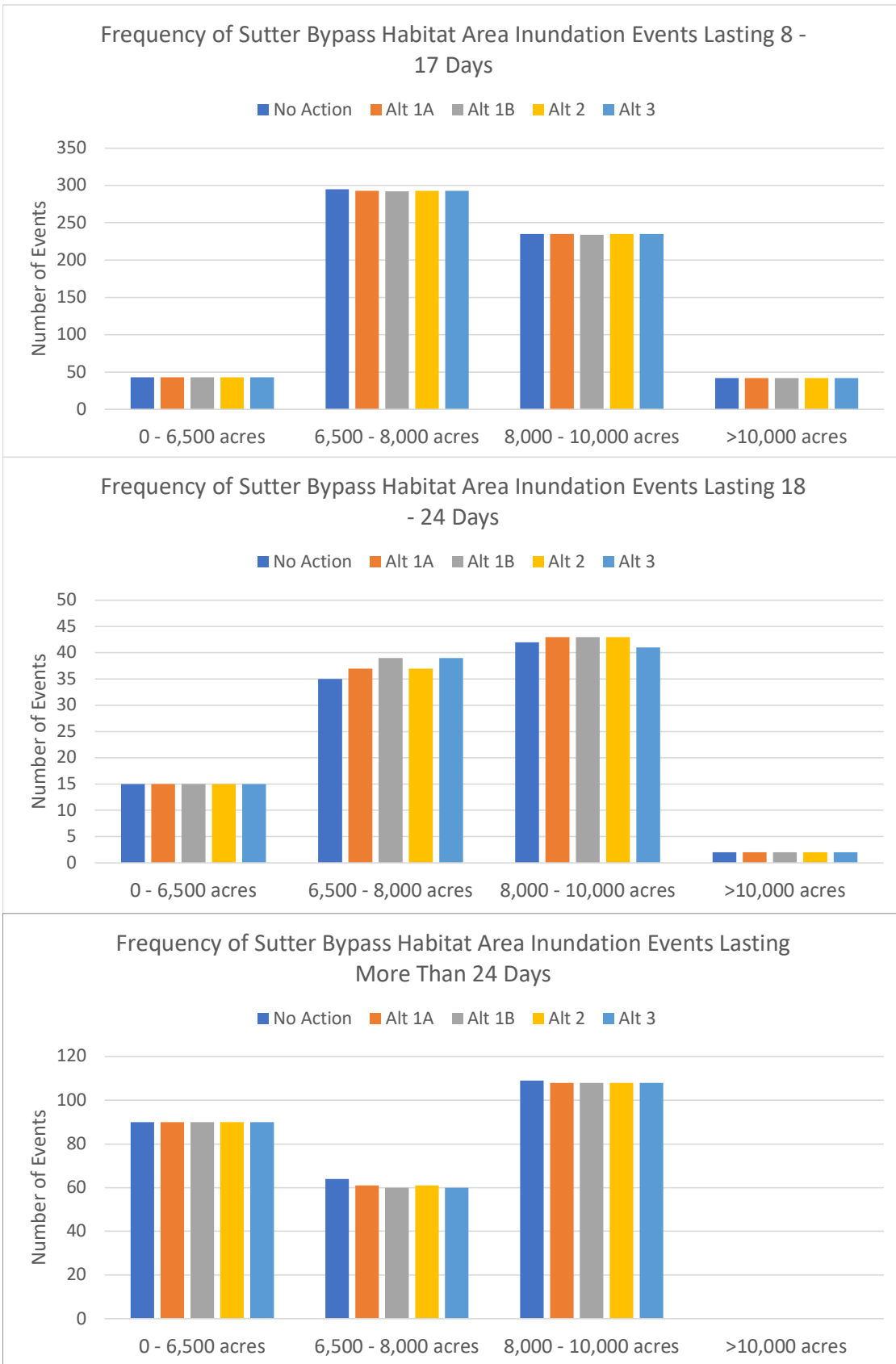


# **Appendix 11M5 Sutter Bypass Inundation Frequencies**

**Appendix 11M-5 . Average Monthly and Average Annual Number of Sutter Bypass Inundation Events with Three Different Ranges of Duration and Four Ranges of Suitable Habitat Acreages for the NAA and Alt 1A, Alt 1B, Alt 2, and Alt 3**



