
374	Var9: In-situ observation / manipulation condition / response variable (SPECIAL USE ONLY)	27.5
375	Var9: Variable unit	27.7
376	Var9: Measured or calculated	27.8
377	Var9: Calculation method and parameters	27.9
378	Var9: Sampling instrument	27.10
379	Var9: Analyzing instrument	27.11
380	Var9: Duration (for settlement/colonization methods) (SPECIAL USE ONLY)	27.12
381	Var9: Detailed sampling and analyzing information	27.13
382	Var9: Field replicate information	27.14
383	Var9: Uncertainty	27.15
384	Var9: Data quality flag description	27.16
385	Var9: Method reference (citation)	27.17
386	Var9: Biological subject (SPECIAL USE ONLY)	27.18
387	Var9: Species Identification code (SPECIAL USE ONLY)	27.19
388	Var9: Life stage of the Biological subject (SPECIAL USE ONLY)	27.20
389	Var9: Researcher Name	27.21.1
390	Var9: Researcher Institution	27.21.2
391	Var10: Variable abbreviation in data files	27.1
392	Var10: Full variable name	27.2
393	Var10: Observation type	27.4
394	Var10: In-situ observation / manipulation condition / response variable (SPECIAL USE ONLY)	27.5
395	Var10: Variable unit	27.7
396	Var10: Measured or calculated	27.8
397	Var10: Calculation method and parameters	27.9
398	Var10: Sampling instrument	27.10
399	Var10: Analyzing instrument	27.11
400	Var10: Duration (for settlement/colonization methods) (SPECIAL USE ONLY)	27.12
401	Var10: Detailed sampling and analyzing information	27.13
402	Var10: Field replicate information	27.14

403	Var10: Uncertainty	27.15
404	Var10: Data quality flag description	27.16
405	Var10: Method reference (citation)	27.17
406	Var10: Biological subject (SPECIAL USE ONLY)	27.18
407	Var10: Species Identification code (SPECIAL USE ONLY)	27.19
408	Var10: Life stage of the Biological subject (SPECIAL USE ONLY)	27.20
409	Var10: Researcher Name	27.21.1
410	Var10: Researcher Institution	27.21.2
411	Var11: Variable abbreviation in data files	28.1
412	Var11: Full variable name	28.2
413	Var12: Variable abbreviation in data files	28.1
414	Var12: Full variable name	28.2