

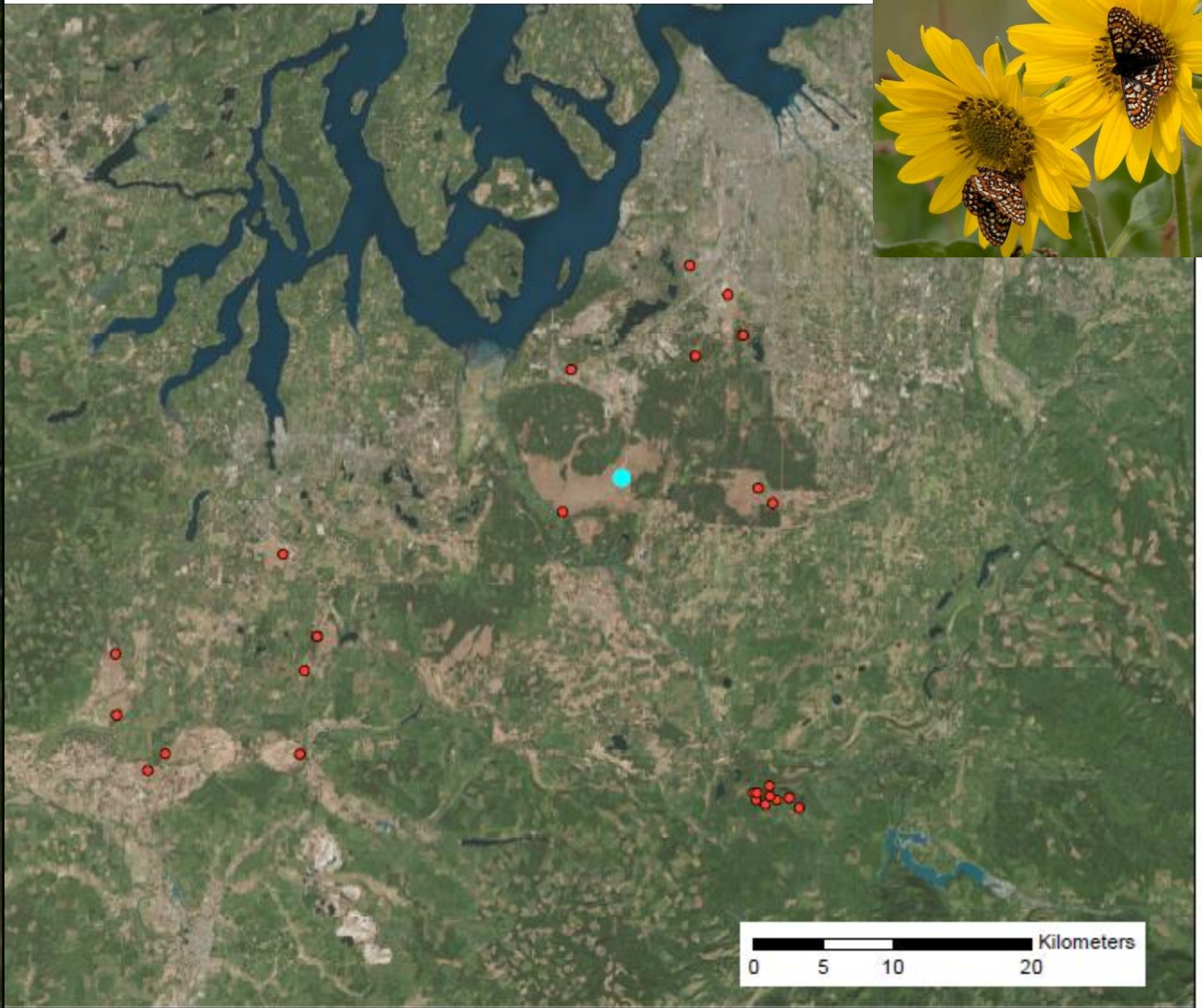
Taylor's checkerspot Reintroduction: A commitment of patience and persistence

Mary Linders

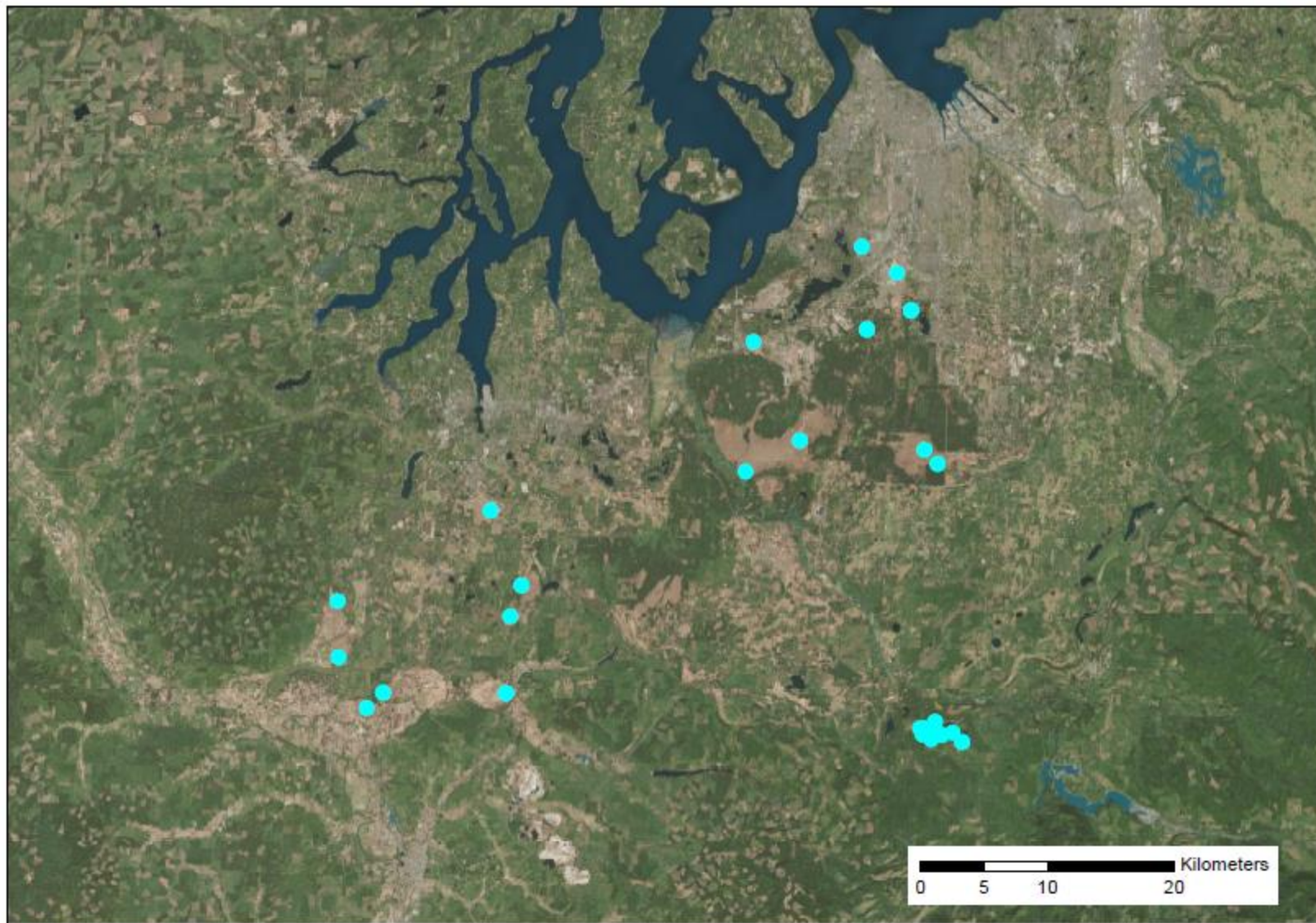
Washington Department of Fish and Wildlife



