**Jollyville Plateau Salamander Interim Report, 2011, for the Balcones Canyonland Preserve**

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## Introduction

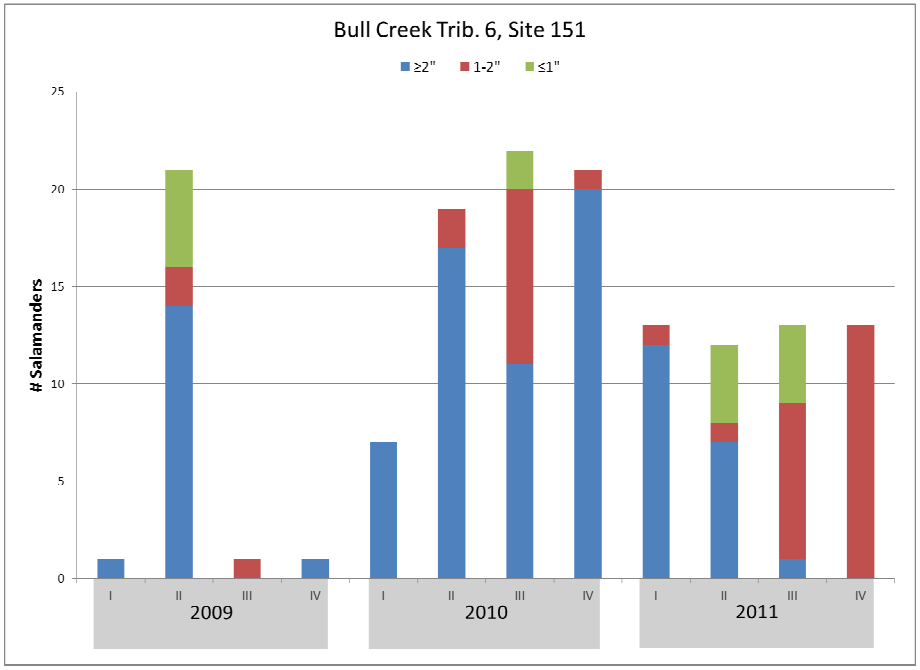
This document is a summary of the survey results for the Jollyville Plateau Salamander (*E. tonkawae*). We conducted salamander surveys on the following Balcones Canyonland Preserve (BCP) tracts: Hanks, Franklin, Lanier, and Stillhouse Hollow and Barrow Preserve tracts, jointly managed with Austin Parks and Recreation Department. This report includes a summary of the survey results for 2011 in addition to results from prior years for comparison. Our survey efforts were hampered by dry weather and lack of spring flow in 2011.

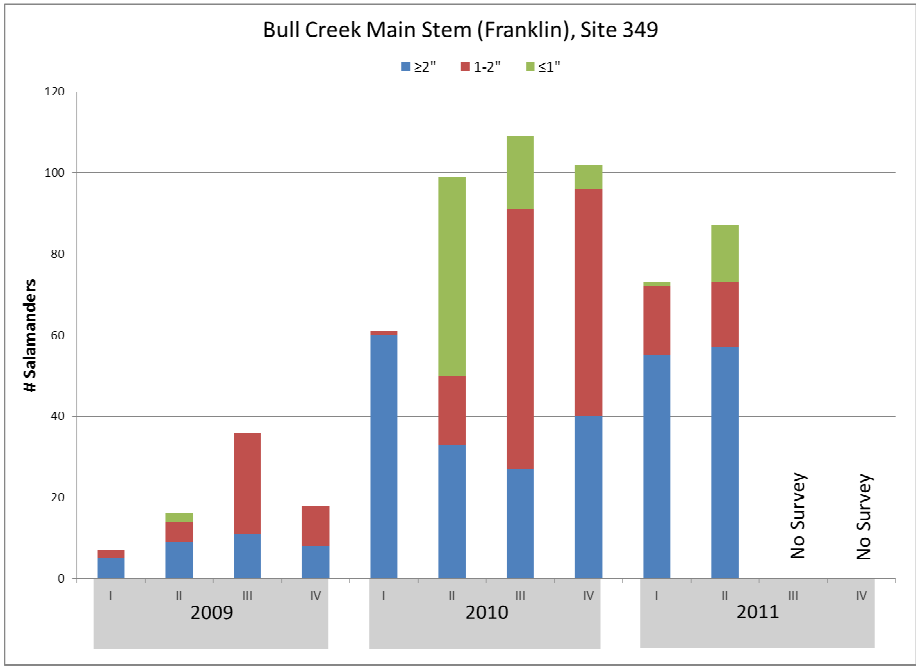
Table 1. Summary of capture-mark-recapture surveys conducted from December 2009 through April 2011.

