Table S1: The number of samples per year at each survey site in the landscape.

		Year									
Site	Site Type	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
HR1	Hedgerow	2	3	3	3	-	3	4	5	3	4
HR2	Hedgerow	4	3	3	3	-	3	4	5	3	4
HR3	Hedgerow	-	-	-	-	-	-	4	4	-	2
HR4	Hedgerow	-	3	3	3	-	3	4	5	3	4
HR5	Hedgerow	-	-	-	-	-	-	-	5	3	-
HR6	Hedgerow	2	3	3	3	-	3	4	5	3	4
HR7	Hedgerow	-	-	-	-	-	-	3	5	3	-
HR8	Hedgerow	-	3	3	3	-	3	4	5	1	3
HR9	Hedgerow	-	-	-	-	-	-	3	5	3	3
HR10	Hedgerow	-	-	-	-	-	-	3	5	3	-
HR11	Hedgerow	-	-	-	-	-	-	4	3	2	-
HR12	Hedgerow	-	-	1	4	4	2	4	5	3	-
HR13	Hedgerow	-	-	-	-	-	-	4	5	3	-
HR14	Hedgerow	-	-	-	3	-	2	4	5	3	-
HR15	Hedgerow	-	-	-	-	4	2	6	4	3	-
HR16	Hedgerow	-	-	-	-	-	-	4	5	-	-
HR17	Hedgerow	-	-	-	4	4	2	4	5	3	3
HR18	Hedgerow	-	-	-	3	-	1	4	5	3	-
FM1	Field margin	-	-	-	3	4	-	3	5	3	-
FM2	Field margin	4	2	3	-	-	-	-	-	-	-
FM3	Field margin	-	3	3	3	-	3	4	4	3	-
FM4	Field margin	-	-	-	-	-	-	3	3	2	-
FM5	Field margin	-	3	3	3	-	2	3	4	1	2
FM6	Field margin	-	-	-	3	-	-	4	5	2	-
FM7	Field margin	-	-	-	-	-	-	1	5	2	-
FM8	Field margin	4	3	2	2	-	3	4	5	2	4
FM9	Field margin	-	3	3	3	-	3	4	5	3	4
FM1-	Field margin	4	3	2	3	-	3	3	5	2	4
FM11	Field margin	-	-	-	4	-	-	2	3	1	-
FM12	Field margin	-	3	3	2	-	3	-	-	-	-
FM13	Field margin	-	-	-	3	4	-	3	5	1	-
FM14	Field margin	-	-	-	-	-	-	-	5	3	-
FM15	Field margin	-	-	-	-	-	-	-	5	2	-
FM16	Field margin	-	3	3	3	-	3	4	2	-	2
FM17	Field margin	-	3	3	3	-	3	2	4	2	-
FM18	Field margin	3	3	3	3	-	3	4	5	3	4
FM19	Field margin	4	3	3	2	-	3	3	4	1	-
FM20	Field margin	-	-	-	-	-	-	4	5	2	-
FM21	Field margin	-	-	-	-	4	-	4	4	3	-

Table S2: Landcover classifications and whether they provided potential floral resources for bees and thus were included in calculations of remnant habitat.

Classification	Bee resources
Acacia - Robinia Alliance	yes
Alkali Bulrush - Bulrush Brackish Marsh NFD Super Alliance	yes
Alkali Sink	no
Barren - Anthropogenic	no
Barren - Gravel and Sand Bars	no
Black Oak Alliance	yes
Blackberry NFD Super Alliance	yes
Blue Oak Alliance	yes
Bullrush - Cattail Wetland Alliance	yes
Bulrush - Cattail Fresh Water Marsh NFD Super Alliance	yes
California Annual Grasslands Alliance	yes
California Bay - Leather Oak - (Rhamnus spp.) Mesic Serpentine NFD Super Alliance	yes
California Juniper Alliance	yes
Canyon Live Oak Alliance	yes
Carex spp. - Juncus spp - Wet Meadow Grasses NFD Super Alliance	yes
Chamise - Wedgeleaf Ceanothus Alliance	yes
Chamise Alliance	yes
Citrus/Subtropical	no
Coyote Brush	yes
Crypsis spp. - Wetland Grasses - Wetland Forbs NFD Super Alliance	yes
Deciduous Fruits/Nuts	no
Eucalyptus Alliance	yes
Evergreen Shrubland	yes
Field Crops	no
Foothill Pine / Mesic Non-serpentine Chaparral NFD Association	yes
Foothill Pine Alliance	yes
Fremont Cottonwood - Valley Oak - Willow (Ash - Sycamore) Riparian Forest NFD Association	yes
Giant Reed Series	no

