

## Supporting Information

**Supporting Table 1.** Details of the study sites.

Site Name	Site Code	Latitude	Longitude	Seasons of Operation	Habitat Type
San Fransisco	SAFR	8°45'57"N	82°56'34"W	2002-2010	Low Cover Coffee
San Gabriel	SAGA	8°45'5"N	82°57'4"W	2002-2010	Low Cover Coffee
El Puente	ELPU	8°46'7"N	82°57'0"W	2007-2010	Low Cover Coffee
La Isla	ISLA	8°50'9"N	82°57'47"W	2007-2010	High Cover Coffee
San Bosco	SABO	8°48'4"N	82°55'2"W	2002-2010	High Cover Coffee
Santa Teresa	SATE	8°48'30"N	82°55'28"W	2002-2010	High Cover Coffee
Quebrada ST	QUST	8°48'54"N	82°55'26"W	2004-2010	Riparian Corridor
Sabalito Rio	SARI	8°49'40"N	82°55'27"W	2004-2010	Riparian Corridor
Panama	PANA	8°46'54"N	82°53'49"W	2007-2010	Riparian Corridor
Copal	COPA	8°46'42"N	82°57'21"W	1999, 2003-2010	Forest Fragment
Los Angeles	LOAN	8°47'0"N	82°56'19"W	1999, 2003-2010	Forest Fragment
Gamboa Parche	GAPA	8°48'3"N	82°58'20"W	1999, 2003-2010	Forest Fragment
Melissa	MELI	8°47'25"N	82°58'2"W	2007-2010	Secondary Forest
Cañas Gordas	CAGO	8°45'16"N	82°55'33"W	2007-2010	Secondary Forest
Los Pinos	PINO	8°50'40"N	82°58'12"W	2007-2010	Secondary Forest
Gamboa Bosque	GABO	8°48'5"N	82°58'20"W	2003-2010	Las Cruces Forest
Río Java	RIJA	8°47'12"N	82°57'53"W	1999, 2003-2010	Las Cruces Forest
La Fila	FILA	8°47'7"N	82°58'34"W	1999, 2003-2010	Las Cruces Forest
Amistad	AMIS	8°57'8"N	82°50'00"W	2009-2010	Amistad International Park

**Supporting Table 2.** Morisita–Horn sample similarity comparisons between habitats including Swainson’s thrushes. Large numbers of them migrated through the study region without wintering and their preference for forest skews the similarity values, especially at Amistad where they comprised 41% of all birds caught in the mist nets. See Table 2 for Morisita–Horn sample similarity comparisons with Swainson’s thrushes excluded.

	<b>Shaded</b>	<b>Riparian</b>	<b>Secondary</b>	<b>Fragment</b>	<b>Las Cruces</b>	<b>Amistad</b>
<b>Open Coffee</b>	0.93	0.49	0.45	0.31	0.17	0.06
<b>Shaded coffee</b>		0.58	0.53	0.37	0.20	0.11
<b>Riparian</b>			0.79	0.69	0.61	0.38
<b>Secondary</b>				0.81	0.68	0.63
<b>Fragment</b>					0.88	0.57
<b>Las Cruces</b>						0.55

**Supporting Table 3.** Numbers of mist-netted species that are globally threatened (VU = Vulnerable) or near threatened (NT) with extinction.

Species	Open Coffee	Shaded Coffee	Riparian	Secondary	Fragment	Las Cruces	Amistad	Total	Threat Level
<i>Tinamus major</i>						2		2	NT
<i>Odontophorus gujanensis</i>				1	3	2		6	NT
<i>Trogon bairdii</i>						1		1	NT
<i>Grallaricula flavirostris</i>						2		2	NT
<i>Cotinga ridgwayi</i>					1			1	VU
<i>Hylocichla mustelina</i>	1	1	3	1	5	8	4	23	NT
<i>Vermivora chrysoptera</i>	1	2	2	4	5	7	1	22	NT
<i>Passerina ciris</i>	7	15	3	1				26	NT
<b>Total</b>	<b>9</b>	<b>18</b>	<b>8</b>	<b>7</b>	<b>14</b>	<b>22</b>	<b>5</b>	<b>83</b>	
<b>Birds/1000 net-hours</b>	0.5	0.99	0.61	0.78	0.69	1.08	0.77	5.42	

**Supporting Table 4.** Numbers of mist-netted species with globally restricted ranges. *Las Cruces:Other* is the ratio of numbers mist-netted in Las Cruces to those in other habitats.