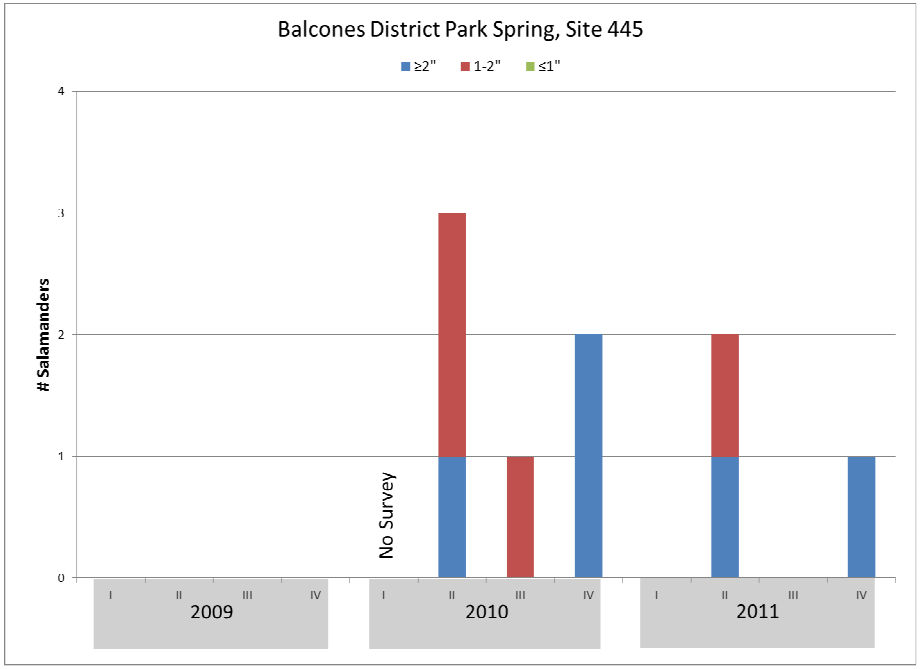
| Site | Month | Total Count | Total Marked | Total Recaptured |
|---|---|---|---|---|
| Lanier Spring | December 2009 | 109 | 43 | 66 |
| Wheless Spring | December 2009 | 238 | 105 | 133 |
| Wheless Spring | March 2010 | 215 | 40 | 175 |
| Lanier Spring | March 2010 | 169 | 46 | 123 |
| Ribelin Spring | March 2010 | 176 | 89 | 87 |
| Ribelin Spring | September 2010 | 43 | 18 | 25 |
| Wheless Spring | October 2010 | 528 | 383 | 145 |
| Lanier Spring | October 2010 | 144 | 82 | 62 |
| Lanier Spring | April 2011 | 177 | 111 | 66 |
| | **Totals** | 1799 | 917 | 882 |

