Excerpts on genetics from 11/8/22 Wild Night presentation by Mary Duffy

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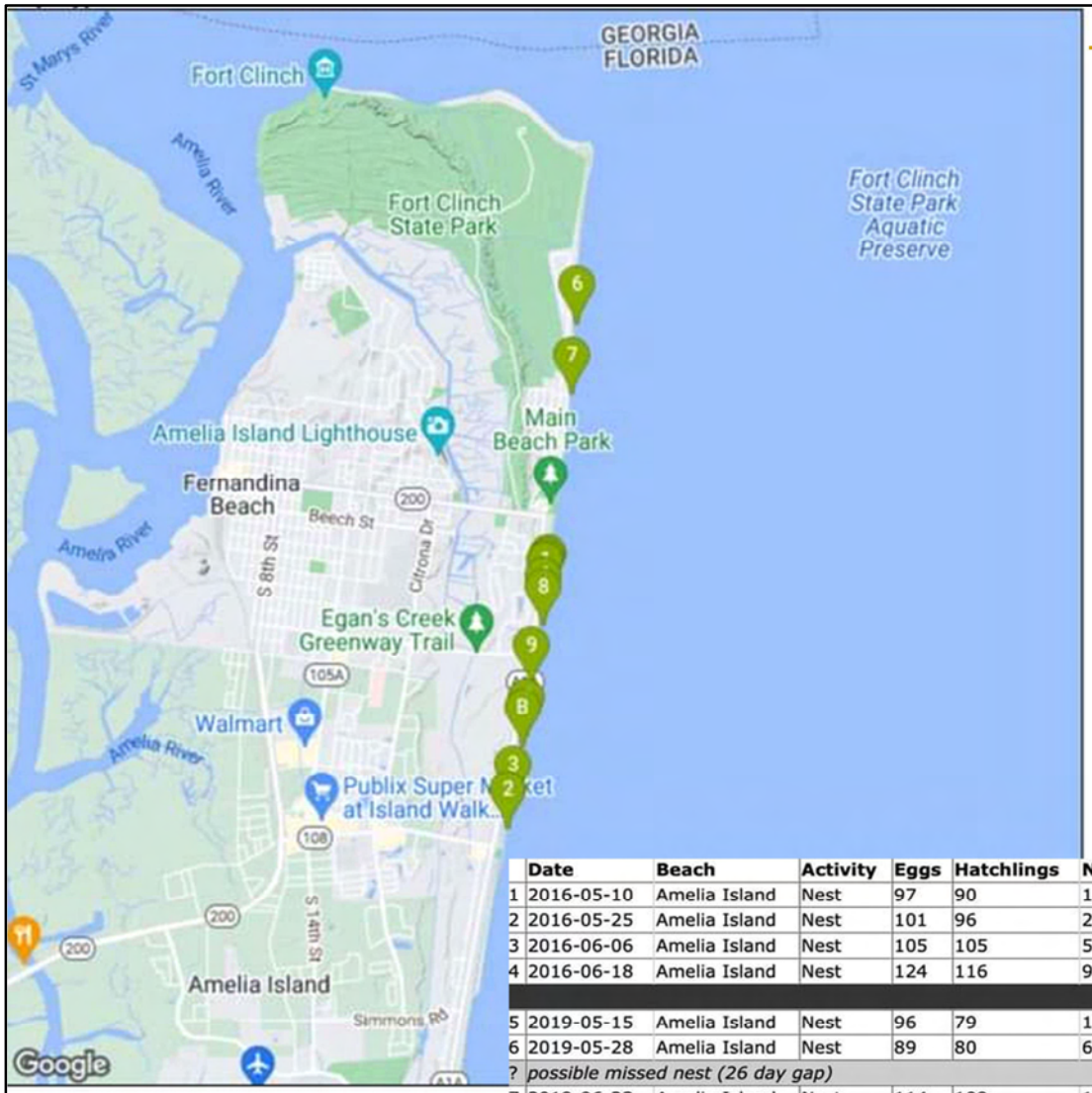
Amelia Island Sea Turtle Watch

