Timing of arrival at breeding grounds determines spatial patterns of productivity within the population of white stork (*Ciconia ciconia*)

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Fig. S1 Histogram of reproductive success of white storks breeding in central Poland, 1994-2011

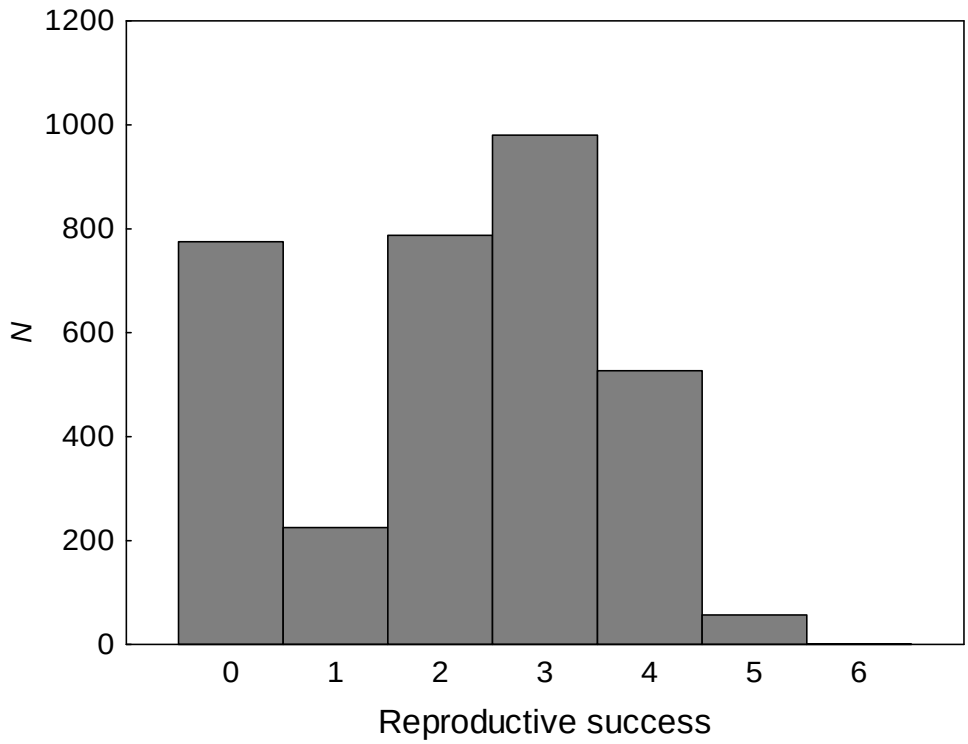


Fig. S2 Between-year variation in reproductive success of white storks breeding in central Poland, 1994-2011. All values presented as mean ± 1.96*SE

