

FIGURE S1 Map of CRC Hawai'i Island effort tracklines (red) and bottlenose dolphin (*Tursiops truncatus*) sightings (black circles) before (top) and after (bottom) farm (yellow triangle) installation in February 2005, showing that there was extensive effort in the area during both time frames. Note that this map does not show community scientist contributed encounters. The one offshore location after farm implementation is of a pelagic group of bottlenose dolphins that have not been linked by association to the insular community (Baird et al., 2009).

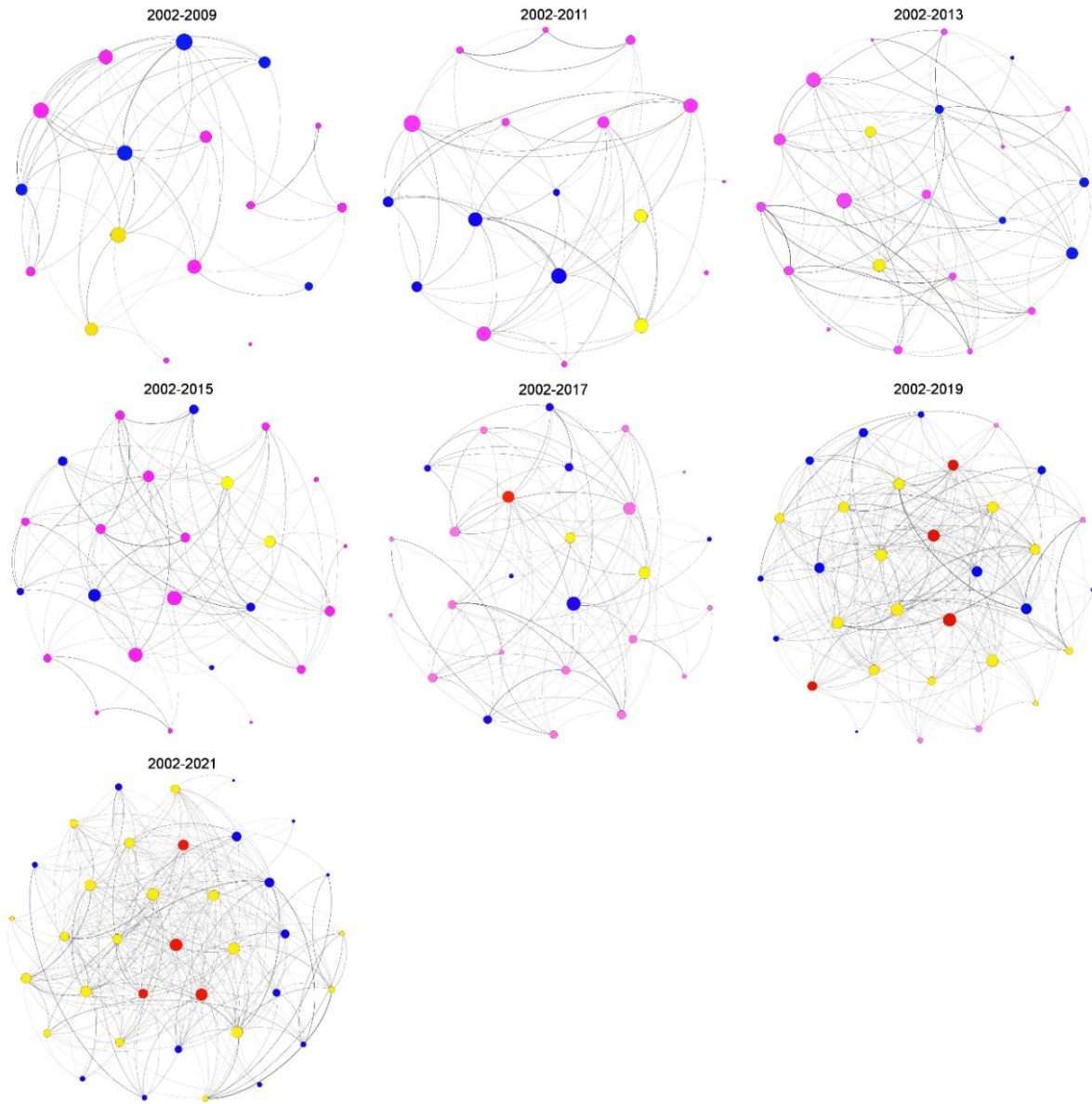


FIGURE S2 Social networks of all farm-associated bottlenose dolphins (*Tursiops truncatus*; both prior to and after documentation at the farm) with no restrictions, with each network successively including two additional years. This figure shows that association with the farm appears to be spreading to proximate associates of individuals already associated with the farm, suggesting that the behavior may be socially learned. Node size increases with the number of connections to other nodes, and node color indicates association with the farm over the time span of the individual network (pink: not yet seen at the farm; blue: seen once at farm; yellow: seen repeatedly at farm but <5 years; red: seen repeatedly at farm >5 years).