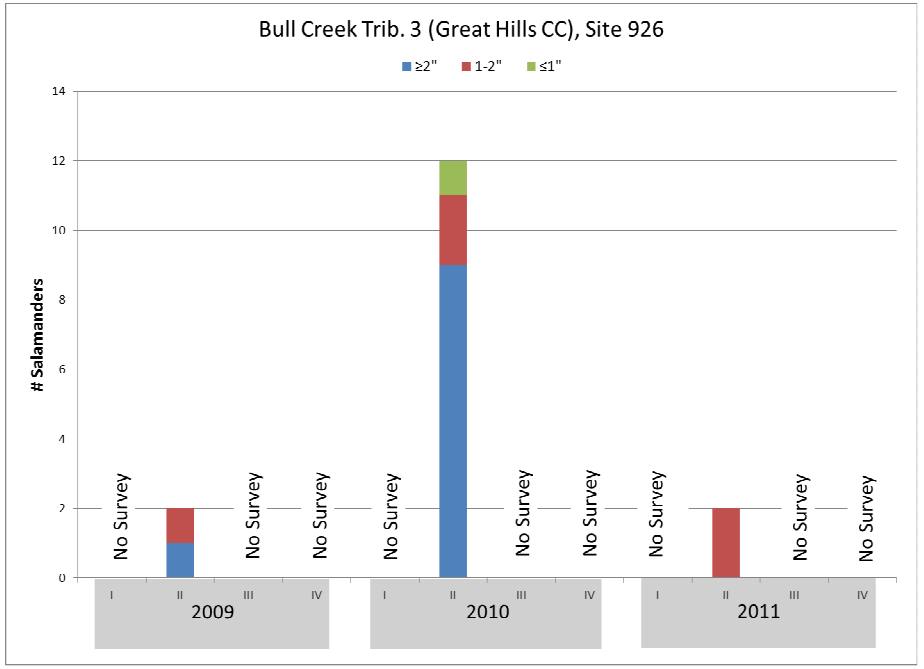
Figure 1: Quarterly Count Summary

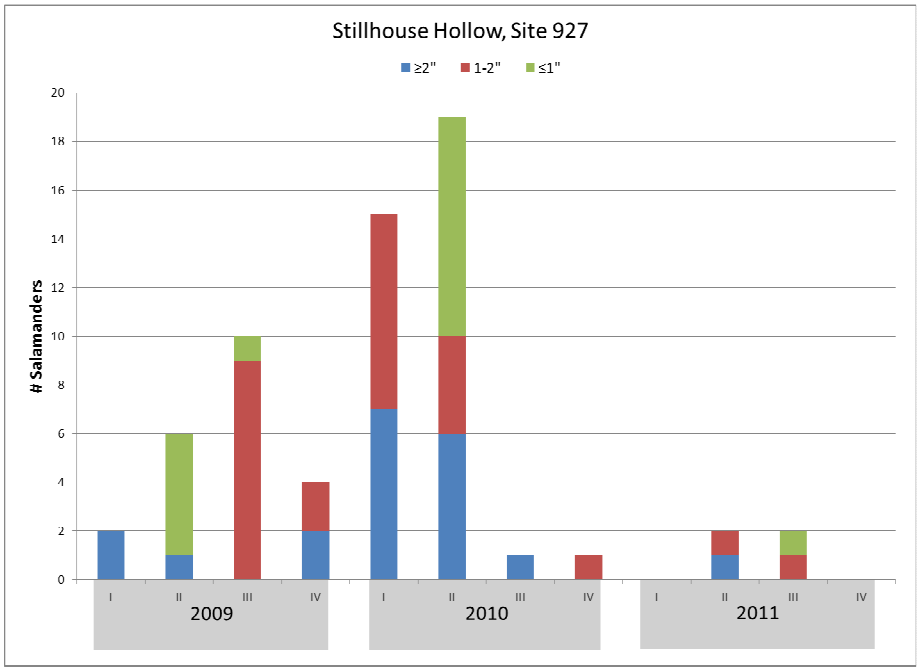
Below are the quarterly results of count surveys conducted at ten sites between 2009 and 2011. Total salamander counts are partitioned by size class: ≤1 inch, 1-2 inches, and ≥2 inches. Each graph has the same x-axis, but different y-axes. Missing data are noted on each graph as "no survey." Otherwise, blanks on the chart represent survey totals of zero salamanders. Each quarter is three months long, starting in January, for quarter I. Most surveys were conducted during the beginning of each quarter, so that consecutive surveys at the same site would more or less have the same time interval (3 months) between them.