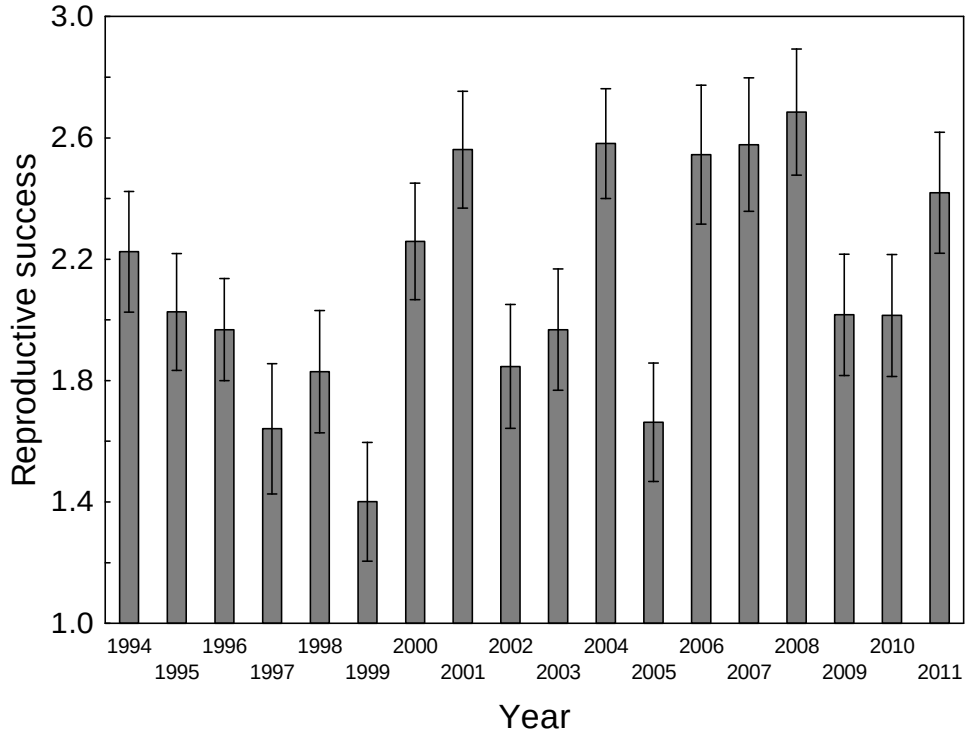


Fig. S3 Between-year variation in the timing of arrival of the first-arriving pair member within the population of white storks breeding in central Poland, 2000-2011. All values presented as mean ± 1.96*SE

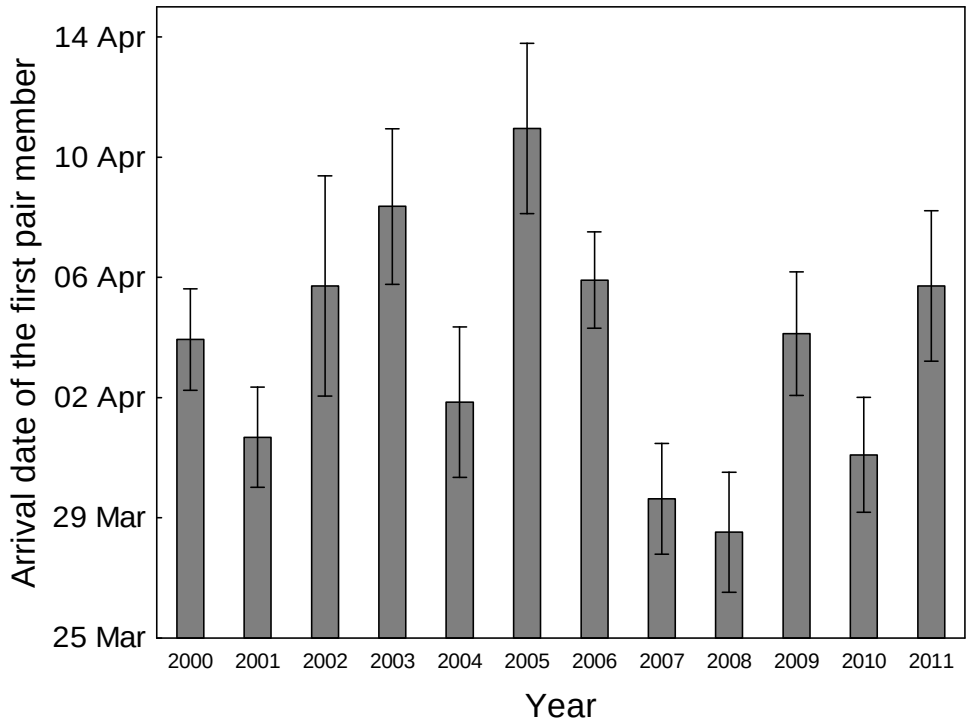


Fig. S4 Median (open circles) and quartile values (whiskers) of arrival dates of the first-arriving pair members within the population of white storks breeding in central Poland, 2000-2011

