Sonora Skipper & Oregon Branded Skipper: Conservation Status Update for Two At-Risk Butterflies in Washington State

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with Thor Hanson & Loni Beyer

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Sonora Skipper
Polites sonora siris (WH Edwards 1881)

Oregon Branded Skipper
Hesperia colorado “Salish segregate” (Pelham 2016)

Skipper butterflies: Superfamily Hesperioidea
Brief history of surveys for butterflies in grasslands of western WA and southern Vancouver Island, BC

• Focus of early lepidopterists (late-1800s) including the Reverend George W. Taylor

• Focus of 20th century lepidopterists (1970s and 1980s), in WA esp Jonathan Pelham
Conservation Status - Washington

First statewide conservation status assessment of butterflies (Pyle 1989) >

Subsequently, WDFW designated 13 butterflies candidates for state listing (5 occur in western WA prairies)

- 21 Butterflies designated SGCN
- 12 Butterfly SGCN inhabit grassland systems in western WA

*NEED to address key knowledge gaps and assess current status!*
Recent reconnaissance surveys – Washington (mid-1990s-mid-2000s)

Many surveys of Puget Trough grassland butterflies during this time

- Barry Bidwell, volunteer
- Ann’s work (since 1995)
- John Fleckenstein, DNR
- Joint Base Lewis-McChord
Focal species surveys and research

- Mardon Skipper
- Valley Silverspot
- Blackmore’s (Puget) Blue
- Taylor’s Checkerspot
- Island Marble

Schultz lab – WSU-Vancouver

WDFW

John Fleckenstein, DNR

Paul Severns & Dan Grosboll

UW

Working both sides of the border,
James Miskelly >
Survey and monitor 12 prairie-oak butterfly SGCN to update knowledge of distribution and status

WDFW Prairie-Oak State Wildlife Grant (USFWS 2013-2017)
Sonora Skipper (*Polites sonora siris*)
- SW Washington/NW Oregon endemic
- Hostplant: *Unknown Grass/Sedge*
- Univoltine; adults early-June – mid-July
- Does not migrate; highly sedentary
## Sonora Skipper: Site search surveys 2013-2017

<table>
<thead>
<tr>
<th>Site Name</th>
<th>#Acres Surveyed</th>
<th>#Survey Visits (All Years)</th>
<th>Detected?</th>
<th>&gt;9 Detected single year?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bald Hill</td>
<td>15</td>
<td>6</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Mima Mounds NAP</td>
<td>80</td>
<td>7</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Rocky Prairie NAP</td>
<td>10</td>
<td>5</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Scatter Creek North</td>
<td>180</td>
<td>26</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Scatter Creek South</td>
<td>50</td>
<td>20</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>West Rocky Prairie</td>
<td>210</td>
<td>26</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td><strong>Total: 6 Sites</strong></td>
<td><strong>545 acres</strong></td>
<td><strong>90 visits</strong></td>
<td><strong>3Y; 3N</strong></td>
<td><strong>2Y; 4N</strong></td>
</tr>
</tbody>
</table>

Site name bold font denotes historical occurrence
Scatter Creek North

Skipper butterfly
SGCN detections
2013-2016 >

(for Sonora Skipper 2013-2015; No detections 2016)
### Scatter Creek North

#### Results: Site Search Surveys

<table>
<thead>
<tr>
<th>Survey Year</th>
<th># SS Detections</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>10</td>
</tr>
<tr>
<td>2014</td>
<td>17</td>
</tr>
<tr>
<td>2015</td>
<td>18</td>
</tr>
<tr>
<td>2016</td>
<td>0</td>
</tr>
<tr>
<td>2017</td>
<td>0</td>
</tr>
</tbody>
</table>
West Rocky Prairie

Sonora Skipper detections 2013-2016

Subarea surveyed 2013 & 2014
Entire area surveyed 2015-2017
# Sonora Skipper detections 2017

<table>
<thead>
<tr>
<th>Survey Year</th>
<th># SS Detections</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>16</td>
</tr>
<tr>
<td>2016</td>
<td>29</td>
</tr>
<tr>
<td>2017</td>
<td>12</td>
</tr>
</tbody>
</table>
Sonora Skipper – Current Status

South Puget Sound Region

Searched all historical locales (5)
SS detected on 3 sites:
• SCN: Small, highly localized population 2013-2015; no detections 2016-2017
• WRP: Small, highly localized population
• Scatter Creek South: One individual 2014
SS not detected on 2 sites:
• Rocky Prairie NAP
• Mima Mounds NAP

