

Supplementary Information for: *Marine Biology*, Spawning and Larval Development of the Mesophotic Octocoral *Swiftia exserta* in Aquaria

Julia W. Johnstone*, William G. Jenkins, Mackenzy Jankiewicz, Jonathan M. Quigley, Janessy Frometa, Enrique Salgado, Ben Higgins, Amanda W.J. Demopoulos, Christopher L. Gardner, Peter J. Etnoyer, Kristopher G. Benson

Tables

* CSS, Inc., under contract to NOAA, National Ocean Service, National Centers for Coastal Ocean Science, Fairfax, VA, USA

julia.johnstone@noaa.gov

Online Resource 1 Collection details for live *Swiftia exserta* specimens collected for husbandry on the SALT 1 (PS-22-08), SALT 2 (PS-22-22), MERCI 1 (MT-22-MERCI1), and MERCI 2 (MT-22-MERCI2) cruises. Federal lab locations are abbreviated as follows: HML - Hollings Marine Lab, SEFSC - Southeast Fisheries Science Center, WARC - Wetland and Aquatic Research Center. Time is reported as Coordinated Universal Time. Shading indicates different expeditions. Sex is indicated as male “M,” female “F,” or nonreproductive “NR,” and is noted as “no sample” in cases where no sample was preserved for histology at the time of collection or spawning. In 2021, a total of five specimens were held at HML, none were held at SEFSC, and eight were held at WARC. In 2022, a total of six specimens were held at HML, 12 were held at SEFSC, and 24 were held at WARC.

ID	Date	Local Time	Latitude (DD)	Longitude (DD)	Depth (m)	Sex	Facility
PS-22-08-S24	10/6/2021	16:54	29.85	-87.29	63.5	F	HML WARC
PS-22-08-S25	10/6/2021	17:05	29.85	-87.29	63.5	F	HML WARC
PS-22-08-S26	10/6/2021	17:13	29.85	-87.29	63.5	M	HML WARC
PS-22-08-S27	10/6/2021	17:25	29.85	-87.29	63.5	F	HML WARC
PS-22-08-S28	10/6/2021	17:35	29.85	-87.29	63.5	F	HML WARC
PS-22-08-029	10/6/2021	19:56	29.8501	-87.2859	66.4	NR	WARC
PS-22-08-036	10/6/2021	19:33	29.85	-87.286	66	no sample	WARC
PS-22-08-037	10/6/2021	19:35	29.8501	-87.2858	66	no sample	WARC
PS-22-22-015	6/1/2022	23:01	29.85	-87.286	66.2	F	HML
PS-22-22-016	6/1/2022	23:07	29.85	-87.286	66.2	F	HML
PS-22-22-020	6/1/2022	23:34	29.85	-87.286	63.6	F	HML

PS-22-22-079	6/3/2022	23:20	29.5043	-87.5072	66.5	NR	HML
PS-22-22-080	6/3/2022	23:25	29.5043	-87.5072	66.5	F	HML
PS-22-22-081	6/3/2022	23:31	29.5045	-87.507	66	no sample	HML
PS-22-22-166	6/6/2022	17:04	29.2332	-88.4376	65.7	no sample	WARC
PS-22-22-182	6/6/2022	22:48	29.2321	-88.4364	64.9	no sample	WARC
PS-22-22-185	6/6/2022	23:01	29.2321	-88.4364	64.7	no sample	WARC
PS-22-22-187	6/6/2022	23:21	29.2322	-88.4363	64.9	no sample	WARC
PS-22-22-211	6/8/2022	20:02	29.4575	-87.7391	66.9	F	WARC
PS-22-22-212	6/8/2022	20:06	29.4576	-87.7391	66.5	F	WARC
PS-22-22-214	6/8/2022	20:23	29.4576	-87.739	67	F	WARC
PS-22-22-217	6/8/2022	20:40	29.4575	-87.7391	66.5	no sample	WARC
PS-22-22-238	6/8/2022	22:57	29.4586	-87.7388	66.5	M	WARC
PS-22-22-239	6/8/2022	23:01	29.4586	-87.7389	66	NR	WARC
PS-22-22-240	6/8/2022	23:05	29.4586	-87.7389	66.4	M	WARC
PS-22-22-267	6/9/2022	17:54	29.4217	-87.7351	67.1	no sample	WARC
MT-22-MERCI1-001	7/25/2022	10:58	27.968	-93.6123	71	F	SEFSC
MT-22-MERCI1-002	7/25/2022	17:22	27.9681	-93.6122	70	M	SEFSC
MT-22-MERCI1-012	7/27/2022	21:26	27.8975	-93.3279	86.6	F	SEFSC
MT-22-MERCI1-013	7/27/2022	22:07	27.8973	-93.3278	85.2	F	SEFSC
MT-22-MERCI1-014	7/27/2022	22:12	27.8972	-93.3278	84.6	M	SEFSC
MT-22-MERCI1-024	7/28/2022	~21:00	27.8475	-93.0585	95.5	F	SEFSC
MT-22-MERCI2-001	9/15/2022	18:12	27.854	-92.92	100	M	SEFSC WARC