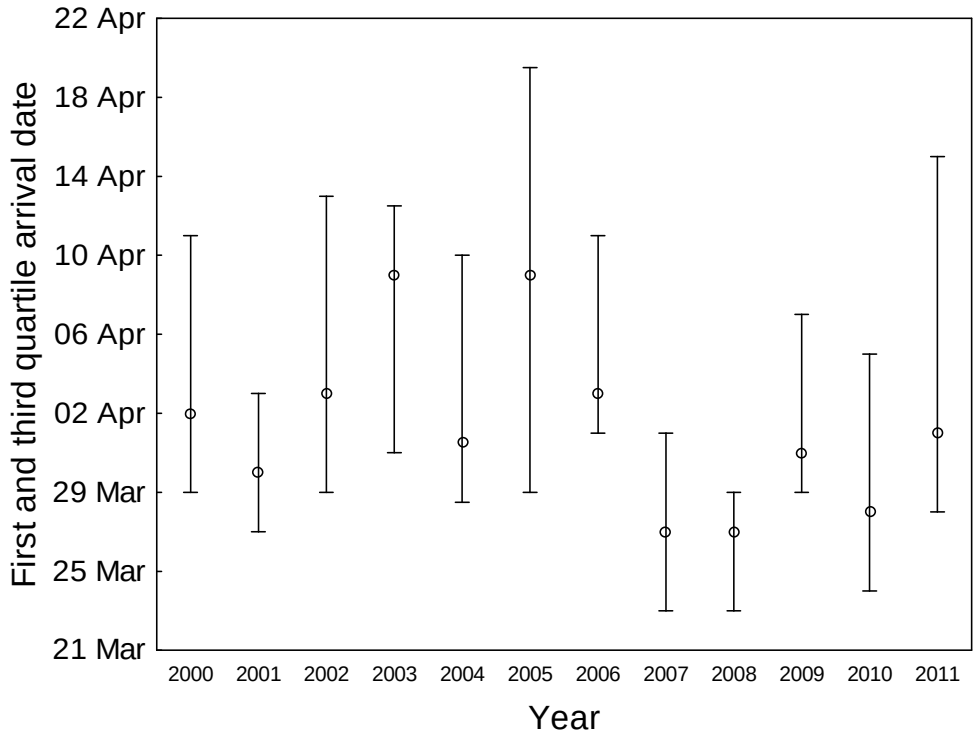


Fig. S5 Number of white stork pairs within the study area in 1994-2011, central Poland

