

Taylor's checkerspot Reintroduction

Setting the bar for success

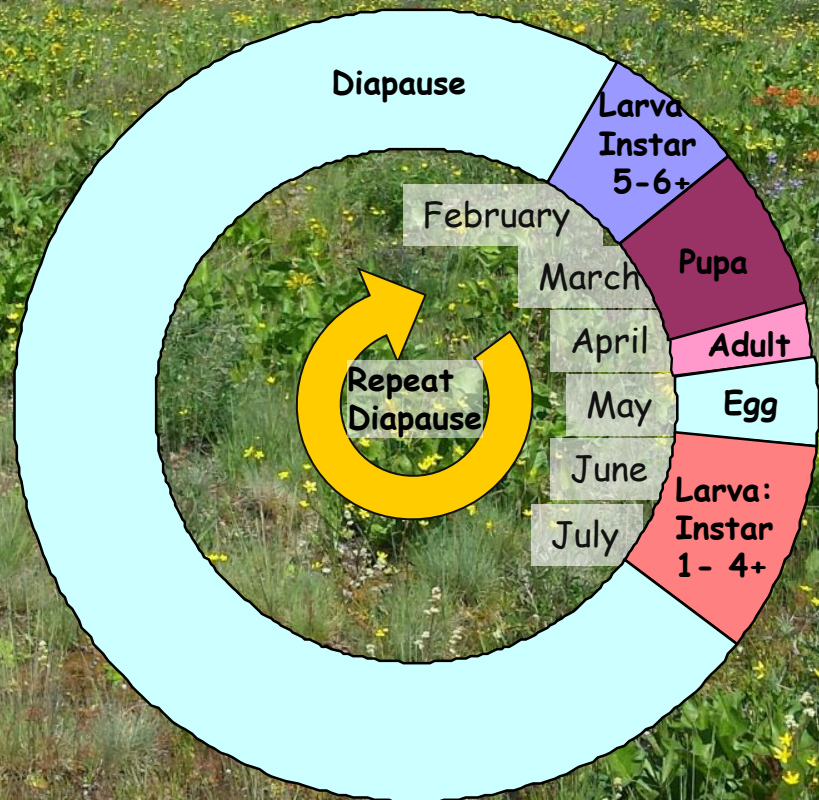


Mary Linders

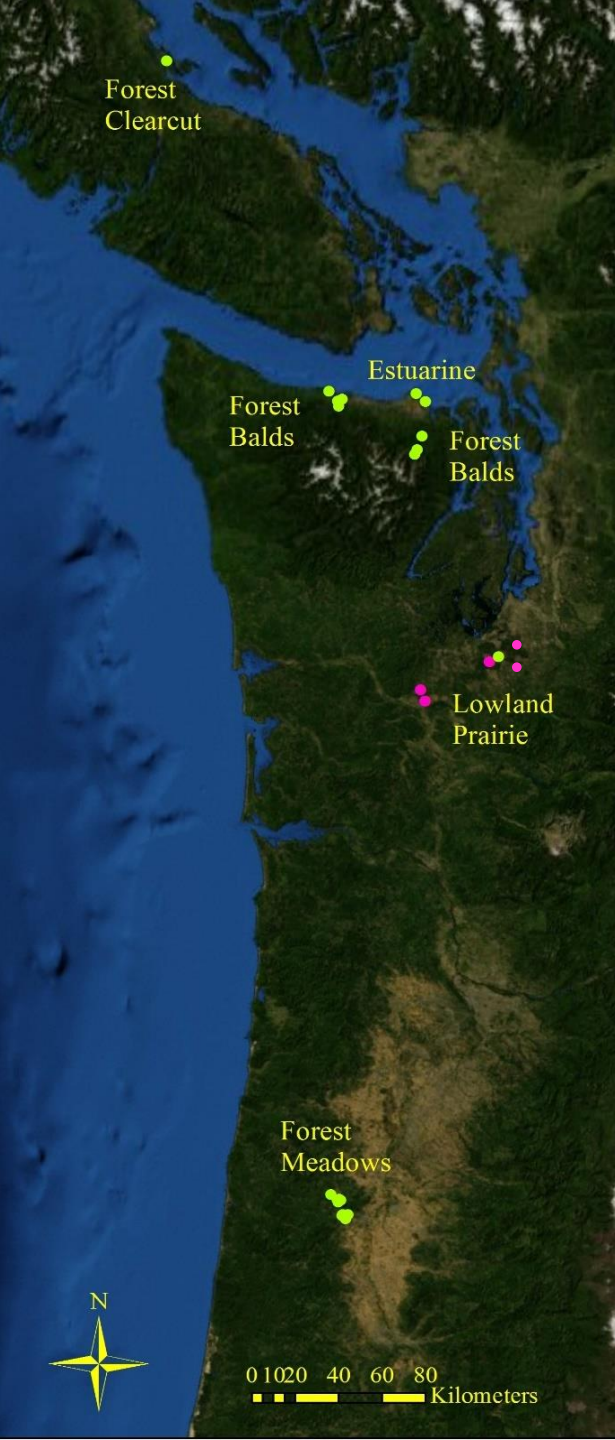
Washington Department of Fish and Wildlife

Conservation: to preserve, protect and restore

- High mortality: 1-5% egg to adult,
- Inability to mark/track individuals,
- Multiple life stages with differing habitat needs, and
- Extended periods when animals are undetectable



Reprinted from Stinson (2005)



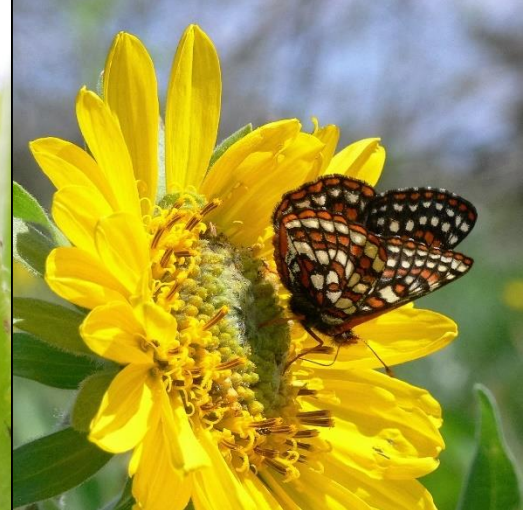
Taylor's Checkerspot Extant Locations

Updated January 2014

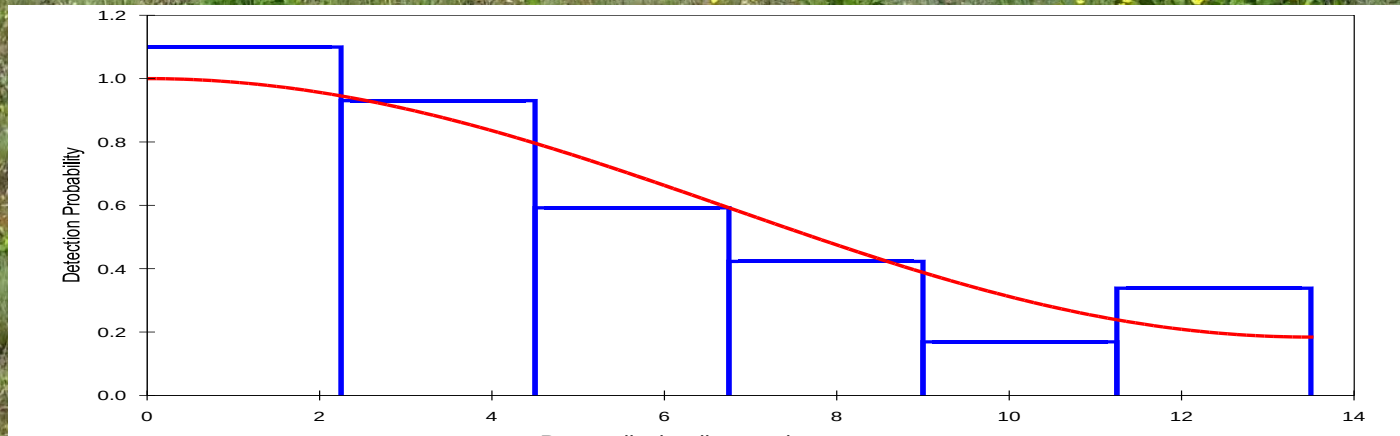
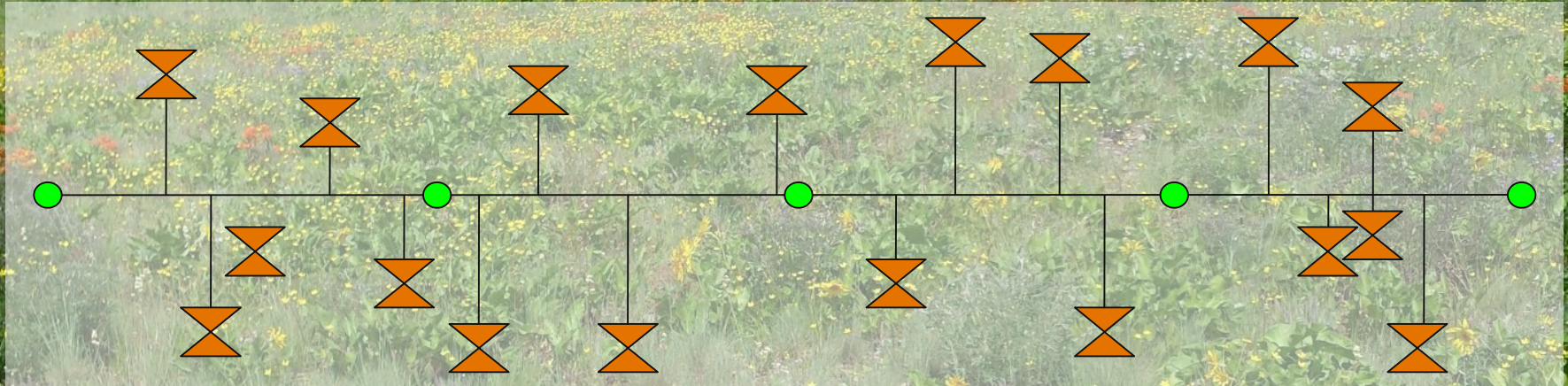