<b>Species</b>	<b>Open Coffee</b>	<b>Shaded Coffee</b>	<b>Riparian</b>	<b>Secondary</b>	<b>Fragment</b>	<b>Las Cruces</b>	<b>Amistad</b>	<b>Total</b>
<i>Zentrygon chiriquensis</i>		1			1	11		<b>13</b>
<i>Lampornis castaneiventris</i>	1					25		<b>26</b>
<i>Elvira chionura</i>	11	9		8	25	132	41	<b>226</b>
<i>Amazilia decora</i>	6	29	7	42	71	129	4	<b>288</b>
<i>Trogon bairdii</i>						1		<b>1</b>
<i>Pteroglossus frantzii</i>		7		4	5	5		<b>21</b>
<i>Thamnophilus bridgesi</i>			1	4	3	8		<b>16</b>
<i>Cotinga ridgwayi</i>					1			<b>1</b>
<i>Cantorchilus semibadius</i>	1	1	11	2	1	37		<b>53</b>
<i>Myadestes melanops</i>					1	10	17	<b>28</b>
<i>Euphonia imitans</i>				11	19	20		<b>50</b>
<b>Total</b>	<b>19</b>	<b>47</b>	<b>19</b>	<b>71</b>	<b>127</b>	<b>378</b>	<b>62</b>	<b>723</b>
<b>Percent of all captures</b>	0.2	0.4	0.7	1.9	2.6	5.7	4.5	
<b>Las Cruces:Other</b>	30.7	13.5	8.0	2.9	2.2	1.0	1.3	

**Supporting Table 5.** Numbers of mist-netted birds that are long-distance migrants and the proportions of long-distance and altitudinal migrants. Figures for long-distance migrants are given with and without Swainson’s thrushes (SWTH), as they migrate through the region in large numbers, but do not winter.

	<b>Open Coffee</b>	<b>Shaded Coffee</b>	<b>Riparian</b>	<b>Secondary</b>	<b>Fragment</b>	<b>Las Cruces</b>	<b>Amistad</b>	<b>TOTAL</b>
<b>Migrants</b>	1678	2326	671	1153	1079	1159	664	8730
<b>Migrants w/o SWTH</b>	1502	1989	427	528	498	505	105	5554
<b>% migrants</b>	16.5	21.0	25.3	31.6	21.9	17.6	48.2	21.6
<b>% migrants w/o SWTH</b>	14.7	17.9	16.1	14.5	10.1	7.7	7.6	13.7
<b>% altitudinal</b>	16.9	13.9	8.3	15.2	13.4	18.3	6.9	14.8

## Supporting Figures

**Supporting Figure 1.** Locations of the banding sites in the study area except Amistad International Park site that is too distant to show at this resolution.

**Supporting Figure 2.** NMDS plot of habitats based on all bird captures, including Swainson's thrushes. Large numbers of them migrated through the study region without wintering and their preference for forest skews the analysis, especially at Amistad where they comprised 41% of all birds caught in the mist nets. For the NMDS plot that excludes Swainson's thrushes, see Fig. 2. NMDS analyses group communities based on rank-order of species abundance rather than absolute abundance, thus reducing the variability stemming from differential sampling of sites or capture rates.

**Supporting Figure 3.** Population growth rate ( $\lambda$ ) values for open coffee, shaded coffee, riparian, fragment and Las Cruces forest species with enough captures and recaptures.