MT-22-MERCI2-002	9/15/2022	18:42	27.8536	-92.9229	99.6	M	WARC
MT-22-MERCI2-003	9/15/2022	18:59	27.8536	-92.9228	99.5	F	WARC
MT-22-MERCI2-006	9/15/2022	19:15	27.8537	-92.9228	98.6	M	WARC
MT-22-MERCI2-007	9/15/2022	19:32	27.8537	-92.9228	97.8	F	WARC
MT-22-MERCI2-008	9/15/2022	19:43	27.854	-92.92	97.1	F	SEFSC WARC
MT-22-MERCI2-010	9/15/2022	20:05	27.854	-92.92	97.2	F	SEFSC WARC
MT-22-MERCI2-021	9/15/2022	21:50	27.8539	-92.9225	91	M	WARC
MT-22-MERCI2-024	9/15/2022	22:08	27.854	-92.92	95.2	F	SEFSC WARC
MT-22-MERCI2-027	9/15/2022	22:37	27.854	-92.92	94.9	F	SEFSC WARC
MT-22-MERCI2-028	9/15/2022	22:42	27.854	-92.92	94.5	F	SEFSC WARC
MT-22-MERCI2-029	9/15/2022	22:49	27.854	-92.9225	96.1	M	WARC

22 **Online Resource 2** Details of *Swiftia exserta* spawning events observed in 2021 and 2022. Cells containing “-” indicate no data. Federal facilities are
 23 abbreviated as follows: HML - Hollings Marine Lab, SEFSC - Southeast Fisheries Science Center, WARC - Wetland and Aquatic Research Center

Facility	Collection Region and Month	Date	Time lights on	Participant Colony ID #	Spawning posture start time	Spawn start time	Spawn end time	# Oocytes collected	time after lights on (h:m)	spawn duration (h:m)	spawning posture lead time (h:m)
WARC	PT&DSR July 2022	9/29/2022	11:45	PS-22-22-212	-	-	-	1	-	-	-
WARC	PT&DSR July 2022	9/30/2022	9:20	PS-22-22-211, 212, 214	-	11:45	-	30	2:25	-	-
WARC	PT&DSR July 2022	10/1/2022	8:12	PS-22-22-214	9:20	11:02	11:29	19	2:50	0:27	1:42
WARC	PT&DSR July 2022	10/10/2022	8:00	PS-22-22-212	-	11:00	-	85	3:00	-	-
WARC	PT&DSR July 2022	10/11/2022	8:00	PS-22-22-212	10:00	-	-	140	-	-	-
WARC	PT&DSR July 2022	10/12/2022	8:00	PS-22-22-212	10:20	10:50	11:20	35	2:50	0:30	0:30
WARC	PT&DSR July 2022	10/13/2022	8:00	PS-22-22-212	-	10:50	11:05	33	2:50	0:15	-
WARC	PT&DSR July 2022	10/14/2022	8:00	PS-22-22-212	-	11:00	-	6	3:00	-	-
WARC	PT&DSR July 2022	10/18/2022	8:00	PS-22-22-212	10:40	11:00	-	2	3:00	-	0:20
WARC	PT&DSR July 2022	10/19/2022	8:00	PS-22-22-212	9:30	10:45	11:00	7	2:45	0:15	1:15
WARC	PT&DSR July 2022	10/20/2022	8:00	PS-22-22-214	9:10	10:53	11:10	5	2:53	0:17	1:43
WARC	PT&DSR July 2022	10/21/2022	8:00	PS-22-22-212	9:20	10:54	-	2	2:54	-	1:34
WARC	PT&DSR July 2022	10/22/2022	8:00	PS-22-22-212	-	10:55	-	4	2:55	-	-
WARC	PT&DSR July 2022	10/23/2022	8:00	PS-22-22-212	9:30	10:50	-	85	2:50	-	1:20
WARC	PT&DSR July 2022	10/24/2022	8:00	PS-22-22-212	-	10:52	11:05	23	2:52	0:12	-
WARC	PT&DSR July 2022	10/25/2022	8:00	PS-22-22-212	10:30	10:50	11:15	8	2:50	0:25	0:20

