APPENDIX

TABLE A1

Overview of the GAMs used to test the effect of laying date and year on hatching success [a]

Model name	Model formula	Link function	n	AIC value
Model 1	*Hatching success ~ s(Laying date)*	binomial (logit)	126	134.47
Model 2	*Hatching success ~ s(Laying date) + Year*	binomial (logit)	126	127.63
Model 3	*Hatching_success ~ s(Laying date, by = Year) + Year*	binomial (logit)	126	124.35

[a] The smoother is cyclic 's(.., bs = 'cc'). AIC = Akaike Information Criterion

TABLE A2

Differences in sea surface temperature and chlorophyll-a concentration among groups, based on pairwise comparisons following the Kruskal-Wallis test [a]

Group (year + month)	Sea Surface Temperature	Chlorophyll-*a* concentration
15 yy mean - Oct	a	ab
2018-2019 - Oct	aj	abceo
2023-2024 - Oct	o	o
15 yy mean - Nov	b	cd
2018-2019 - Nov	a	abceo
2023-2024 - Nov	np	bcdem
15 yy mean - Dec	c	cde
2018-2019 - Dec	bc	abcdekmo
2023-2024 - Dec	npqr	abeo
15 yy mean - Jan	f	jq
2018-2019 - Jan	de	fp
2023-2024 - Jan	ghj	abcdemo
15 yy mean - Feb	d	f
2018-2019 - Feb	k	p
2023-2024 - Feb	ds	fghi
15 yy mean - Mar	e	g
2018-2019 - Mar	l	p
2023-2024 - Mar	ms	jlnq
15 yy mean - Apr	f	hi
2018-2019 - Apr	fm	fgh
2023-2024 - Apr	bc	iq
15 yy mean - May	gh	jkl
2018-2019 - May	ghi	jq
2023-2024 - May	t	abceo
15 yy mean - Jun	i	mn
2018-2019 - Jun	n	cdm
2023-2024 - Jun	pq	jkl
15 yy mean - Jul	g	cd
2018-2019 - Jul	h	dklmn
2023-2024 - Jul	r	bcdem
15 yy mean - Aug	g	ao
2018-2019 - Aug	g	abcdem
2023-2024 - Aug	n	abcdemo
15 yy mean - Sept	g	o
2018-2019 - Sep	a	ao
2023-2024 - Sep	q	abceo

[a] The first column lists the groups, while the second and third columns report significance groupings for sea surface temperature and chlorophyll-*a* concentration, respectively. Groups sharing the same letter are not significantly different, whereas groups with different letters are. Results should be read column-wise