Legend

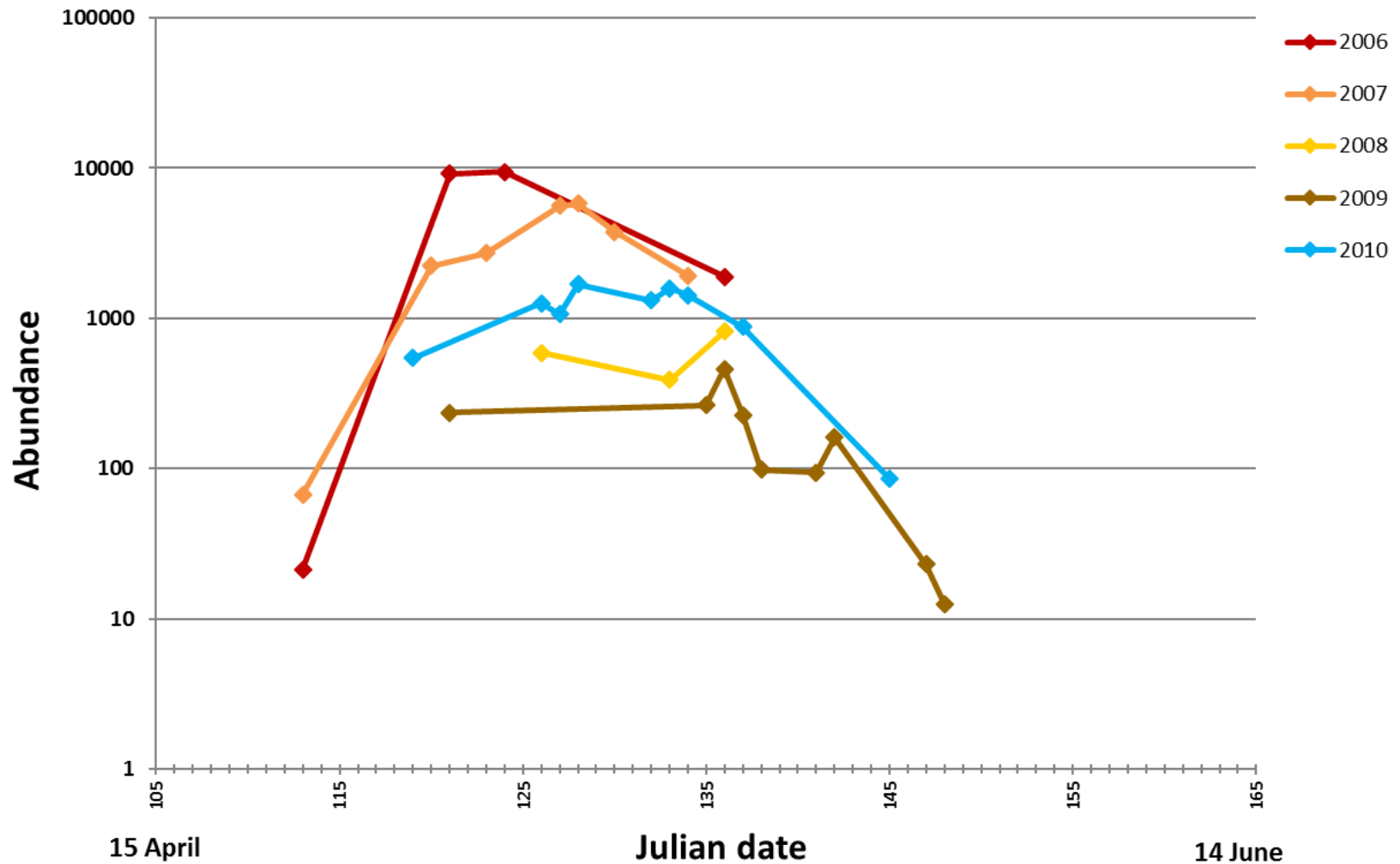
- Wild Sites
- Reintroduction Sites



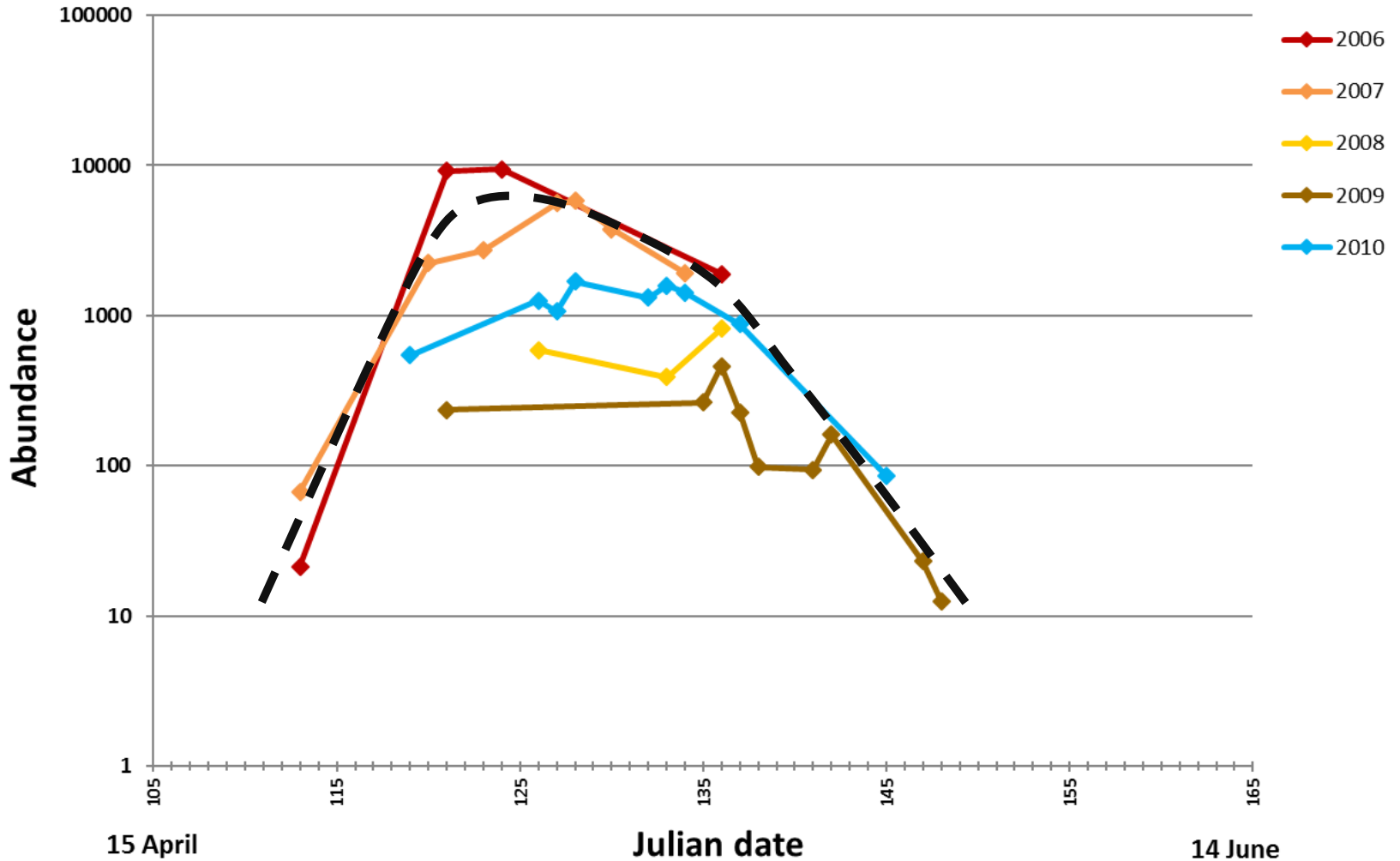
Adult distance estimation: Density, abundance and distribution