BANA, Bananaquit (*Coereba flaveola*); BCMA, Blue-crowned Manakin (*Lepidothrix coronata*); BGTA, Blue-gray Tanager (*Thraupis episcopus*); BRWA, Buff-rumped Warbler (*Phaeothlypis fulvicauda*); BSSP, Black-striped Sparrow (*Arremonops conirostris*); BTFG, Buff-throated Foliage-gleaner (*Automolus ochrolaemus*); BTSA, Buff-throated Saltator, (*Saltator maximus*); CCBF, Chestnut-capped Brush-Finch (*Arremon brunneinucha*); CCRO, Clay-colored Robin (*Turdus grayi*); CHET, Cherrie's Tanager (*Ramphocelus costaricensis*); COBT, Common Bush-Tanager (*Chlorospingus ophthalmicus*); COTF, Common Tody-Flycatcher (*Todirostrum cinereum*); ERFL, Eye-ringed Flatbill (*Rhynchocyclus brevirostris*); GCDO, Ruddy Quail-Dove (*Geotrygon montana*); GCSP, Golden-crowned Spadebill (*Platyrinchus coronatus*); GHOT, Golden-hooded Tanager (*Tangara larvata*); LEEL, Lesser Elaenia (*Elaenia chiriquensis*); LEGO, Lesser Goldfinch (*Carduelis psaltria*); MOWA, Mourning Warbler (*Geothlypis philadelphia*); NOWA, Northern Waterthrush (*Parkesia noveboracensis*); OBFL, Ochre-bellied Flycatcher (*Mionectes oleagineus*); OBNT, Orange-billed Nightingale-Thrush (*Catharus aurantiirostris*); OBSP, Orange-billed Sparrow (*Arremon aurantiirostris*); OCMA, Orange-collared Manakin (*Manacus aurantiacus*); OLPI, Olivaceous Piculet (*Picumnus olivaceus*); OSTF, Olive-striped Flycatcher (*Mionectes olivaceus*); OVEN, Ovenbird (*Seiurus aurocapilla*); PATY, Paltry Tyrannulet (*Zimmerius vilissimus*); PLAN, Plain Antvireo (*Dysithamnus mentalis*); PLWR, Plain Wren (*Thryothorus modestus*); RBSW, Rufous-breasted Wren (*Thryothorus rutilus*); RCAT, Red-crowned Ant-Tanager (*Habia rubica*); RCSP, Rufous-collared Sparrow (*Zonotrichia capensis*); RCWA, Rufous-capped Warbler (*Basileuterus rufifrons*); RCWO, Red-crowned Woodpecker (*Melanerpes rubricapillus*); RIWR, Riverside Wren (*Thryothorus semibadius*); RUGF, Ruddy Foliage-gleaner (*Automolus rubiginosus*); RUGD, Ruddy-ground Dove (*Columbia talpacoti*); RUWO, Ruddy Woodcreeper (*Dendrocincla homochroa*); SCPT, Scale-crested Pygmy-Tyrant (*Lophotriccus pileatus*); SHWO, Streak-headed Woodcreeper (*Lepidocolaptes souleyetii*); SLAN, Slaty Antwren (*Myrmotherula schisticolor*); SPBA, Spotted Barbtail (*Premnoplex brunnescens*); SRFL, Sulphur-rumped Flycatcher (*Myiobius sulphureipygius*); STRE, Slate-throated Redstart (*Myioborus miniatus*); STSA, Streaked Saltator (*Saltator striatipectus*); STTA, Silver-