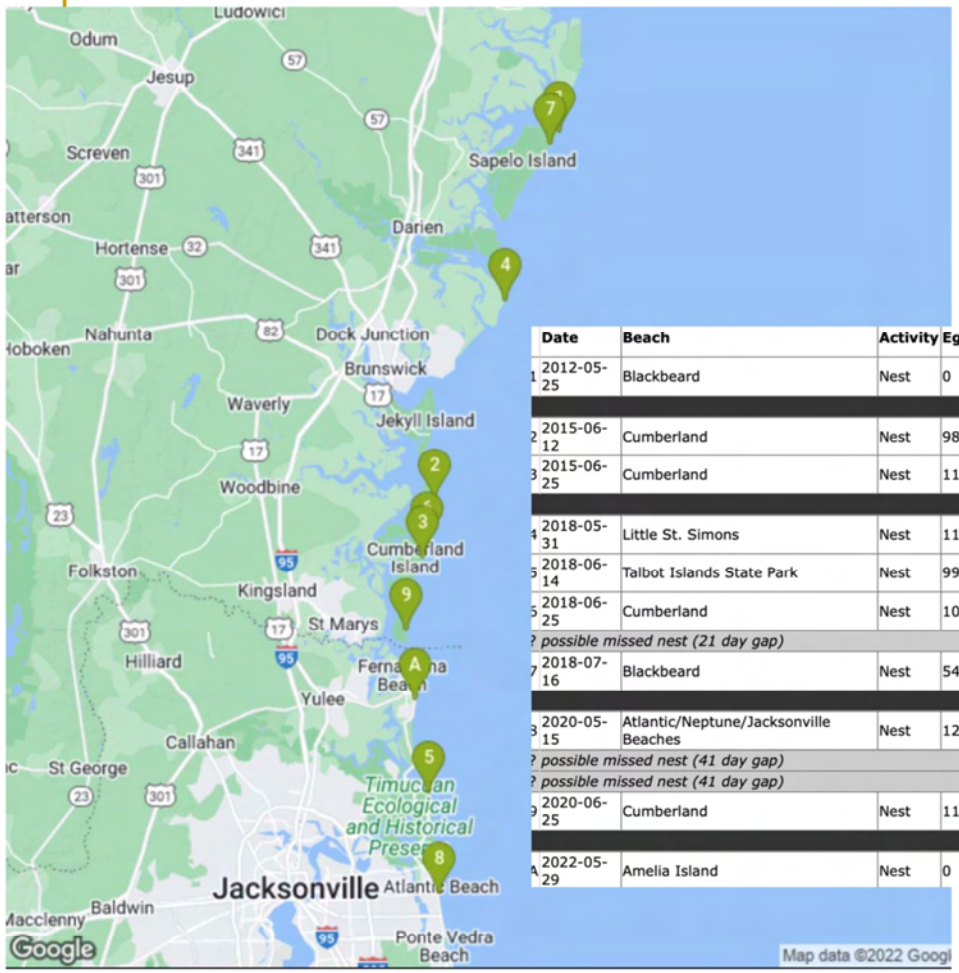
A Little About Genetics

- This is our 7th year of participating in genetic research
- We collected 1 fresh egg from each loggerhead nest
- Preliminary results from 2022