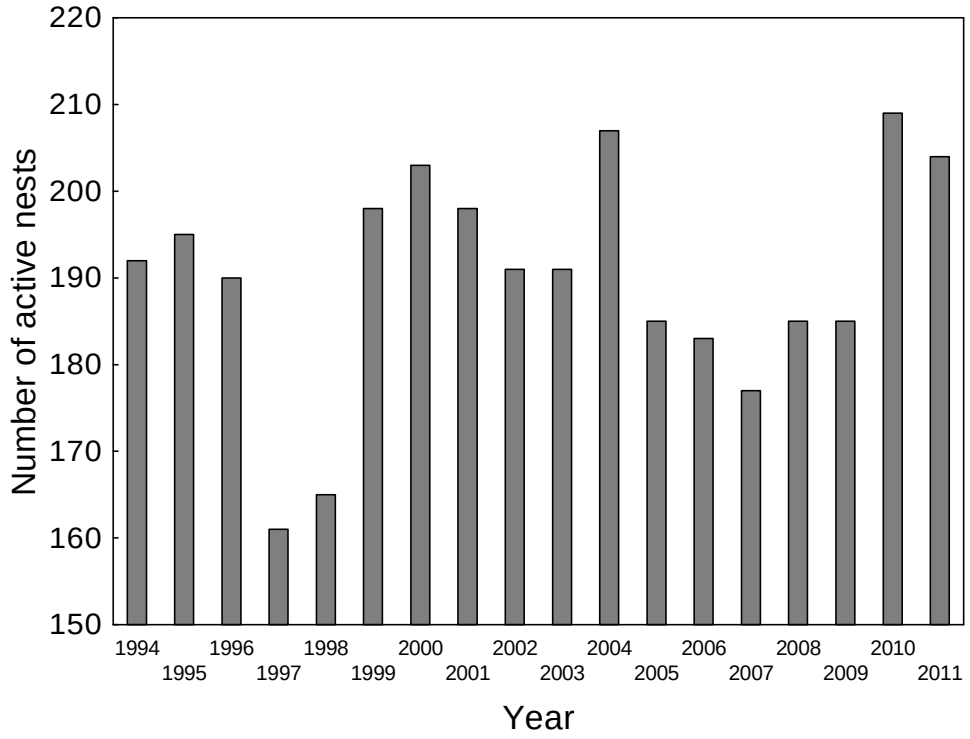
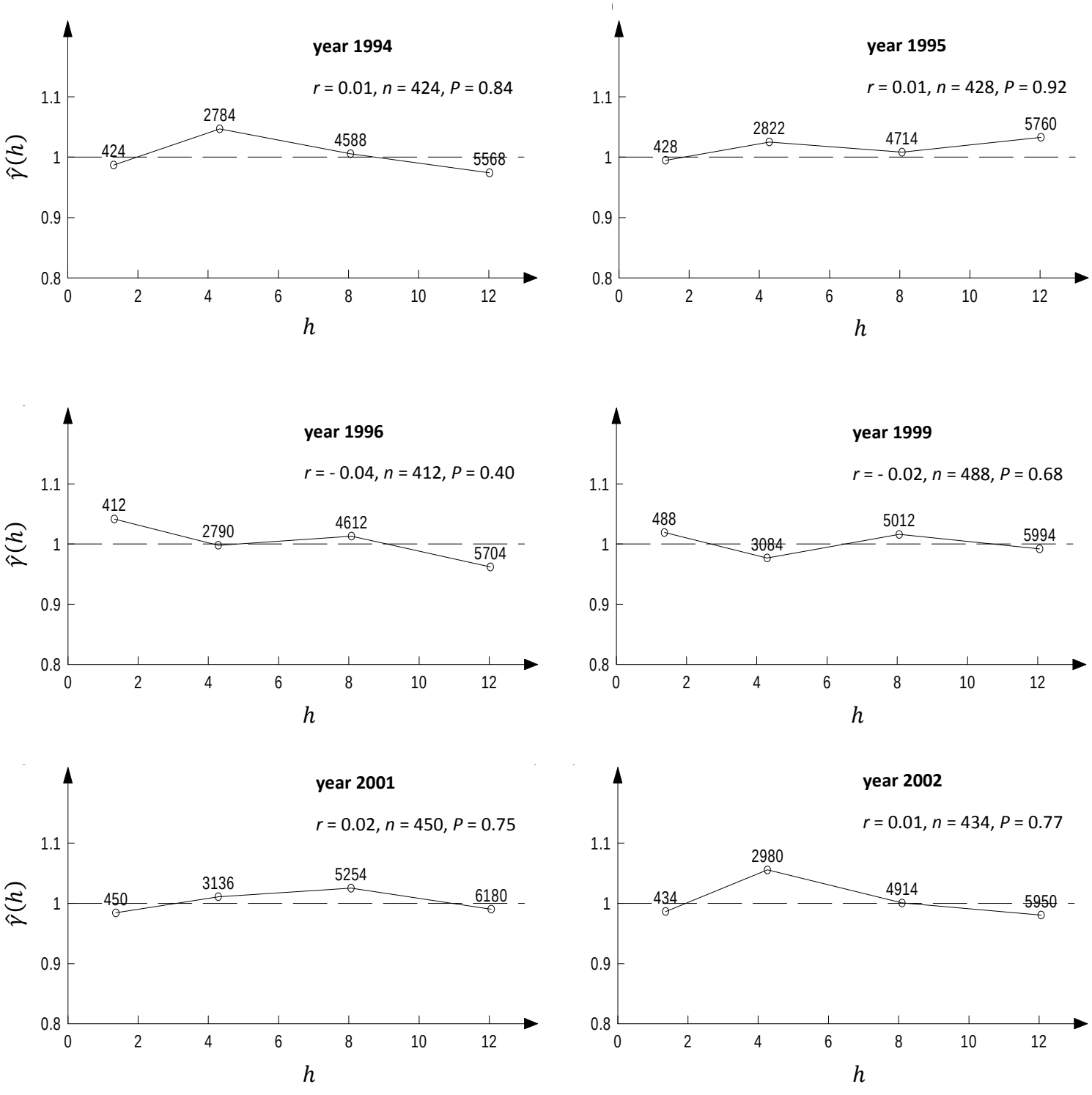
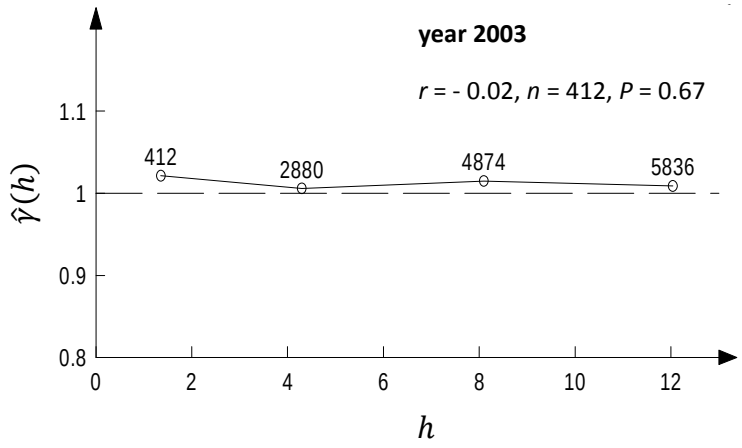
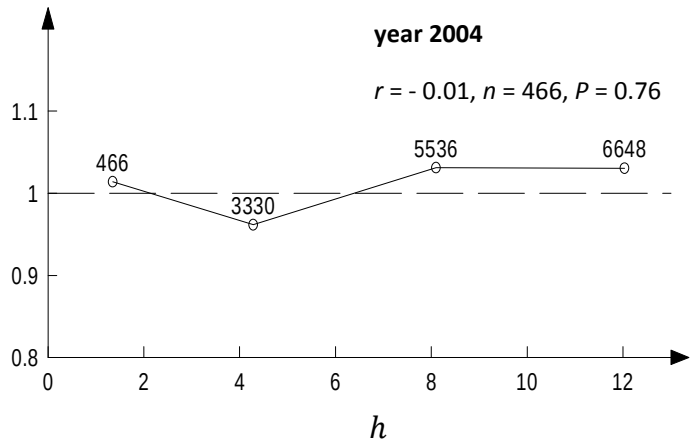
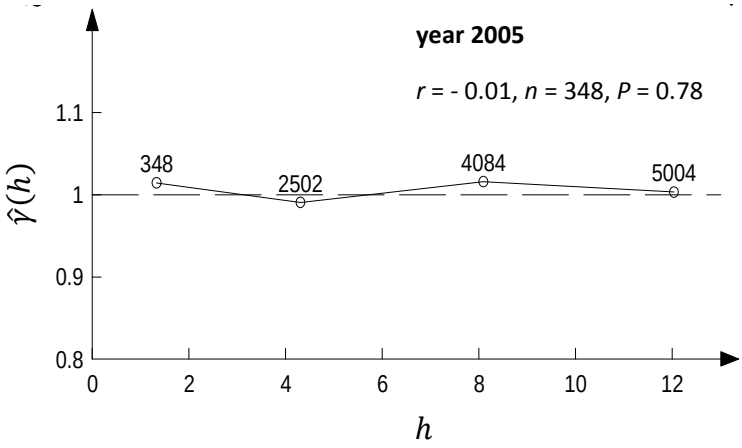


