

Supplementary material

Appendix 1. Number of individual colour-ringed yellow-legged gulls (each bird considered only once) detected at our landfill study sites for each year of observations
Abbreviations: No visits, total number of visits of observers to each landfill.

Landfills	Coordinates	Survey year	Ringed gulls seen according to colony of origin			Ringed gulls seen according to survey period			No visits
			Getaria	Santa Clara	Ulia	Breeding	Post-breeding	Pre-breeding	
Zaluaga	43° 23' N - 01° 34' W	2006-2016	241	368	2771	352	2075	971	150
Sasieta	43° 02' N - 02° 13' W	2012-2013	25	45	71	1	102	12	7
Urteta	43° 15' N - 02° 10' W	2006-2009	66	199	268	26	347	124	46
Jata	43° 11' N - 02° 46' W	2006-2013	68	66	291	17	76	17	85
Igorre	43° 24' N - 02° 50' W	2006-2016	18	15	78	43	339	31	27

Appendix 2. Summary of Generalized Linear Model (GLM) candidate models ranked by the lowest corrected Akaike Information Criteria (AICc). Here, we show the first ranked model (1), the global and the additive models (2 and 3) and the null (constant) model (4). Abbreviations: AICc, small sample size-corrected Akaike values; Δ AICc, difference in AICc values in relation to the first model. Landfills: Zaluaga, Sasieta, Urteta, Igorre and Jata. Colonies: Ulia, Santa Clara and Getaria. Periods: pre-breeding, breeding and post-breeding. Age classes: 1st-, 2nd-, 3rd-, 4th-year and > 4 years old birds.

Models	AICc	Δ AICc	Akaike weight
1. landfill \times colony + landfill \times period + age	5446.8	0.00	0.923
2. landfill \times colony \times period + age	5456.8	9.97	0.006
3. landfill + colony + period + age	5895.7	448.95	0.000
4. null	10657.1	5210.29	0.000

Appendix 3. Frequency distribution of the response variable (counts).