Facility	Collection Region and Month	Date	Time lights on	Participant Colony ID #	Spawning posture start time	Spawn start time	Spawn end time	# Oocytes collected	time after lights on (h:m)	spawn duration (h:m)	spawning posture lead time (h:m)
WARC	PT&DSR July 2022	10/26/2022	8:00	PS-22-22-212	-	-	11:05	3	-	-	-
SEFSC	FGBNMS July 2022	10/14/2022	8:00	MT-22-MERCI1-unknown	-	-	-	178	-	-	-
SEFSC	FGBNMS July 2022	10/16/2022	8:00	MT-22-MERCI1-024	-	11:10	-	42	3:10	-	-
SEFSC	FGBNMS July 2022	10/17/2022	7:45	MT-22-MERCI1-024	-	10:35	-	10	2:50	-	-
SEFSC	FGBNMS July 2022	10/19/2022	7:45	MT-22-MERCI1-unknown	-	-	-	2	-	-	-
SEFSC	FGBNMS July 2022	10/20/2022	7:45	MT-22-MERCI1-013	-	10:40	11:10	26	2:55	0:30	-
SEFSC	FGBNMS July 2022	10/21/2022	8:00	MT-22-MERCI1-013	-	10:30	12:00	25	2:30	0:30	-
SEFSC	FGBNMS July 2022	9/29/2022	7:45	MT-22-MERCI1-010	-	10:23	11:00	350	2:38	0:37	-
SEFSC	FGBNMS July 2022	10/21/2022	8:00	MT-22-MERCI1-010	-	10:30	12:00	25	2:30	1:30	-
SEFSC	FGBNMS July 2022	10/23/2022	10:00	MT-22-MERCI1-010	-	12:10	13:50	220	2:10	1:40	-
SEFSC	FGBNMS July 2022	10/24/2022	7:45	MT-22-MERCI1-010	-	10:32	11:05	173	2:47	0:33	-
WARC	FGBNMS Sept 2022	9/29/2022	11:45	MT-22-MERCI2-010	-	14:10	-	118	2:25	-	-
WARC	FGBNMS Sept 2022	9/30/2022	9:20	MT-22-MERCI2-010	9:20	11:30	-	12	2:10	-	2:10
WARC	FGBNMS Sept 2022	10/19/2022	8:00	MT-22-MERCI2-027	9:00	10:45	11:00	12	2:45	0:15	1:45
WARC	FGBNMS Sept 2022	10/20/2022	8:00	MT-22-MERCI2-024, 008, 007	9:10	10:35	11:04	129	2:35	0:29	1:25
WARC	FGBNMS Sept 2022	10/21/2022	8:00	MT-22-MERCI2-010, 027, 003	9:20	10:33	10:50	278	2:33	0:17	1:13
WARC	FGBNMS Sept 2022	10/22/2022	8:00	MT-22-MERCI2-010, 027	-	9:40	-	239	1:40	-	-