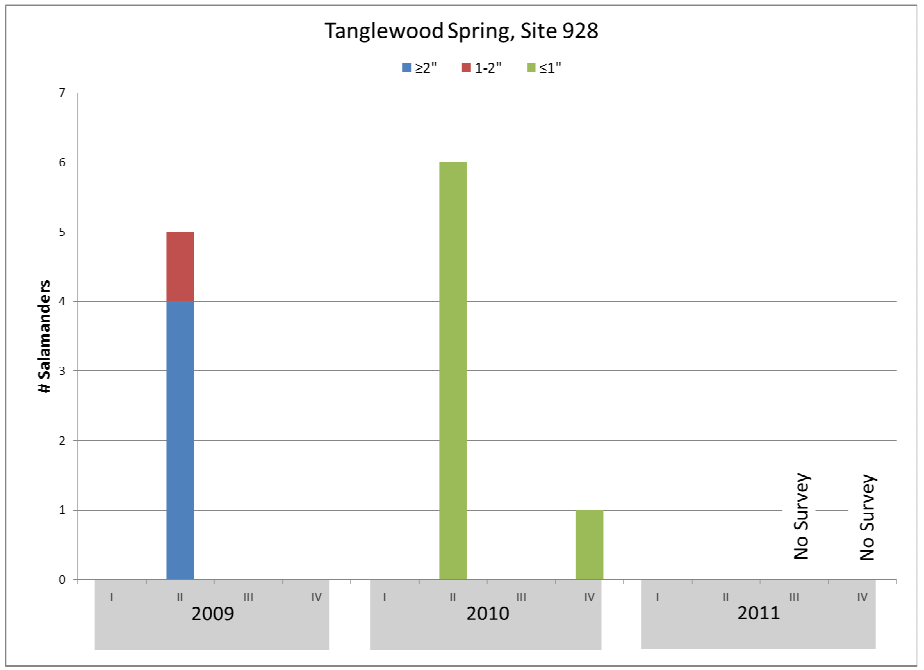


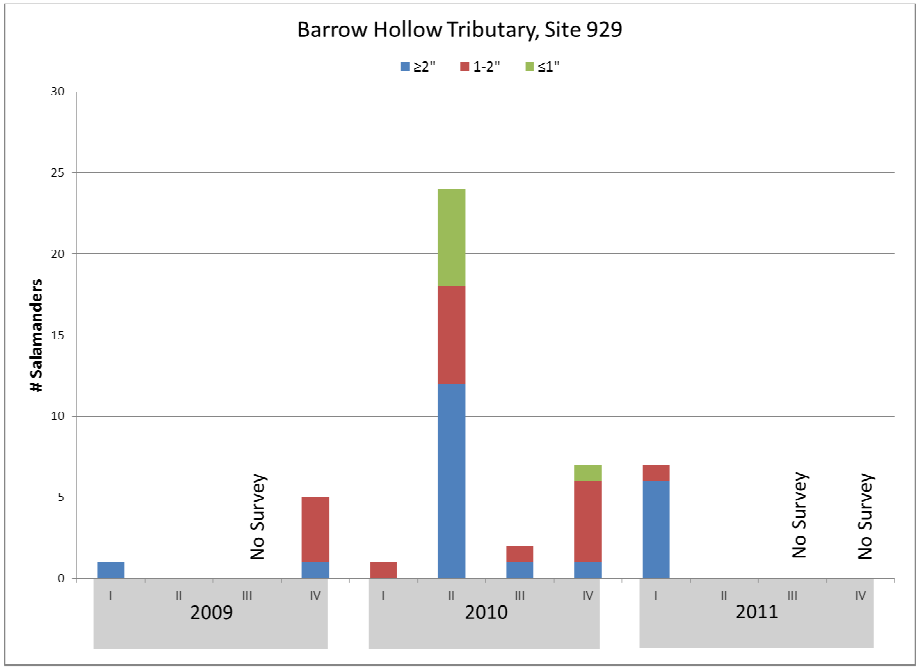



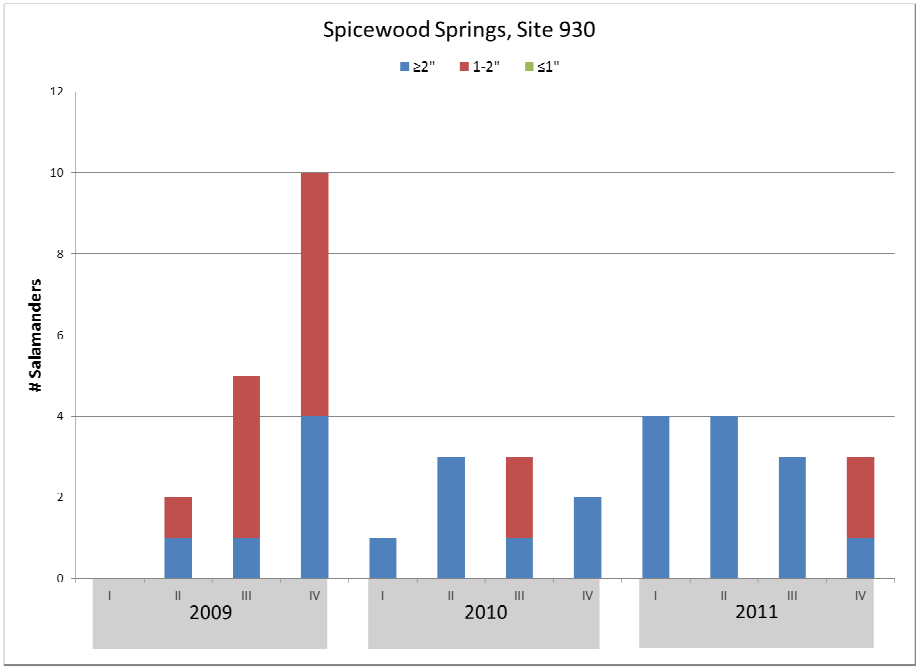

Balcones District Park Spring, Site 445
≥2"
1-2"
≤1"