**Table 1. Frequency of Sutter Bypass Habitat Area Inundation Events.**

Frequency of Sutter Bypass Habitat Area Inundation Events Lasting 8 - 17 Days													
Area Range	No Action	Alt 1A	Alt 1A minus No Action	Percent Change	Alt 1B	Alt 1B minus No Action	Percent Change	Alt 2	Alt 2 minus No Action	Percent Change	Alt 3	Alt 3 minus No Action	Percent Change
0 - 6,500 acres	43	43	0	0%	43	0	0%	43	0	0%	43	0	0%
6,500 - 8,000 acres	295	293	-2	-1%	292	-3	-1%	293	-2	-1%	293	-2	-1%
8,000 - 10,000 acres	235	235	0	0%	234	-1	0%	235	0	0%	235	0	0%
>10,000 acres	42	42	0	0%	42	0	0%	42	0	0%	42	0	0%
Frequency of Sutter Bypass Habitat Area Inundation Events Lasting 18 - 24 Days													
Area Range	No Action	Alt 1A	Alt 1A minus No Action	Percent Change	Alt 1B	Alt 1B minus No Action	Percent Change	Alt 2	Alt 2 minus No Action	Percent Change	Alt 3	Alt 3 minus No Action	Percent Change
0 - 6,500 acres	15	15	0	0%	15	0	0%	15	0	0%	15	0	0%
6,500 - 8,000 acres	35	37	2	6%	39	4	11%	37	2	6%	39	4	11%
8,000 - 10,000 acres	42	43	1	2%	43	1	2%	43	1	2%	41	-1	-2%
>10,000 acres	2	2	0	0%	2	0	0%	2	0	0%	2	0	0%
Frequency of Sutter Bypass Habitat Area Inundation Events Lasting More Than 24 Days													
Area Range	No Action	Alt 1A	Alt 1A minus No Action	Percent Change	Alt 1B	Alt 1B minus No Action	Percent Change	Alt 2	Alt 2 minus No Action	Percent Change	Alt 3	Alt 3 minus No Action	Percent Change
0 - 6,500 acres	90	90	0	0%	90	0	0%	90	0	0%	90	0	0%
6,500 - 8,000 acres	64	61	-3	-5%	60	-4	-6%	61	-3	-5%	60	-4	-6%
8,000 - 10,000 acres	109	108	-1	-1%	108	-1	-1%	108	-1	-1%	108	-1	-1%
>10,000 acres	0	0	0	-	0	0	-	0	0	-	0	0	-

\*Based on total number of events in 82 year simulation period.

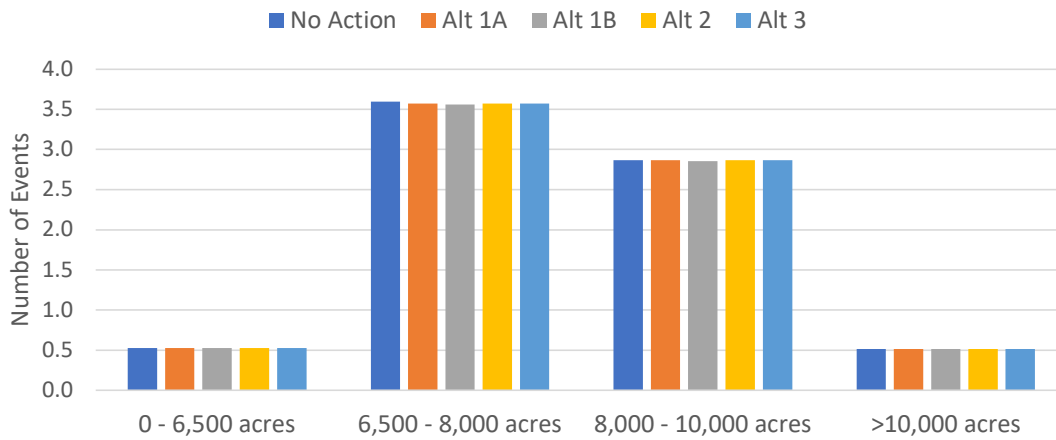
**Table 2. Monthly Summary of Frequency of Sutter Bypass Habitat Area Inundation Events Lasting 8 - 17 Days**