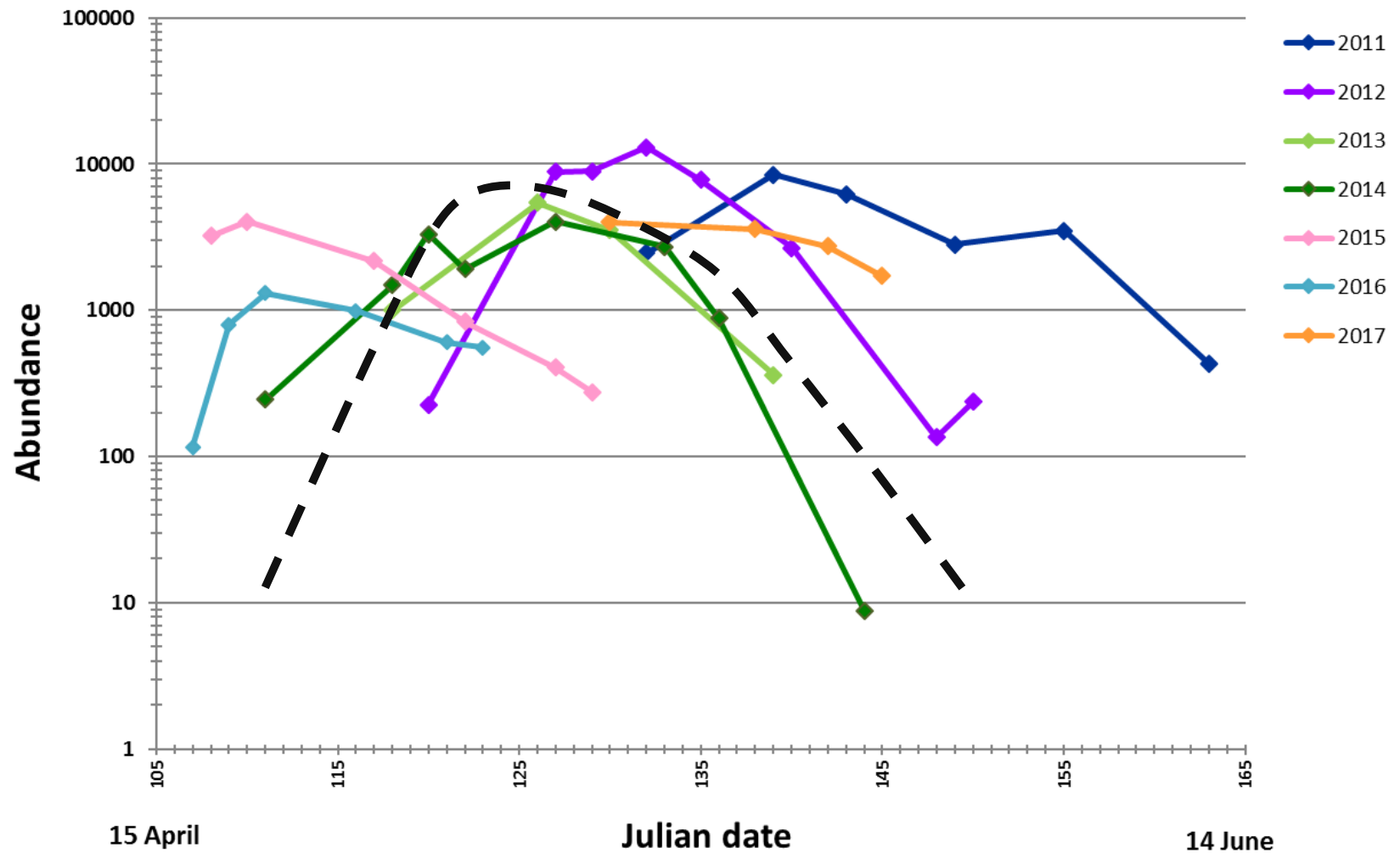
Adult abundance: R76 2006-2010



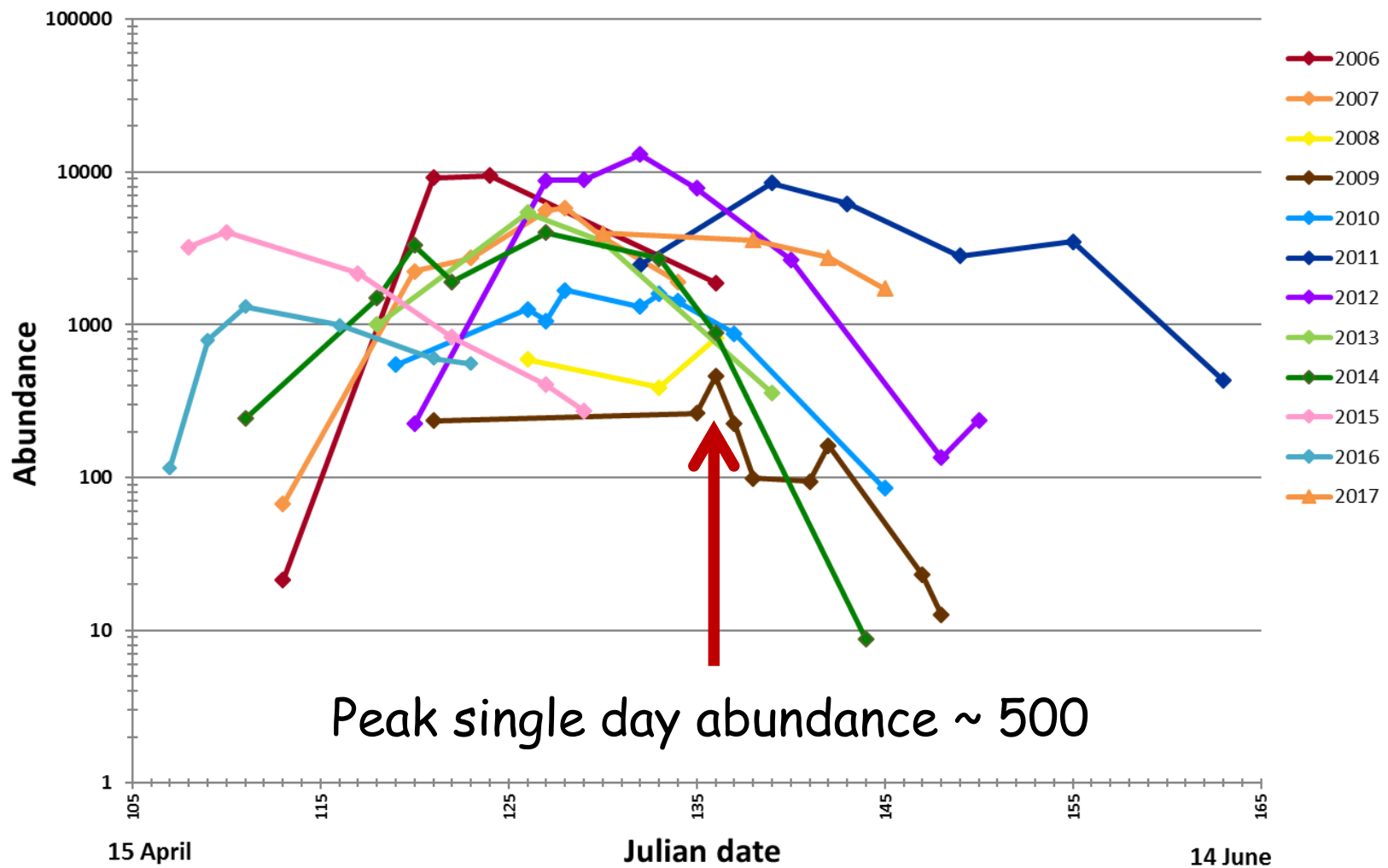
Adult abundance at R76: 2006-2010



Adult abundance at R76: 2011-2017



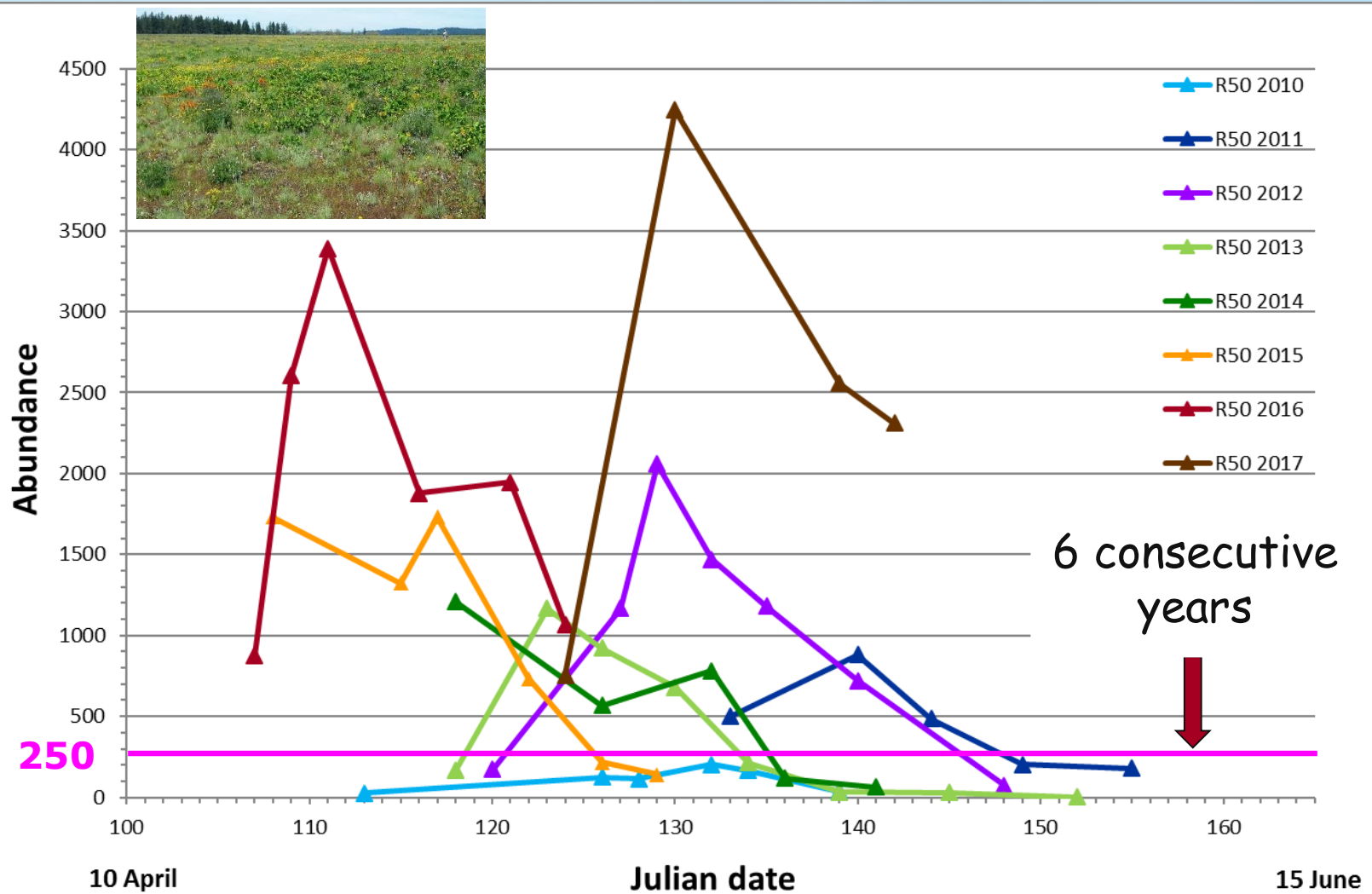
R76 = 100 ac: peak single day abundance estimate of 500
50 ac Reintroduction site: peak single day abundance estimate of 250 adults



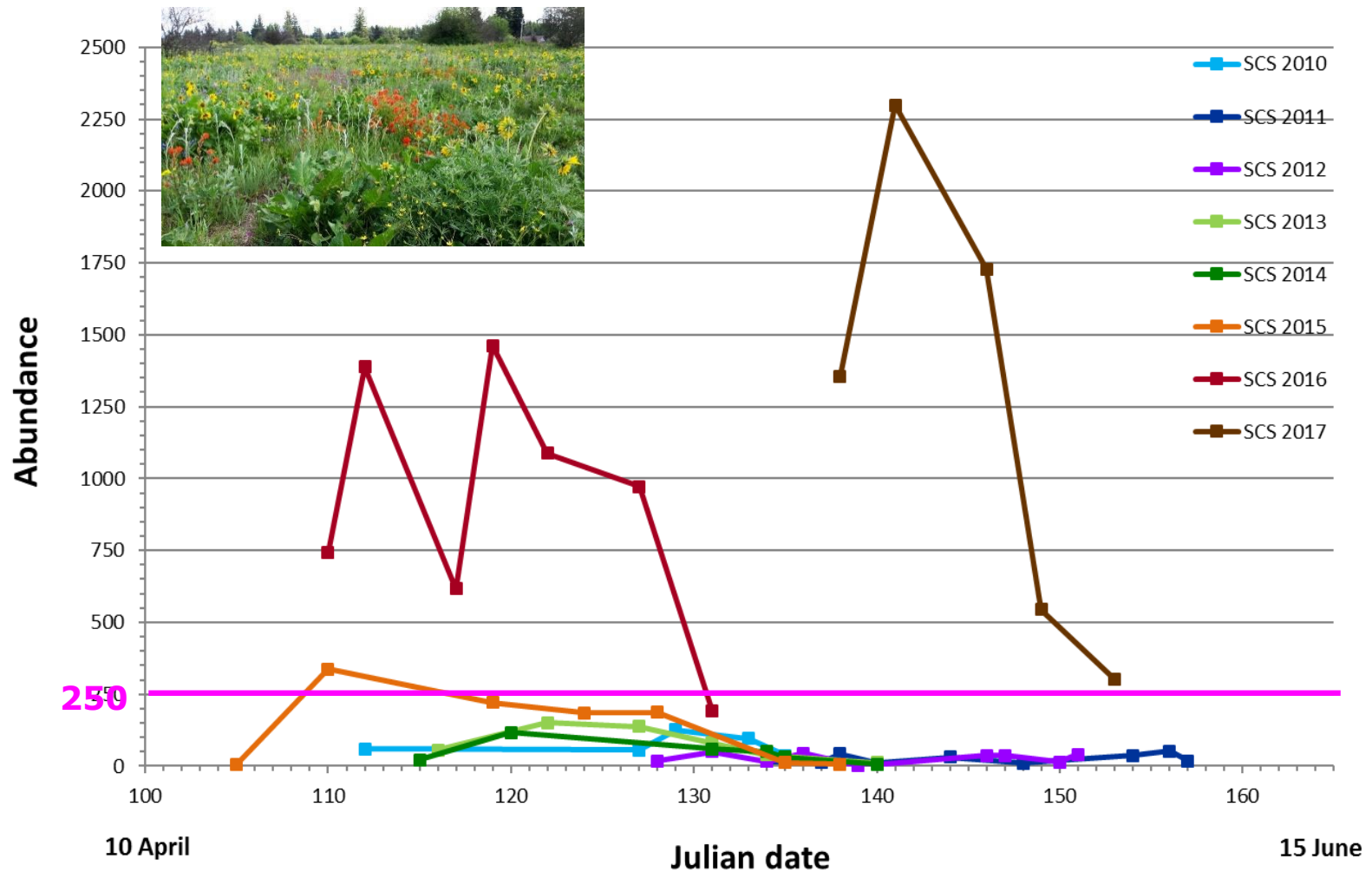
A reintroduced population is deemed "established" when:

- Peak single day abundance estimates (PSDAE) exceed 250 adults for
- 5 consecutive years solely through natural reproduction, and
- adults are widely distributed across a 20-ha site.