Searched new area with potential habitat
• Bald Hill (SE Thurston Co): SS not detected

Finding: Very small populations extant on 1, possibly 2 sites in region
Sonora Skipper

Outside SPS Region

Historical localities
- Small areas of potential habitat
- Old records (1950s – 1993)

Total of 3 sites with detections since 2000; 2 in SW WA, 1 in NE OR

Sonora Skipper

Ecological Notes

• All extant and historical populations associated with “wetter” site conditions
• Population at WRP strongly associated with California Oatgrass (Danthonia californica)
Oregon Branded Skipper (*Hesperia colorado* “Salish segregate”)

- PNW Endemic: SPS WA, San Juan Islands, SE Vancouver Island
- Hostplant: *Unknown* Grass/Sedge
- Univoltine; adults late-July – early-September
- Does not migrate; highly sedentary
from An Atlas of Washington Butterflies
Hinchliff 1996
<table>
<thead>
<tr>
<th>Site Name</th>
<th>#Acres Surveyed</th>
<th>#Survey Visits (All Years)</th>
<th>Detected?</th>
<th>&gt;9 Detected single year?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artillery Impact Area - JBLM</td>
<td>5</td>
<td>1</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Bald Hill</td>
<td>20</td>
<td>12</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Mima Mounds NAP</td>
<td>390</td>
<td>25</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Rocky Prairie NAP</td>
<td>2</td>
<td>1</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Scatter Creek North</td>
<td>240</td>
<td>16</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Scatter Creek South</td>
<td>50</td>
<td>10</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>West Rocky Prairie</td>
<td>210</td>
<td>5</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td><strong>Total: 7 Sites</strong></td>
<td><strong>917 acres</strong></td>
<td><strong>70 visits</strong></td>
<td><strong>4Y; 3N</strong></td>
<td><strong>2Y; 5N</strong></td>
</tr>
</tbody>
</table>

*Site name bold font denotes historical occurrence*
Mima Mounds NAP

Entire site surveyed 2016
• 285 OBS detected

Oregon Branded Skipper detections 2016 >
Scatter Creek North

Skipper butterfly
SGCN detections
2013-2016

(for Oregon Branded Skipper 2013-2015: No effort 2016)
## Scatter Creek North

### Oregon Branded Skipper detections 2017

<table>
<thead>
<tr>
<th>Survey Year</th>
<th># OBS Detections</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>44</td>
</tr>
<tr>
<td>2014</td>
<td>18</td>
</tr>
<tr>
<td>2015</td>
<td>5</td>
</tr>
<tr>
<td>2016</td>
<td>No effort</td>
</tr>
<tr>
<td>2017</td>
<td>7</td>
</tr>
</tbody>
</table>
Oregon Branded Skipper – Current Status

South Puget Sound Region

Searched all historical locales (6)
OBS detected on 4 sites:
• Mima Mound NAP: Robust population
• SCN: Small, highly localized population
• Scatter Creek South: 8 individuals 2013
• Artillery Impact Area: Small survey effort 2016
OBS not detected on 2 sites:
• Rocky Prairie NAP
• West Rocky Prairie

Searched new area with potential habitat
• Bald Hill (SE Thurston Co): OBS not detected

Finding: Robust population on 1 site, small populations on 2 sites in region
## Oregon Branded Skipper: Site search surveys 2013-2015

**San Juan Islands**

<table>
<thead>
<tr>
<th>Site Name</th>
<th>#Acres Surveyed</th>
<th>#Survey Visits (All Years)</th>
<th>Detected?</th>
<th>&gt;9 Detected single year?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cady Mtn, San Juan Is</td>
<td>2</td>
<td>3</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Entrance Mtn, Orcas Is</td>
<td>2</td>
<td>1</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td><strong>Friday Harbor Labs, SJ Is</strong></td>
<td>2</td>
<td>1</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td><strong>Mt Constitution, Orcas Is</strong></td>
<td><strong>8</strong></td>
<td><strong>7</strong></td>
<td><strong>Y</strong></td>
<td><strong>Y</strong></td>
</tr>
<tr>
<td>Hogback, Orcas Is</td>
<td>2</td>
<td>1</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Mt Grant, San Juan Is</td>
<td>1</td>
<td>4</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Turtleback Mtn, Orcas Is</td>
<td>15</td>
<td>6</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td><strong>Total: 7 Sites</strong></td>
<td><strong>32 acres</strong></td>
<td><strong>23 visits</strong></td>
<td><strong>1Y; 6N</strong></td>
<td><strong>1Y; 6N</strong></td>
</tr>
</tbody>
</table>

