SUPPLEMENTARY DATA

Table S1. Localities of study sites, plant species studied and methods used (LT = light-trapping. OBS = Direct observations, CAM = motion activated cameras).

Site	Coordinates (decimal degrees)	Plant species	Methods
Amatikulu	-29.129689°, 31.573216°	*Crinum delagoanse*	LT, OBS
Fort Nottingham	-29.402742°, 29.932206°	*Harveya speciosa*	LT, OBS
Greytown	-29.149107°, 30.615174°	*Crinum bulbispermum*	OBS
Hilton	-29.513620°, 30.301135°	*Harveya speciosa*	OBS, CAM
Mabibi	-27.329277° 32.746083°	*Bonatea lamprophylla*	OBS
Mapungubwe	-22.225906° 29.363047°	*Sesamothamnus lugardii*	OBS, CAM
Midmar	-29.541851° 30.191700°	*Crinum bulbispermum*	LT, OBS
Mt Gilboa	-29.284375° 30.292654°	*Gladiolus longicollis*	LT, OBS
Ndumo	-26.894369° 32.207621°	*Crinum paludosum, Gardenia volkensii, Gardenia cornuta*	OBS
Pietermaritzburg	-29.624294° 30.406320°	*Crinum macowanii, Crinum moorei, Gardenia thunbergii, Ipomoea alba, Hedychium gardnenianum*	OBS, CAM
Sani pass	-29.631085° 29.415142°	*Harveya speciosa*	OBS
St Lucia	-28.359821° 32.416617°	*Crinum delagoanse*	LT, OBS
Stainbank	-29.905972° 30.947058°	*Oxyanthus pyriformis*	LT, OBS
Tembe	-27.043882° 32.423958°	*Cladostemon kirkii*	OBS
Umtamvuna	-31.020303° 30.176328°	*Rangaeris muscicola*	LT, OBS
Vernon Crookes	-30.268570° 30.602486°	*Gladiolus longicollis*	LT, OBS

Table S2. Corolla dimensions and nectar properties of plant species in South Africa with long-tubed flowers. Values are means ± s.e.

Family	Species	Study site	Flowers sampled	Corolla tube length (mm)	Stigma-nectar distance (mm)	Nectar volume (µl)	Nectar sugar concentration (%)
Amaryllidaceae	*Crinum macowanii*	Pietermaritzburg	10	113 ± 4.0	190 ± 6.7	33.9 ± 6.1	20.5 ± 1.2
	Crinum bulbispermum	Greytown	10	75 ± 7.6	162 ± 4.6	3.7 ± 0.7	12.3 ± 1.6
		Midmar	10	74 ± 1.8	156 ± 3.4	39.5 ± 9.4	18.3 ± 0.6
	Crinum delagoanse	St Lucia	9	115 ± 3.1	217 ± 4.1	21.8 ± 16.3	18.8 ± 4.2
		Amatikulu	8	107 ± 4.1	164 ± 8.2	17.2 ± 5.2	21.8 ± 6.6
	Crinum moorei	Pietermaritzburg	7	104 ± 2.6	177 ± 7.1	20.4 ± 8.6	18.4 ± 1.0
	Crinum paludosum	Ndumo	7	116 ± 4.2	179 ± 12.1	20.0 ± 7.6	12.0 ± 0.6
Orchidaceae	*Rangaeris muscicola*	Umtamvuna	41	112 ± 1.0	-	9.9 ± 1.5	12.3 ± 0.6
	Bonatea lamprophylla	Mabibi	4	103 ± 1.7	-	-	-
		Tshengwe	3	127 ± 2.7	-	25.0 ± 5.0	23.0 ± 0.0
Iridaceae	*Gladiolus longicollis*	Mt Gilboa	289	93 ± 9	-	10.1 ± 1.9	28.3 ± 0.6
		Vernon Crookes	98	95 ± 14	-	17.8 ± 2.6	24.2 ± 1.3
Orobanchaceae	*Harveya speciosa*	Fort Nottingham	9	87 ± 3.2	87 ± 9.8	7.7 ± 1.6	18.0 ± 0.4
		Sani pass	6	89 ± 1.8	-	14.6 ± 3.8	25.8 ± 1.8
		Hilton	13	79 ± 2.5	73 ± 2.3	34.0 ± 4.8	21.1 ± 0.7
Pedaliaceae	*Sesamothamnus lugardii*	Mapungubwe	16	100 ± 1.5	137 ± 4.3	9.2 ± 2.9	24.0 ± 1.1
Rubiaceae	*Oxyanthus pyriformis*	Stainbank	10	92 ± 2.2	103 ± 2.0	21.6 ± 3.4	16.2 ± 0.6
	Gardenia thunbergii	Pietermaritzburg	6	93 ± 3.8	103 ± 3.4	13.7 ± 4.6	18.8 ± 0.7
	Gardenia volkensii	Ndumo	5	118 ± 8.6	136 ± 7.4	12.6 ± 3.7	16.5 ± 0.8
Capparaceae	*Cladostemon kirkii*	Tembe	9	-	75 ± 4.3	11.4 ± 2.6	12.7 ± 03
Convolvulaceae	*Ipomea alba*	Pietermaritzburg	8	103 ± 1.1	-	22.4 ± 13.7	38.5 ± 0.8
Zingiberaceae	*Hedychium gardnenianum*	Pietermaritzburg	6	58 ± 1.4	123 ± 0.6	10.1 ± 1.8	29.7 ± 0.4
Liliaceae	*Lilium formosanum*	Wahroonga	22	122 ± 2.9	140 ± 2.9	47.0 ± 7.3	36.1 ± 2.0