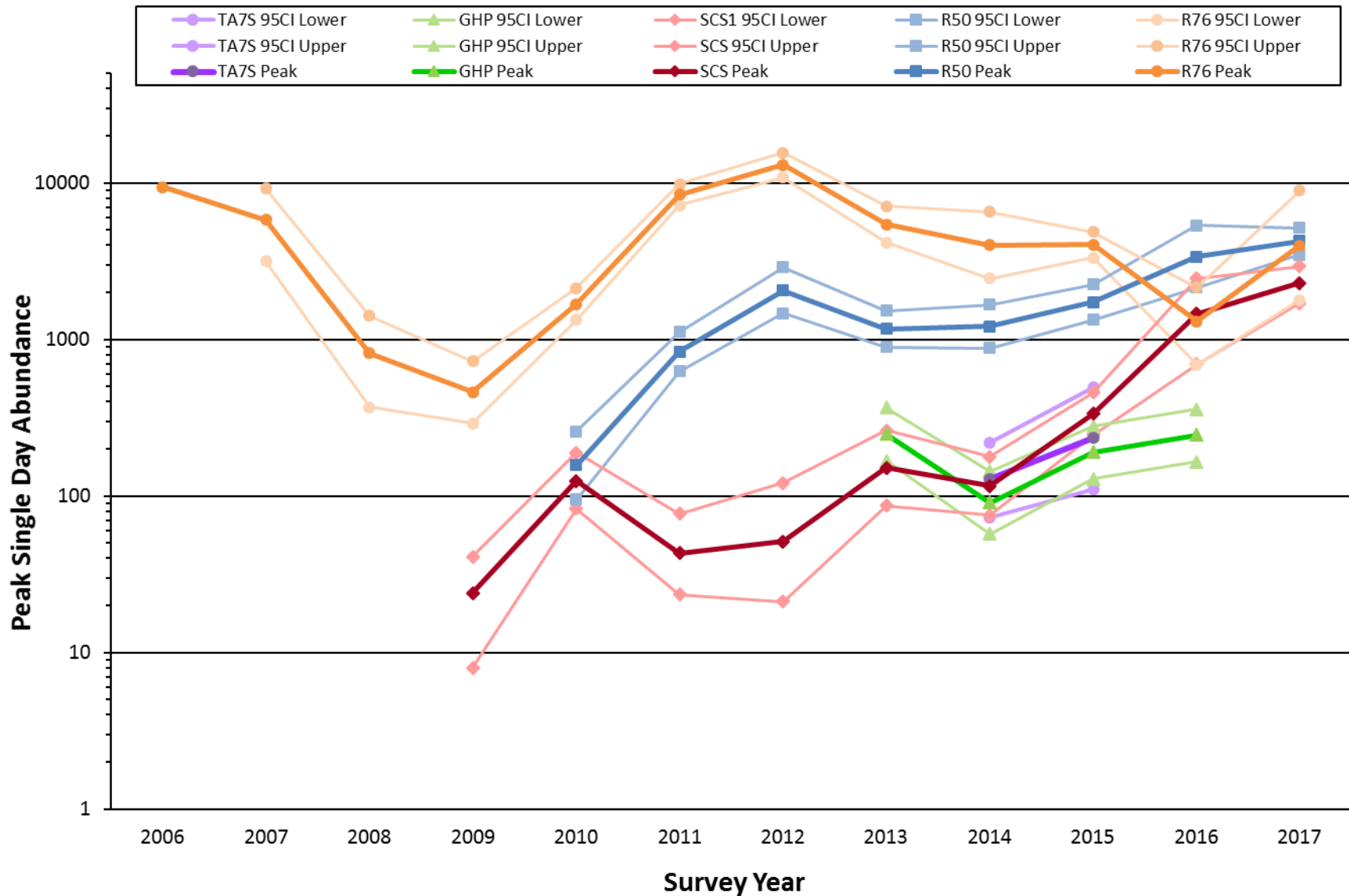
Adult abundance at R50: 2010-2017



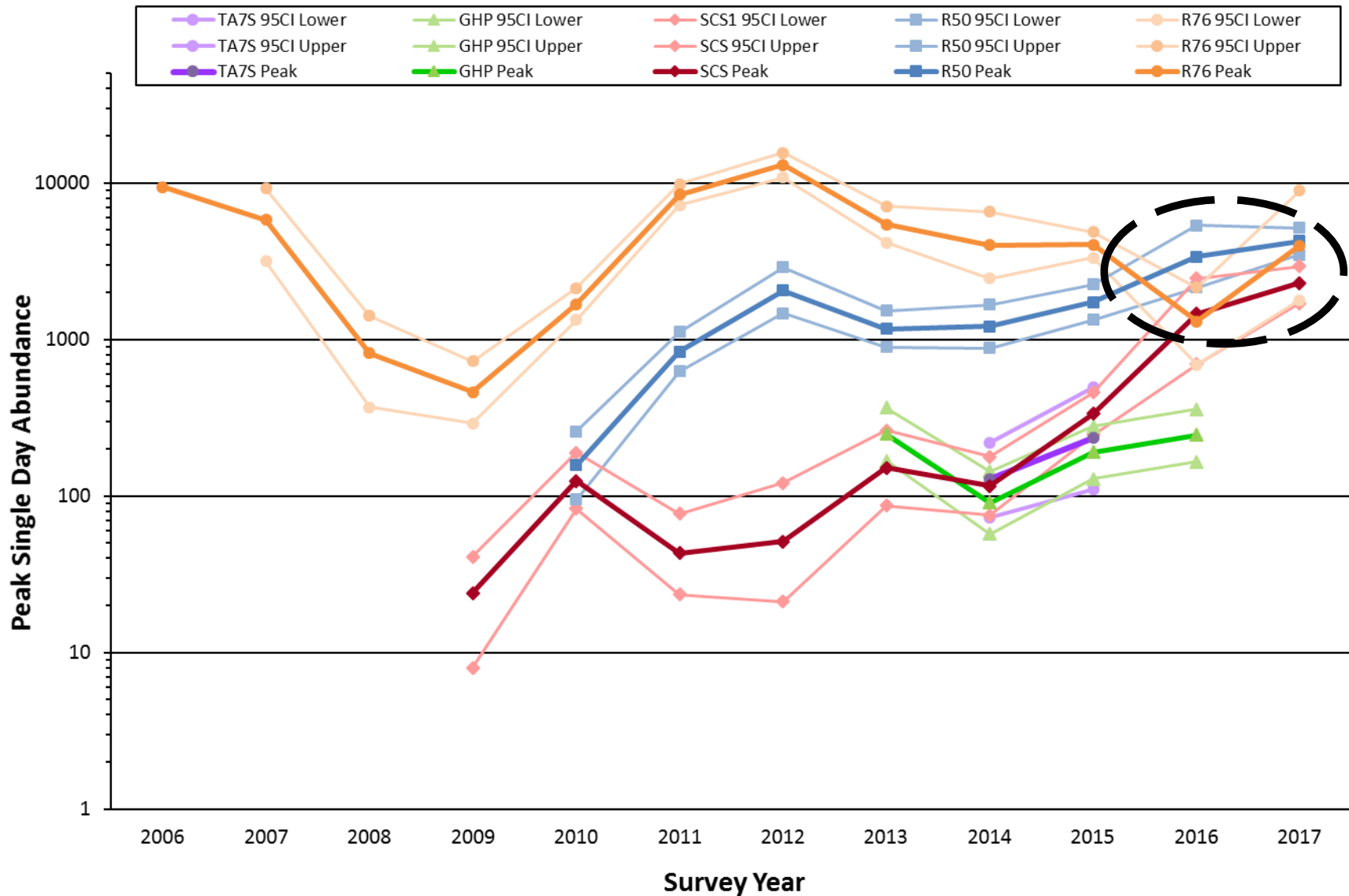
Adult abundance at SCS: 2010-2017



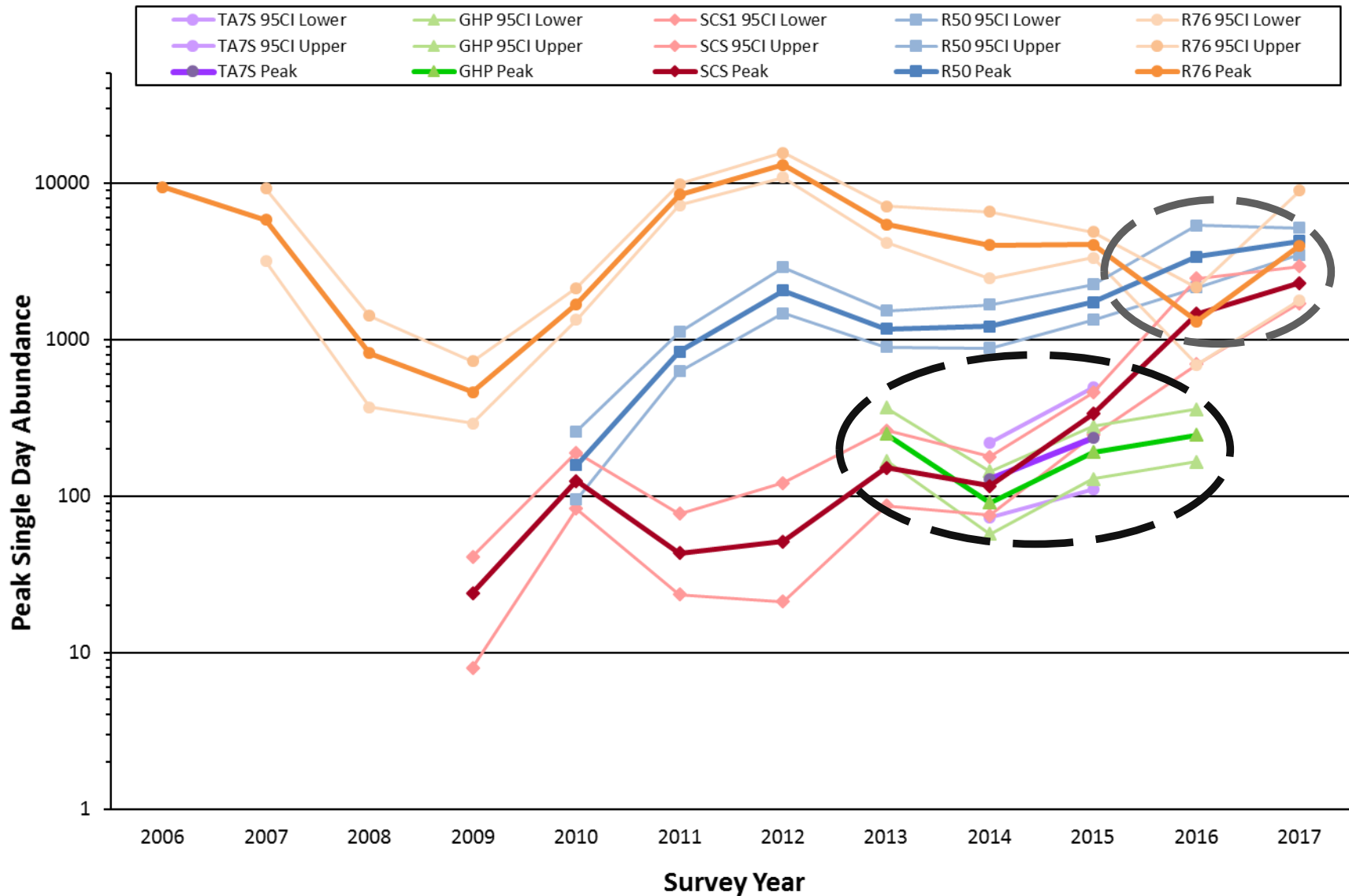
Peak Single Day Abundance



Peak Single Day Abundance

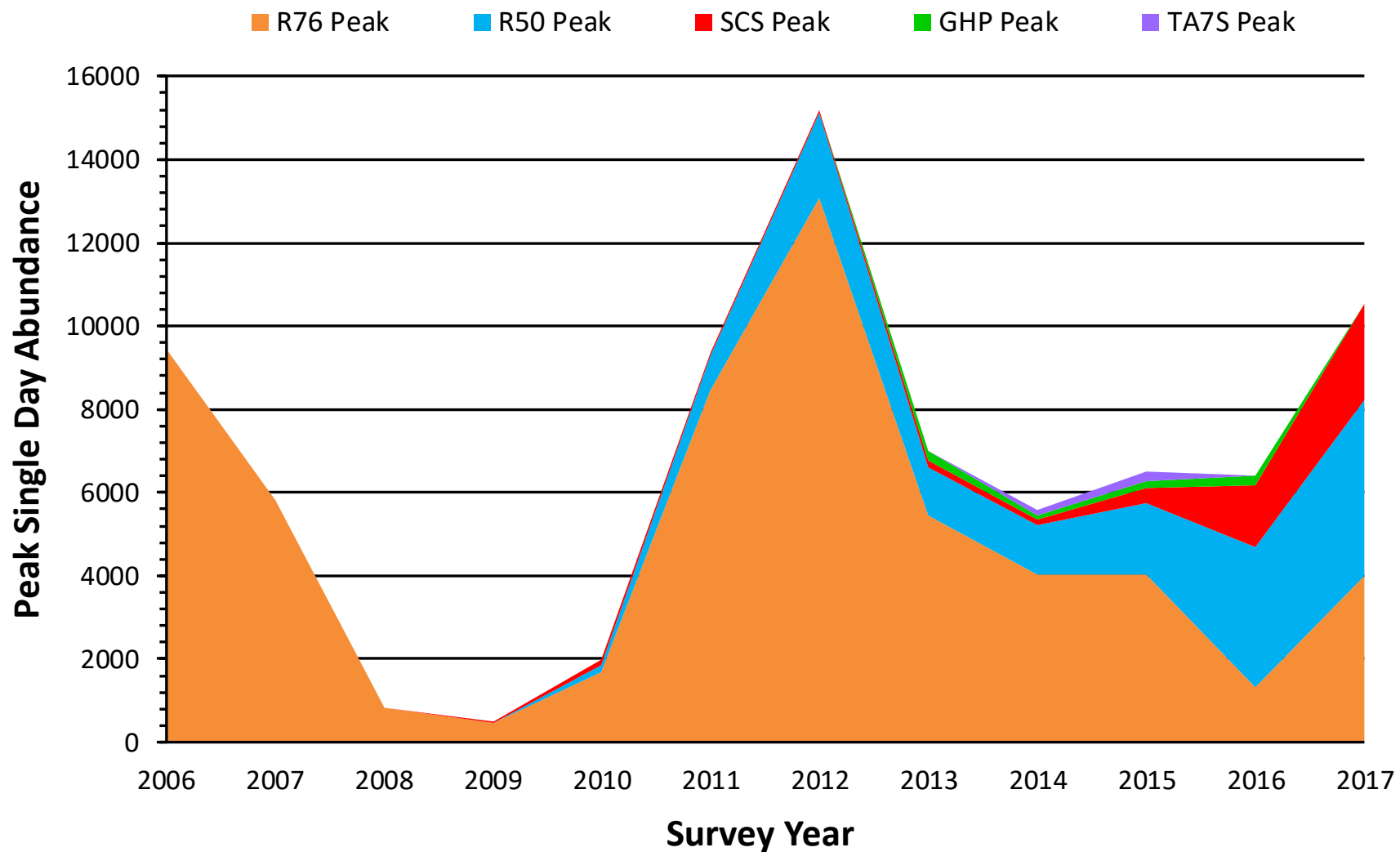


Peak Single Day Abundance