Taylor's checkerspot location 2007

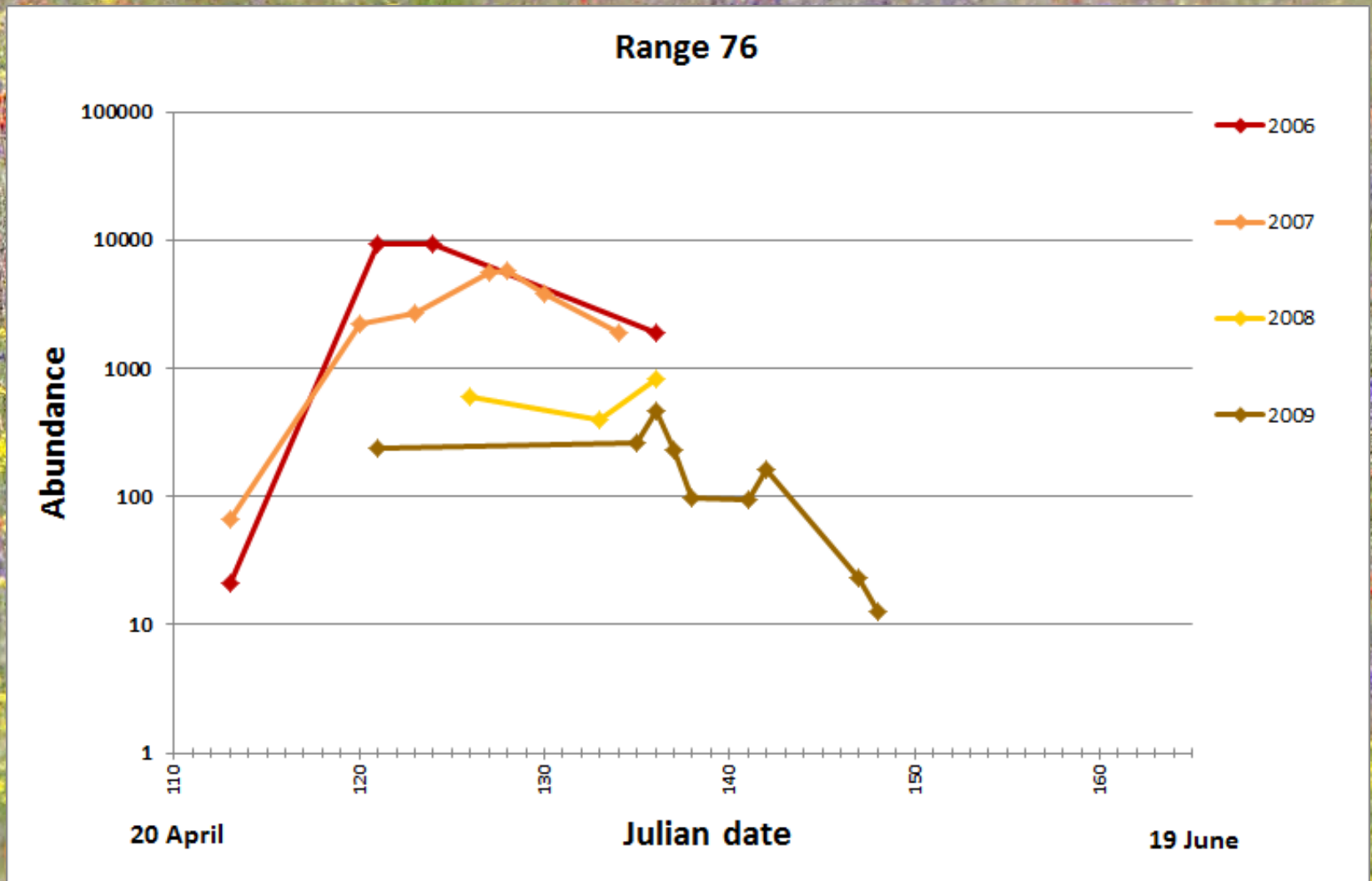


Historic Locations of Taylor's Checkerspots



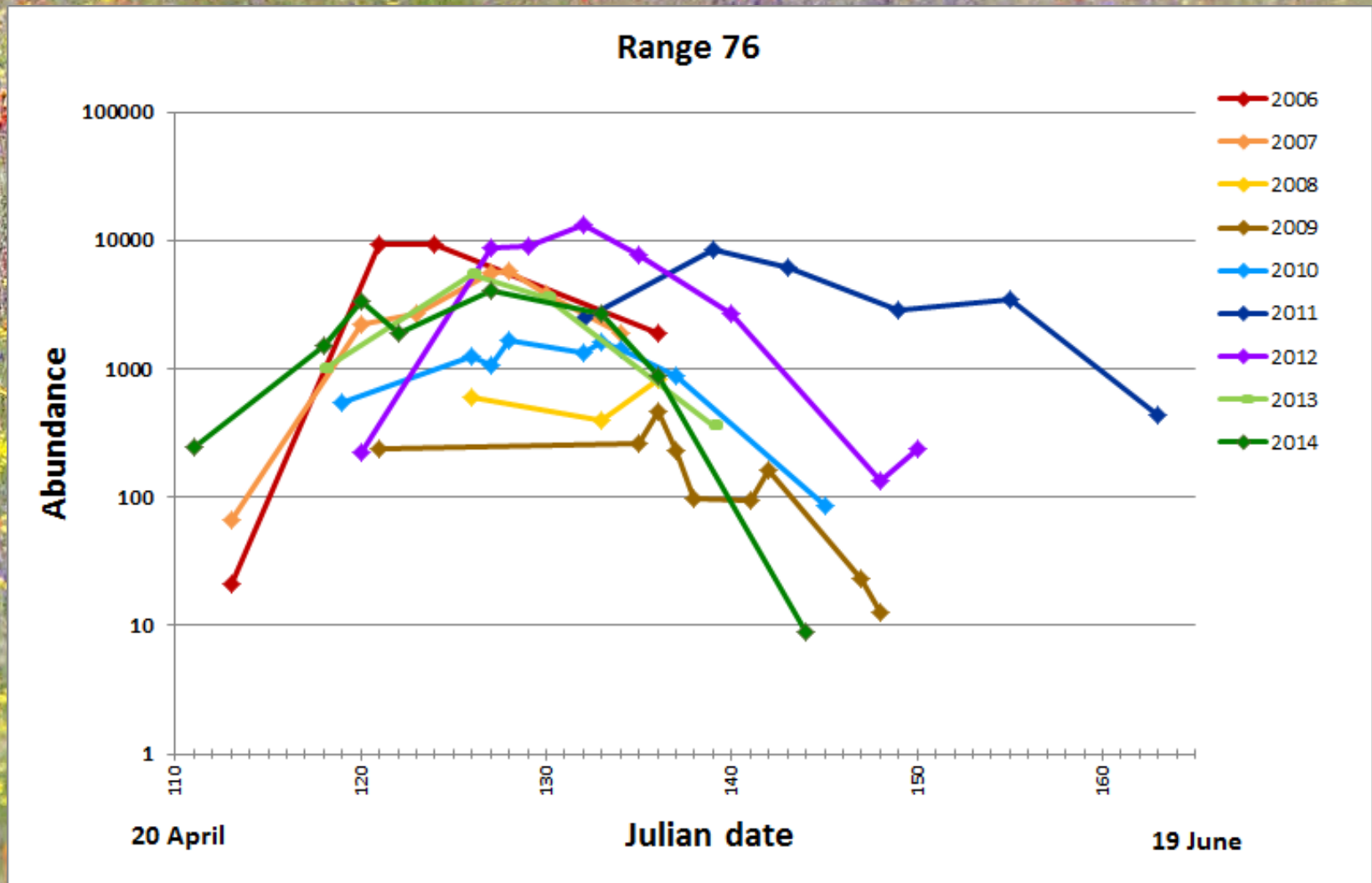
Taylor's checkerspot abundance

Range 76: 2006 to 2009



Taylor's checkerspot abundance

Range 76: 2006 to 2014





Taylor's checkerspot
Habitat loss and degradation

Puget Lowlands:

Joint Base Lewis-McChord Artillery Impact Area - Range 76



M. Linders



National defense

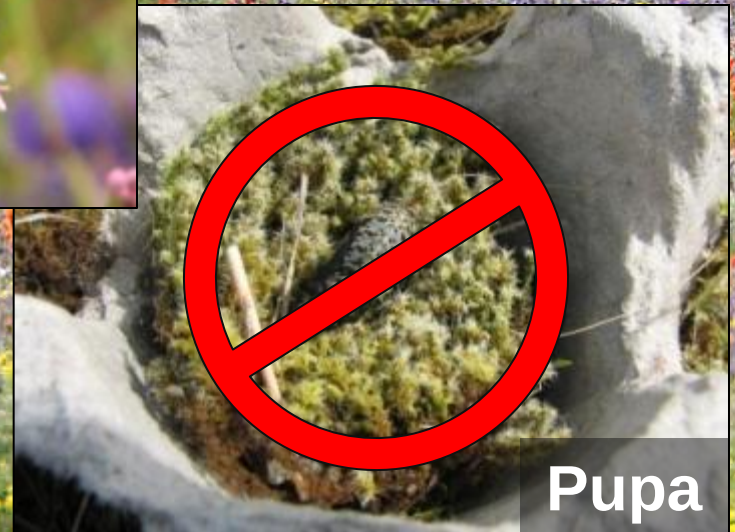


Taylor's checkerspot Reintroduction

Goals and Objectives

- **Goal:** to establish at least 3 new populations at three Puget lowland sites in the next decade (2022).
- **Objectives:**
 - release >1500 postdiapause larvae at a minimum of two sites annually
 - Continue releases at each site for 5 consecutive years
 - Continue adult surveys 5 more years for evidence of population establishment

Release trials - ID promising strategy



Taylor's checkerspots released by life stage 2008-2015

	2008	2009		2010		2011			2012		2013		2014		2015	
Site	Post	Post	Pre	Post	Ad	Post	Ad	Pre	Post	Ad	Post	Ad	Post	Ad	Post	Ad
SCS	340	747	2487	891	202	1109	167	1036		133	3250			56		
R50			2956	1145		1141										
GHP									975		3372	107	1522		1203	169
PCM		741							1565							
TA7S													1086		1102	
SCN		759														
TNQ																
WRP																
T15																
BHP																
MMP																
WHI																
JHP																

Bigger really is better!