Frequency of Sutter Bypass Habitat Area Inundation Events Lasting 8 - 17 Days in October													
Area Range	No Action	Alt 1A	Alt 1A minus No Action	Percent Change	Alt 1B	Alt 1B minus No Action	Percent Change	Alt 2	Alt 2 minus No Action	Percent Change	Alt 3	Alt 3 minus No Action	Percent Change
0 - 6,500 acres	8	8	0	0%	8	0	0%	8	0	0%	8	0	0%
6,500 - 8,000 acres	26	26	0	0%	26	0	0%	26	0	0%	26	0	0%
8,000 - 10,000 acres	7	7	0	0%	7	0	0%	7	0	0%	7	0	0%
>10,000 acres	0	0	0	-	0	0	-	0	0	-	0	0	-
Frequency of Sutter Bypass Habitat Area Inundation Events Lasting 8 - 17 Days in November													
Area Range	No Action	Alt 1A	Alt 1A minus No Action	Percent Change	Alt 1B	Alt 1B minus No Action	Percent Change	Alt 2	Alt 2 minus No Action	Percent Change	Alt 3	Alt 3 minus No Action	Percent Change
0 - 6,500 acres	8	8	0	0%	8	0	0%	8	0	0%	8	0	0%
6,500 - 8,000 acres	25	25	0	0%	25	0	0%	25	0	0%	25	0	0%
8,000 - 10,000 acres	33	33	0	0%	33	0	0%	33	0	0%	33	0	0%
>10,000 acres	0	0	0	-	0	0	-	0	0	-	0	0	-
Frequency of Sutter Bypass Habitat Area Inundation Events Lasting 8 - 17 Days in December													
Area Range	No Action	Alt 1A	Alt 1A minus No Action	Percent Change	Alt 1B	Alt 1B minus No Action	Percent Change	Alt 2	Alt 2 minus No Action	Percent Change	Alt 3	Alt 3 minus No Action	Percent Change
0 - 6,500 acres	5	5	0	0%	5	0	0%	5	0	0%	5	0	0%
6,500 - 8,000 acres	34	33	-1	-3%	33	-1	-3%	33	-1	-3%	34	0	0%
8,000 - 10,000 acres	32	32	0	0%	30	-2	-6%	32	0	0%	31	-1	-3%
>10,000 acres	0	0	0	-	0	0	-	0	0	-	0	0	-
Frequency of Sutter Bypass Habitat Area Inundation Events Lasting 8 - 17 Days in January													
Area Range	No Action	Alt 1A	Alt 1A minus No Action	Percent Change	Alt 1B	Alt 1B minus No Action	Percent Change	Alt 2	Alt 2 minus No Action	Percent Change	Alt 3	Alt 3 minus No Action	Percent Change
0 - 6,500 acres	7	7	0	0%	7	0	0%	7	0	0%	7	0	0%
6,500 - 8,000 acres	32	32	0	0%	32	0	0%	32	0	0%	32	0	0%
8,000 - 10,000 acres	37	38	1	3%	38	1	3%	38	1	3%	38	1	3%
>10,000 acres	1	1	0	0%	1	0	0%	1	0	0%	1	0	0%
Frequency of Sutter Bypass Habitat Area Inundation Events Lasting 8 - 17 Days in February													
Area Range	No Action	Alt 1A	Alt 1A minus No Action	Percent Change	Alt 1B	Alt 1B minus No Action	Percent Change	Alt 2	Alt 2 minus No Action	Percent Change	Alt 3	Alt 3 minus No Action	Percent Change
0 - 6,500 acres	2	2	0	0%	2	0	0%	2	0	0%	2	0	0%
6,500 - 8,000 acres	22	21	-1	-5%	21	-1	-5%	21	-1	-5%	23	1	5%
8,000 - 10,000 acres	29	29	0	0%	29	0	0%	29	0	0%	29	0	0%
>10,000 acres	1	1	0	0%	1	0	0%	1	0	0%	1	0	0%
Frequency of Sutter Bypass Habitat Area Inundation Events Lasting 8 - 17 Days in March													
Area Range	No Action	Alt 1A	Alt 1A minus No Action	Percent Change	Alt 1B	Alt 1B minus No Action	Percent Change	Alt 2	Alt 2 minus No Action	Percent Change	Alt 3	Alt 3 minus No Action	Percent Change
0 - 6,500 acres	0	0	0	-	0	0	-	0	0	-	0	0	-
6,500 - 8,000 acres	13	13	0	0%	12	-1	-8%	13	0	0%	10	-3	-23%
8,000 - 10,000 acres	20	19	-1	-5%	19	-1	-5%	19	-1	-5%	19	-1	-5%
>10,000 acres	8	8	0	0%	8	0	0%	8	0	0%	8	0	0%