Table S3. Hawkmoths observed on long-tubed flowers of plant species in South Africa, indicating their proboscis length and site of pollen placement.

Family	Species	Study site	Observation nights	Hawkmoth species [1] (number observed)	Proboscis length (mm) X ± SD (number captured)	Confirmed pollen placement
Amaryllidaceae	*Crinum macowanii*	Vernon Crookes	3	*A.c.* (12)	100 ± 14.0 (18)	Thorax (ventral)
	Crinum bulbispermum	Greytown	4	*A.c.* (>20)	108 ± 13 (5)	Thorax (ventral)
		Midmar	2	*A.c.* (>. 30)	98 ± 4.0 (3)	Thorax (ventral)
	Crinum delagoanse	St Lucia	2	*A.c.* (8)	125 ± 11(4)	Thorax (ventral)
		Amatikulu	2	*A.c.* (1)	111 ± 0 (1)	Thorax (ventral)
Orchidaceae	*Rangaeris muscicola*	Umtamvuna	8	*A.c.* (4)	118 ± 12 (3)	Proboscis
Iridaceae	*Gladiolus longicollis*	Mt Gilboa	7	*A.c.* (0)	103 ± 7 (15)	Head (dorsal)
		Vernon Crookes	6	*A.c.* (4)	100 ± 14.0 (18)	Head (dorsal)
Orobanchaceae	*Harveya speciosa*	Fort Nottingham	4	*A. c* (1)	-	Proboscis
Pedaliaceae	*Sesamothamnus lugardii*	Mapungubwe	3	*A. c.* (7)	125 ± 0.0 (1)	Proboscis/head
Rubiaceae	*Oxyanthus pyriformis*	Stainbank	4	*C.m.* (5), N.a (5)	89 ± 0.0 (1)	Proboscis/head
	Gardenia thunbergii	Pietermaritzburg	7	*A.c.* (>50)	85 ± 0.0 (1)	Proboscis/head
Capparaceae	*Cladostemon kirkii*	Tembe	1	*A.c.* (1) *C. m.* (10)	116 ± 0 (1) 91 ± 8	Wings and thorax (ventral)
		St Lucia	2	*A. c* (>50) *C.m.* (> 50)		
Convolvulaceae	*Ipomea alba*	Pietermaritzburg	4	*A.c* (>100).	117 ± 0.0 (1)	Proboscis/head
Zingiberaceae	*Hedychium gardnerianum*	Pietermaritzburg	4	*A.c.* (>20)	-	Head (dorsal)
Liliaceae	*Lilium formosanum*	Wahroonga	4	*A.c.* (156)	101 ± 6.3 (7)	Wings and thorax (ventral)

[1] *A.c. = Agrius convolvuli, C. m. = Coelonia mauritii, N.a. = Nephele accentifera accentifera*

Table S4. Plant species in Kenya with floral tubes greater than 80 mm in length (adapted from Martins and Johnson, 2013). * = taxa that also occur in South Africa. # = confirmation of pollination by *Agrius convolvuli*.