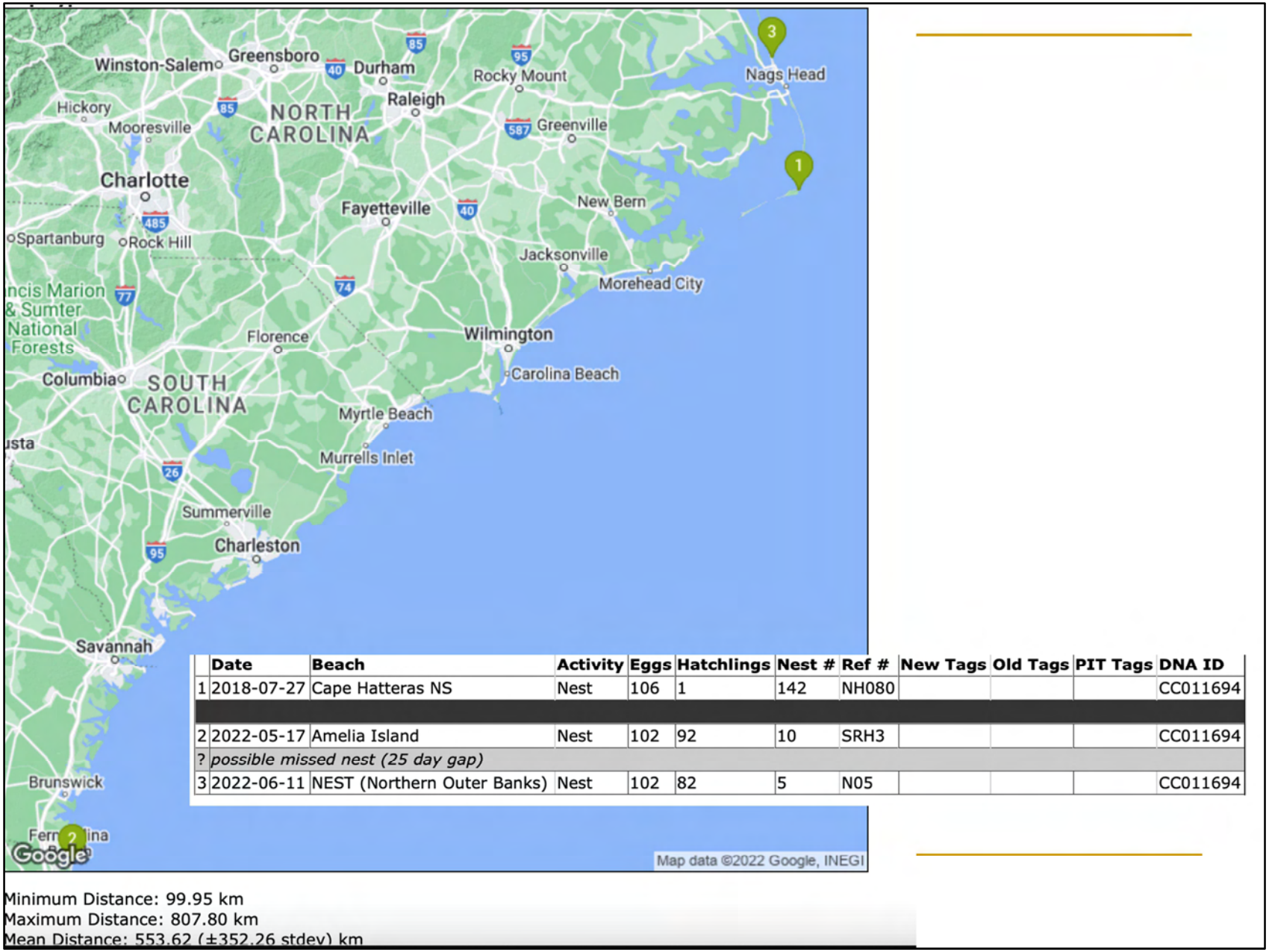
	Date	Beach	Activity	Eggs	Hatchlings	Nest #	Ref #	New Tags	Old Tags	PIT Tags	DNA ID
1	2016-05-10	Amelia Island	Nest	97	90	1	MD1				CC008618
2	2016-05-25	Amelia Island	Nest	101	96	21	LC5				CC008618
3	2016-06-06	Amelia Island	Nest	105	105	54	DHC13				CC008618
4	2016-06-18	Amelia Island	Nest	124	116	97	SH14				CC008618
5	2019-05-15	Amelia Island	Nest	96	79	13	LK1				CC008618
6	2019-05-28	Amelia Island	Nest	89	80	68	RBB12				CC008618
?	*possible missed nest (26 day gap)*										
7	2019-06-23	Amelia Island	Nest	114	109	183	VW14				CC008618
8	2019-07-04	Amelia Island	Nest	0	0	237	SRH18				CC008618
9	2022-05-16	Amelia Island	Nest	110	100	8	SRH2				CC008618
A	2022-05-29	Amelia Island	Nest	119	115	44	SRH9				CC008618
B	2022-06-09	Amelia Island	Nest	122	117	78	JEL3				CC008618
C	2022-06-19	Amelia Island	Nest	121	112	119	SRH18				CC008618

