

Tiger Salamander (*Ambystoma tigrinum*) Burrow Casts

Principle Investigator: Nicole Dzenowski

Project Duration: 2010 – 2012

Total Burrows: 54

Subvertical Ramps (41)

TS3-2-1B, TS3-3-1(T), TS3-3-2B, TS4-1-1A, TS4-3-1, TS5-1-1A, TS5-1-1B, TS5-2-2D, TS6-1-1G, TS6-1-1H, TS6-3-1(T), TS6-3-2, TS7-2-1, TS7-2-2, TSB1, TS2-1-2, TS2-2-1(T), TS2-2-2, TS2-3-1, TS2-3-2, TSB3, TSB7, TS3-1-2B, TS3-2-1A, TS3-3-2A, TSB2, TS4-1-1C, TS4-1-2, TS4-2-1, TS4-2-2(T), TS5-2-2C, TS5-3-1, TS5-3-2, TS6, 1-1C, TS6-2-1B, TS6-2-2, TS7-1-1, TS7-1-2, TS7-3-1, TS7-3-2

Branching Ramps (1)

TS6-2-1A

Y-Shaped Burrows (3)

TSB5, TSB6, TSB8

U-Shaped Burrows (4)

TS3-1-1, TS3-2-2, TS6-1-1E, TS6-1-2

J-Shaped Burrow (1)

TSB9

W-Shaped Burrows (4)