# Salamanders
No Survey
2009
2010
2011

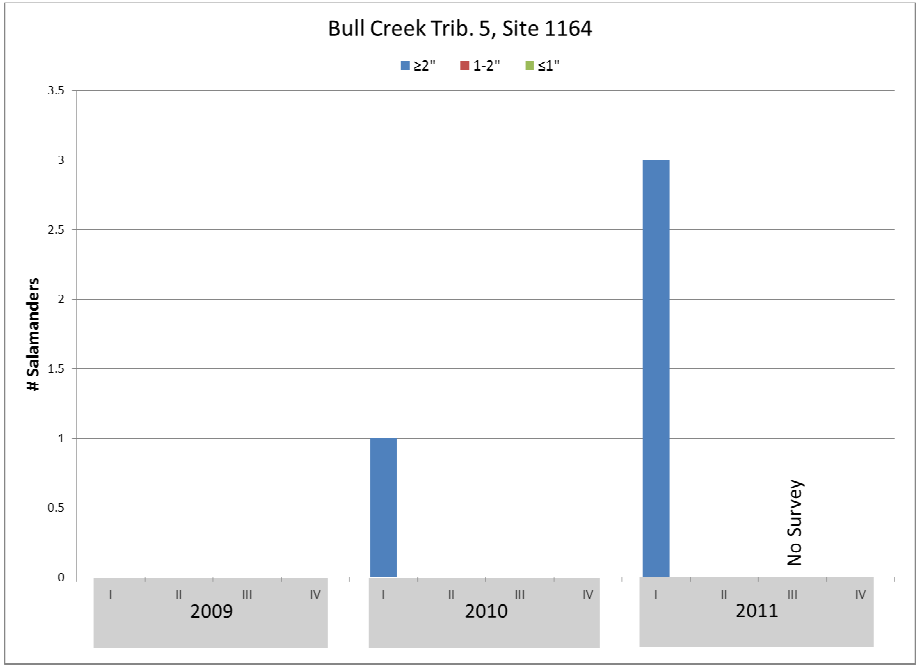

Bull Creek Trib. 3 (Great Hills CC), Site 926
≥2"
1-2"
≤1"
# Salamanders
No Survey
2009
2010
2011