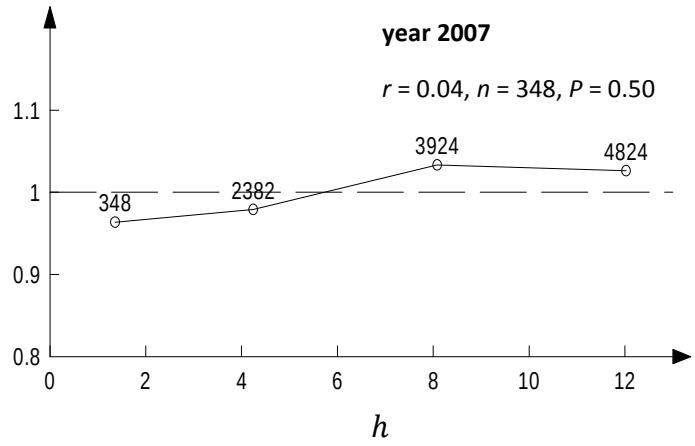
Fig. S6 Standardized variograms for reproductive success of white storks in the years with non-significant autocorrelations (random pattern of distribution) over the first lag (*h* =2 km). Semivariances $\hat{\gamma}(h)$ are shown in four chosen lags, with values >1 indicating a negative autocorrelation and values < 1 a positive autocorrelation. Dashed horizontal lines indicate standardized total variance. Numbers of pair comparisons are given in each case above the symbol