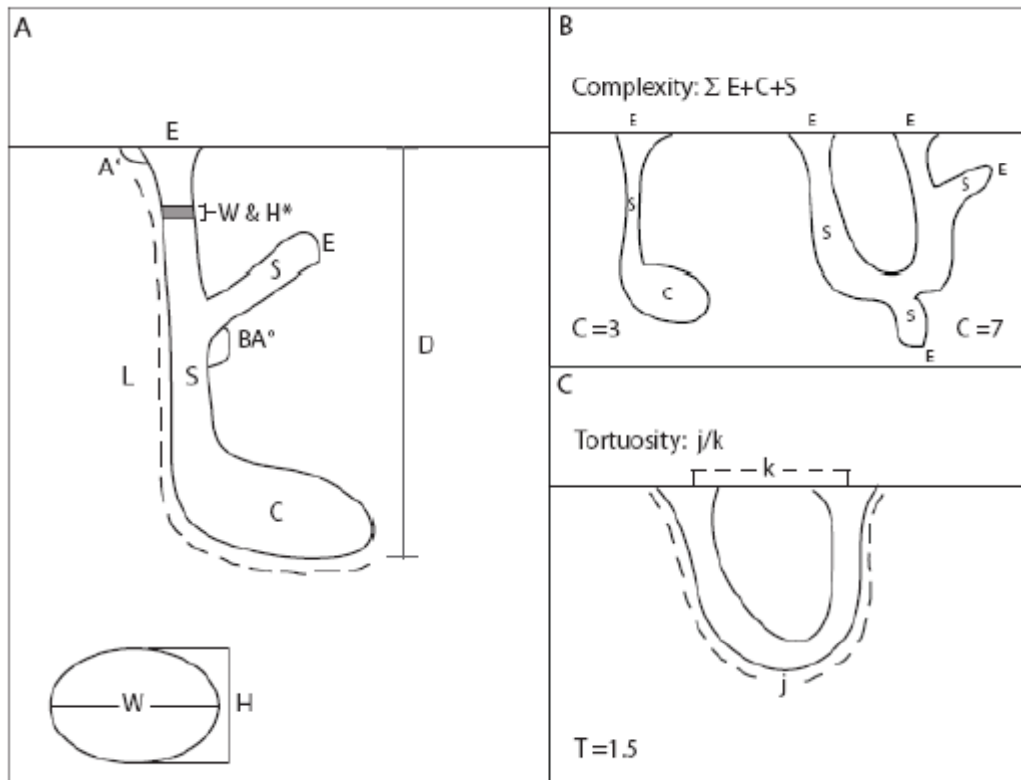
TS2-1-1, TS4-3-2, TSB4, TS3-1-2A



Bags of Burrow Casts

Bag #	Casts Contained	Architecture
1	TS3-2-1B, TS3-3-1(T), TS3-3-2B, TS4-1-1A, TS4-3-1, TS5-1-1A, TS5-1-1B	SR
2	TS5-2-2D, TS6-1-1G, TS6-1-1H, TS6-3-1(T), TS6-3-2, TS7-2-1, TS7-2-2	SR
3	TSB1, TS2-1-2, TS2-2-1(T), TS2-2-2, TS2-3-1	SR
4	TS2-3-2, TSB3, TSB7, TS3-1-2B, TS3-2-1A, TS3-3-2A	SR
5	TSB2, TS4-1-1C, TS4-1-2, TS4-1-2, TS4-2-1, TS4-2-2(T), TS5-1-2(T)	SR
6	TS5-2-2C, TS5-3-1, TS5-3-2, TS6-1-1C, TS6-2-1B, TS6-2-2	SR
7	TS7-1-1, TS7-1-2, TS7-3-1, TS7-3-2	SR
8	TS6-2-1A, TSB5, TSB6, TSB8	BR, YS
9	TSE-1-1, TS3-2-2, TS6-1-1E, TS6-1-2	US
10	TS2-1-1, TS4-3-2, TSB4	WS
11	TS3-1-2A, TSB9	WS, JS
12	Extra Burrows	

Burrow Measurements



Experimental Setup

Experimental Parameters. A) Experiment 1. B) Experiment 2. C) Experiment 3.

Basic Morphology Experiments

Soil Composition	Soil Moisture	Aquaria Size	Experimental Period
75% Coconut Fiber & 25% Soil	74%	38, 114, & 246 L	7 days
75% Coconut Fiber & 25% Soil	74%	38, 114, & 246 L	14 days

Variation in Soil Composition

Soil Composition	Soil Moisture	Aquaria Size	Experimental Period
50% Coconut Fiber & 50% Soil	74%	38, 114, & 246 L	14 days
50% Coconut Fiber, 25% Soil, 25% Sand	74%	38, 114, & 246 L	14 days

Variation in Soil Moisture

Soil Composition	Soil Moisture	Aquaria Size	Experimental Period
75% Coconut Fiber & 25% Soil	54%	38, 114, & 246 L	14 days
75% Coconut Fiber & 25% Soil	94%	38, 114, & 246 L	14 days