Grain/Hay Crops	no
Great Valley Valley Oak Riparian Association	yes
Interior Live Oak - Blue Oak - (Foothill Pine) NFD Association	yes
Interior Live Oak Alliance	yes
Intermittently Flooded to Saturated Deciduous Shrubland	yes
Knobcone Pine Alliance	yes
Leather Oak - California Bay - Rhamnus spp. Mesic Serpentine NFD Alliance	yes
Leather Oak - White Leaf Manzanita - Chamise Xeric Serpentine NFD Super Alliance	yes
Leather Oak Chaparral Alliance	yes
Levee	no
Lotus scoparius Alliance (post-burn)	yes
McNab Cypress Alliance	yes
Mixed Fremont Cottonwood - Willow spp. NFD Alliance	yes
Mixed Manzanita - (Interior Live Oak -California Bay - Chamise) NFD Alliance	yes
Mixed Oak Alliance	yes
Mixed Willow Super Alliance	yes
Pasture	no
Perennial Bunchgrass Restoration Sites	yes
Perennial pepperweed (Lepidium latifolium) Alliance	yes
Rice	no
Rock Outcrop	no
Saltgrass Alliance	yes
Scrub Oak Chaparral Alliance	yes
Semiagricultural/Incidental to Agriculture	no
Serpentine Barren	no
Serpentine Grasslands NFD Super Alliance	yes
Sparse Bush Lupine / Annual Grasses / Rock Outcrop NFD Alliance	yes
Sparse California Juniper-Canyon Live Oak-California Bay-California Buckeye / Steep Rock Outcrop NFD Alliance	yes
Tamarisk Alliance	yes
Toyon - (Foothill Pine / Chamise)/Annual Grasses Savanna NFD Alliance	yes

Truck/Nursery/Berry Crops	no
Upland Annual Grasslands & Forbs Formation	yes
Urban or Built-up	no
Valley Oak - Fremont Cottonwood - (Coast Live Oak) Riparian Forest NFD Association	yes
Valley Oak Alliance	yes
Valley Oak Alliance - Riparian	yes
Vernal Pool Complx	yes
Vineyards	no
Water	no
White Alder (Mixed Willow) Riparian Forest NFD Association	yes
White Leaf Manzanita - Leather Oak - (Chamise - Ceanothus spp.) Xeric Serpentine NFD Super Alliance	yes
Whiteleaf Manzanita Alliance	yes

[1]

Model	α HR	α Remnant	WAIC
1	350	350	11225.61
2	350	1000	10930.18
3	**350**	**2500**	**10842.01**
4	1000	350	10938.62
5	1000	1000	11288.68
6	1000	2500	11025.02
7	2500	350	11016.98
8	2500	1000	11121.83
9	2500	2500	10927.53

Table S3: WAIC values for the models with different combinations Gaussian decay rates (α) for hedgerows (HR) and remnant habitat. A decay of 350 for hedgerows and 2500 for remnant habitat was best supported by the data (bolded).

Scale/process	Variable	Persistence			Colonization		
		Mean (SD)	$prob > 0$	$prob < 0$	Mean (SD)	$prob > 0$	$prob < 0$
Landscape	**Hedgerow proximity**	-0.5(0.26)	0.03	**0.97**⋆	0.42(0.17)	**0.99**⋆	0.01
	Remnant habitat proximity	0.29(0.27)	0.88	0.12	-0.27(0.18)	0.05	**0.95**⋆
Local	**Floral diversity**	0.64(0.2)	**1**⋆	0	0.32(0.11)	**1**⋆	0
Habitat selection	**Floral diet breadth**	0.85(0.27)	**1**⋆	0	0.34(0.16)	**0.98**⋆	0.02
Dispersal	**Body size**	-0.06(0.18)	0.38	0.62	-0.38(0.15)	0.01	**0.99**⋆
Local*Landscape	**Floral diversity*Hedgerow proximity**	-0.29(0.27)	0.13	**0.90**†	0.33(0.15)	**0.98**⋆	0.02
	Floral diversity*Remnant proximity	0.05(0.23)	0.58	0.42	-0.31(0.15)	0.02	**0.98**⋆
Habitat selection*Landscape	**Floral diet breadth*Hedgerow proximity**	0.71(0.25)	**1**	0	-0.27(0.17)	0.05	**0.95**⋆
	Floral diet breadth*Remnant proximity	-0.11(0.26)	0.34	0.66	-0.05(0.18)	0.38	0.62
Dispersal*Landscape	Body size*Hedgerow proximity	0.03(0.21)	0.55	0.45	0.01(0.15)	0.52	0.48
	Body size*Remnant proximity	0.36(0.21)	**0.96**⋆	0.04	-0.26(0.15)	0.04	**0.96**⋆