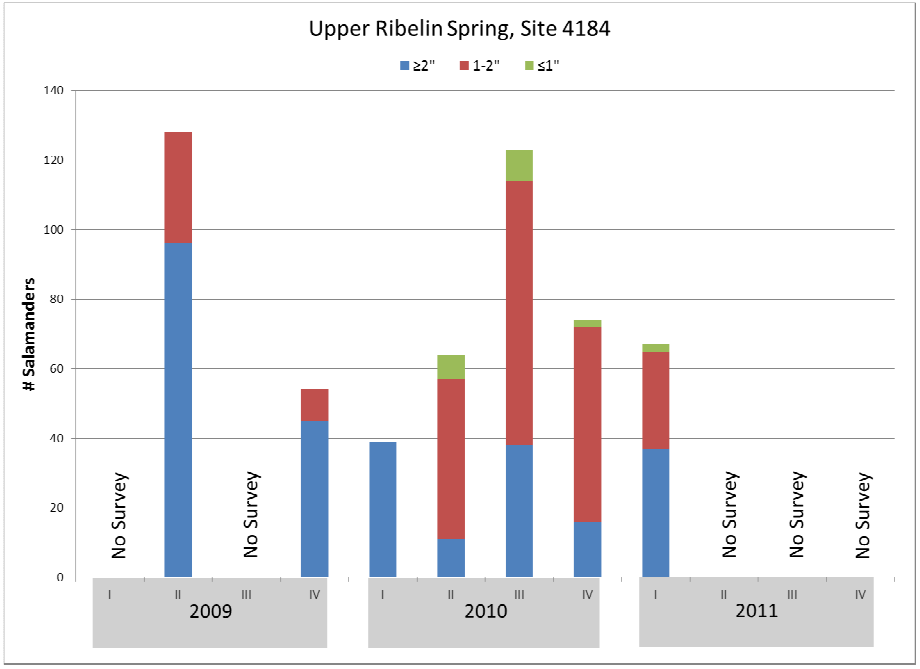

Stillhouse Hollow, Site 927
≥2"
1-2"
≤1"
# Salamanders
2009
2010
2011

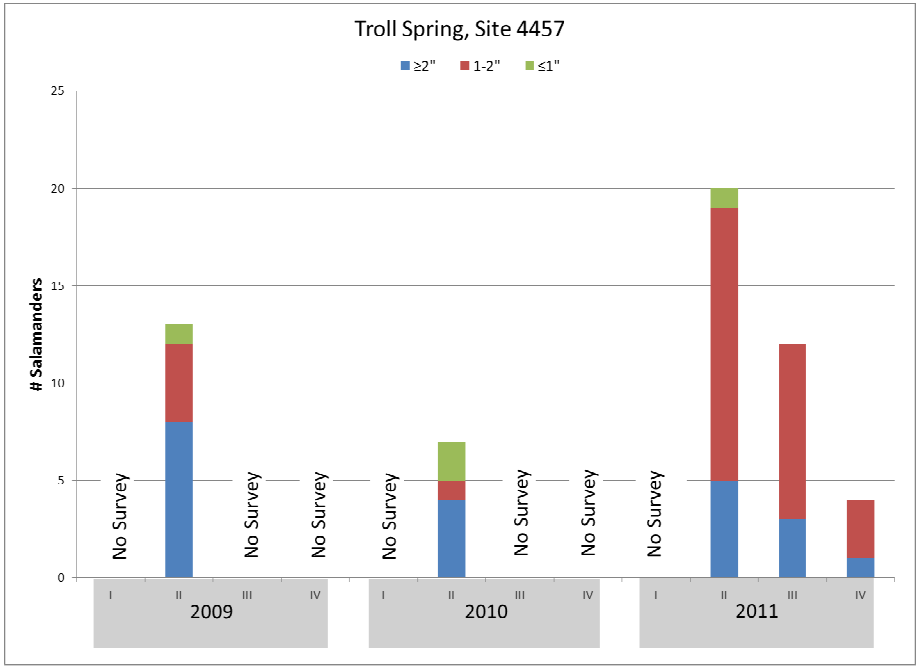

Tanglewood Spring, Site 928
≥2"
1-2"