Frequency of Sutter Bypass Habitat Area Inundation Events Lasting 8 - 17 Days in April													
Area Range	No Action	Alt 1A	Alt 1A minus No Action	Percent Change	Alt 1B	Alt 1B minus No Action	Percent Change	Alt 2	Alt 2 minus No Action	Percent Change	Alt 3	Alt 3 minus No Action	Percent Change
0 - 6,500 acres	1	1	0	0%	1	0	0%	1	0	0%	1	0	0%
6,500 - 8,000 acres	15	15	0	0%	15	0	0%	15	0	0%	15	0	0%
8,000 - 10,000 acres	17	17	0	0%	17	0	0%	17	0	0%	17	0	0%
>10,000 acres	18	18	0	0%	18	0	0%	18	0	0%	18	0	0%
Frequency of Sutter Bypass Habitat Area Inundation Events Lasting 8 - 17 Days in May													
Area Range	No Action	Alt 1A	Alt 1A minus No Action	Percent Change	Alt 1B	Alt 1B minus No Action	Percent Change	Alt 2	Alt 2 minus No Action	Percent Change	Alt 3	Alt 3 minus No Action	Percent Change
0 - 6,500 acres	0	0	0	-	0	0	-	0	0	-	0	0	-
6,500 - 8,000 acres	18	18	0	0%	18	0	0%	18	0	0%	18	0	0%
8,000 - 10,000 acres	15	15	0	0%	16	1	7%	15	0	0%	16	1	7%
>10,000 acres	13	13	0	0%	13	0	0%	13	0	0%	13	0	0%
Frequency of Sutter Bypass Habitat Area Inundation Events Lasting 8 - 17 Days in June													
Area Range	No Action	Alt 1A	Alt 1A minus No Action	Percent Change	Alt 1B	Alt 1B minus No Action	Percent Change	Alt 2	Alt 2 minus No Action	Percent Change	Alt 3	Alt 3 minus No Action	Percent Change
0 - 6,500 acres	2	2	0	0%	2	0	0%	2	0	0%	2	0	0%
6,500 - 8,000 acres	40	40	0	0%	40	0	0%	40	0	0%	40	0	0%
8,000 - 10,000 acres	23	23	0	0%	23	0	0%	23	0	0%	23	0	0%
>10,000 acres	1	1	0	0%	1	0	0%	1	0	0%	1	0	0%
Frequency of Sutter Bypass Habitat Area Inundation Events Lasting 8 - 17 Days in July													
Area Range	No Action	Alt 1A	Alt 1A minus No Action	Percent Change	Alt 1B	Alt 1B minus No Action	Percent Change	Alt 2	Alt 2 minus No Action	Percent Change	Alt 3	Alt 3 minus No Action	Percent Change
0 - 6,500 acres	0	0	0	-	0	0	-	0	0	-	0	0	-
6,500 - 8,000 acres	51	51	0	0%	51	0	0%	51	0	0%	51	0	0%
8,000 - 10,000 acres	15	15	0	0%	15	0	0%	15	0	0%	15	0	0%
>10,000 acres	0	0	0	-	0	0	-	0	0	-	0	0	-
Frequency of Sutter Bypass Habitat Area Inundation Events Lasting 8 - 17 Days in August													
Area Range	No Action	Alt 1A	Alt 1A minus No Action	Percent Change	Alt 1B	Alt 1B minus No Action	Percent Change	Alt 2	Alt 2 minus No Action	Percent Change	Alt 3	Alt 3 minus No Action	Percent Change
0 - 6,500 acres	0	0	0	-	0	0	-	0	0	-	0	0	-
6,500 - 8,000 acres	8	8	0	0%	8	0	0%	8	0	0%	8	0	0%
8,000 - 10,000 acres	6	6	0	0%	6	0	0%	6	0	0%	6	0	0%
>10,000 acres	0	0	0	-	0	0	-	0	0	-	0	0	-
Frequency of Sutter Bypass Habitat Area Inundation Events Lasting 8 - 17 Days in September													
Area Range	No Action	Alt 1A	Alt 1A minus No Action	Percent Change	Alt 1B	Alt 1B minus No Action	Percent Change	Alt 2	Alt 2 minus No Action	Percent Change	Alt 3	Alt 3 minus No Action	Percent Change
0 - 6,500 acres	10	10	0	0%	10	0	0%	10	0	0%	10	0	0%
6,500 - 8,000 acres	11	11	0	0%	11	0	0%	11	0	0%	11	0	0%
8,000 - 10,000 acres	1	1	0	0%	1	0	0%	1	0	0%	1	0	0%
>10,000 acres	0	0	0	-	0	0	-	0	0	-	0	0	-