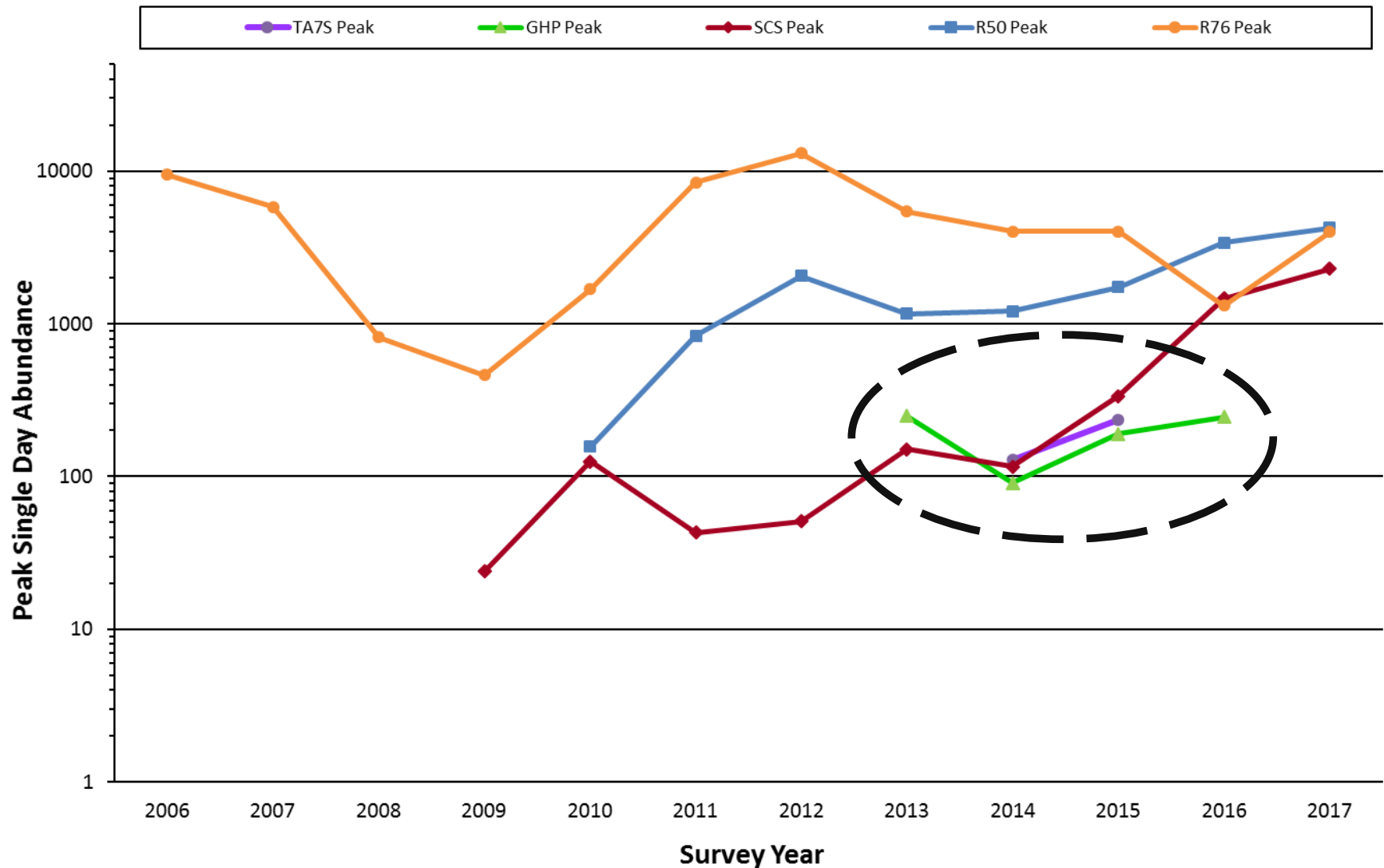
Cumulative Abundance All Sites

Single Day Peak



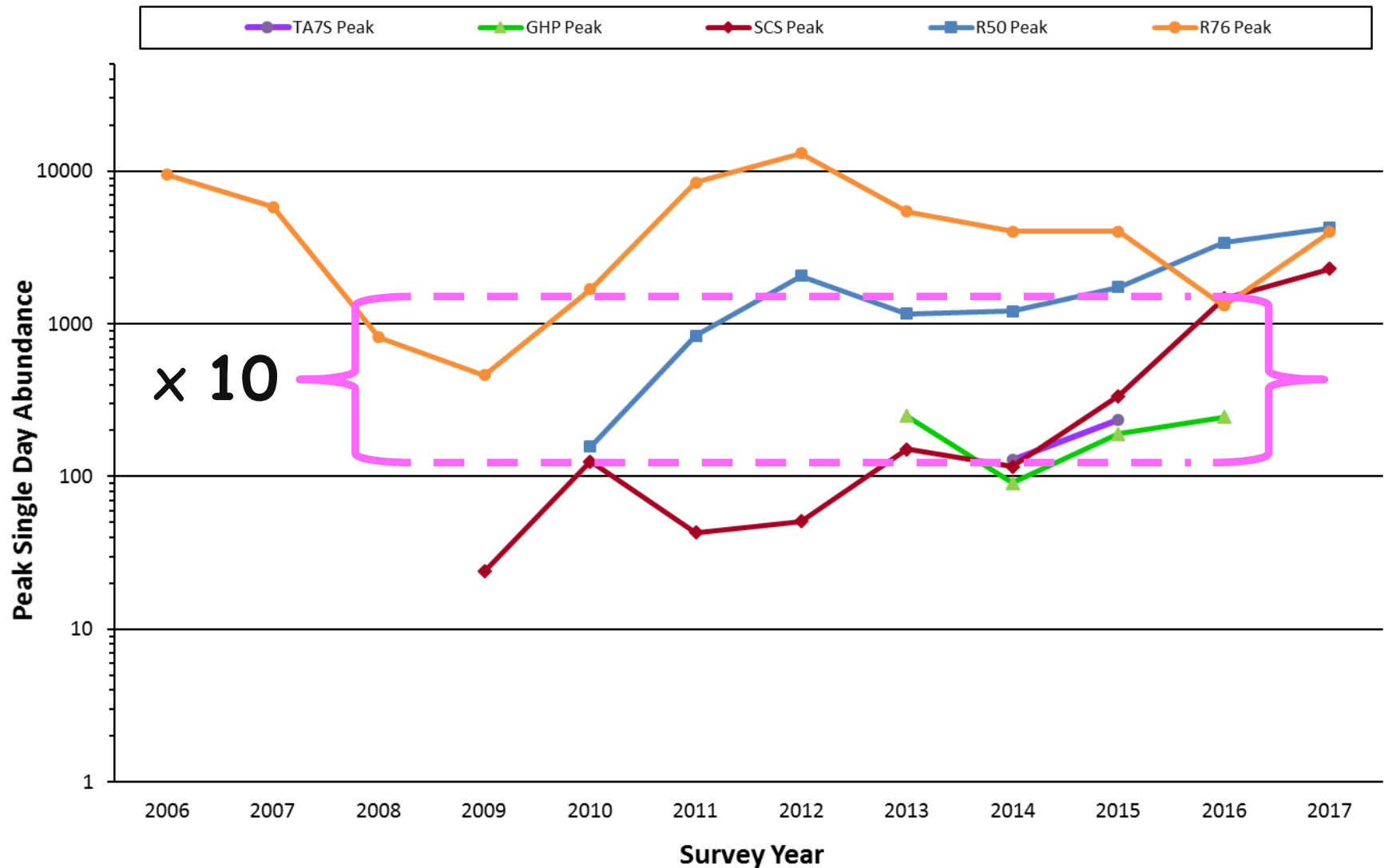
What's going on here?

Peak Single Day Abundance



What's going on here?

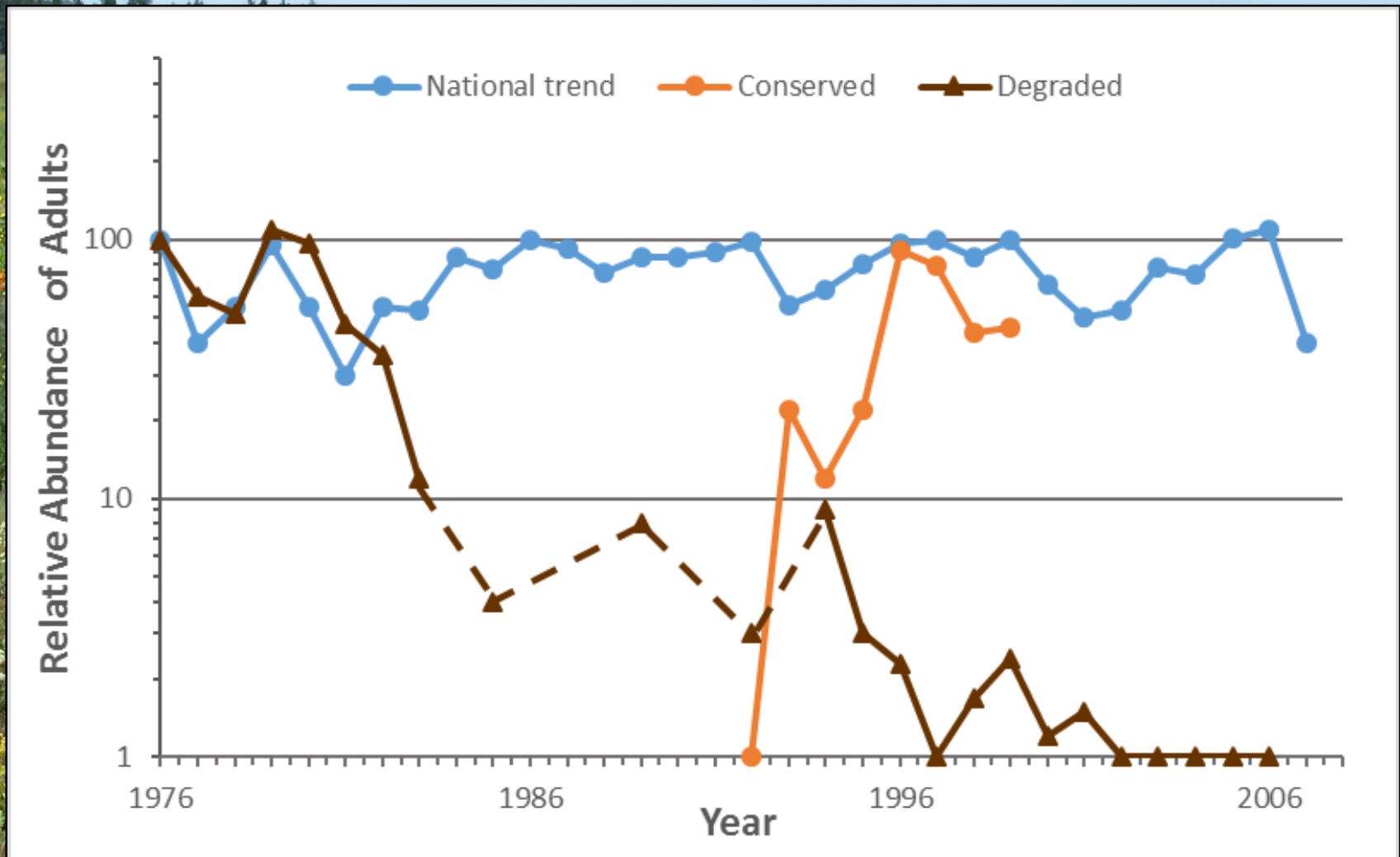
Peak Single Day Abundance



"Evidence based conservation of butterflies"