Table S4: Excluding the super-generalists, *L. incompletum* and *H. tripartitus*, the mean and standard deviation of the posterior distributions of the occupancy model coefficients, as well as posterior probabilities (proportion of the posterior greater than zero or less than zero) for the model parameters. The coefficients reported for the effects of hedgerow proximity, remnant proximity, and floral diversity are the means of the community-level distributions, $\mu_{\beta[s]}$ and $\mu_{B[s]}$). ⋆ and † indicate that 95% (strong support), or 90% (marginal support) of the posterior is either greater than or less than zero, respectively. Strongly and marginally significant variables and posterior probabilities are bolded. The posterior probabilities that are substantially different than the results from the model including the super-generalists are in red.

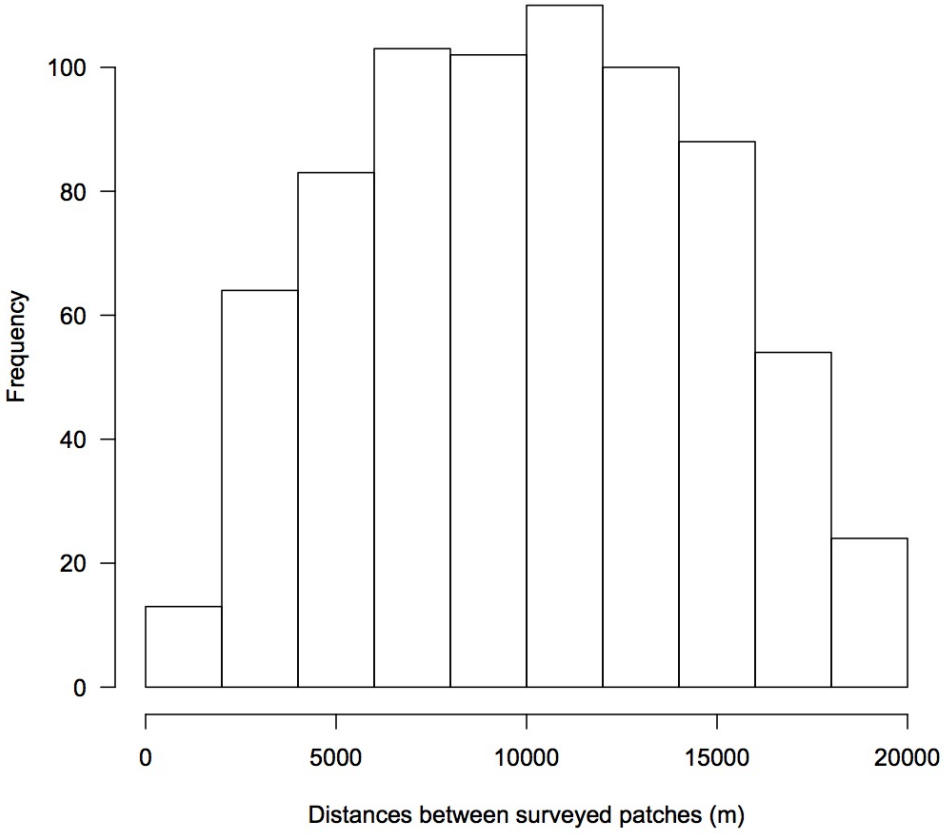

Figure S1: The distribution of pair-wise distances between survey patches.