TABLE S1 Sighting histories of 36 individual bottlenose dolphins (*Tursiops truncatus*) associated with the farm, sorted in descending order by the number of encounters at the farm. Sex was determined based on analysis of genetic samples (g), calf presence (c), or morphology (m). Species involved in aggressive interspecies interactions at the farm: unidentified shark (shark), false killer whales (*Pc*), pantropical spotted dolphins (*Sa*), and spinner dolphins (*Sl*). “Highest Dist.” refers to the highest distinctiveness rating of the individual, as outlined in the methods.

ID	Highest distribution	Sex	Aggressive interactions	# Encounters at farm	First date at farm	Last date at farm	Span of years at farm
HITt0201	2	M (m)	<i>Pc, Sa, Sl</i>	17	5-Jul-09	29-Nov-20	11.41
HITt0501	4	F (g/c)		5	8-May-08	29-Nov-20	12.57
HITt0768	3	F (c)		5	14-Feb-18	29-Nov-20	2.79
HITt0812	4	M (m)	<i>Pc</i>	5	20-May-18	25-Dec-18	0.60
HITt0894	3		<i>Pc</i>	5	20-May-18	25-Dec-18	0.60
HITt0309	4			4	18-Dec-18	26-Aug-20	1.69
HITt0813	4		Shark, <i>Sa</i>	4	19-Feb-15	18-Dec-18	3.83
HITt1751	3			4	18-Dec-18	29-Nov-20	1.95
HITt0150	4			3	19-Jul-08	25-Dec-18	10.44
HITt0159	4	M (g)		3	13-Oct-18	24-Dec-18	0.20
HITt0589	3			3	19-Jul-08	13-Oct-18	10.24
HITt0814	4	F (c)	<i>Pc</i>	3	15-Sep-18	2-Feb-20	1.38
HITt0927	4	F (m)		3	22-Nov-16	9-Jun-18	1.55
HITt1748	3		<i>Pc, Sl</i>	3	15-Sep-18	29-Aug-20	1.96
HITt0444	4			2	18-Dec-18	24-May-20	1.43
HITt0446	4			2	18-Dec-18	25-Dec-18	0.02
HITt0585	3	F (g/c)		2	22-Nov-16	9-Jun-18	1.55
HITt0618	4			2	25-Dec-18	2-Feb-20	1.11
HITt0819	3			2	20-May-18	18-Dec-18	0.58
HITt1754	2			2	26-Aug-20	29-Nov-20	0.26
HITt1755	2			2	24-May-20	29-Nov-20	0.52
HITt1757	3			2	24-May-20	29-Nov-20	0.52
HITt0440	4			1	19-Jul-08	19-Jul-08	0.00
HITt0448	3			1	19-Jul-08	19-Jul-08	0.00
HITt0449	2			1	25-Aug-09	25-Aug-09	0.00
HITt0453	3	M (g)		1	5-Jan-20	5-Jan-20	0.00
HITt0455	3	M (g)		1	25-Dec-18	25-Dec-18	0.00
HITt0630	3		<i>Pc</i>	1	15-Sep-18	15-Sep-18	0.00
HITt0682	4	F (m)		1	16-May-21	16-May-21	0.00
HITt1357	4			1	18-Dec-18	18-Dec-18	0.00
HITt1518	4			1	18-Dec-18	18-Dec-18	0.00
HITt1523	4			1	26-Aug-20	26-Aug-20	0.00
HITt1749	3			1	13-Oct-18	13-Oct-18	0.00
HITt1750	2			1	18-Dec-18	18-Dec-18	0.00
HITt1753	2			1	26-Aug-20	26-Aug-20	0.00
HITt1756	1			1	24-May-20	24-May-20	0.00

TABLE S2 Results of the test for preferred/avoided associations conducted on the 165 bottlenose dolphins (*Tursiops truncatus*) encountered at least twice with good distinctiveness and photo quality. The null hypothesis is that all individuals within the network associate with each other at random. The mean test statistic of the observed social network, that of the 20,000 permuted network, and the number of permutations with lower test statistic than the observed network are reported. The *p*-value for the permutation analysis of each statistic is reported. The non-significant difference between mean of the real and permuted networks indicates that individuals appear to form short-term associations at random, while the significant difference between the *SD* and *CV* of the real and permuted networks indicates that individuals display preferences for specific animals when forming long-term associations.