The DNA identifies each turtle named with a number. This turtle, identified as CC008618, returned to northern Amelia Island every three years, laying 4-5 nests each time. The gap in 2019 could be from a nest laid in Fort Clinch State Park, which does not participate in the genetics study.



	Date	Beach	Activity	Eggs	Hatchlings	Nest #	Ref #	New Tags	Old Tags	PIT Tags	DNA ID
1	2012-05-25	Blackbeard	Nest	0	0	61	N031				CC0090
2	2015-06-12	Cumberland	Nest	98	77	227					CC0090
3	2015-06-25	Cumberland	Nest	112	32	361					CC0090
4	2018-05-31	Little St. Simons	Nest	110	0	11	NB011				CC0090
5	2018-06-14	Talbot Islands State Park	Nest	99	90	15	LTCCN37				CC0090
6	2018-06-25	Cumberland	Nest	100	82	262					CC0090
	? possible missed nest (21 day gap)										
7	2018-07-16	Blackbeard	Nest	54	2	197	N089				CC0090
8	2020-05-15	Atlantic/Neptune/Jacksonville Beaches	Nest	121	117	2	NB-02				CC0090
	? possible missed nest (41 day gap)										
	? possible missed nest (41 day gap)										
9	2020-06-25	Cumberland	Nest	111	99	515					CC0090
A	2022-05-29	Amelia Island	Nest	0	0	46	VL5				CC0090