	TS3-2-1B	TS3-3-1(T)	TS3-3-2B	TS4-1-1A	TS4-3-1	TS5-1-1A	TS5-1-1B	TS5-2-2D	TS6-1-1G	TS6-1-1H	TS6-3-1(T)	TS6-3-2	TS7-2-1	TS7-2-2	TSB1	TS2-1-2	TS2-2-1(T)	TS2-2-2
PAST Identifier	AT1_SR	AT2_SR	AT3_SR	AT4_SR	AT5_SR	AT6_SR	AT7_SR	AT8_SR	AT9_SR	AT10_SR	AT11_SR	AT12_SR	AT13_SR	AT14_SR	AT15_SR	AT16_SR	AT17_SR	AT18_SR
Architecture	SR	SR	SR	SR	SR	SR	SR	SR	SR	SR	SR	SR	SR	SR	SR	SR	SR	SR
Surface Openings	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Maximum depth	5.8	9.3	4.0	7.5	9.7	9.8	12.4	8.7	5.2	4.2	4.7	4.6	8.5	8.5	9.6	14.0	8.9	5.4
Total Length	9.8	19.5	11.3	9.0	12.0	13.0	15.5	12.5	10.0	11.3	20.9	17.0	11.0	11.7	16.1	17.5	21.9	18.0
Maximum width	3.3	5.0	4.1	2.1	3.3	4.5	3.5	3.6	3.0	2.5	3.5	3.2	3.6	3.3	4.2	3.9	4.1	4.4
Minumum width	1.2	1.6	1.9	0.9	2.3	2.9	2.4	2.3	2.1	2.0	1.1	1.8	2.3	2.5	2.1	1.6	1.5	1.2
Average width	2.1	3.5	3.2	1.7	2.7	3.8	2.9	3.0	2.7	2.2	2.2	2.4	2.9	3.0	3.1	3.0	3.1	3.2
Maximum height	2.2	3.1	2.8	1.7	3.3	3.4	2.5	3.2	2.0	2.6	2.6	2.1	2.5	2.7	3.1	2.2	2.9	2.1
Minimum height	1.1	1.6	1.6	1.1	1.9	2.6	1.3	1.5	1.5	1.6	1.2	1.5	1.6	1.4	1.6	1.2	1.6	1.5
Average height	1.5	2.4	2.1	1.5	2.6	2.8	1.9	2.2	1.8	2.0	1.8	1.6	2.0	1.8	2.2	2.0	2.0	1.9
Average W/H ratio	1.4	1.5	1.5	1.1	1.0	1.4	1.5	1.4	1.5	1.1	1.2	1.5	1.5	1.7	1.4	1.5	1.6	1.7
Max circumference	13.0	11.3	11.1	7.2	9.1	11.6	9.0	10.6	8.4	8.6	7.6	8.3	9.7	9.4	12.0	9.7	11.5	10.2
Min circumference	4.5	6.1	6.1	4.3	7.0	9.3	6.4	6.9	6.2	5.8	3.1	5.8	4.1	6.4	6.4	5.1	4.5	5.0
Avg circumference	9.8	9.3	8.3	6.0	9.2	10.5	7.6	8.2	7.3	7.5	5.9	6.5	7.4	7.7	8.7	8.1	8.2	8.2
Maximum slope	35.0	67.0	31.0	64.0	15.0	53.0	65.0	62.0	40.0	40.0	52.0	34.0	75.0	64.0	57.0	52.0	36.0	37.0
Minimum slope	35.0	67.0	31.0	64.0	15.0	53.0	65.0	62.0	40.0	40.0	52.0	34.0	75.0	64.0	57.0	52.0	36.0	37.0
Average slope	35.0	67.0	31.0	64.0	15.0	53.0	65.0	62.0	40.0	40.0	52.0	34.0	75.0	64.0	57.0	52.0	36.0	37.0
Branching angles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Complexity	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3
Tortuosity	1.5	1.3	1.3	1.2	1.3	1.1	1	1.3	1.6	1.3	1.1	1.5	1.3	1.2	1.1	1.5	1.3	1.6