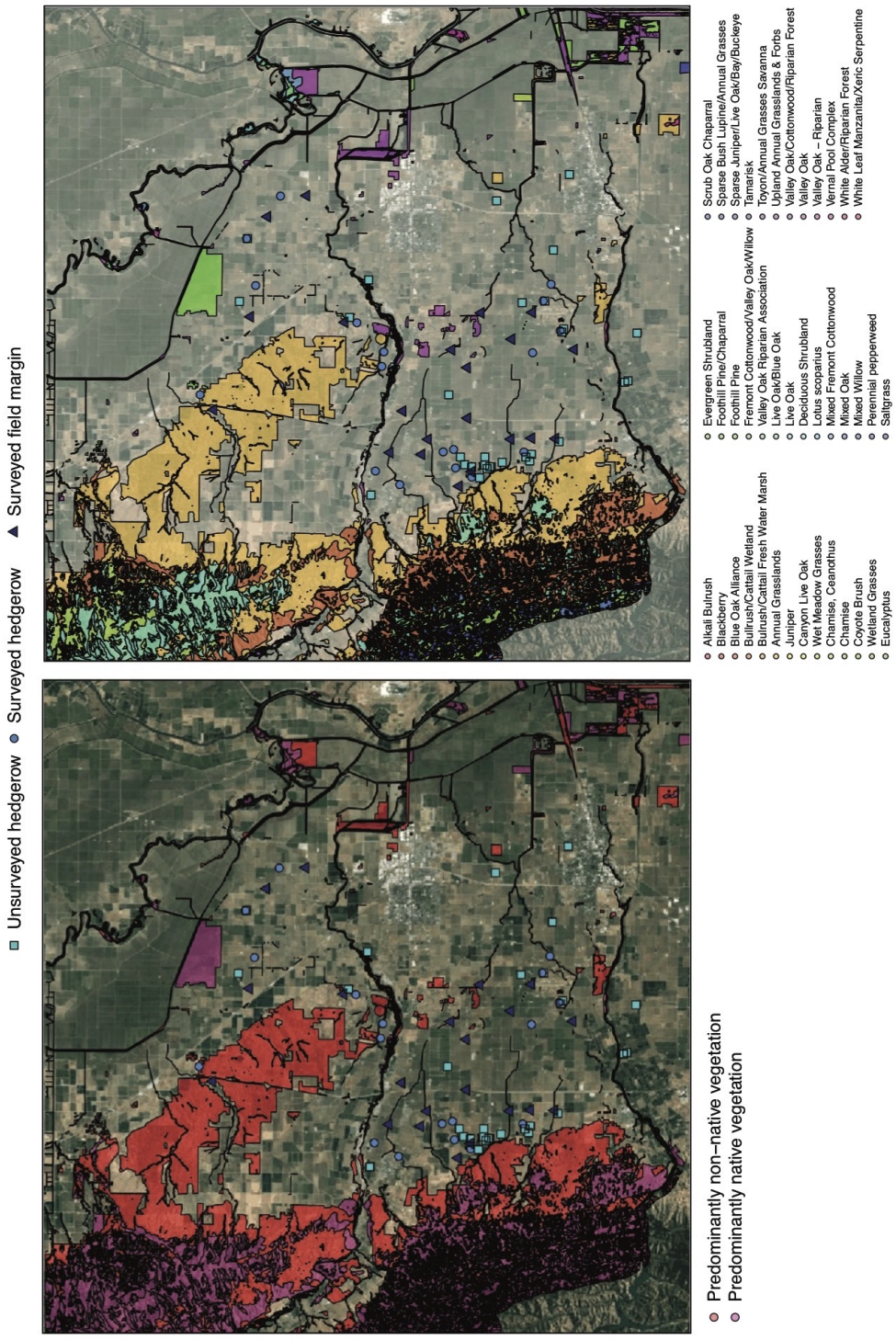

Figure S2: The distribution of cover classes with the potential to provide resources to bees across Yolo county.

