

Appendix S3

Shifts of vegetation phenology at the non-breeding sites, stopover sites and breeding sites. For significant linear shifts we list the fitted values and standard deviations of green-up date [DOY] for 1982 and the 2010 as well as the resulting change rate [days/year]. When there was no significant shift we listed 29-year mean and standard deviation green-up date [DOY].

Table S1: Shifts of vegetation phenology at the non-breeding sites.

| ID | linear shift | | | | rate | no shift | |
|-----|--------------|------|------|------|------|----------|------|
| | 1982 | ± sd | 2010 | ± sd | | ø | ± sd |
| Ne1 | . | . | . | . | . | 207 | 0.48 |
| Ne2 | . | . | . | . | . | 189 | 0.75 |
| Ne3 | . | . | . | . | . | 185 | 0.81 |
| Ne4 | . | . | . | . | . | 188 | 0.72 |
| Nc1 | . | . | . | . | . | 182 | 1.14 |
| Nw1 | 185 | 1.06 | 174 | 1.16 | -0.4 | . | . |
| Nw2 | . | . | . | . | . | 199 | 0.50 |
| Nw3 | 100 | 3.25 | 137 | 3.77 | 1.3 | . | . |
| Nw4 | . | . | . | . | . | 116 | 0.90 |

Table S2: Shifts of vegetation phenology at the stopover sites.

| ID | linear shift | | | | rate | no shift | |
|-----|--------------|------|------|------|------|----------|------|
| | 1982 | ± sd | 2010 | ± sd | | ø | ± sd |
| Se1 | 342 | 1.66 | 322 | 1.70 | -0.7 | . | . |
| Se2 | . | . | . | . | . | 339 | 1.53 |
| Se3 | 15 | 2.53 | 336 | 2.53 | -1.5 | . | . |
| Se4 | 26 | 2.71 | 337 | 2.71 | -1.8 | . | . |
| Sc1 | 337 | 5.00 | 2 | 5.00 | -2.4 | . | . |
| Sw1 | . | . | . | . | . | 45 | 4.67 |
| Sw2 | . | . | . | . | . | 41 | 3.00 |
| Sw3 | . | . | . | . | . | 110 | 0.87 |
| Sw4 | . | . | . | . | . | 68 | 5.15 |

Table S3: Shifts of vegetation phenology at the breeding sites.

| ID | linear shift | | | | rate | no shift | |
|----|--------------|------|------|------|------|----------|------|
| | 1982 | ± sd | 2010 | ± sd | | ø | ± sd |
| Be | . | . | . | . | . | 108 | 0.78 |
| Bc | . | . | . | . | . | 108 | 0.66 |
| Bw | 118 | 1.63 | 99 | 1.81 | -0.6 | . | . |