Site name bold font denotes historical occurrence
Oregon Branded Skipper – Current Status

San Juan Islands

Searched all historical locales (2)
OBS detected on 1 site:
• Mt Constitution, Orcas Island
OBS not detected on 1 site:
• Friday Harbor Labs, San Juan Island

Searched 5 sites with potential habitat
• OBS not detected

Finding: Small population persists on 1 site in region
**Oregon Branded Skipper Status**

**Canada**

Listed Endangered 2013

- Committee on the Status of Endangered Wildlife in Canada (COSEWIC)

Documented from 16 sites

- SE Vancouver Island
- Extant 4 sites (2013)
- Extirpated 12 sites

**Habitat on Extant Sites:** Marine and sand dune meadows

OBS nectars from Tansy Ragwort in Canada too! >
**Oregon Branded Skipper**

**Key Life History Information – Oviposition**

**Mima Mounds NAP (South Puget Sound)**
- Followed >25 females (observed 6 eggs laid)
- Collected data on egg location, plant, vegetation (1 m²)
- Tracked eggs until hatching or disappearance

**Results**
- All oviposition behaviors (searching and egg-laying) occurred in inter-mound swales
- All eggs laid on dry senesced vegetation
- Mean egg height: 13.1 cm (7.4-22 cm)
- Successful eggs laid on Long-stolon Sedge (Carex inops)
- Eggs hatched in February
**Oregon Branded Skipper**

Key Life History Information – Nectar

Documented 169 nectaring behaviors

- Two years: 2013 & 2016
- Mima Mounds & Scatter Creek North
- 63% on non-native plants, primarily Tansy Ragwort (*Senecio jacobaea*)

Native plants used (in order of use):

- White-top Aster (*Sericocarpus rigidus*)
- Spreading Dogbane (Apocynum androsaemifolium) >
- Goldenrod (*Solidago* spp.)
- Two rare wet prairie Asters

Hot dry years of study top two spp. did not flower

photo Brad Gill
Sonora Skipper & Oregon Branded Skipper

Summary of Threats

In common with other imperiled prairie butterflies:
• Habitat loss
• Small number of extant populations
• Isolated populations

Specific to grass-feeding skippers:
• Life history knowledge gaps (host plants, habitat)
• Hosts likely vulnerable to grass-specific herbicide, an important restoration tool
• Difficult - impossible to rear in captivity

Specific to OBS:
Scarcity of late-season nectar & efforts to eradicate nectar species they depend on
PNW Bumble Bee Atlas

A collaborative effort to track and conserve the bumble bees of the Pacific Northwest

Trainings ID, OR, WA
Spring 2018/2019
Wenatchee, WA
June 2, 2018

Launching Spring 2018!
Stay tuned for more information at: www.pnwBumbleBeeAtlas.org

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Xerces worked with the IUCN to assess all of the bumble bees of North America.

Eight bumble bees in the western United States are in an IUCN risk category.

<table>
<thead>
<tr>
<th>Bumble Bee Species</th>
<th>IUCN Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bombus franklini</td>
<td>Critically Endangered</td>
</tr>
<tr>
<td>Bombus suckleyi</td>
<td>Critically Endangered</td>
</tr>
<tr>
<td>Bombus crotchii</td>
<td>Endangered</td>
</tr>
<tr>
<td>Bombus caliginosus</td>
<td>Vulnerable</td>
</tr>
<tr>
<td>Bombus morrisoni</td>
<td>Vulnerable</td>
</tr>
<tr>
<td>Bombus occidentalis</td>
<td>Vulnerable</td>
</tr>
<tr>
<td>Bombus pensylvanicus</td>
<td>Vulnerable</td>
</tr>
<tr>
<td>Bombus fervidus (californicus)</td>
<td>Near Threatened</td>
</tr>
</tbody>
</table>
PNW Bumble Bees: Current Understanding

Source: Bumble Bee Watch
PNW Bumble Bee Atlas
PNW Bumble Bee Atlas

How to Participate

1: Adopt a Grid Cell
2: Survey for bumble bees
3: Submit your data online

www.pnwBumbleBeeAtlas.org

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The best explored group of organisms are vertebrates... A great majority of other species, however, are by far the most abundant. I like to call them “the little things that run the world”.