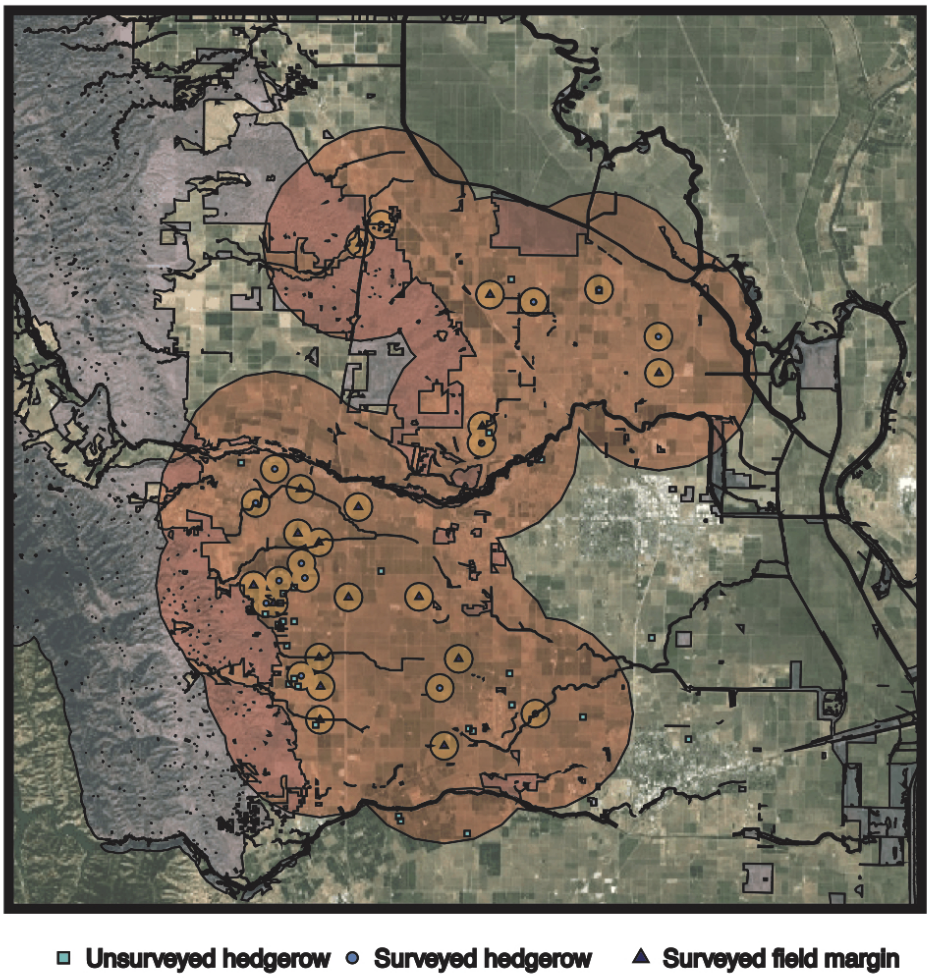

Figure S3: Survey sites (hedgerows and field margins) in the landscape with 1 km (orange) and 7 km (red) buffers around them. Remnant habitat is shaded in blue with a black boarder.