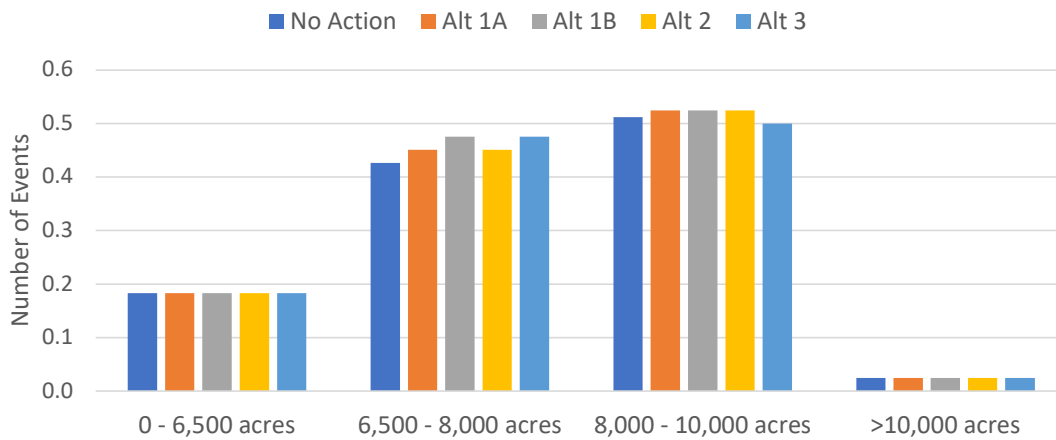




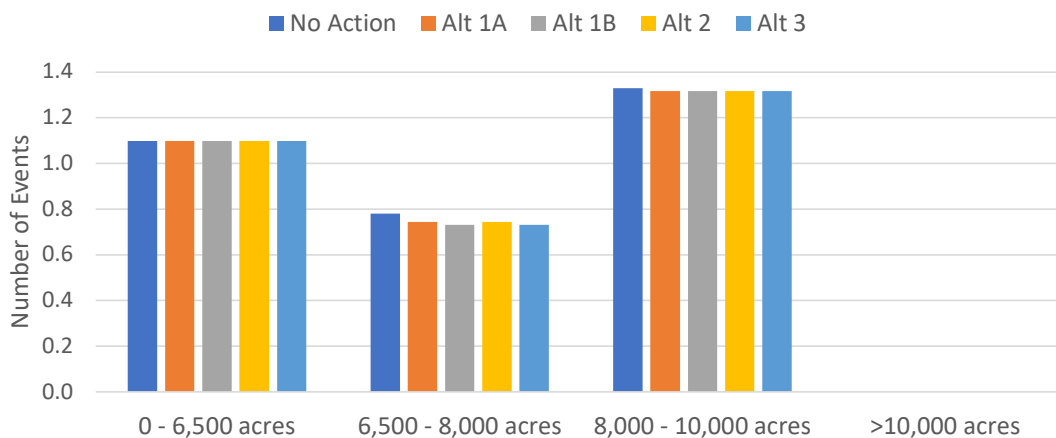
Average Annual Sutter Bypass Habitat Area Inundation Events Lasting 8 - 17 Days



Average Annual Sutter Bypass Habitat Area Inundation Events Lasting 18 - 24 Days



Average Annual Sutter Bypass Habitat Area Inundation Events Lasting More Than 24 Days



**Table 5. Average Annual Sutter Bypass Habitat Area Inundation Events.**

Average Annual Sutter Bypass Habitat Area Inundation Events Lasting 8 - 17 Days													
Area Range	No Action	Alt 1A	Alt 1A minus No Action	Percent Change	Alt 1B	Alt 1B minus No Action	Percent Change	Alt 2	Alt 2 minus No Action	Percent Change	Alt 3	Alt 3 minus No Action	Percent Change
0 - 6,500 acres	0.52	0.52	0.00	0%	0.52	0.00	0%	0.52	0.00	0%	0.52	0.00	0%
6,500 - 8,000 acres	3.60	3.57	-0.02	-1%	3.56	-0.04	-1%	3.57	-0.02	-1%	3.57	-0.02	-1%
8,000 - 10,000 acres	2.87	2.87	0.00	0%	2.85	-0.01	0%	2.87	0.00	0%	2.87	0.00	0%
>10,000 acres	0.51	0.51	0.00	0%	0.51	0.00	0%	0.51	0.00	0%	0.51	0.00	0%

Average Annual Sutter Bypass Habitat Area Inundation Events Lasting 18 - 24 Days													