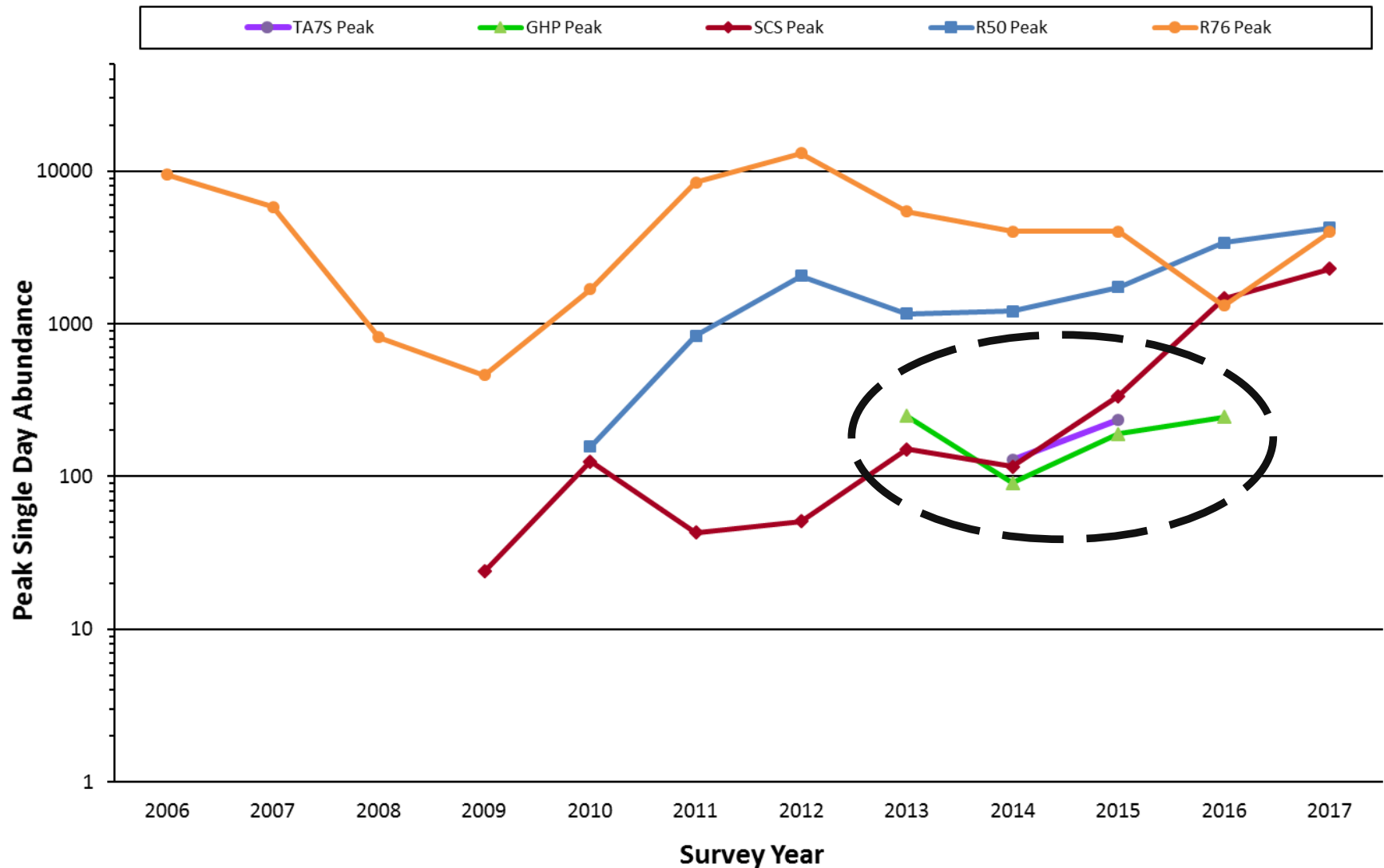
Thomas et al. 2011

Chalkhill blue - *Polyommatus coridon*



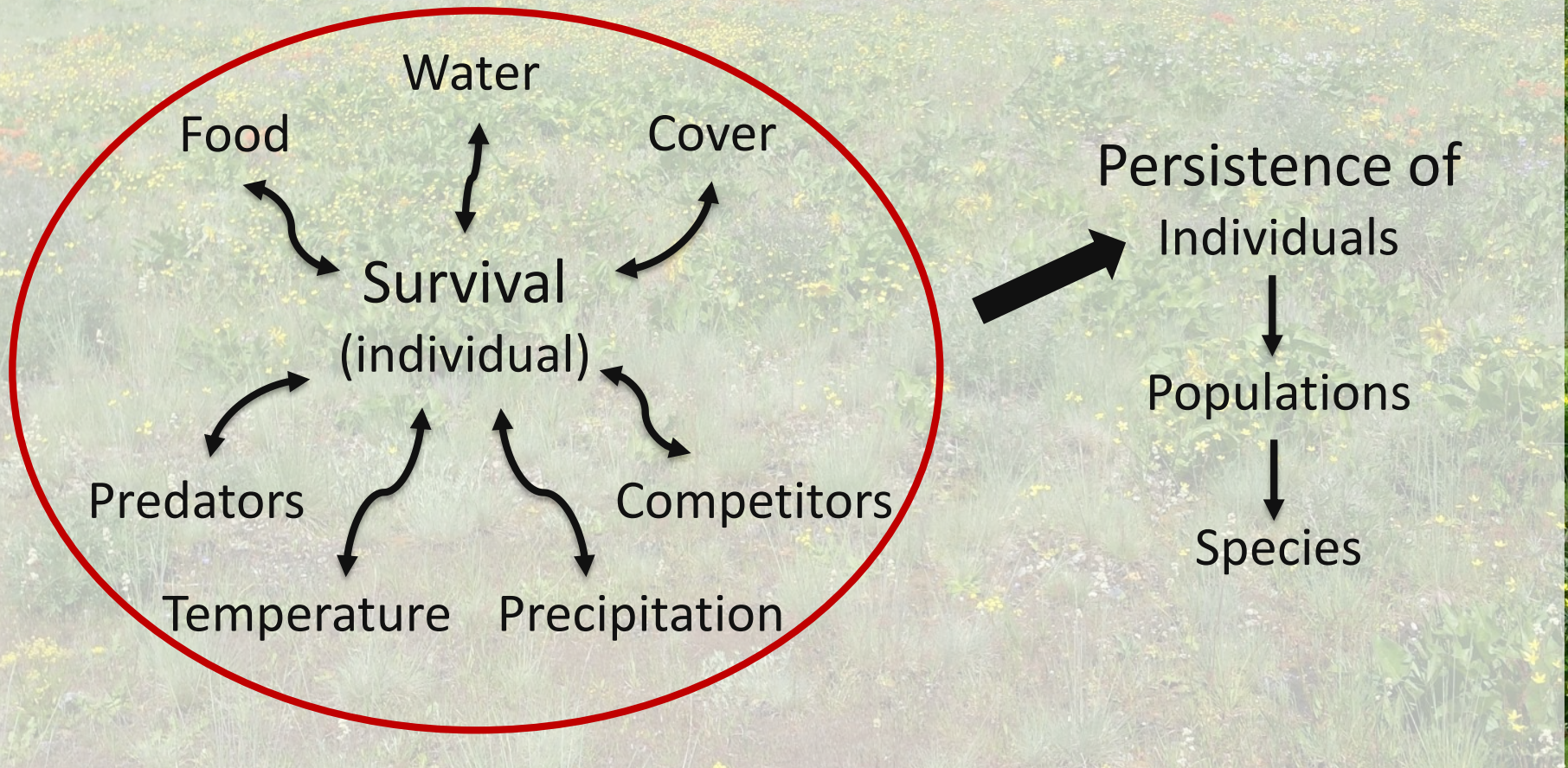
What's going on here?

Peak Single Day Abundance



Habitat: *Morrison et al. 1992*

the Goldilocks principal



So are we achieving what we hope to?

Threats	Objectives
Habitat loss and degradation	Conserve habitat on sites/ microsites
Population loss	Increase the number of populations
Protect existing population	Move checkerspots to new sites
Population/species viability	Maintain genetic integrity and population size
Population isolation	Large sites and site complexes

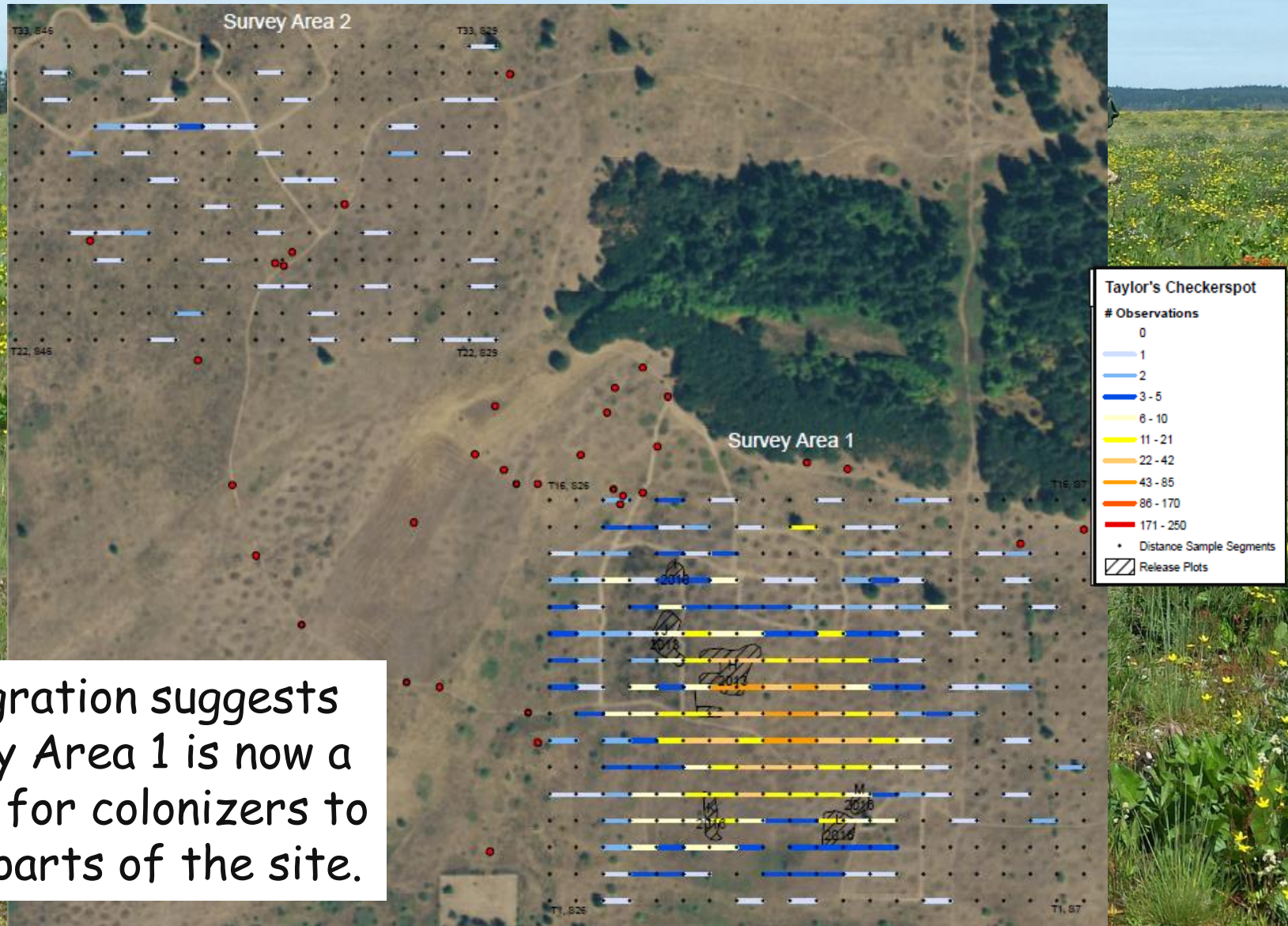
Many thanks South Puget Sound Partnership

Funding
provided by:



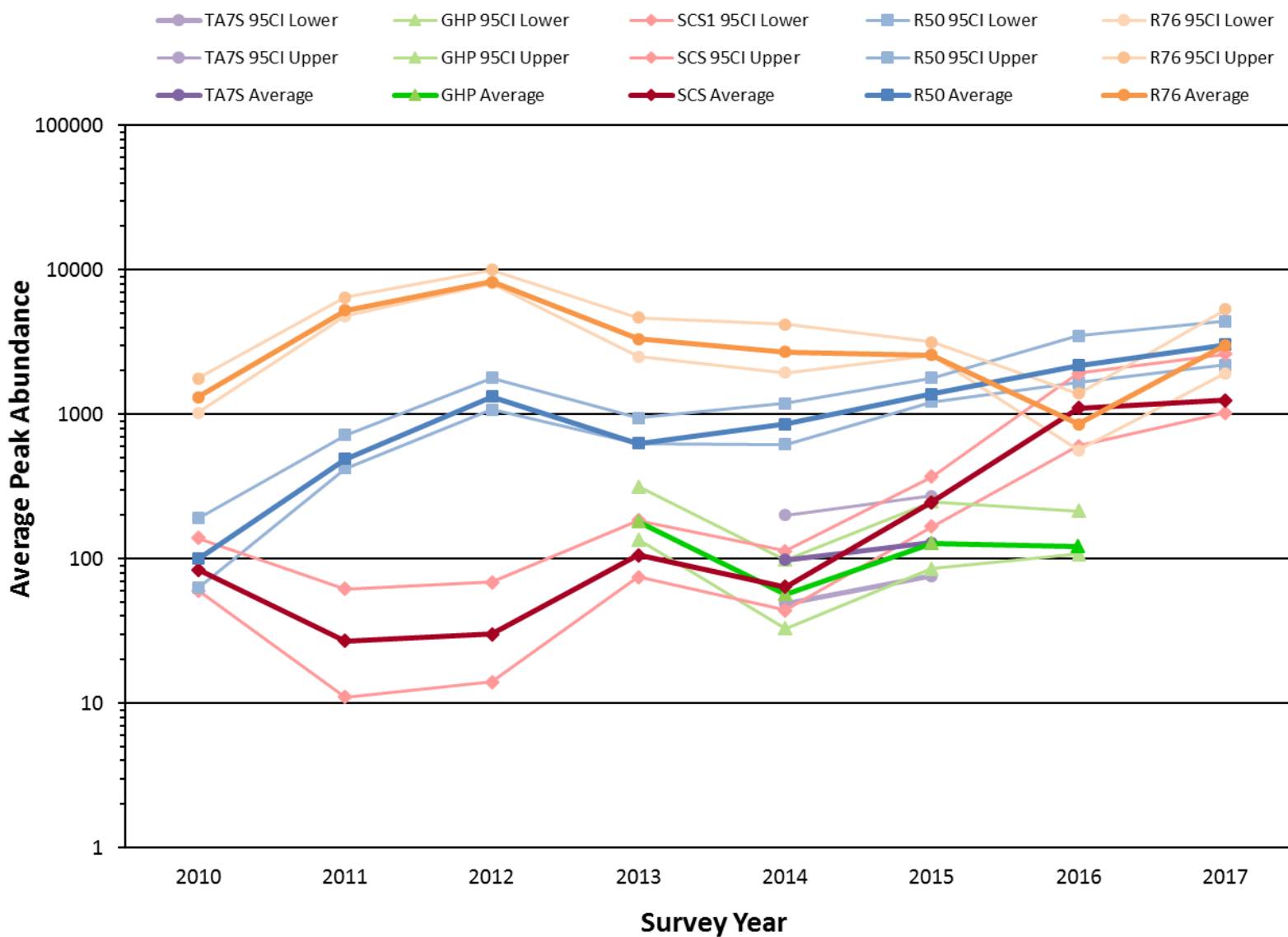
Taylor's checkerspot distribution

Scatter Creek South: 2017



...emigration suggests
Survey Area 1 is now a
source for colonizers to
other parts of the site.

10 Day Average Abundance



2017 Taylor's checkerspot counts

Date	R76:T1-12	R76:T 1-16	R50	SCS1	SCS2	GHP	GHP:CALE	TA7S
28-Apr						0		
30-Apr				0				
3-May				2	0			
4-May	1	1	293					
6-May						0	0	
8-May				410				1
9-May					0	0	0	
10-May	394	570	1410					
12-May						(1)		0
18-May	406	582						
19-May			1004					0
21-May				717	15	0	0	
22-May	467	533	768					
23-May								0
25-May	266	295			16			
26-May				422		0	0	
29-May				121	21			
31-May	1	1						
2-Jun				42	1			
5-Jun			0					
Total	1535	1981	3475	1714	53	1	0	1

Taylor's checkerspot release

2009-2017

	2009			2010		2011			2012		2013		2014		2015		2016			2017	
Site	Po	Pre		Po	Ad	Po	Ad	Pre	Po	Ad	Po	Ad	Po	Ad	Po	Ad	Po	Ad	Pre	Po	Ad
SCS	747	2487		891	202	1109	167	1036		133	3250			56			1658				
R50		2956		1145		1141															
GHP									975		3372	107	1522		1693 ¹	226	2029			3024	
PCM	741								1565												
T7S													1086		1102		231	1003		909	145

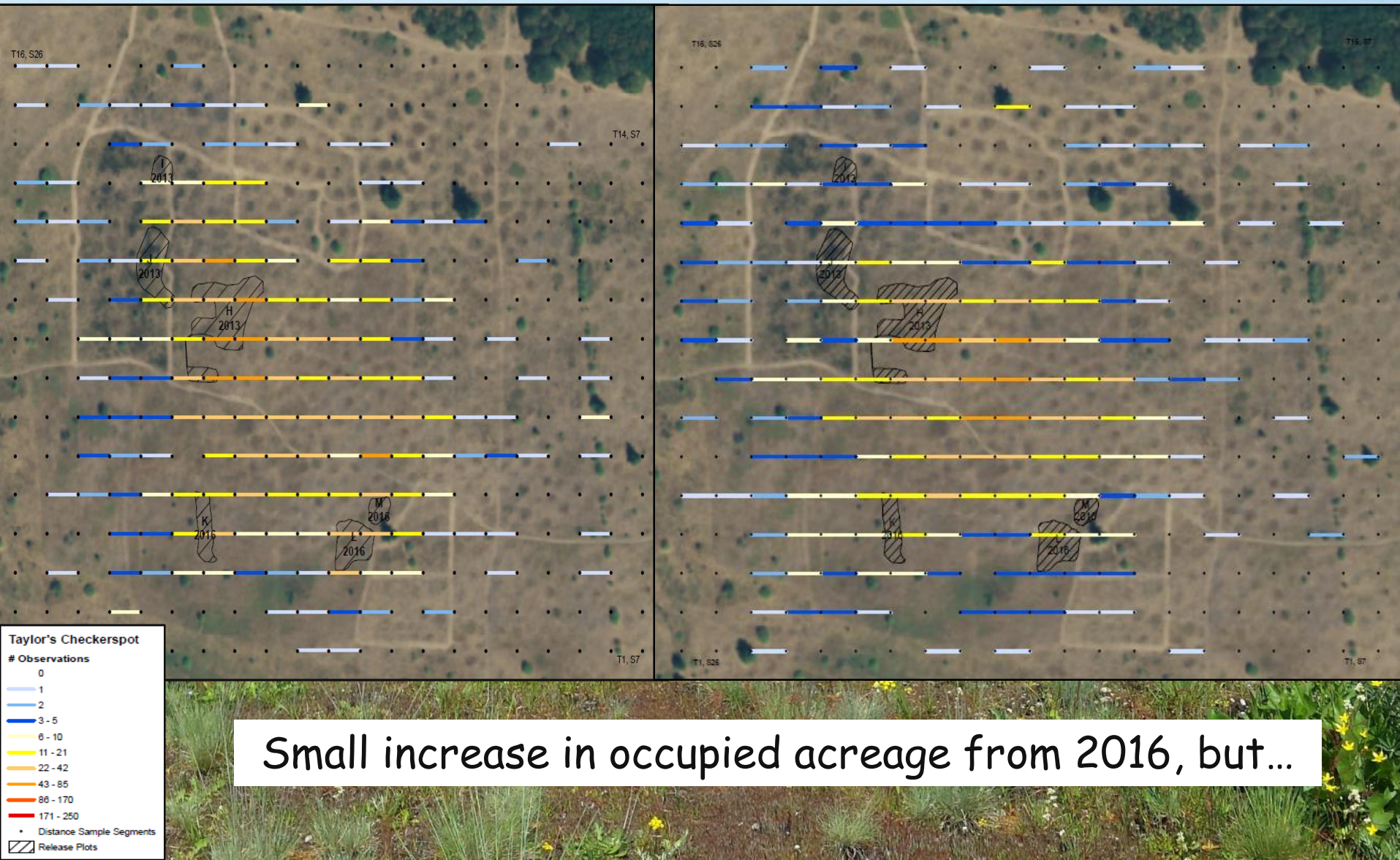
¹ Includes 490 larvae released at "Eric's plots"

- ✓ SCS - 6 consecutive years +1
- ✓ R50 - 2 consecutive years
- GHP - 6 consecutive years
- PCM - 1 year at a time
- TA7S - 4 consecutive years