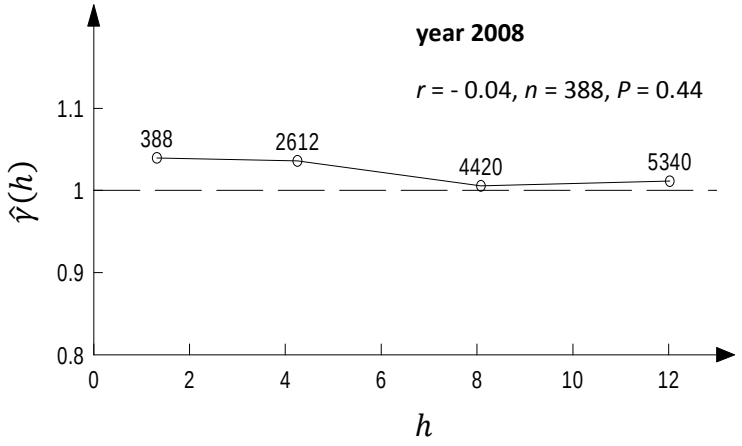


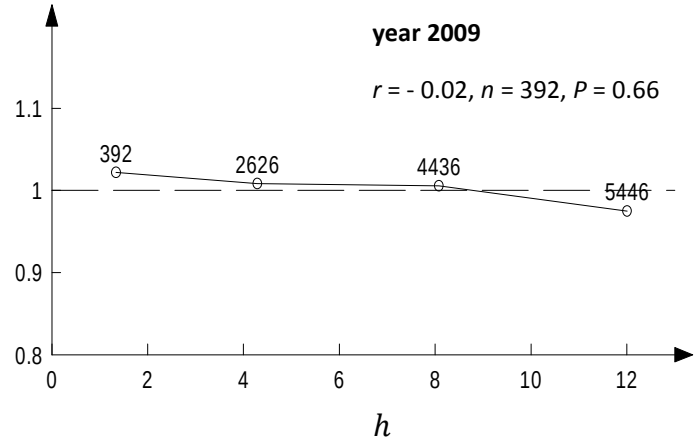

year 2003
r = - 0.02, n = 412, P = 0.67
412
2880
4874
5836
$\hat{\gamma}(h)$
h


year 2004
r = - 0.01, n = 466, P = 0.76
466
3330
5536
6648
$\hat{\gamma}(h)$
h


year 2005
r = - 0.01, n = 348, P = 0.78
348
2502
4084
5004
$\hat{\gamma}(h)$
h


year 2007
r = 0.04, n = 348, P = 0.50
348
2382
3924
4824
$\hat{\gamma}(h)$
h


year 2008
r = - 0.04, n = 388, P = 0.44
388
2612
4420
5340
$\hat{\gamma}(h)$
h


year 2009
r = - 0.02, n = 392, P = 0.66
392
2626
4436
5446
$\hat{\gamma}(h)$
h

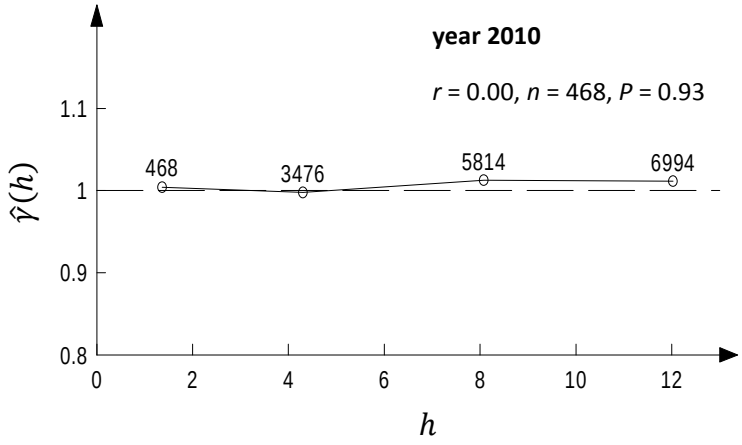

year 2010
r = 0.00, n = 468, P = 0.93
468
3476
5814
6994
$\hat{\gamma}(h)$
h

Fig. S7 Spatial distribution of white storks in the years of maximal (year 2007; random pattern of distribution) and minimal (year 2011; satellite pattern of distribution) spatial autocorrelation. For the purpose of presentation, high reproductive success (black squares) was assigned when more than two fledglings were raised (2007: *n* = 106; 2011: *n* = 104), whereas low reproductive success (open circles) was assigned when two or less fledglings were raised (2007: *n* = 71; 2011: *n* = 100). Dashed line mark the borders of the study area