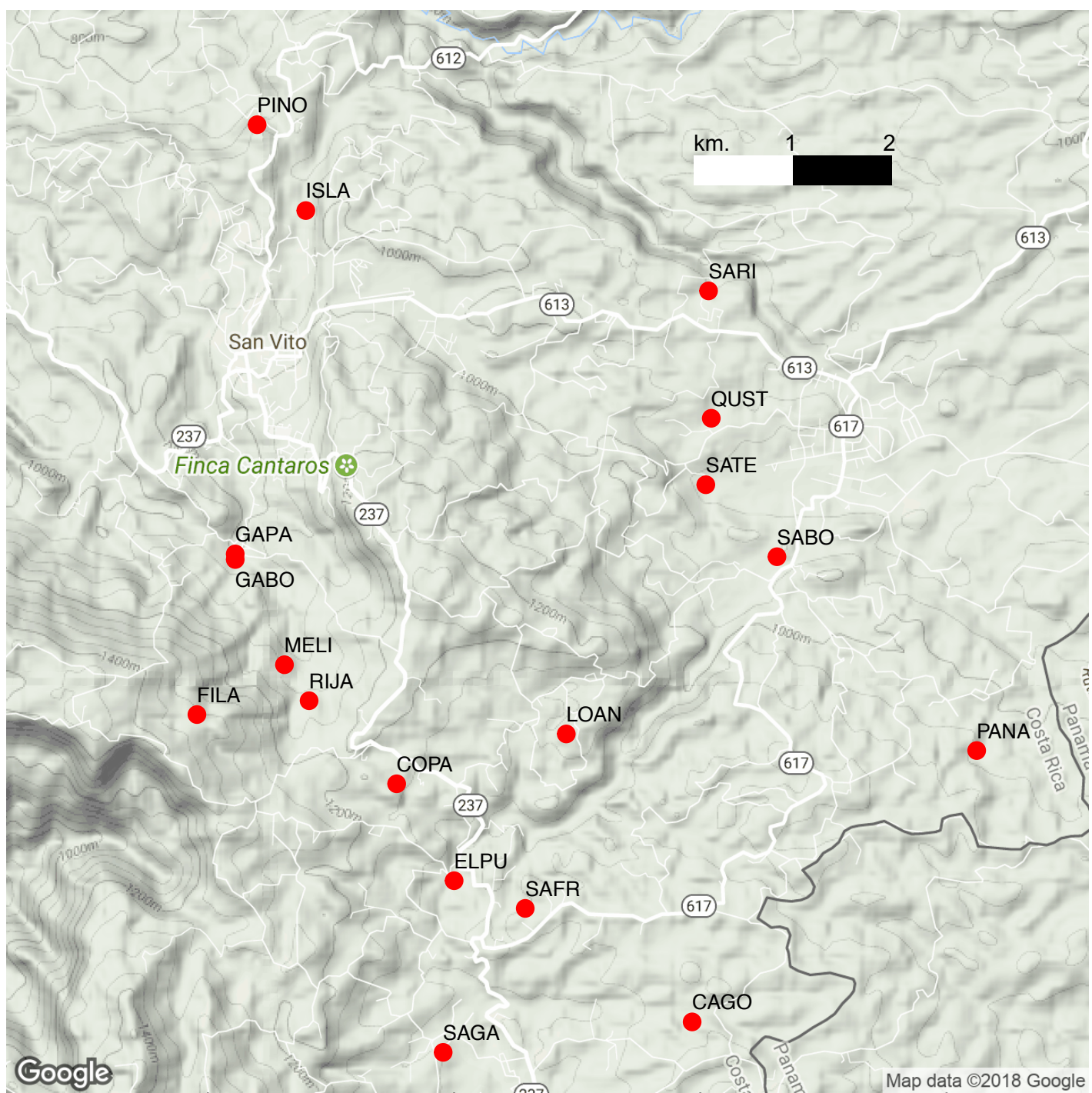
throated Tanager (*Tangara icterocephala*); TBEU, Thick-billed Euphonia (*Euphonia lanirostris*); TEWA, Tennessee Warbler (*Leiothlypis peregrina*); TRGN, Tropical Gnatcatcher (*Polioptila plumbea*); VASE, Variable Seedeater (*Sporophila corvina*); WBWO, Wedge-billed Woodcreeper (*Glyphorhynchus spirurus*); WBWW, White-breasted Wood-Wren (*Henicorhina leucosticta*); WRMA, White-ruffed Manakin (*Corapipo altera*); WTDO, White-tipped Dove (*Leptotila verreauxi*); WTRO, White-throated Robin (*Turdus assimilis*); WTSP, White-throated Spadebill (*Platyrinchus mystaceus*); YBEL, Yellow-bellied Elaenia (*Elaenia flavogaster*); YBFL, Yellow-bellied Flycatcher (*Empidonax flaviventris*); YFGR, Yellow-faced Grassquit (*Tiaris olivaceus*); YWAR, Yellow Warbler (*Dendroica petechia*).

**Supporting Figure 4.** Number of species with significant ( $p < 0.05$ ) and moderate ( $0.05 < p < 0.10$ ) declines in capture rates in individual coffee plantations.