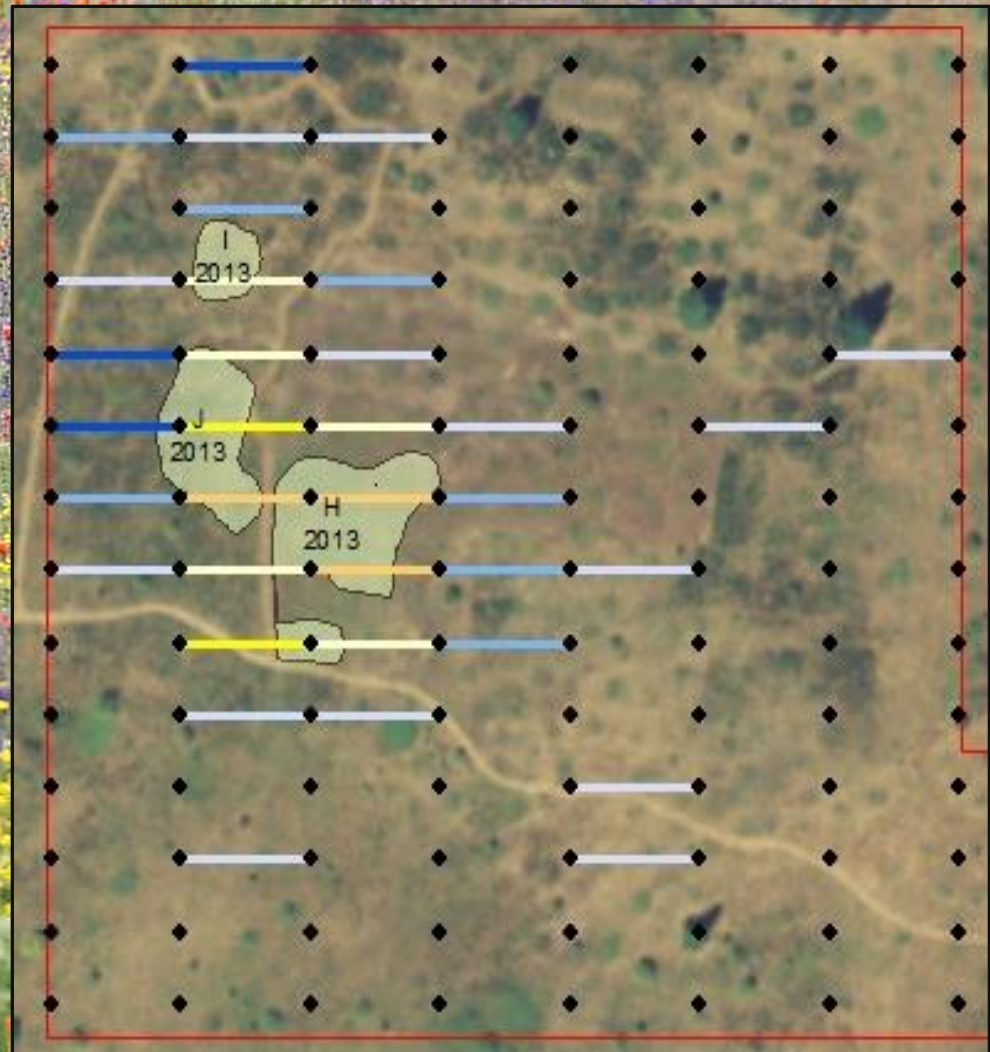


Larvae feed before pupating

...and eclosing as adults



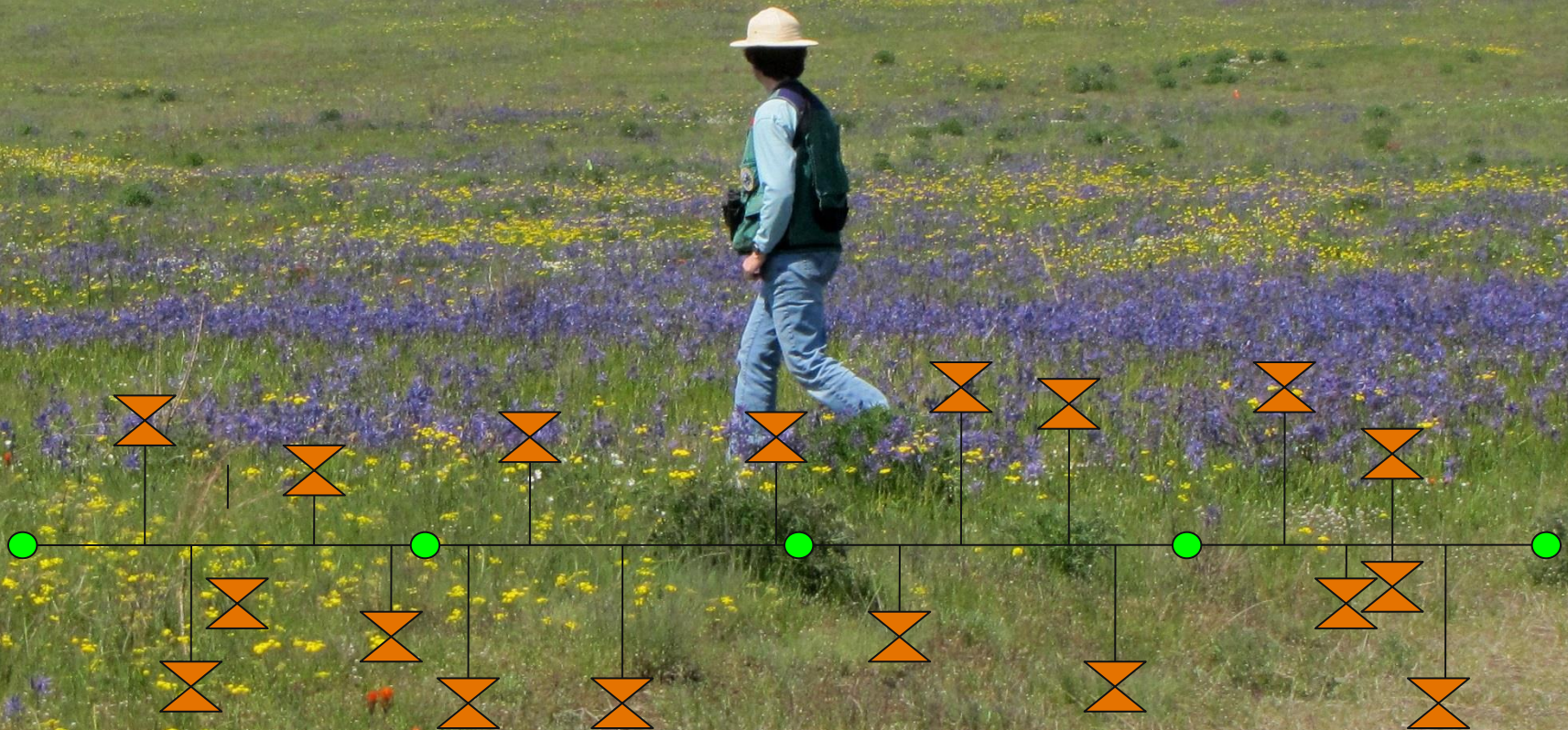
where females in turn,
deposit their eggs...



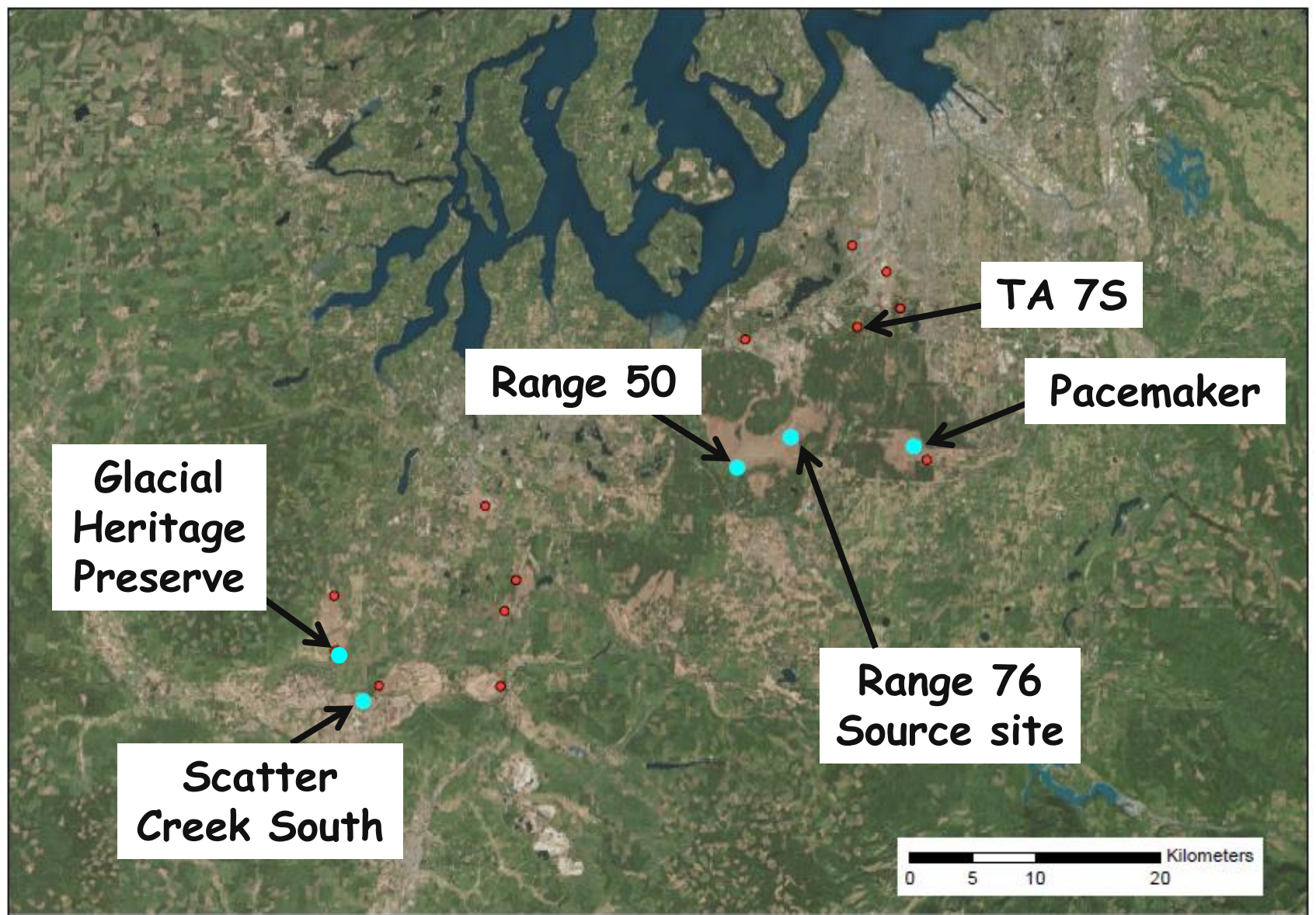
Distance sampling of adults

Objective: Quantify adult density, abundance and distribution

Method: Record location, number, perpendicular distance (± 0.1 m) and behavior (perch, fly, nectar) of checkerspots