	TS2-3-1	TS2-3-2	TSB3	TSB7	TS3-1-2B	TS3-2-1A	TS3-3-2A	TSB2	TS4-1-1C	TS4-1-2	TS4-2-1	TS4-2-2(T)	TS5-1-2(T)	TS5-2-1(T)	TS5-2-2C	TS5-3-1	TS5-3-2	TS6-1-1C
PAST Identifier	AT19_SR	AT20_SR	AT21_SR	AT22_SR	AT23_SR	AT24_SR	AT25_SR	AT26_SR	AT27_SR	AT28_SR	AT29_SR	AT30_SR	AT31_SR	****	AT32_SR	AT33_SR	AT34_SR	AT35_SR
Architecture	SR	SR	SR	SR	SR	SR	SR	SR	SR	SR	SR	SR	SR	SR	SR	SR	SR	SR
Surface Openings	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Maximum depth	9.0	12.0	18.4	10.1	8.3	5.2	12.0	7.1	9.8	11.2	4.8	14.0	11.7	11.2	6.1	10.1	14.7	10.0
Total Length	26.0	16.5	15.0	15.0	14.0	16.0	16.0	15.7	14.0	18.0	11.5	15.0	15.0	24.0	12.0	15.7	18.5	13.5
Maximum width	5.3	4.3	4.0	4.2	5.0	4.9	4.5	5.1	4.0	3.4	4.4	3.7	4.1	4.4	4.0	4.0	4.6	3.5
Minimum width	3.1	2.6	2.1	2.4	1.9	1.5	2.9	2.4	1.7	2.0	2.4	1.2	1.5	2.1	1.9	3.1	2.8	2.4
Average width	3.9	3.3	3.3	3.4	3.2	3.8	3.9	3.7	3.0	2.8	3.5	2.9	3.0	3.2	3.1	3.6	3.6	3.0
Maximum height	2.8	3.1	2.4	3.1	2.5	2.6	3.0	3.1	2.4	2.4	2.6	2.4	2.7	3.7	2.6	2.9	2.8	2.3
Minimum height	1.7	1.8	1.5	1.9	1.7	1.4	1.7	1.8	1.1	1.4	1.9	1.6	1.9	1.9	1.6	2.1	2.1	1.6
Average height	2.4	2.2	2.1	2.4	2.0	2.1	2.5	2.4	2.0	1.9	2.3	1.9	2.3	2.4	2.1	2.5	2.4	2.0
Average W/H ratio	1.6	1.5	1.6	1.4	1.6	1.8	1.6	1.5	1.5	1.5	1.5	1.5	1.3	1.3	1.5	1.4	1.5	1.5
Max circumference	12.7	12.6	10.3	10.5	10.8	8.4	11.6	12.4	9.8	9.1	11.5	9.9	10.5		10.1	10.6	12.5	8.4
Min circumference	8.0	6.8	5.5	5.9	5.8	3.6	8.5	5.5	4.5	3.2	6.1	4.2	5.2		3.7	8.2	6.6	6.3
Avg circumference	9.8	9.1	8.5	9.2	8.6	6.1	10.3	9.5	8.3	6.9	9.1	7.7	8.1		8.0	9.5	9.2	6.8
Maximum slope	51.0	63.0	61.0	66.0	50.0	35.0	90.0	45.0	65.0	89.0	45.0	85.0	55.0	56.0	52.0	58.0	67.0	66.0
Minimum slope	51.0	63.0	61.0	66.0	50.0	35.0	10.0	45.0	65.0	89.0	45.0	85.0	55.0	56.0	52.0	58.0	67.0	66.0
Average slope	51.0	63.0	61.0	66.0	50.0	35.0	43.0	45.0	65.0	89.0	45.0	85.0	55.0	56.0	52.0	58.0	67.0	66.0
Branching angles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Complexity	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Tortuosity	1.4	1.2	1.2	1.2	1.4	1.7	1.4	1.1	1.4	1.2	1.5	1.2	1	1.3	1.3	1.1	1.1	1.2