**Supporting Figure 5.** Proportions of mist-netted individuals of non-migratory bird species in breeding condition. Year-around presence of water may increase breeding success at riparian sites.

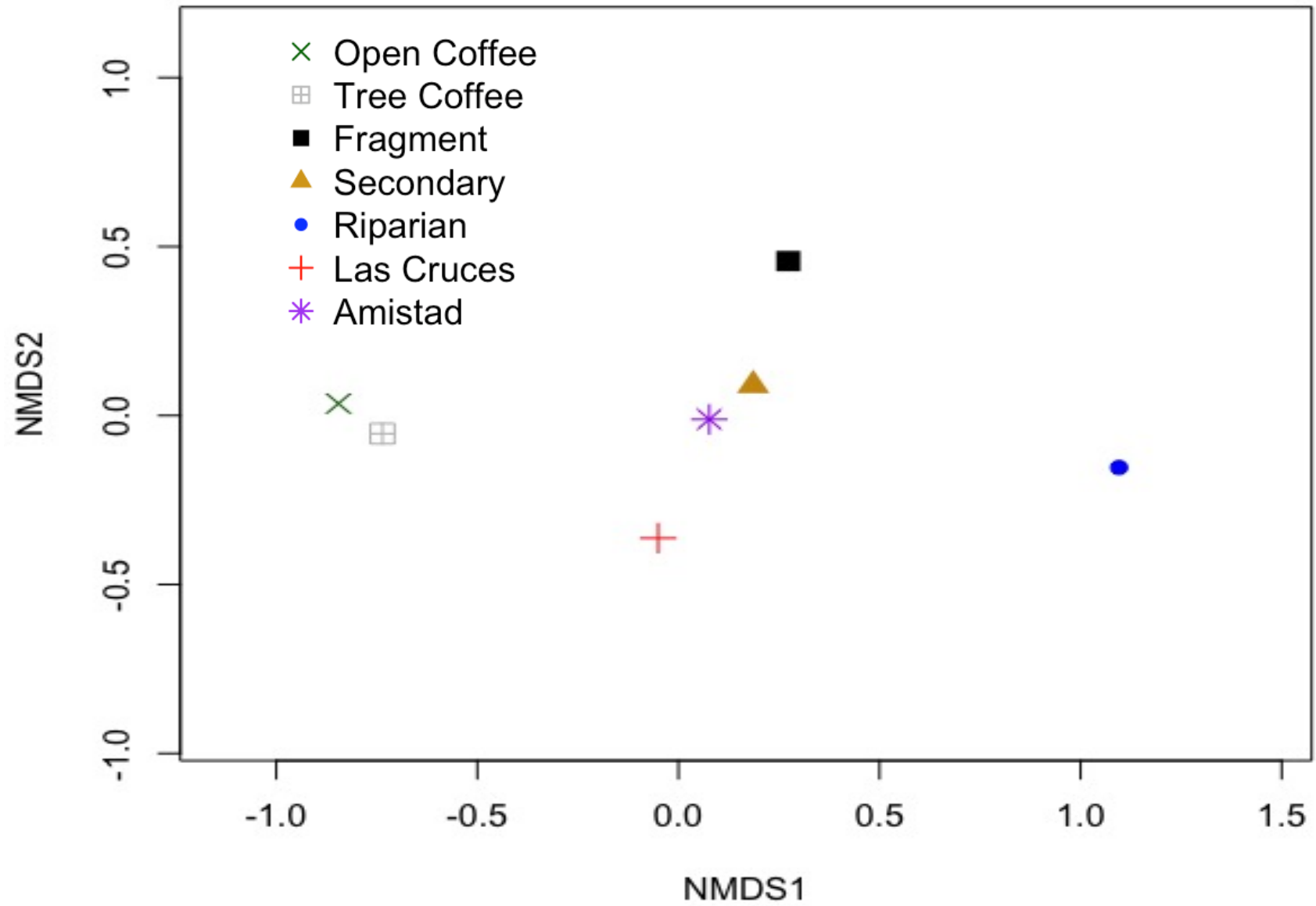
**Supporting Figure 6.** Ratios of immature/juvenile (hatch year - HY) to adult birds (after hatch year - AHY, second year - SY, ASY and so on) for all non-migratory birds of known age. **a.** Adult birds include AHY birds. **b.** AHY birds excluded from the analyses because AHY includes both mature, breeding birds and birds that are no longer juveniles but are still too young to breed. Coffee sites comprise inferior habitat for forest birds and may serve as an ecological trap for young birds that may be pushed to marginal habitat.