Family	Species	Flower colour	Floral tube length (mm)
Acanthaceae	*Ruellia megachlamys* S. Moore	white	78-130
	Thunbergia guerkeana Lindau	white	85-130
Amaryllidaceae	*Ammocharis tinneana* (Kotschy & Peyr.) Milne-Redh. & Schweick #	pink	90
	Crinum kirkii Baker	white	100+
	Crinum macowanii Baker*#	white	120
	Crinum papillosum Nordal	white	100+
	Crinum zeylanicum L	white-pink	100
	Cyrtanthus salmonoides P.R.O.Bally & S.Carter	pink	100
	Pancratium tenuifolium Hochst.	white	140
Balsaminaceae	*Impatiens sodenii* Engl. & Warb. ex Engl.	white, pink	100+
Caesalpinaceae	*Gigasiphon macrosiphon* (Harms) Brenan	white, yellow	100+
Capparaceae	*Cladostemon kirkii* (Oliv.) Pax & Gilg *	white, yellow	160
	Ritchiea capparoides Britten	white, green	80
Convolvulaceae	*Ipomoea lapidosa* Vatke	white	75
	Ipomoea longituba Hallier f.	white	110
	Turbina stenosiphon (Hallier f.) A.Meeuse	white	110-130
Crassulaceae	*Kalanchoe marmorata* Baker	white	80
Iridaceae	*Gladiolus ukambanensis* (Baker)Marais#	white	110
Meliaceae	*Turraea floribunda* Hochst	white	84-105
Orchidaceae	*Aerangis brachycarpa* (A.Rich.) Durand & Schinz #	white	120-170
	Aerangis coriacea Summerh	white	110-170
	Aerangis kotschyana Schltr.	white	130-250
	Aerangis somalensis Schltr.	white	100-150
	Aerangis thomsonii Schltr.	white	100-150
	Angraecum infundibulare Lindl.	green-cream	160-120
	Bonatea steudneri T.Durand & Schinz *	white-green	100-120
	Habenaria altior Rendle	white-green	150-220
	Habenaria armatissima Rchb.f.	white-green	80-220
	Habenaria attenuate Hook.f.	green	100-160
	Habenaria cavatibrachia Summerh.	white-green	100-140

	Habenaria cirrhata Rchb.f.	white-green	130-220
	Habenaria egregia Summerh.	white-green	130-190
	Habenaria macrura Kraenzl.	white	90-170
	Habenaria macruroides	white	100-140
	Habenaria walleri Rchb.f.	white-green	130-170
	Jumellea usambarensis J.J.Wood	white	80-90
	Rangaeris amanuensis (Kraenzl.)Summerh.#	white	80-160
	Tridactyle tricuspis Schltr.	green-cream	120-150
Pedaliaceae	*Sesamothamnus rivae* Engl.	white	80-130
Rubiaceae	*Conostomium quadrangulare* (Rendle) Cufod.	white	120
	Gardenia posoquerioides S. Moore	white	90-125
	Gardenia ternifolia Schumach. & Thonn.	white	110
	Gardenia volkensii K. Schum.*	white	130
	Oxyanthus pyriformis longitubus (Skeels) Bridson	white	110-160
	Oxyanthus zanguebaricus (Hiern) Bridson	white	75-114
	Rothmannia fischeri (K.Schum.) Bullock in Oberm.	cream-red spots	50-110
	Rothmannia longiflora Salisb.	purple-green	140-180
	Rothmannia macrosiphon (K.Schum. ex Engl.) Bridson	white, red spots	135-240
Solanaceae	*Datura metel* L.	cream	120
Verbenaceae	*Clerodendrum rotundifolium* Oliv.	white	62-118
	Clerodendrum fischeri Gürke ex Engl.	white	70-150

Fig S1. The geographical distribution of invasive plant species with long-tubed flowers in South Africa. In each quarter degree grid square, the number of invasive species is indicated in red font as a subscript below the number of native species in black font.