Occupied Sites - South Puget Sound



Reintroduction

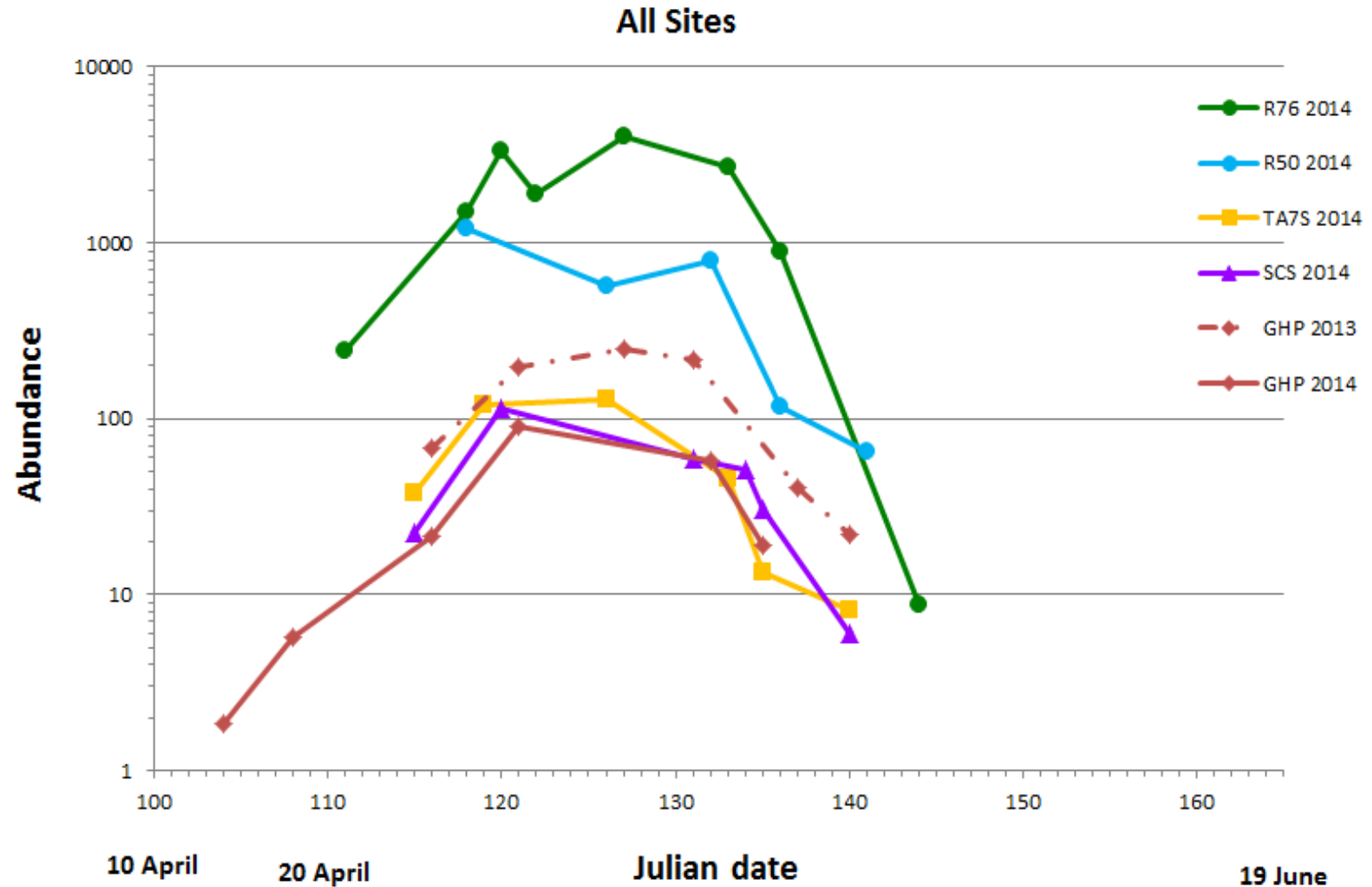
How do we define success?

A reintroduced population of checkerspots will be considered **established** when:

- **How many?** a minimum of 250 adult butterflies (single day abundance estimate)
- **Where?** are widely distributed across a monitoring area >20 ha (50 ac) in size
- **How long?** and they occupy the site solely through natural reproduction each year for five consecutive years.