Area Range	No Action	Alt 1A	Alt 1A minus No Action	Percent Change	Alt 1B	Alt 1B minus No Action	Percent Change	Alt 2	Alt 2 minus No Action	Percent Change	Alt 3	Alt 3 minus No Action	Percent Change
0 - 6,500 acres	0.18	0.18	0.00	0%	0.18	0.00	0%	0.18	0.00	0%	0.18	0.00	0%
6,500 - 8,000 acres	0.43	0.45	0.02	6%	0.48	0.05	11%	0.45	0.02	6%	0.48	0.05	11%
8,000 - 10,000 acres	0.51	0.52	0.01	2%	0.52	0.01	2%	0.52	0.01	2%	0.50	-0.01	-2%
>10,000 acres	0.02	0.02	0.00	0%	0.02	0.00	0%	0.02	0.00	0%	0.02	0.00	0%

Average Annual Sutter Bypass Habitat Area Inundation Events Lasting More Than 24 Days													
Area Range	No Action	Alt 1A	Alt 1A minus No Action	Percent Change	Alt 1B	Alt 1B minus No Action	Percent Change	Alt 2	Alt 2 minus No Action	Percent Change	Alt 3	Alt 3 minus No Action	Percent Change
0 - 6,500 acres	1.10	1.10	0.00	0%	1.10	0.00	0%	1.10	0.00	0%	1.10	0.00	0%
6,500 - 8,000 acres	0.78	0.74	-0.04	-5%	0.73	-0.05	-6%	0.74	-0.04	-5%	0.73	-0.05	-6%
8,000 - 10,000 acres	1.33	1.32	-0.01	-1%	1.32	-0.01	-1%	1.32	-0.01	-1%	1.32	-0.01	-1%
>10,000 acres	0.00	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-	0.00	0.00	-

\*Based on total events in 82 year simulation period.