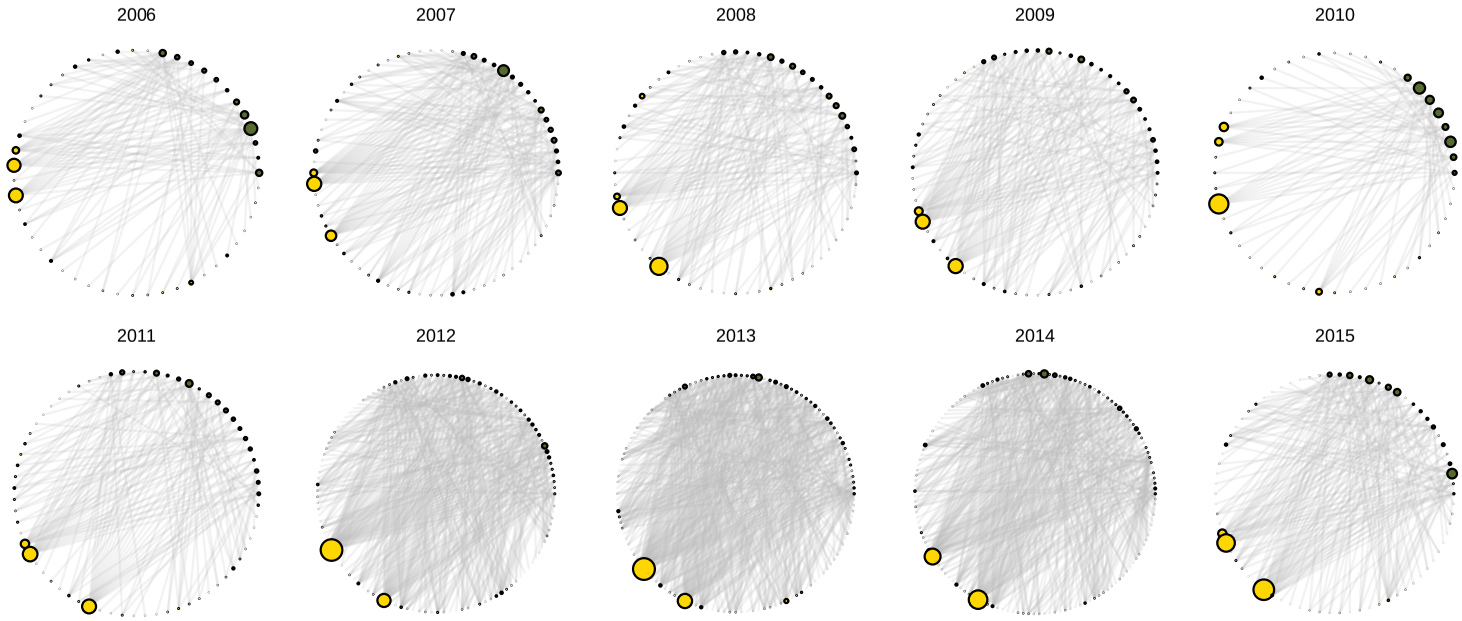

Figure S4: Networks of pollinators within each year, across sites. In each network, sites and pollinators are represented by green and yellow colored circles, respectively, weighted by their degree centrality.

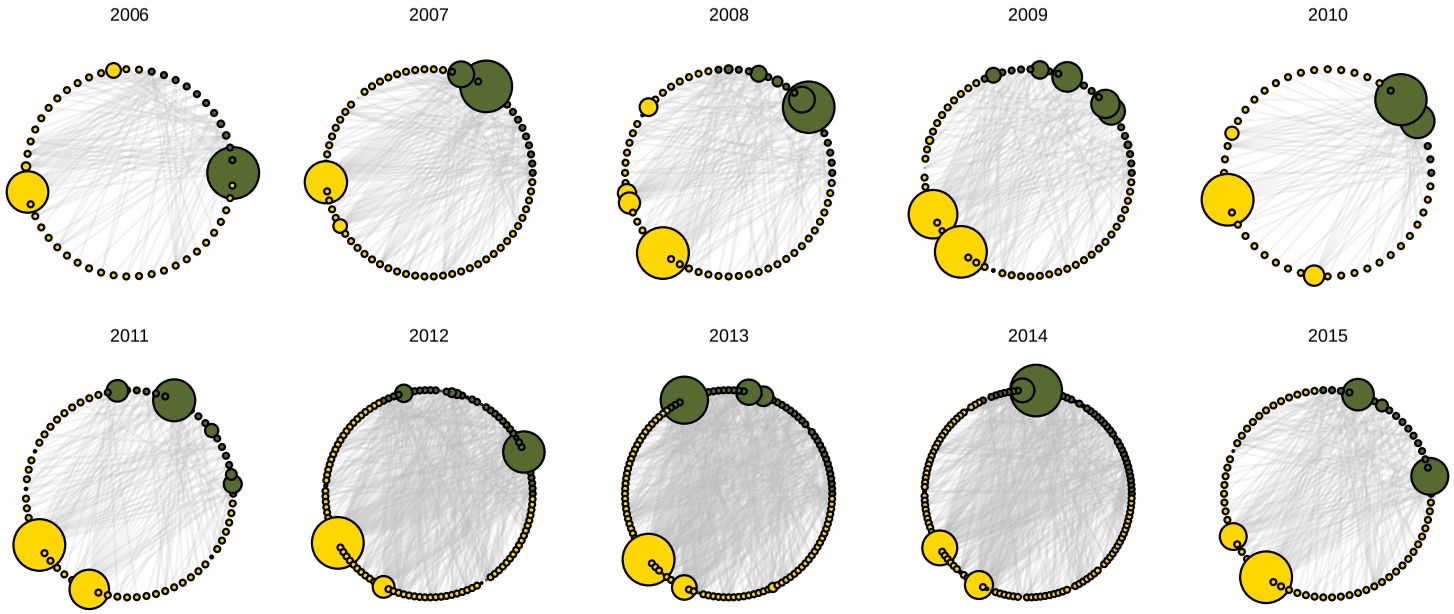

Figure S5: Networks of pollinators within each year, across sites. In each network, sites and pollinators are represented by green and yellow colored circles, respectively, weighted by their betweenness centrality.