Taylor's checkerspot abundance

All Sites: 2014

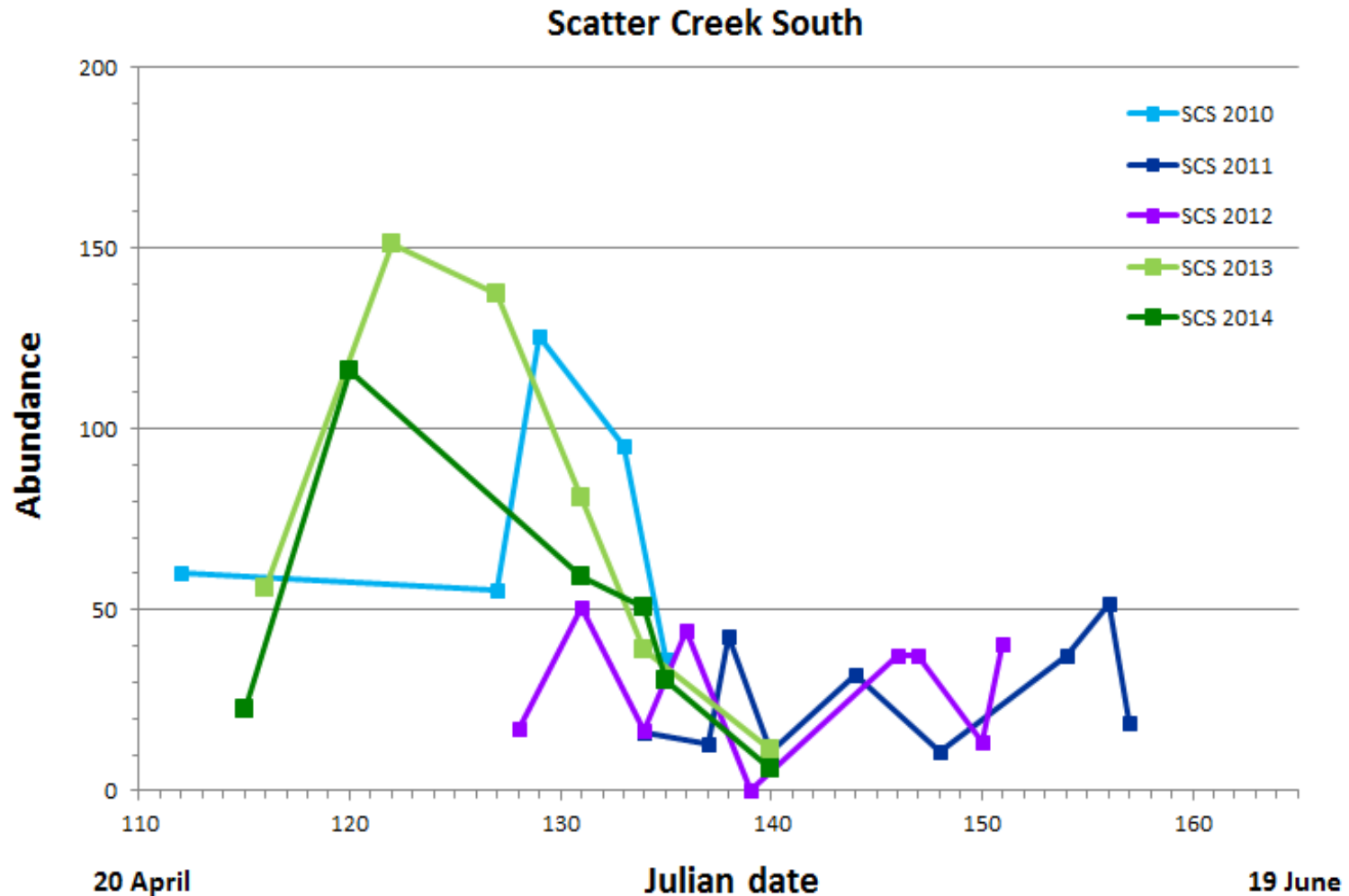


Taylor's checkerspot Surveys 2015

Date	GHP	PCM	R50	R76	SCS	TA7S
14-Apr	1				0	
18-Apr	3	0			0	0
21-Apr				44		0
25-Apr		0			12	14
26-Apr	11					
28-Apr			331	232		
29-Apr						52
30-Apr		0		672	60	
1-May	48					
2-May				500		
3-May			16			
6-May			146			50
7-May		0		754		
11-May					30	
12-May	32		201			
13-May		0		561		23
14-May					26	
15-May	10				16	7
16-May			29	144		
20-May	0	0			3	2
21-May			14			
24-May		0		2		0
Total	105		812	2909	147	148