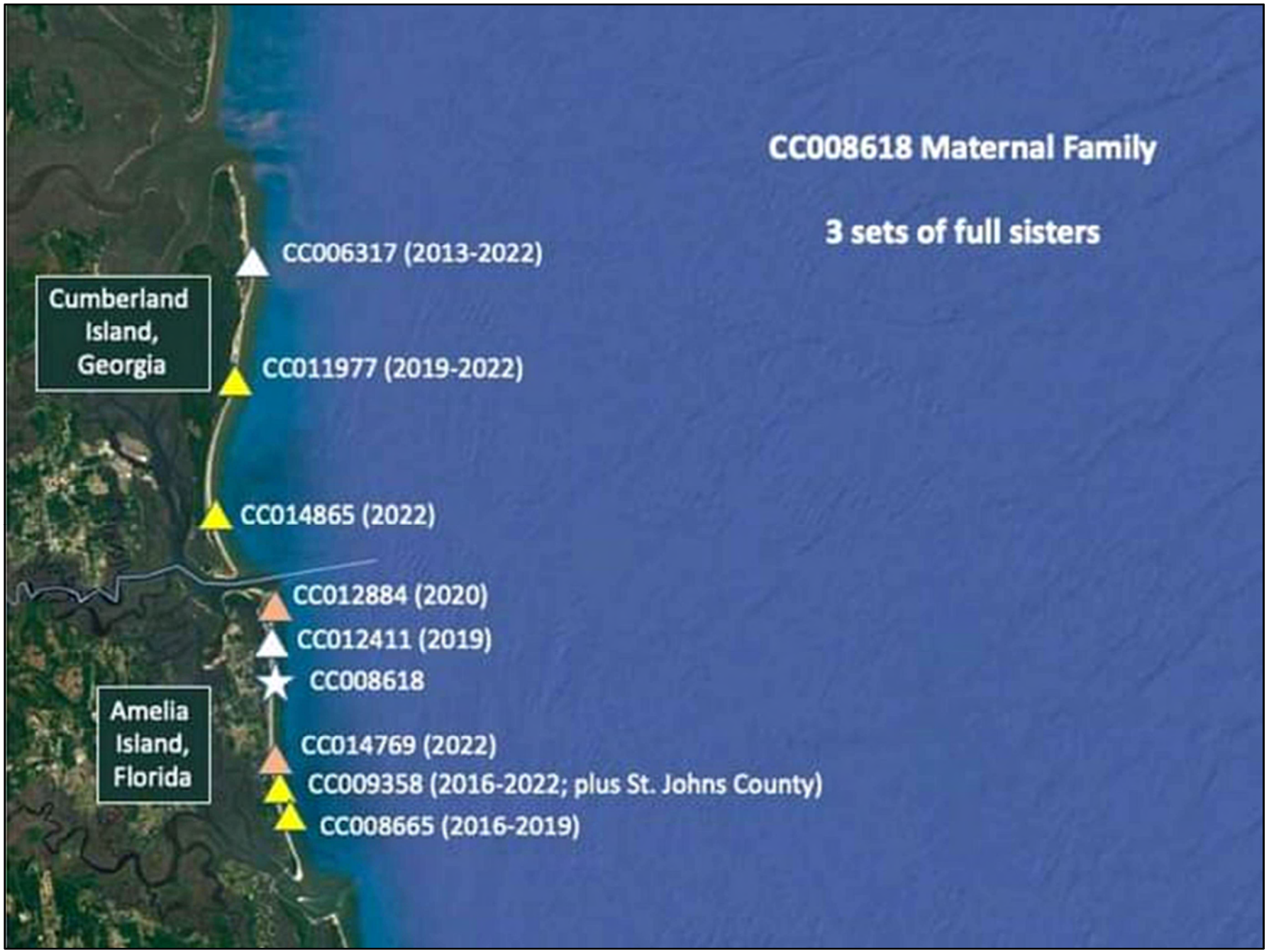
In contrast, this turtle, CC0090, chose several islands to nest at, starting at Blackbeard Island in 2012, and eventually ending up at Amelia Island in 2022. There is only one nest shown in 2022 because data is still being processed.



	Date	Beach	Activity	Eggs	Hatchlings	Nest #	Ref #	New Tags	Old Tags	PIT Tags	DNA ID
1	2018-07-27	Cape Hatteras NS	Nest	106	1	142	NH080				CC011694
2	2022-05-17	Amelia Island	Nest	102	92	10	SRH3				CC011694
?	*possible missed nest (25 day gap)*										
3	2022-06-11	NEST (Northern Outer Banks)	Nest	102	82	5	N05				CC011694

Minimum Distance: 99.95 km
Maximum Distance: 807.80 km
Mean Distance: 553.62 (±352.26 stdev) km

This turtle, CC011694, laid a nest on Amelia Island on May 17 of this year, then laid a nest on June 11 about 500 miles northeast near Nags Head on the Outer Banks.



The same mother shown earlier CC008618 (white star) has daughters identified by DNA. There are three sets of full sisters (colored triangles).

"Most often in our data, offspring from the same mother are half-siblings, so they have different fathers. This can occur via multiple paternity within nesting seasons. We also expect that for a female that nests over decades, she's unlikely to mate with the same male across years. Our working hypothesis is that these full sisters likely hatched the same year."

"These two females have five potential half-sisters and a candidate mother in the database as well. We'll need to run additional markers to confirm these relationships."