Figure S6: Networks of pollinators within each site, across years. In each network, pollinators are represented by yellow colored circles, respectively, weighted by their degree centrality.

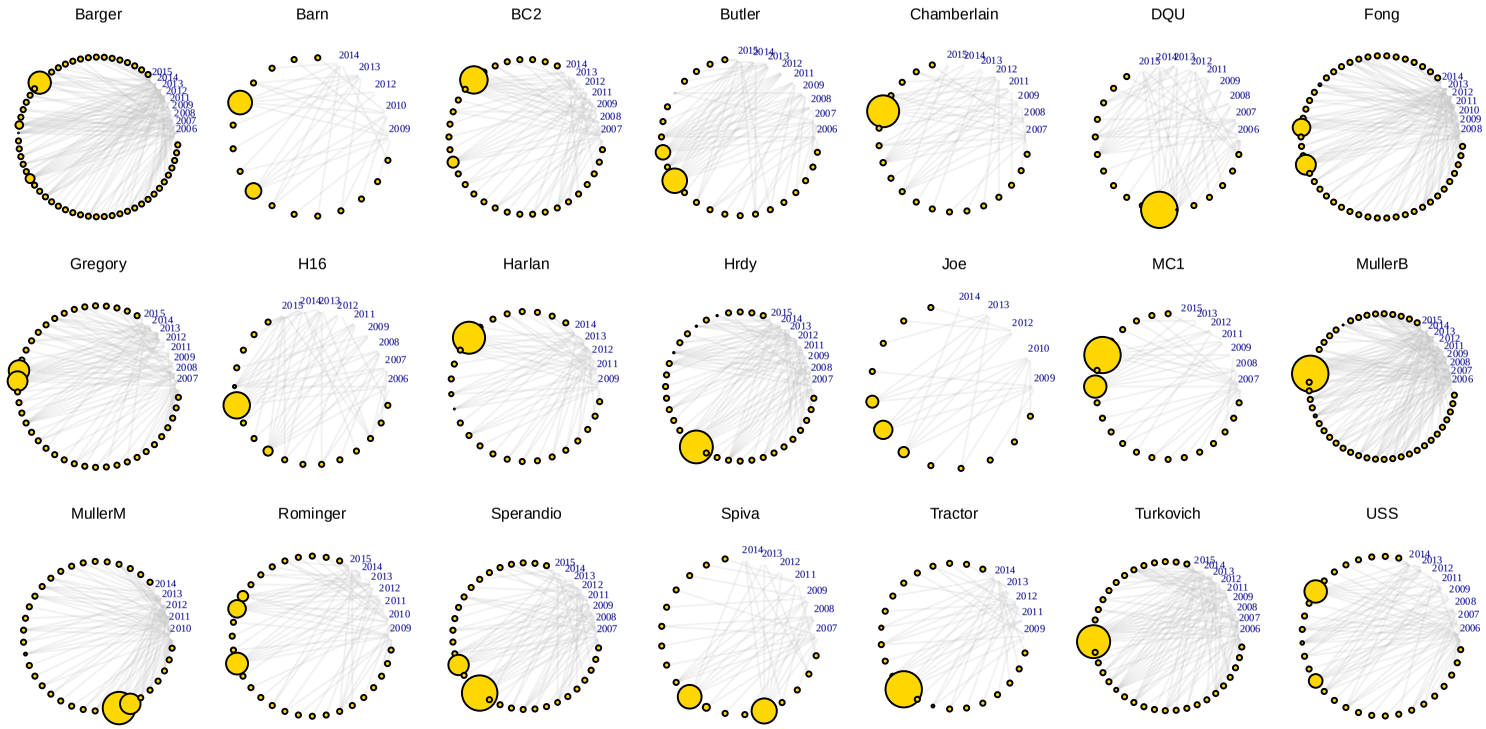

Figure S7: Networks of pollinators within each site, across years. In each network, sites and pollinators are represented by green and yellow colored circles, respectively, weighted by their betweenness centrality.