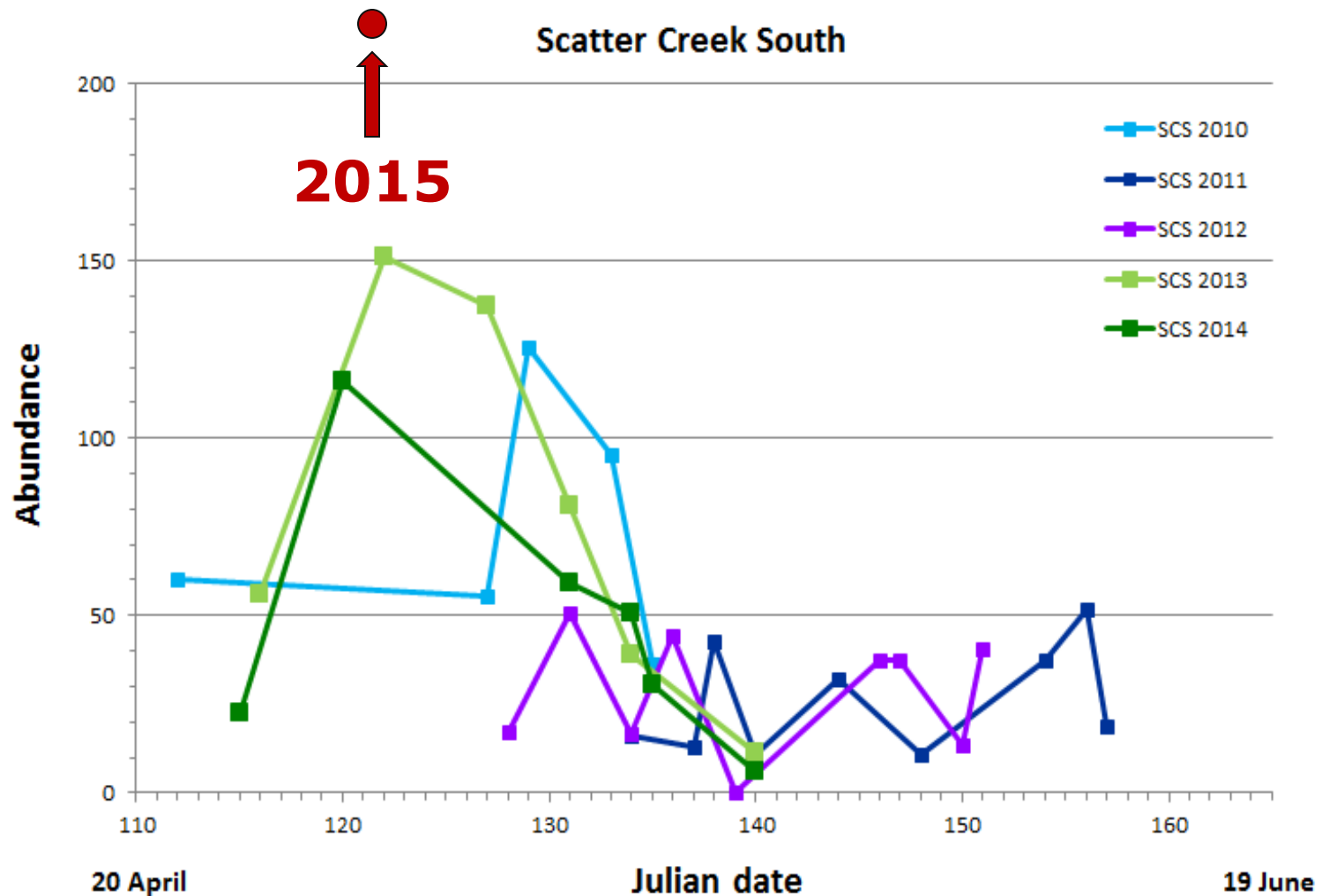
Taylor's checkerspot abundance

Scatter Creek South: 2010 to 2014



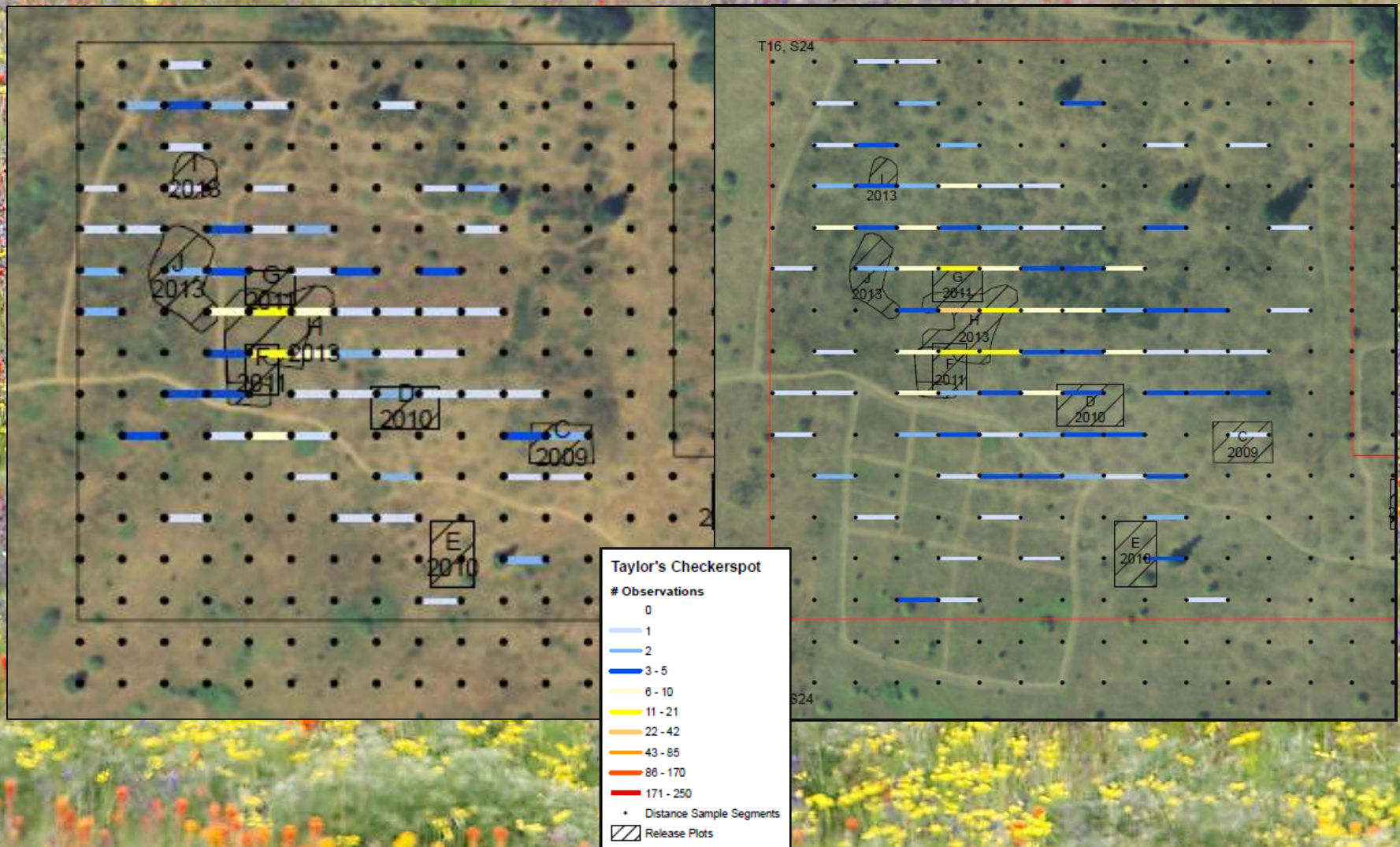
Taylor's checkerspot abundance

Scatter Creek South: 2010 to 2014



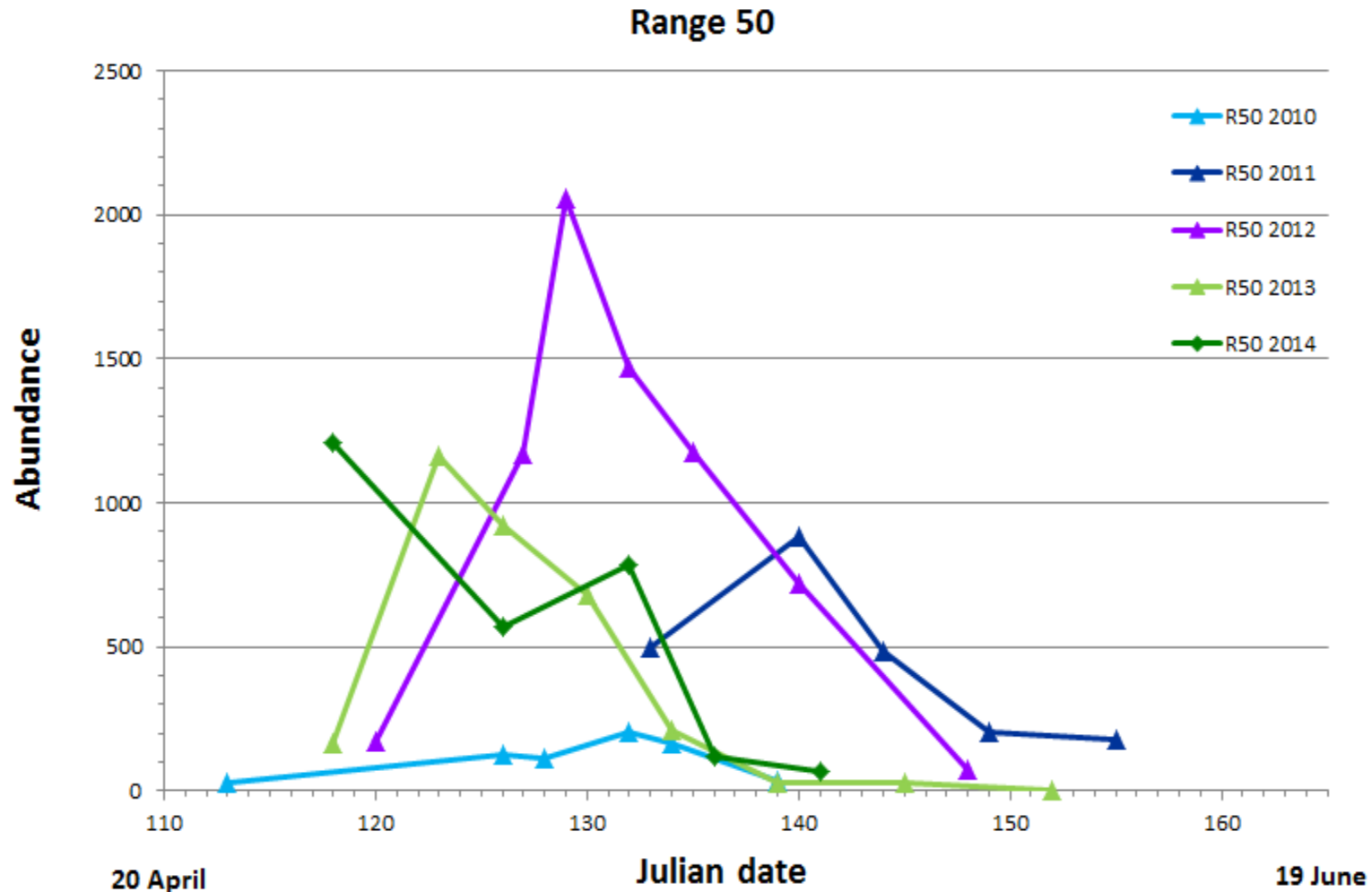
Taylor's checkerspot abundance

Scatter Creek South: 2015 vs. 2014

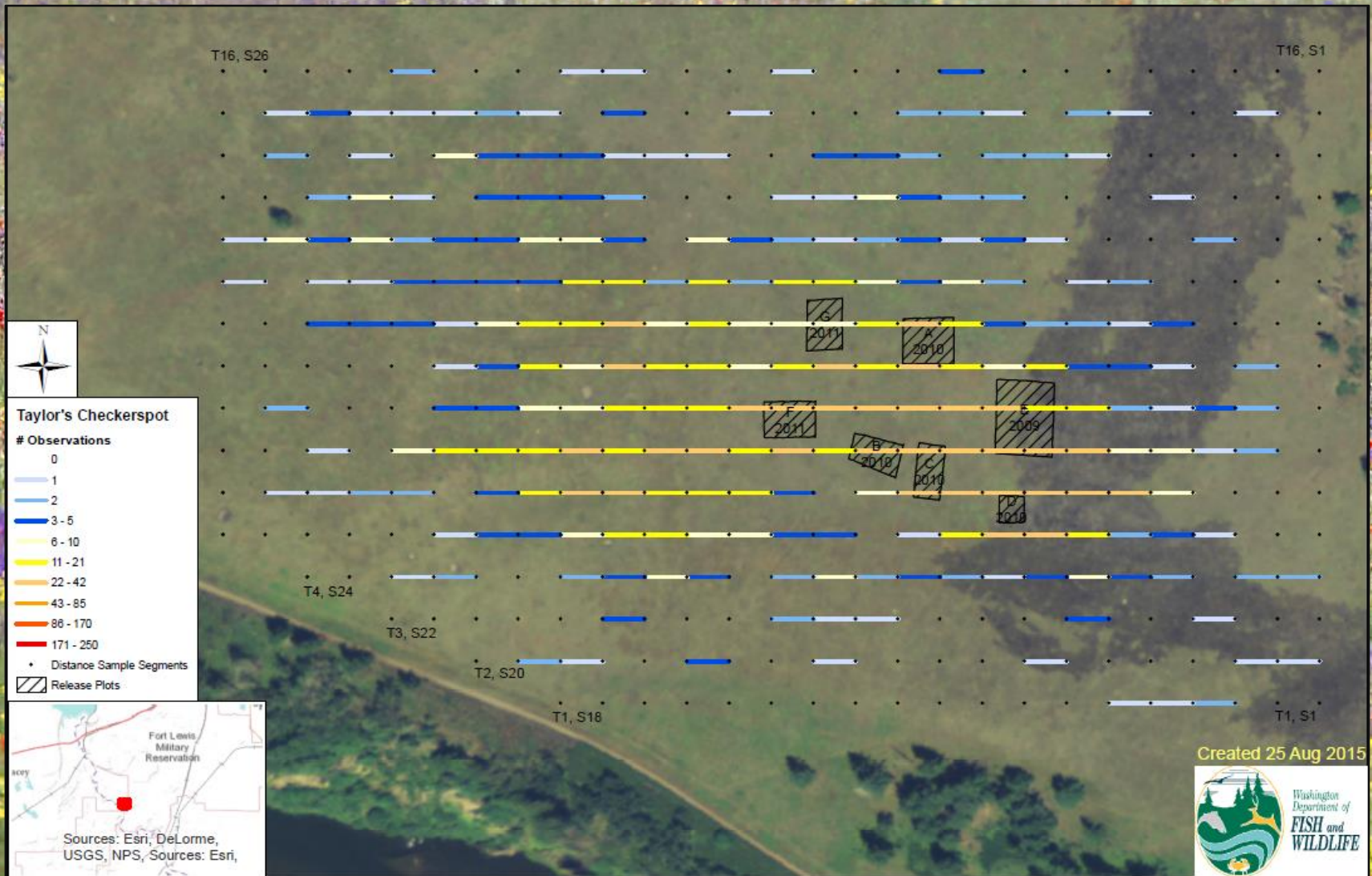


Taylor's checkerspot abundance

Range 50: 2010 to 2012

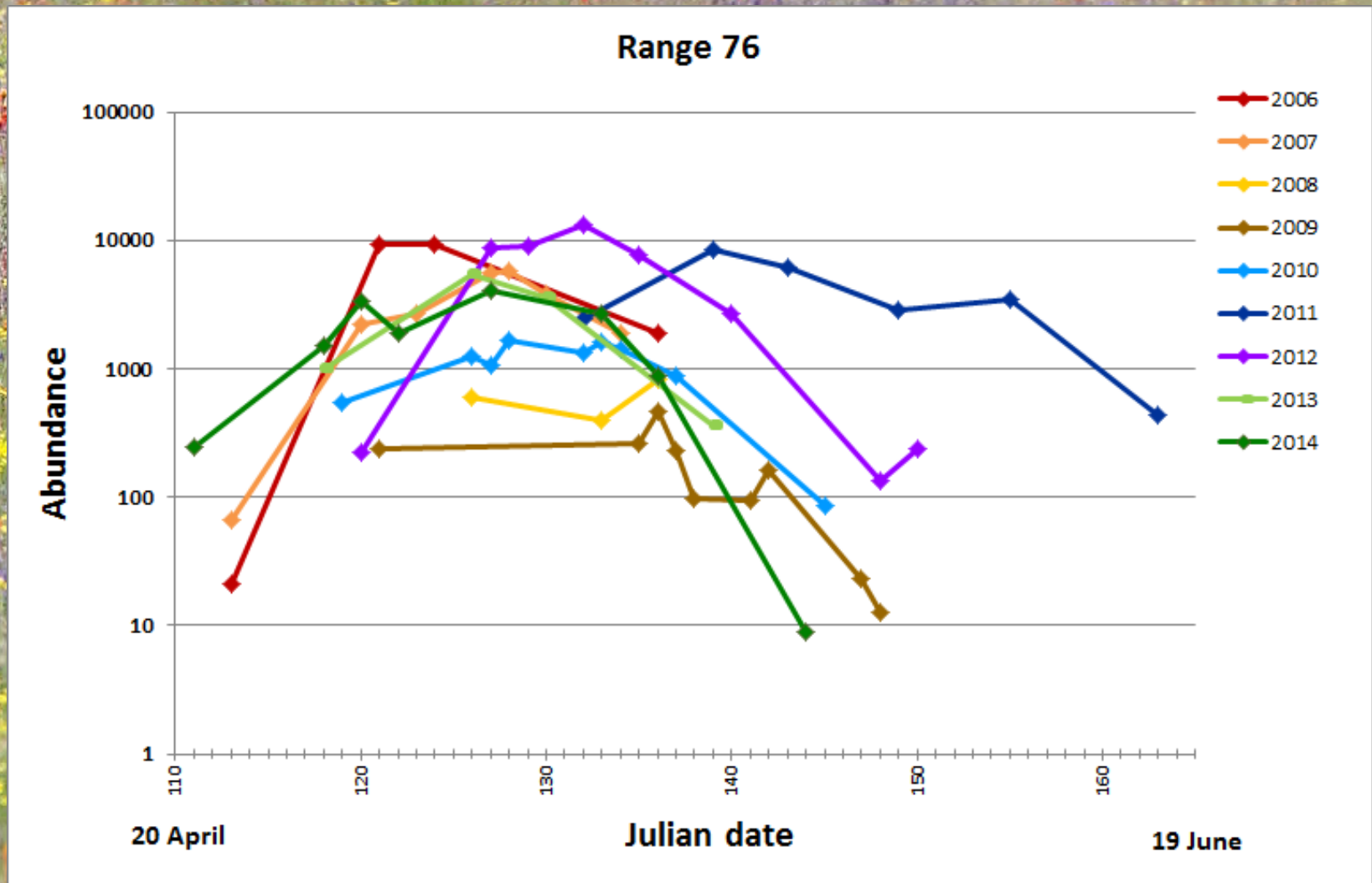


Four data sources: Adult distribution and abundance



Taylor's checkerspot abundance

Range 76: 2006 to 2014



Public/Private Conservation Collective

Funding provided by:



Most good photos by Rod Gilbert

Behavior, persistence and evidence of acceptance





M. Linders

Patience pays off

- Success at Range 50 indicates methods are viable under favorable conditions (e.g., weather, habitat)
- Habitat improvements are finally taking hold and giving back.
- Individual releases can and do fail:
 - Weather (rain, cold temps, exposure)
 - Habitat (resources, structure)
 - Large and repeated releases are necessary.
- Cooperation and collaboration are vital
- Variation is the norm... Embrace it!!



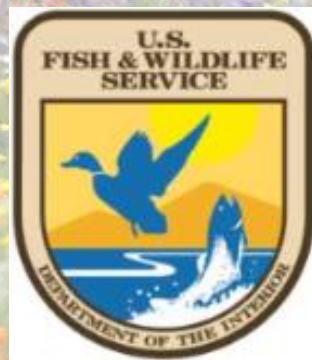
M. Linders

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- Background photo: Rod Gilbert

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Questions?



A. Wolf