Facility	Collection Region and Month	Date	Time lights on	Participant Colony ID #	Spawning posture start time	Spawn start time	Spawn end time	# Oocytes collected	time after lights on (h:m)	spawn duration (h:m)	spawning posture lead time (h:m)
WARC	FGBNMS Sept 2022	10/23/2022	8:00	MT-22-MERCI2-010, 027	9:30	10:35	10:50	109	2:35	0:15	1:05
WARC	FGBNMS Sept 2022	10/24/2022	8:00	MT-22-MERCI2-unknown	-	10:45	10:50	4	2:45	0:05	-
WARC	FGBNMS Sept 2022	10/25/2022	8:00	MT-22-MERCI2-027	10:30	10:43	11:15	2	3:15	0:32	0:13
WARC	FGBNMS Sept 2022	11/7/2022	7:00	MT-22-MERCI2-unknown	-	-	9:45	3	-	-	-

24

25

26 **Online Resource 3** In situ sizes of *Swiftia exserta* colonies sampled for husbandry. Colony sex is indicated by “F” for female and “M” for male, the reproductive
 27 status of specimens that were not sampled for histology or observed to spawn is listed as “Unknown.” Average colony height was 73.47 cm, with a standard
 28 deviation of 33.73 cm, with no significant difference in size between male and female colonies.

Date collected	Locality	Colony ID	Height (cm)	Reproductive?	Spawning observed?
10/6/2021	Pensacola Edge 01	PS22-08-S24	59.47	Yes (F)	No
10/6/2021	Pensacola Edge 01	PS22-08-S25	29.49	Yes (F)	No
10/6/2021	Pensacola Edge 01	PS22-08-S26	71.59	Yes (M)	No
10/6/2021	Pensacola Edge 01	PS22-08-S27	38.74	Yes (F)	No
10/6/2021	Pensacola Edge 01	PS22-08-S28	58.06	Yes (F)	No
10/6/2021	Pensacola Edge 01	PS-22-08_029	48.01	No	No
10/6/2021	Pensacola Edge 01	PS-22-08_036	74.80	Unknown	No
10/6/2021	Pensacola Edge 01	PS-22-08_037	53.30	Unknown	No
6/1/2022	Pensacola Edge 01	PS-22-22_015	45.36	Yes (F)	No
6/3/2022	Salt Ridge 3	PS-22-22_079	43.63	No	No
6/3/2022	Salt Ridge 3	PS-22-22_081	48.10	Unknown	No
6/8/2022	Boulder Field 4	PS-22-22_211	51.74	Yes (F)	Yes
6/8/2022	Boulder Field 4	PS-22-22_212	77.43	Yes (F)	Yes
6/8/2022	Boulder Field 4	PS-22-22_217	51.79	Unknown	No
6/8/2022	Boulder Field 4	PS-22-22_238	62.37	Yes (M)	No
6/8/2022	Boulder Field 4	PS-22-22_239	31.54	No	No
6/8/2022	Boulder Field 4	PS-22-22_240	60.19	Yes (M)	No
6/9/2022	Boulder Field 3	PS-22-22_267	49.61	Unknown	No
9/15/2022	Elvers Bank	MT-22-MERCI2_001	98.50	Yes (M)	No
9/15/2022	Elvers Bank	MT-22-MERCI2_002	69.05	Yes (M)	No
9/15/2022	Elvers Bank	MT-22-MERCI2_003	90.03	Yes (F)	Yes
9/15/2022	Elvers Bank	MT-22-MERCI2_006	107.80	Yes (M)	No
9/15/2022	Elvers Bank	MT-22-MERCI2_007	118.98	Yes (F)	Yes
9/15/2022	Elvers Bank	MT-22-MERCI2_008	127.77	Yes (F)	Yes
9/15/2022	Elvers Bank	MT-22-MERCI2_010	110.50	Yes (F)	Yes
9/15/2022	Elvers Bank	MT-22-MERCI2_021	67.96	Yes (M)	No
9/15/2022	Elvers Bank	MT-22-MERCI2_024	159.30	Yes (F)	Yes
9/15/2022	Elvers Bank	MT-22-MERCI2_027	129.70	Yes (F)	Yes

9/15/2022	Elvers Bank	MT-22-MERCI2_028	135.00	Yes (F)	No
9/15/2022	Elvers Bank	MT-22-MERCI2_029	100.36	Yes (M)	No