≤1"
# Salamanders
No Survey
2009
2010
2011

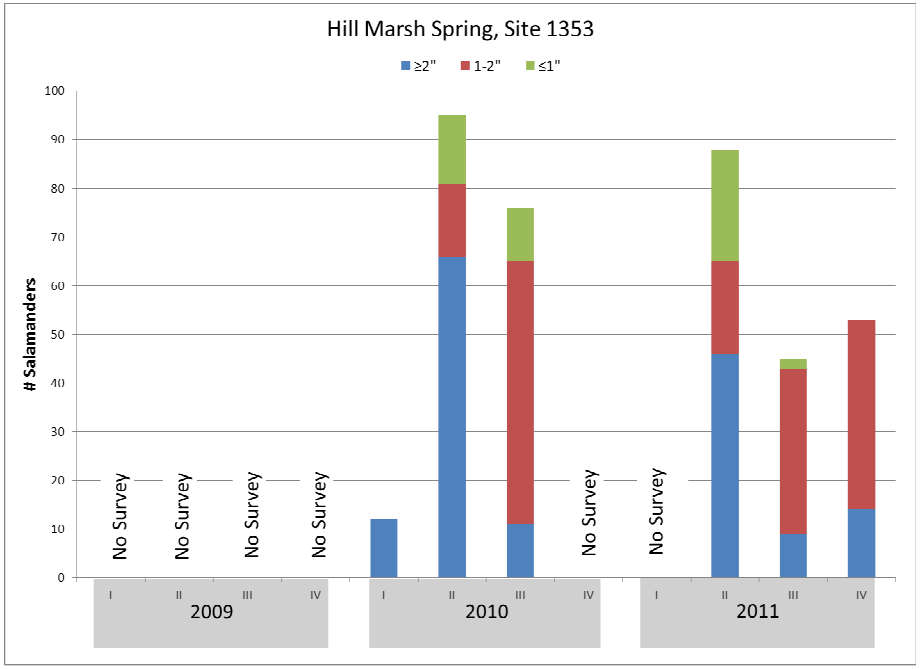

Barrow Hollow Tributary, Site 929
≥2"
1-2"
≤1"
# Salamanders
No Survey
No Survey
No Survey
2009
2010
2011