Supporting  
Figure 1

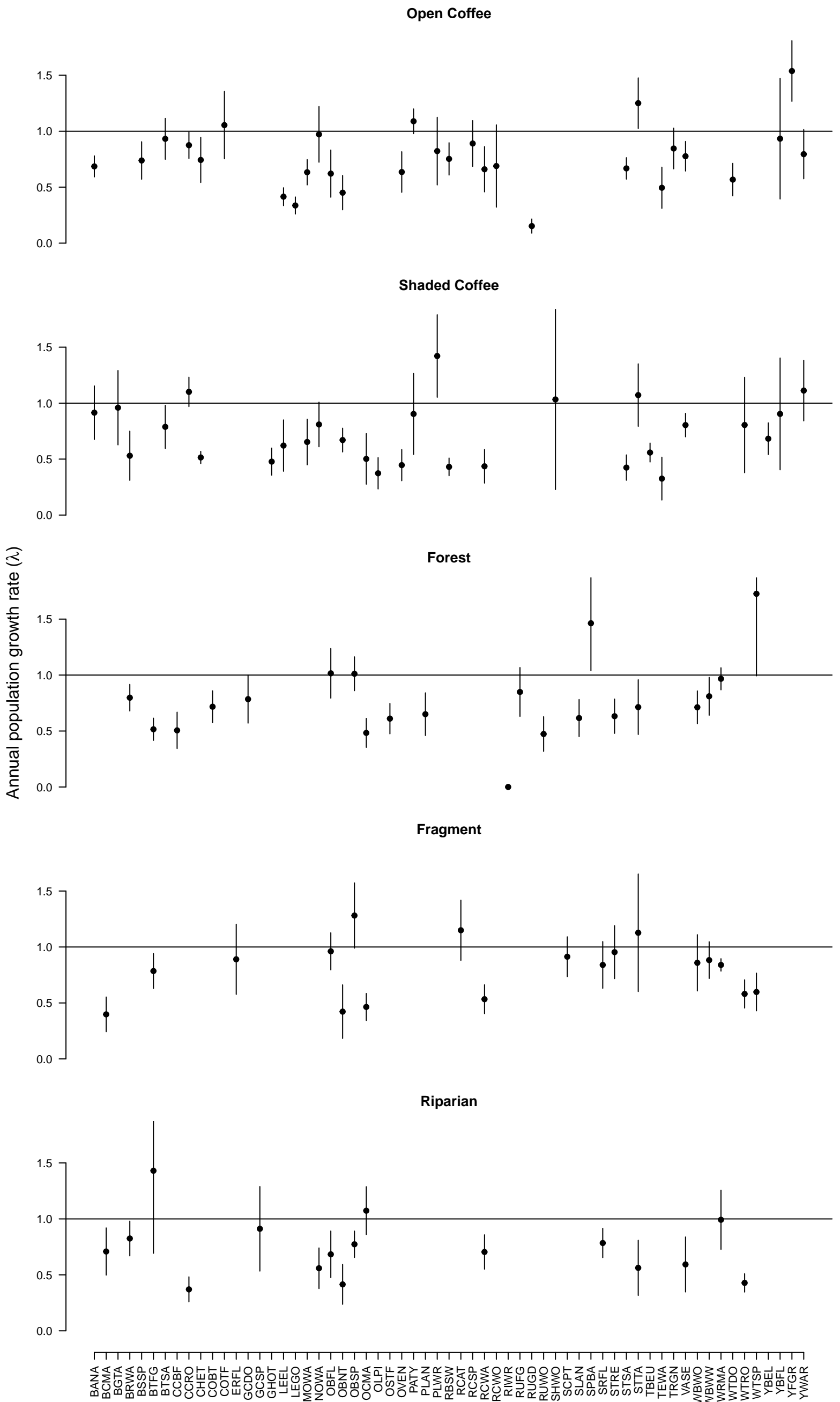




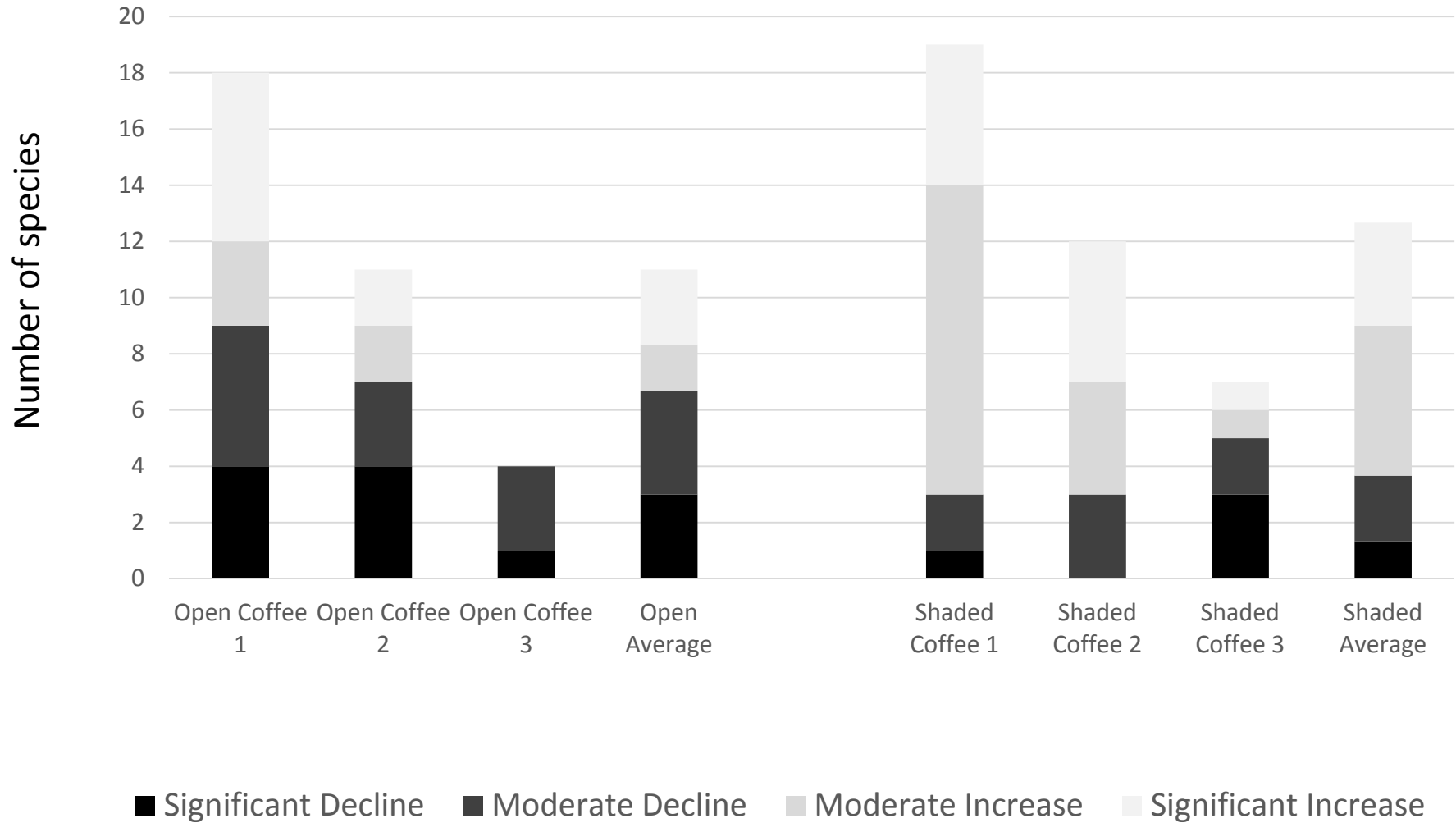
Supporting Figure 2