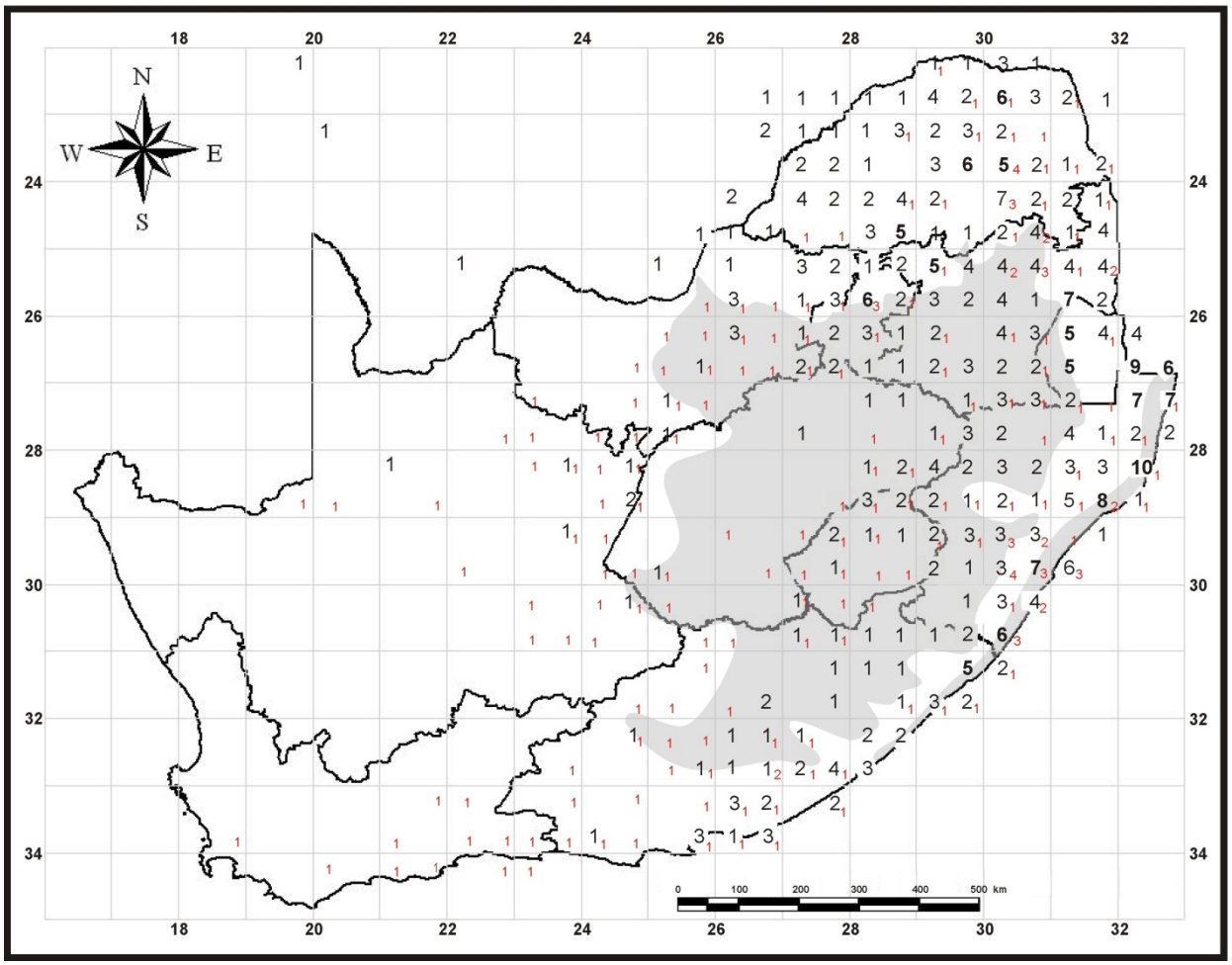

Fig S2 The geographical distribution of the convolvulus hawkmoth *Agrius convolvuli* in South Africa. Values in each degree grid square and the darkness of the shading indicate the percentage of *A. convolvuli* specimens among all hawkmoth specimens recorded in the grid square. No hawkmoths were recorded for unshaded squares.