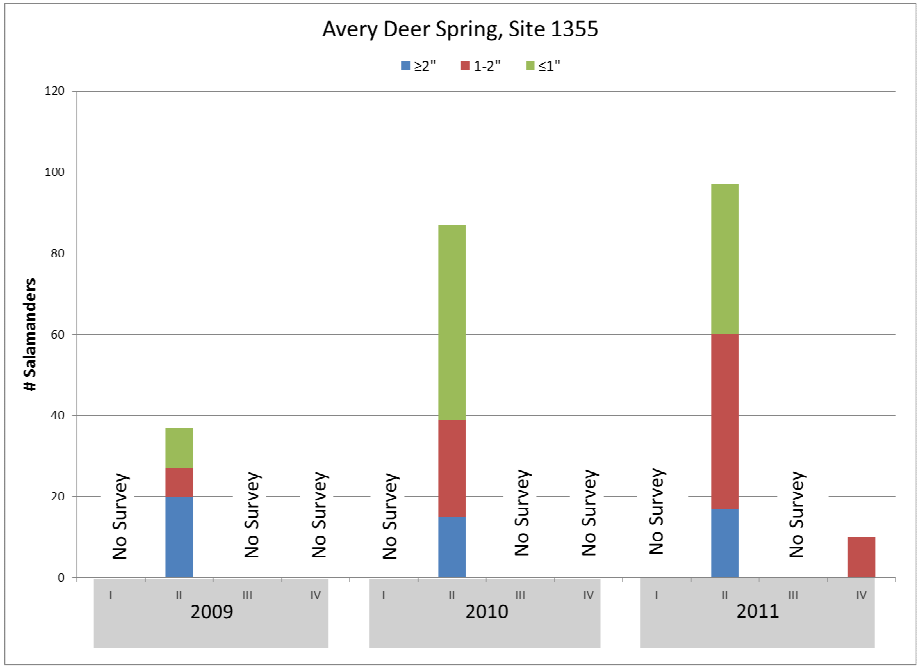

Spicewood Springs, Site 930
≥2"
1-2"
≤1"
# Salamanders
2009
2010
2011


Bull Creek Trib. 5, Site 1164
≥2"
1-2"
≤1"
# Salamanders
No Survey
2009
2010
2011


Upper Ribelin Spring, Site 4184
≥2"
1-2"
≤1"
# Salamanders
No Survey
No Survey
No Survey
No Survey
2009
2010
2011


Troll Spring, Site 4457
≥2"
1-2"
≤1"
# Salamanders
0
5
10
15
20
25
No Survey
No Survey
No Survey
No Survey
No Survey
No Survey
No Survey
No Survey
No Survey
I
II
III
IV
2009
2010
2011


Hill Marsh Spring, Site 1353
≥2"
1-2"
≤1"
# Salamanders
0
10
20
30
40
50
60
70
80
90
100
No Survey
No Survey
No Survey
No Survey
No Survey
No Survey
I
II
III
IV
2009
2010
2011


Avery Deer Spring, Site 1355
≥2"
1-2"
≤1"
# Salamanders
0
20
40
60
80
100
120
No Survey
No Survey
No Survey
No Survey
No Survey
No Survey
No Survey
No Survey
No Survey
I
II
III
IV
2009
2010
2011

## Methods

We conducted count surveys using a drive survey technique at 13 sites in 2011. Salamanders were searched for by flipping rocks and other cover objects and chased downstream after a visual assessment of total length for three size classes, ≤1", 1-2" and ≥2". Surveys were primarily conducted on a quarterly basis (every three months) with the exception of site 926, which is conducted once per year. Sites 1353 and 1355 were surveyed more irregularly, although in the future will be surveyed according to the standard quarterly schedule.

We intended to conduct two surveys per site this year at Wheless, Lanier and Ribelin springs, although dry conditions throughout most of 2011 allowed only a single survey for one site (Lanier Spring), in April.

For additional details about the projects and including background and methods, please consult the original permit proposals, QAPPs and referenced reports therein.

## Results and Discussion

Figures 1 provides summary of all count-based population monitoring from 2009-2011. Table 1 contains a summary of the capture-mark-recapture (CMR) results from December 2009 through April 2011.

No surveys were conducted at Baker Spring (site 3959) in 2011, primarily due to lack of spring flow. Similarly, surveys were not conducted during the latter half of 2011 due to a lack of spring flow at sites 349, 928, 929, 1164, and 4184.

Mark-recapture survey efforts were also greatly reduced due to a lack of spring flow. In April 2011, flow was already declining at Lanier Spring, and several weeks following the survey, it completely stopped. We were unable to conduct surveys at Ribelin or Wheless due to low or zero flow in April, and all three sites have been mostly dry throughout the rest of the year. Results from this single survey are reported in Table 1, and a more detailed analysis will wait until additional data are collected.

The most recent analysis of both count data and mark-recapture data are included in a report on the status of *E. tonkawae*, which includes data up to and including 2010 (Bendik 2010). I refrain from duplicating these efforts for 2011 in this report.

## References

Bendik, N.F. 2010. Jollyville Plateau Salamander Status Report. City of Austin Watershed Protection Department. SR-11-10.