Test statistic	Real mean	Permuted mean	Real/random	<i>p</i> (1-sided)
Mean	0.04748	0.04702	19,404/20,000	.9702
<i>SD</i>	0.13741	0.13318	20,000/20,000	<.0001
<i>CV</i>	2.89390	2.83252	19,999/20,000	<.0001

TABLE S3 Mixed species groups involving bottlenose dolphins (*Tursiops truncatus*) from CRC encounter data, out of 286 encounters with bottlenose dolphins around the main Hawaiian Islands (MHI). Percentages are relative to the total # of mixed species encounters for that area. Aggressive encounters were defined based on observer notes suggestive of harassment. Note that all aggressive spinner interactions described in the paper came from community science contributions and are therefore not shown in this table (see Table S4 for details of all aggressive interactions involving bottlenose dolphins off Hawai‘i Island).

Species	Number of mixed species encounters involving bottlenose dolphins			
	All MHI excluding Hawai‘i Island	Hawai‘i Island only	# aggressive mixed-species encounters all MHI excluding Hawai‘i Island	# of aggressive mixed-species encounters Hawai‘i Island (%), distance to farm
<i>Mesoplodon densirostris</i>	0	1	NA	0
<i>Pseudorca crassidens</i>	4	4	2 (50%)	0
<i>Megaptera noveangliae</i>	46	0	2 (4%)	NA
<i>Peponocephala electra</i>	0	1	NA	1 (100%), 29 km
<i>Stenella attenuata</i>	8	6	0	0
<i>Feresa attenuata</i>	1	1	0	0
<i>Steno bredanensis</i>	4	0	0	NA
<i>Globicephala macrorhynchus</i>	0	5	NA	0
<i>Stenella longirostris</i>	0	0	NA	NA

TABLE S4 Detailed narratives of aggressive or likely aggressive interspecific interactions involving bottlenose dolphins (*Tursiops truncatus*) and directed towards other cetaceans off Hawai‘i Island.

Date	Species	Narrative
18 August 2010	<i>Peponocephala electra</i>	In August 2010 a pair of bottlenose dolphins (neither of whom were known farm associates) was encountered harassing a group of approximately 190 melon-headed whales (<i>Peponocephala electra</i>) ~30 km north of the farm.
15 September 2018	<i>Pseudorca crassidens</i>	In September 2016 a group of six bottlenose dolphins (HITt0201, HITt0630, HITt0812, HITt0814, HITt0894, HITt1748) at the farm rapidly approached a passing pair of false killer whales (<i>Pseudorca crassidens</i>) comprised of an adult male and a calf, identified as members of the endangered main Hawaiian Islands population as determined based on comparison to CRC’s false killer whale photo-identification catalog (Baird et al., 2008). ¹ The dolphins appeared to harass the pair, attempting to steal a fish they were carrying, and closely flanking and repeatedly leaping at them for a period in excess of 45 min. The false killer whales were visibly agitated during the encounter and began tail slapping.
18 December 2018	<i>Stenella attenuata</i>	In December 2018 a pair of bottlenose dolphins (HITt0201, HITt0813) was observed interacting with a mother-calf pair of pantropical spotted dolphins (<i>Stenella attenuata</i>) at the farm. In this encounter, the bottlenose dolphins separated the spotted dolphin calf from its mother, and briefly chased it. The calf repeatedly leapt from the water, with one of the bottlenose dolphins underwater close behind it. The encounter ended with the calf and one of the bottlenose dolphins (HITt0813), swimming side-by-side for a while. It is unknown whether the calf was reunited with its mother.
October 2016	<i>Stenella longirostris</i>	On an unknown date in October 2016, HITt0201 was documented chasing a spinner dolphin (<i>Stenella longirostris</i>) near Kailua Bay (over 5 km away from the farm ²).
24 October 2016	<i>Stenella longirostris</i>	HITt0201 was filmed attempting to mate with a spinner dolphin at an unknown location along the Kona coastline. ³ While no overt aggression was filmed during the encounter, the spinner dolphin had severe fresh rake marks on its fluke that were of the appropriate size to have come from a bottlenose dolphin, suggesting that the encounter became aggressive at some point prior to filming.
13 November 2016	<i>Stenella longirostris</i>	In November 2016, HITt0201 was filmed biting the fluke and peduncle of a spinner dolphin.
2 February 2020	<i>Stenella longirostris</i>	In February 2020, a pair of bottlenose dolphins (HITt0201, HITt1748) were photographed in close association with a spinner dolphin within 5 km of the farm. HITt0201 was photographed leaping onto the spinner dolphin in what may have been an attempt to push it underwater, and the spinner dolphin had several open rake marks across its dorsal fin. The outcome for the spinner dolphin is unknown.