	TS6-2-1B	TS6-2-2	TS7-1-1	TS7-1-2	TS7-3-1	TS7-3-2	TS6-2-1A	TS3-1-1	TS3-2-2	TS6-1-1E	TS6-1-2	TS2-1-1	TS4-3-2	TSB4	TS3-1-2A	TSB9	TSB5	TSB6
PAST Identifier	AT36_SR	AT37_SR	AT38_SR	AT39_SR	AT40_SR	AT41_SR	AT42_BR	AT43_US	AT44_US	AT45_US	AT46_US	AT47_WS	AT48_WS	AT49_WS	AT50_WS	AT51_JS	AT52_YS	AT53_YS
Architecture	SR	SR	SR	SR	SR	SR	BR	US	US	US	US	WS	WS	WS	WS	JS	YS	YS
Surface Openings	1	1	1	1	1	1	1	2	2	2	2	3	3	2	3	1	2	3
Maximum depth	11.2	11.7	12.4	10.0	11.9	7.6	10.1	6.3	4.1	4.0	4.9	7.1	3.5	7.9	7.5	16.7	9.6	12.4
Total Length	20.0	18.8	16.1	12.1	16.5	13.0	19.4	19.0	14.2	16.0	12.2	30.5	23.0	34.0	29.5	27.0	23.6	25.2
Maximum width	3.7	4.4	4.2	3.0	3.8	3.9	4.0	4.7	4.1	4.2	3.4	3.3	3.9	4.8	4.0	3.7	3.8	3.4
Minimum width	1.4	1.0	1.0	2.2	2.3	1.9	2.2	3.2	2.6	2.4	1.8	1.5	1.7	2.0	1.6	1.7	2.4	1.8
Average width	2.7	3.0	2.7	2.5	3.0	3.0	2.9	4.2	3.5	3.3	2.9	2.4	2.6	3.5	2.9	2.5	3.1	2.6
Maximum height	2.4	2.2	3.4	2.4	2.9	4.2	2.7	2.5	2.1	3.8	3.3	3.9	2.7	3.7	4.0	2.3	2.5	2.1
Minimum height	1.4	1.2	1.1	1.8	1.5	1.8	1.3	1.9	1.2	2.0	1.7	1.3	1.5	1.7	1.9	1.3	1.5	1.2
Average height	1.9	1.8	1.9	2.1	2.1	2.8	1.9	2.3	2.0	3.1	2.2	2.1	1.9	2.5	2.3	1.7	1.9	1.8
Average W/H ratio	1.4	1.7	1.4	1.2	1.4	1.1	1.5	1.8	1.8	1.1	1.3	1.1	1.4	1.4	1.3	1.5	1.6	1.4
Max circumference	10.6	9.5	12.1	10.5	10.4	13.0	11.0	12.2	10.9	13.0	9.9	14.5	8.4	13.0	14.7	10.2	10.2	10.3
Min circumference	4.0	4.0	3.2	6.7	6.5	4.6	5.6	8.8	7.6	7.4	5.4	5.0	4.2	5.6	1.1	4.6	6.2	5.1
Avg circumference	7.4	7.3	7.6	8.4	8.1	9.8	7.8	10.6	8.9	10.5	8.0	7.6	6.6	9.6	9.7	7.1	8.0	7.5
Maximum slope	53.0	82.0	64.0	65.0	60.0	58.0	68.0	35.0	43.0	60.0	80.0	90.0	86.0	87.0	80.0	62.0	48.0	74.0
Minimum slope	53.0	82.0	64.0	65.0	60.0	0.0	68.0	30.0	20.0	15.0	67.0	45.0	41.0	50.0	33.0	62.0	36.0	50.0
Average slope	53.0	82.0	64.0	65.0	60.0	58.0	68.0	32.5	31.5	37.5	73.5	65.0	58.0	68.5	56.5	62.0	42.0	64.7
Branching angles	0	0	0	0	0	0	52	0	0	0	0	0	0	35	0	0	90	90
Complexity	3	3	3	3	3	3	5	3	3	3	3	5	5	5	6	2	4	7
Tortuosity	1.2	1.3	1.1	1.2	1.2	1.3	1.8	1.5	2.8	1.1	1.7	1.6	1.7	1.7	2.5	2.5	1.3	2

	TSB8
PAST Identifier	AT54_Y5
Architecture	Y5
Surface Openings	2
Maximum depth	10.2
Total Length	23.0
Maximum width	3.7
Minumum width	1.8
Average width	3.0
Maximum height	2.4
Minimum height	1.4
Average height	1.9
Average W/H ratio	1.6
Max circumference	9.2
Min circumference	5.5
Avg circumference	7.7
Maximum slope	63.0
Minimum slope	59.0
Average slope	61.0
Branching angles	90
Complexity	5
Tortuosity	1.9