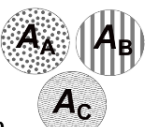



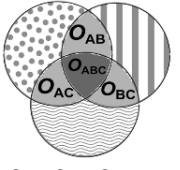
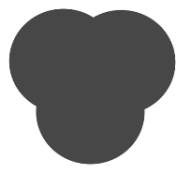
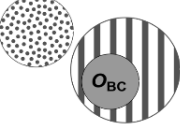



Individual core areas	Core area union	Spatial gregariousness
$K = 3$ $j = 3$  $O_2 = 0$ $O_3 = 0$ $\sum_{i=2}^j (i * O_i) = 0$	 $A = A_A + A_B + A_C$	$gSGI = 0 / 3 * (A_A + A_B + A_C) = 0$ $iSGI_A = 0 / 3 * A_A = 0$ $iSGI_B = 0 / 3 * A_B = 0$ $iSGI_C = 0 / 3 * A_C = 0$ <b>No spatial overlap</b>
$K = 3$ $j = 3$  $O_2 = 0$ $O_3 = O_{ABC}$ $\sum_{i=2}^j (i * O_i) = 3 * O_{ABC}$	 $A = O_{ABC}$	$gSGI = 3 * O_{ABC} / 3 * O_{ABC} = 1$ $iSGI_A = O_{ABC} / 3 * A_A = 1$ $iSGI_B = O_{ABC} / 3 * A_B = 1$ $iSGI_C = O_{ABC} / 3 * A_C = 1$ <b>Total spatial overlap</b>
$K = 3$ $j = 3$  $O_2 = O_{AB} + O_{BC} + O_{AC}$ $O_3 = O_{ABC}$ $\sum_{i=2}^j (i * O_i) = (2 * O_2) + (3 * O_3)$	 $A = A_A + A_B + A_C - O_2 - 2 * O_3$	$gSGI = (2 * O_2 + 3 * O_3) / (3 * A)$ $iSGI_A = \frac{2(O_{AB} + O_{AC}) + 3(O_{ABC})}{3 * A_A}$ $iSGI_B = \frac{2(O_{AB} + O_{BC}) + 3(O_{ABC})}{3 * A_B}$ $iSGI_C = \frac{2(O_{AC} + O_{BC}) + 3(O_{ABC})}{3 * A_C}$ <b>Partial spatial overlap with the same iSGI for all individuals</b>
$K = 3$ $j = 3$  $O_2 = O_{BC}$ $O_3 = 0$ $\sum_{i=2}^j (i * O_i) = (2 * O_2)$	 $A = A_A + A_B + A_C - O_2$	$gSGI = (2 * O_2) / (3 * A)$ $iSGI_A = 0 / (3 * A_A) = 0$ $iSGI_B = (2 * O_{BC}) / (3 * A_B)$ $iSGI_C = (2 * O_{BC}) / (3 * A_C) = 0.67 A_C$ <b>Partial spatial overlap with a different iSGI for each individual</b>

**S3 Fig. Example calculations of the group (gSGI) and individual (iSGI) spatial gregariousness indices** in four scenarios which differ in the level of overlap ( $O$ ) among the core areas (CA) of three individuals (A, B and C). gSGI quantifies the clumping of individual CAs with respect to the total extent covered by the union of all core areas (CA union) following the expression  $(\sum_{i=2}^j i * O_i) / (K * A)$  where  $A$  is the size of the CA union;  $j$  is the maximum number of overlapping individual CAs in a certain period;  $i$  is the number of overlapping CAs with values between 2 and  $j$ ;  $O$  is the size of the area where  $i$  CAs overlap within the CA union; and  $K$  is the total number of CAs analyzed per period. Values of gSGI range between 0 and 1 where 1 indicates total spatial overlap of all possible CAs and 0 indicates no coincidence at all (i.e. completely non-overlapping CAs). iSGI quantifies how much the core area of individual  $x$  coincides with the rest of the CAs. It involves a formulation similar to gSGI where instead of  $A$ , the denominator includes the individual's core area  $A_x$ , and the overlap  $O_i$  is restricted to areas of overlap within  $A_x$ , becoming  $O_{ix}$  in the expression  $iSGI_x = (\sum_{i=2}^j i * O_{ix}) / (K * A_x)$ . Values of iSGI also range between 0 and 1 where 1 indicates total spatial overlap of the individual's CA with all other possible CAs and 0 indicates no coincidence at all between that individual's CA and any other. Both indices are adapted from the index used by José-Domínguez et al. [103].