Supporting Figure 3

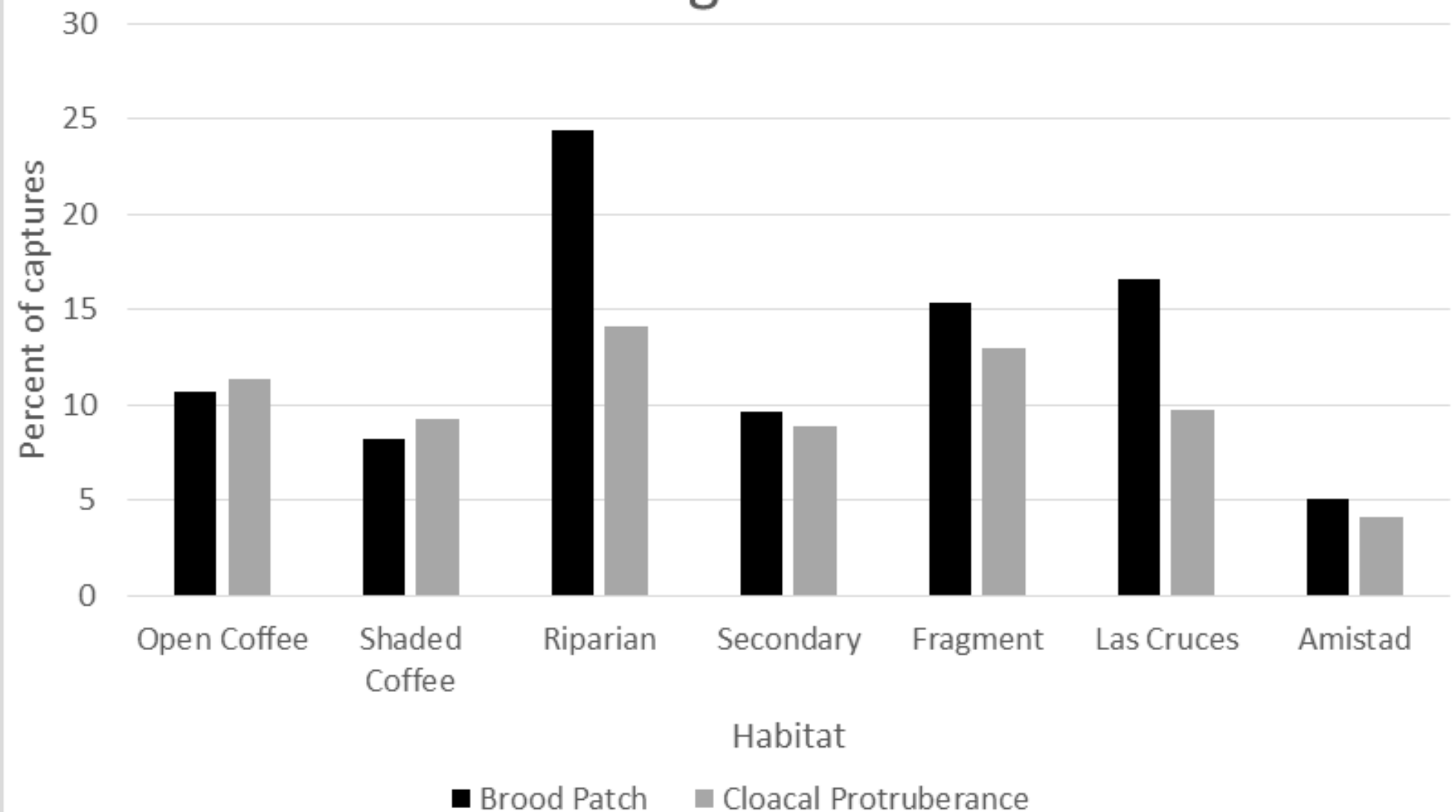


### Trends in coffee plantation capture rates



Supporting Figure 5

# Percent of non-migratory individuals in breeding condition



Supporting Figure 6

### Ratio of young vs adult birds (non-migratory species)