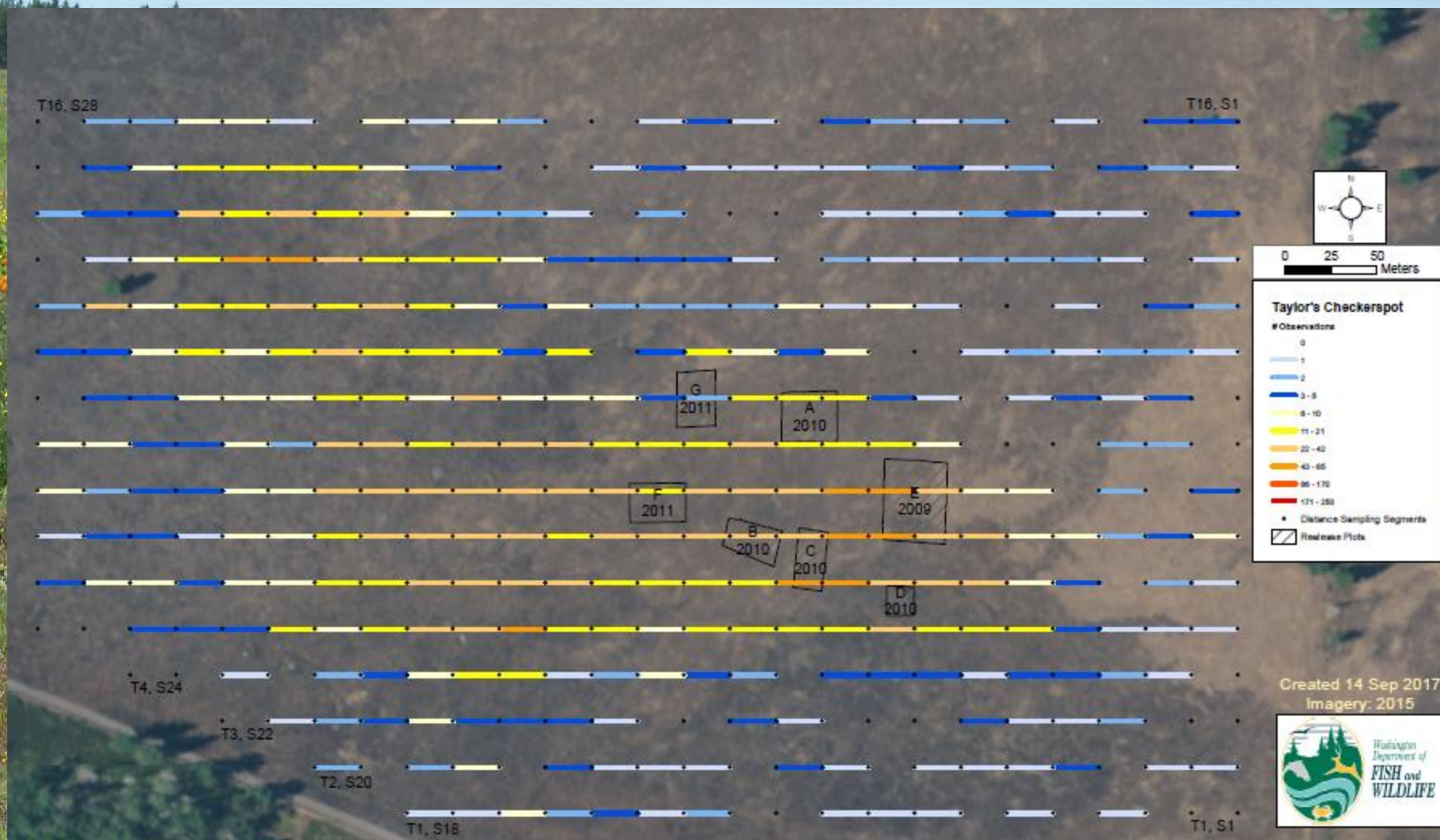
Taylor's checkerspot distribution

Scatter Creek South: 2016 and 2017



Taylor's checkerspot distribution

Range 50: 2017



Checkerspot Distribution Range 76 2016

Taylor's Checkerspot

Observations

0

1

2

3 - 5

6 - 10

11 - 21

22 - 42

43 - 85

86 - 170

171 - 250

● Distance Sample Segments



Checkerspot Distribution Range 76 2017

Taylor's Checkerspot

Observations

0

1

2

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11 - 21

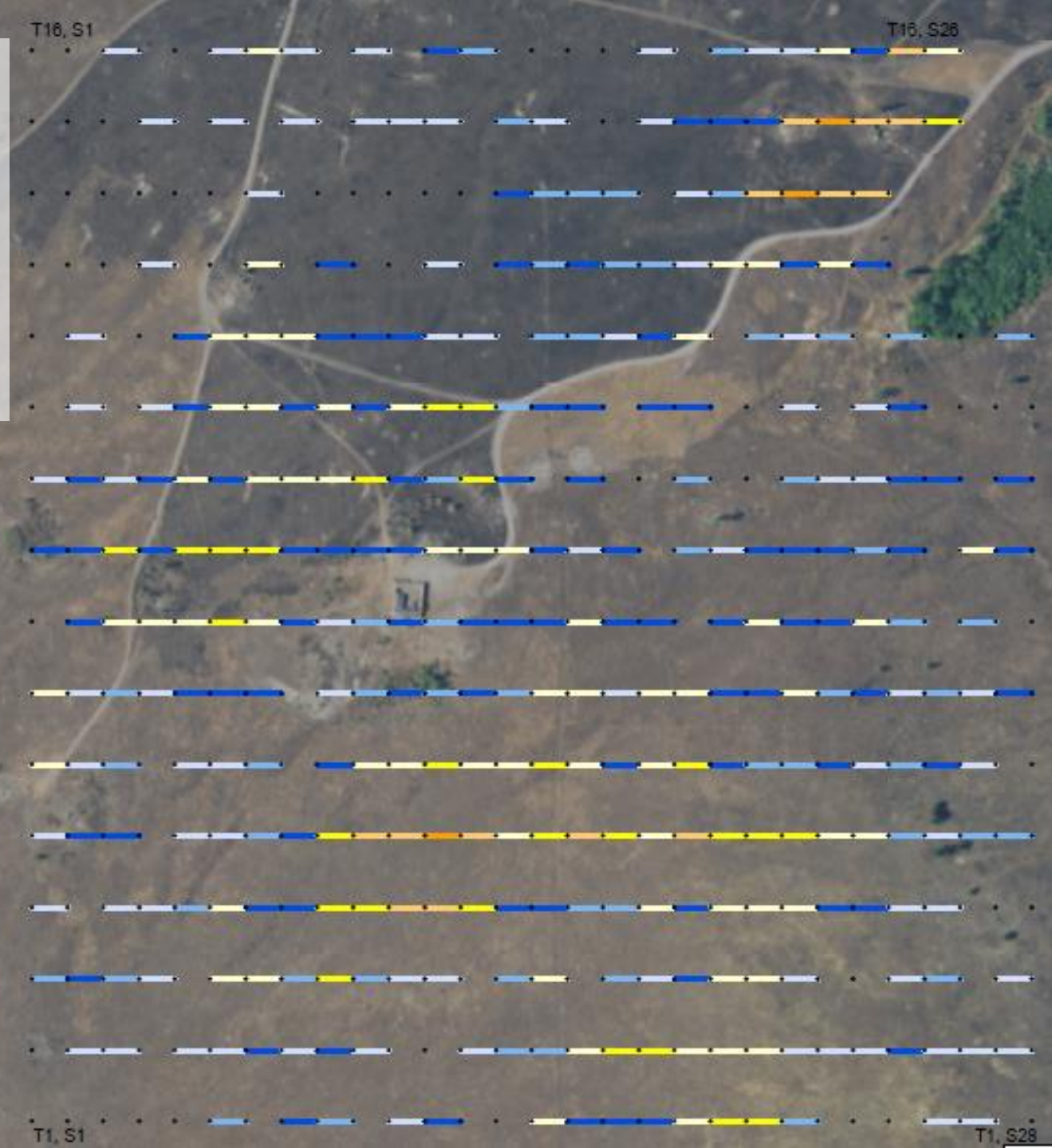
22 - 42

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● Distance Sample Segments



Range 76
distribution

Widely
distributed
across a
monitoring
area >20 ha
(50 ac) in size

42 ha (104 ac)

Taylor's Checkerspot
Total # Observations

0
1
2
3 - 5
6 - 10
11 - 21
22 - 42
43 - 85
86 - 170
171 - 250

• Distance Sample Segments

100 50 0 100 Meters
Datum: WGS 1984 UTM Zone 10 North
Imagery: Statewide 2011 (NAIP 2011 Color 1m)

Range 76
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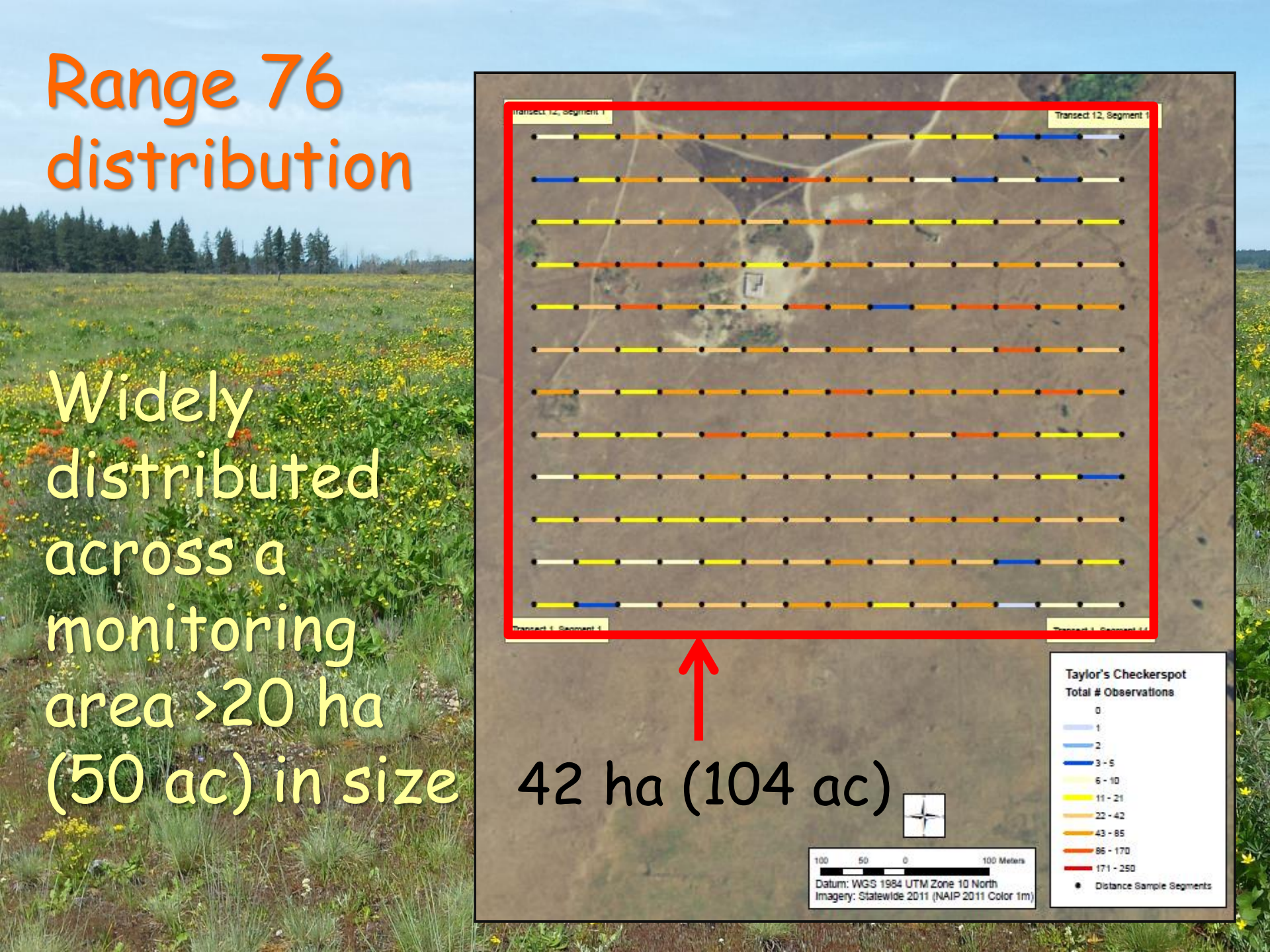
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Taylor's Checkerspot
Total # Observations

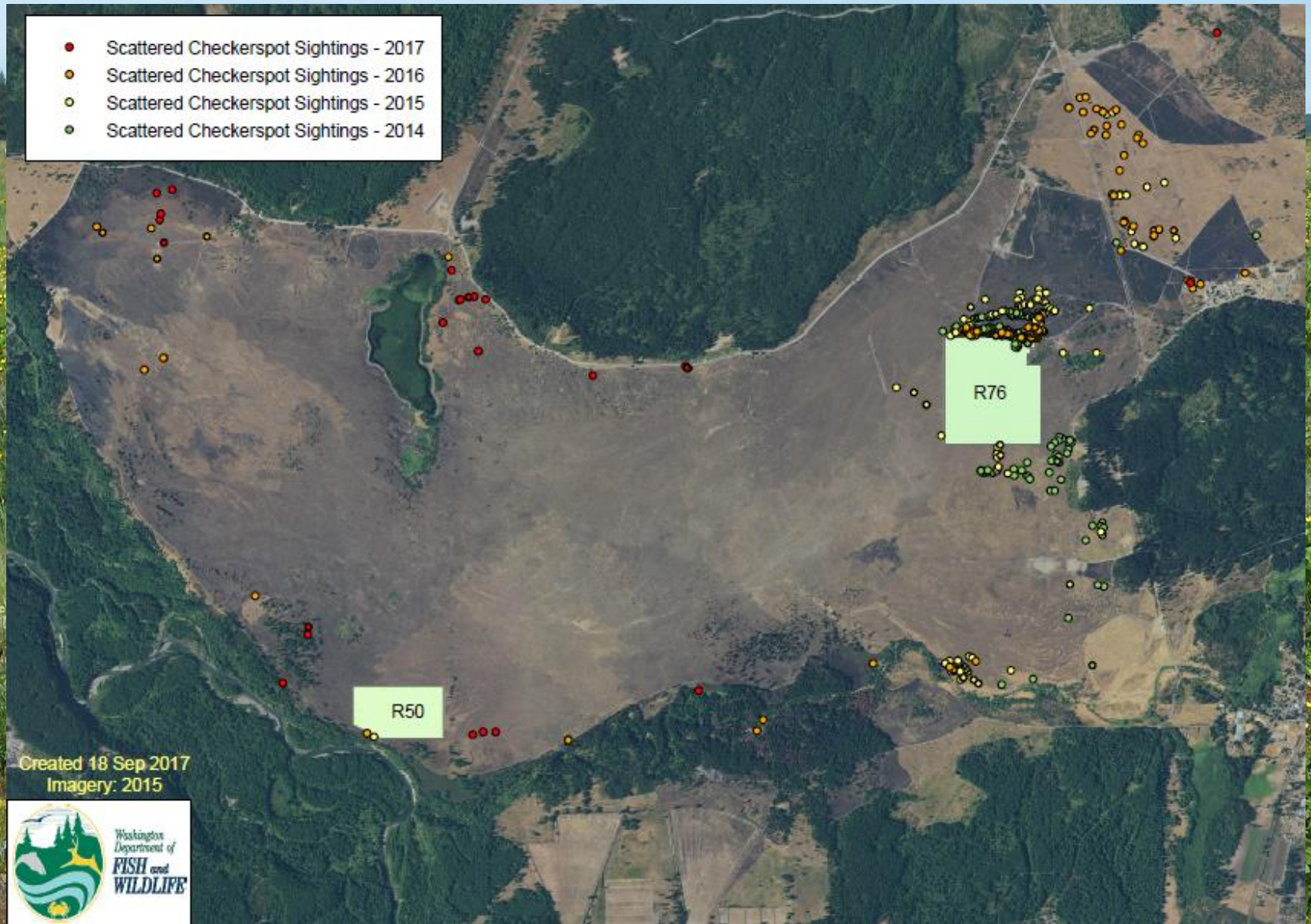
0
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• Distance Sample Segments

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2017 Scattered Sightings - AIA



Extensive Habitat Restoration