4 August 2020	<i>Stenella longirostris</i>	In August 2020, HITt0201 was seen interacting with a spinner dolphin within 5 km of the farm (Videos S2, S3). During this encounter, HITt0201 initially gently mouthed the spinner dolphin, but gradually became increasingly aggressive, exposing its penis, and pursuing and biting at the peduncle, pectoral fins, and fluke of the spinner, leaving behind severe open rake marks. Eventually, HITt0201 appeared to be attempting to hold the spinner dolphin underwater by dragging down on its pectoral fins. The spinner dolphin leapt out of the water repeatedly during the encounter and appeared to be trying to escape. The outcome for the spinner dolphin is unknown.
19 October 2021	<i>Stenella longirostris</i>	In October 2021 an aggressive interaction was documented at Kealakekua Bay (over 5 km from the farm), between an unidentified bottlenose dolphin and a group of 10–12 spinner dolphins. During this encounter, the bottlenose dolphin separated a single spinner dolphin from the group, then repeatedly lifted it out of the water and pushed it underwater by rolling on top of it.

¹Baird, R. W., Gorgone, A. M., McSweeney, D. L., Salden, D. R., Deakos, M. H., Ligon, A. D., Schorr, G. S., Barlow, J., & Mahaffy, S. D. (2008). False killer whales (*Pseudorca crassidens*) around the main Hawaiian Islands: long-term site fidelity, inter-island movements, and association patterns. *Marine Mammal Science*, 24(3), 591–612. <https://doi.org/10.1111/j.1748-7692.2008.00200.x>

²Tavernier, T. (2016). *Intimate encounter from a bottle nose with a spinner* [video]. Youtube. <https://www.youtube.com/watch?v=wWEVFiPPq4>

³Bloom, S. (2016). *Bottlenose Dolphin and Hawaiian Spinner Dolphin Mating Kailua Kona, Hawaii* [video]. Youtube. https://www.youtube.com/watch?v=xrHW3iZ_MDw

TABLE S5 Details of 2021–2022 CRC and community science opportunistic surveys of Makako Bay, showing that spinner dolphins (*Stenella longirostris*) appear to have abandoned the Bay.

Date	Source	Details
02-May-2021	CRC	No spinners
03-May-2021	CRC	Slow transit – no spinners
08-May-2021	CRC	5 min wait – no spinners
09-May-2021	CRC	Passed through bay – no spinners
23-May-2021	Cynthia Hankins	5 min wait – no spinners
24-Oct-2021	Cynthia Hankins	8 min cruise – no spinners
12-Dec-2021	Cynthia Hankins	No spinners
19-Dec-2021	Cynthia Hankins	No spinners
13-Jun-2022	Cynthia Hankins	No spinners
14-Jun-2022	CRC	No spinners
28-Oct-2022	CRC	14 min – no spinners
19-Nov-2022	CRC	10 min – no spinners

VIDEO S1 Video of a bottlenose dolphin (*Tursiops truncatus*) removing a fish from a net pen on February 14, 2018. The animal approaches the net pen, then twists rapidly. This motion spooks the fish in the net pen, causing them to press upwards against the gate and creating a small gap, through which a single fish escapes. Available at <https://youtu.be/pAdFWkJcv5Q>

VIDEO S2 Video of a bottlenose dolphin (*Tursiops truncatus*), HITt0201, during an aggressive interaction with a spinner dolphin (*Stenella longirostris*) on August 4, 2020. HITt0201 initially gently mouths the spinner dolphin, but gradually becomes increasingly aggressive, exposing its penis, and pursuing and biting at the peduncle, pectoral fins, and fluke of the spinner, leaving behind severe open rake marks. Available at <https://youtu.be/pvKG5lXRQw>

VIDEO S3 Video of a bottlenose dolphin (*Tursiops truncatus*), HITt0201, during an aggressive interaction with a spinner dolphin (*Stenella longirostris*) on August 4, 2020. HITt0201 appears to be attempting to hold the spinner dolphin underwater by dragging down on its pectoral fins. The spinner dolphin leaps out of the water repeatedly during the encounter and appears to be trying to escape. Available at <https://youtu.be/c-howsutXro>