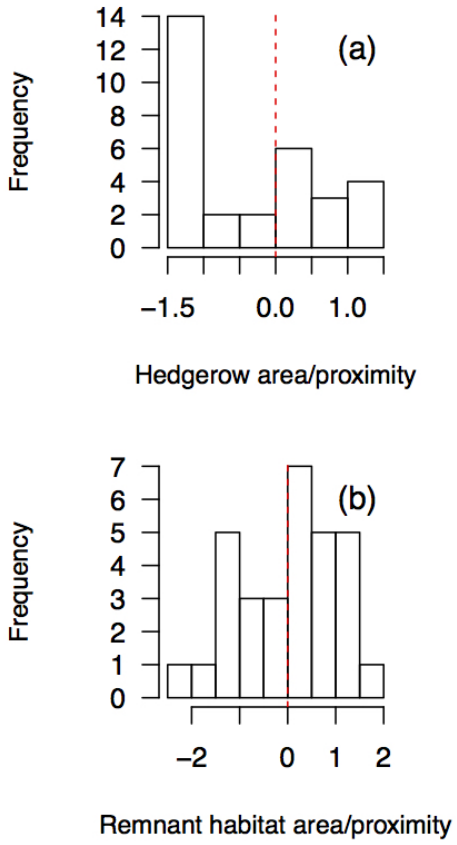

Figure S8: The distribution of standardized variables. The $log(x + 1)$ was taken for hedgerow proximity and remnant habitat proximity. The mean is denoted by a dashed red line.

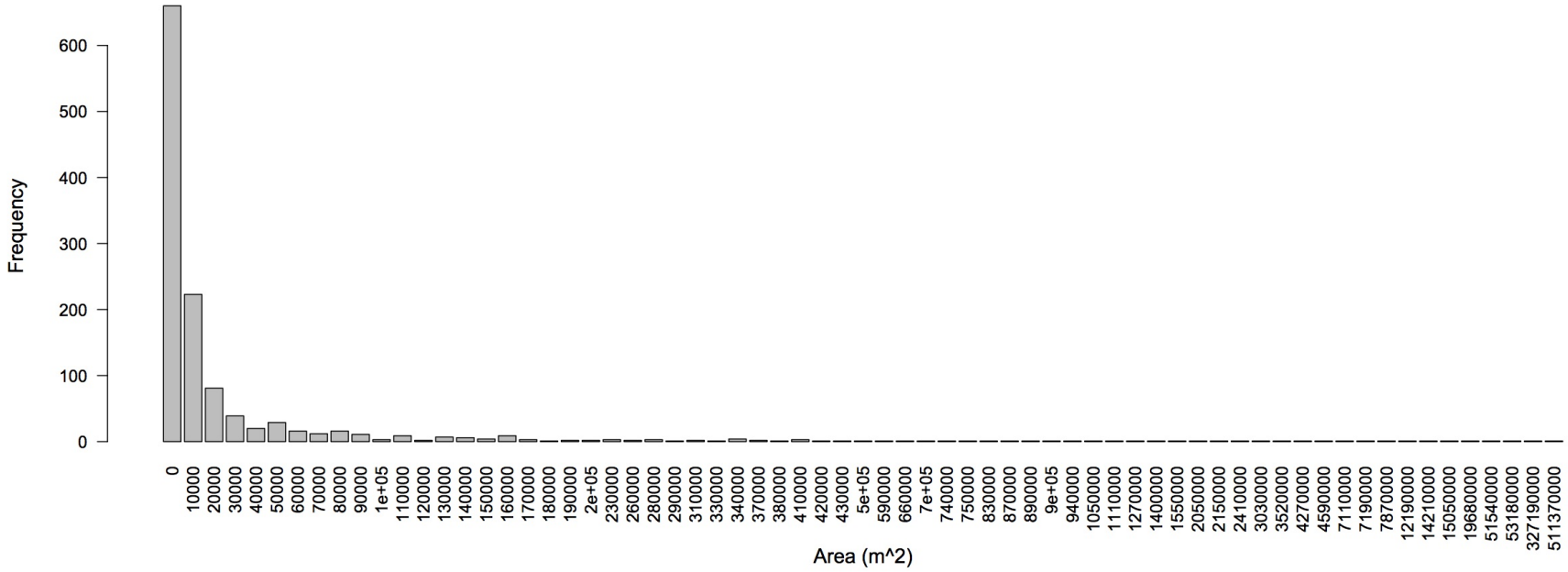

Figure S9: The distribution the area of remnant habitat patches, rounded to the nearest thousand.