Region 5
Aerial Survey Results 2005

National Forests and Parks	Acres of Biotic Mortality					Acres of Fire Mortality					Acres of Other Abiotic/Unknown Mortality					Total Mortality as mapped
	Pine	Fir	Mixed	Hdwd	Total	Pine	Fir	Mixed	Hdwd	Total	Pine	Fir	Mixed	Hdwd	Total	
Angeles	1,149	0	61	1	1,211	2,526	0	27	101	2,654	0	0	0	0	0	3,865
Cleveland	458	0	125	0	584	356	0	157	79	592	0	0	0	7,539	7,539	8,715
Eldorado	3,979	8,942	18,995	0	31,915	30	0	58,970	0	58,999	0	0	0	0	0	90,915
Inyo	566	170	6	0	742	542	0	6,982	0	7,524	0	0	0	0	0	8,266
Klamath	27,116	77,861	37,270	0	142,246	1,062	569	2,357	0	3,988	0	0	0	0	0	146,234
Lassen	35,397	57,106	64,876	0	157,379	1,482	59	2,521	0	4,061	0	0	0	0	0	161,440
Los Padres	1,079	145	13	4,230	5,466	5	0	0	546	551	0	0	0	25	25	6,042
LTBMU	131	3,392	430	0	3,953	0	0	0	0	0	0	0	0	0	0	3,953
Mendocino	1,257	11,726	1,618	0	14,601	0	45	2,487	0	2,532	0	0	18	0	18	17,151
Modoc	42,427	35,643	28,919	0	106,989	617	88	0	0	705	0	0	0	0	0	107,693
Plumas	1,132	18,797	2,607	0	22,535	1,037	325	208	0	1,570	0	0	0	0	0	24,105
San Bernardino	4,596	146	1,584	6	6,332	195	0	1,639	8	1,843	0	0	0	0	0	8,175
Sequoia	17,945	1,554	8,195	0	27,694	3,825	0	1,306	0	5,131	0	0	0	5	5	32,829
Shasta-Trinity	31,347	11,324	0	0	42,671	20	88	353	0	461	0	0	33	3	36	43,168
Sierra	2,078	8,769	1,082	0	11,929	1,707	0	1,448	228	3,382	0	284	0	0	284	15,595
Six Rivers	959	5,625	956	35	7,575	0	0	768	0	768	0	0	0	192	192	8,536
Stanislaus	4,990	45,899	41,925	0	92,813	1,107	901	11,534	0	13,541	0	0	0	0	0	106,354
Tahoe	3,267	155,149	48,465	0	206,881	373	54	0	0	427	0	0	0	0	0	207,309
Subtotal NF	179,871	442,245	257,128	4,273	883,517	14,882	2,128	90,756	963	108,729	0	284	52	7,764	8,099	1,000,345
Lassen	2,293	5,418	0	7,880	15,591	0	0	0	5,573	5,573	0	0	0	0	0	21,163
Sequoia-Kings	4,394	1,344	0	9,632	15,370	208	0	0	9,000	9,207	0	0	0	0	0	24,577
Yosemite	31,179	3	0	0	31,182	4,041	1,887	0	0	5,928	0	0	0	0	0	37,110
Subtotal NP	37,865	6,765	0	17,512	62,142	4,249	1,887	0	14,572	20,708	0	0	0	0	0	82,850
Total	217,737	449,010	257,128	21,785	945,659	19,131	4,015	90,756	15,535	129,437	0	284	52	7,764	8,099	1,083,196

Acres of Mortality represent all acres mapped within a sketched polygon across all ownerships.
Mixed includes polygons coded with a combination of tree species, or coded as mixed conifer, Douglas-fir, juniper, and unknown conifer types.

Region 5, Aerial Survey Results, 2005 (continued)

National Forests and Parks	Acres of Other Damage					Acres with Damage and Mortality	Acres Flown	Total Forested Productive Acreage	Total Mortality	Total Damage	Total Acres Mapped
	Pine	Fir	Mixed	Hdwd	Total						
Angeles	0	0	0	0	0	0	735,156	108,854	3,865	0	3,865
Cleveland	0	0	0	0	0	0	738,826	18,593	8,715	0	8,715
Eldorado	0	0	0	0	0	0	859,227	485,796	90,915	0	90,915
Inyo	0	0	0	0	0	0	2,195,221	730,134	8,266	0	8,266
Klamath	0	0	0	0	0	0	1,921,996	1,371,172	146,234	0	146,234
Lassen	0	0	0	0	0	0	2,116,344	834,279	161,440	0	161,440
Los Padres	0	0	0	0	0	0	2,235,800	178,462	6,042	0	6,042
LTBMU	0	0	0	0	0	0	209,033	112,643	3,953	0	3,953
Mendocino	0	0	0	0	0	0	1,071,909	521,691	17,151	0	17,151
Modoc	0	0	0	0	0	0	2,250,820	582,115	107,693	0	107,693
Plumas	0	0	0	0	0	0	1,610,101	1,024,633	24,105	0	24,105
San Bernardino	0	0	0	0	0	0	849,704	194,603	8,175	0	8,175
Sequoia	0	309	0	0	309	0	1,203,517	583,044	32,829	309	33,138
Shasta-Trinity	0	424	0	0	424	0	3,174,088	1,764,975	43,168	424	43,592
Sierra	47	8,369	0	0	8,416	0	1,427,112	893,487	15,595	8,416	24,011
Six Rivers	0	1,096	0	58	1,154	58	1,190,869	827,967	8,536	1,154	9,632
Stanislaus	434	2,249	8	0	2,691	0	1,093,427	587,299	106,354	2,691	109,045
Tahoe	0	0	0	0	0	0	1,279,279	661,731	207,309	0	207,309
Subtotal NF	481	12,446	8	58	12,993	58	26,162,428	11,481,478	1,000,346	12,993	1,013,281
Lassen	0	0	0	0	0	0	107,290	N/A	21,163	0	21,163
Sequoia-Kings	0	0	0	0	0	0	871,795	N/A	24,577	0	24,577
Yosemite	31,030	2,093	0	0	33,123	31,030	750,296	N/A	37,110	33,123	39,203
Subtotal NP	31,030	2,093	0	0	33,123	31,030	1,729,381	N/A	82,850	33,123	84,943
Total	31,511	14,539	8	58	46,116	31,088	27,891,810	11,481,478	1,083,196	46,116	1,098,224

Other Damage includes defoliation, branch dieback, discoloration and topkill.
Total Forested Productive Acres values are from 2003 and may have changed due to recent land exchanges.

Biotic and Abiotic Damage Causing Agents Mapped in 2005

National Code*	Common Name
	Biotic
11000	Bark Beetles
11002	Western Pine Beetle
11004	Jeffrey Pine Beetle
11006	Mountain Pine Beetle
11019	Pinyon Ips
11027	California Five-Spined Ips
11030	Ips Engraver Beetles
11048	True Fir Bark Beetles
11050	Fir Engraver
12049	Lodgepole Needleminer
12123	Douglas Fir Tussock Moth
15040	California Flatheaded Borer
21028	Sudden Oak Death
22026	Cytosperia Canker
26001	White Pine Blister Rust
41001	Bear Damage
80000	Complex
	Fire
50012	Wildfire
70002	Human-caused (Prescribed) Fire
	Other Abiotic/Unknown
50004	Flooding/High Water
50013	Wind/Tornado
50016	Mud/Land Slide
70000	Human Activities
90000	Unknown
90008	Foliage Discoloration
99999	No Data

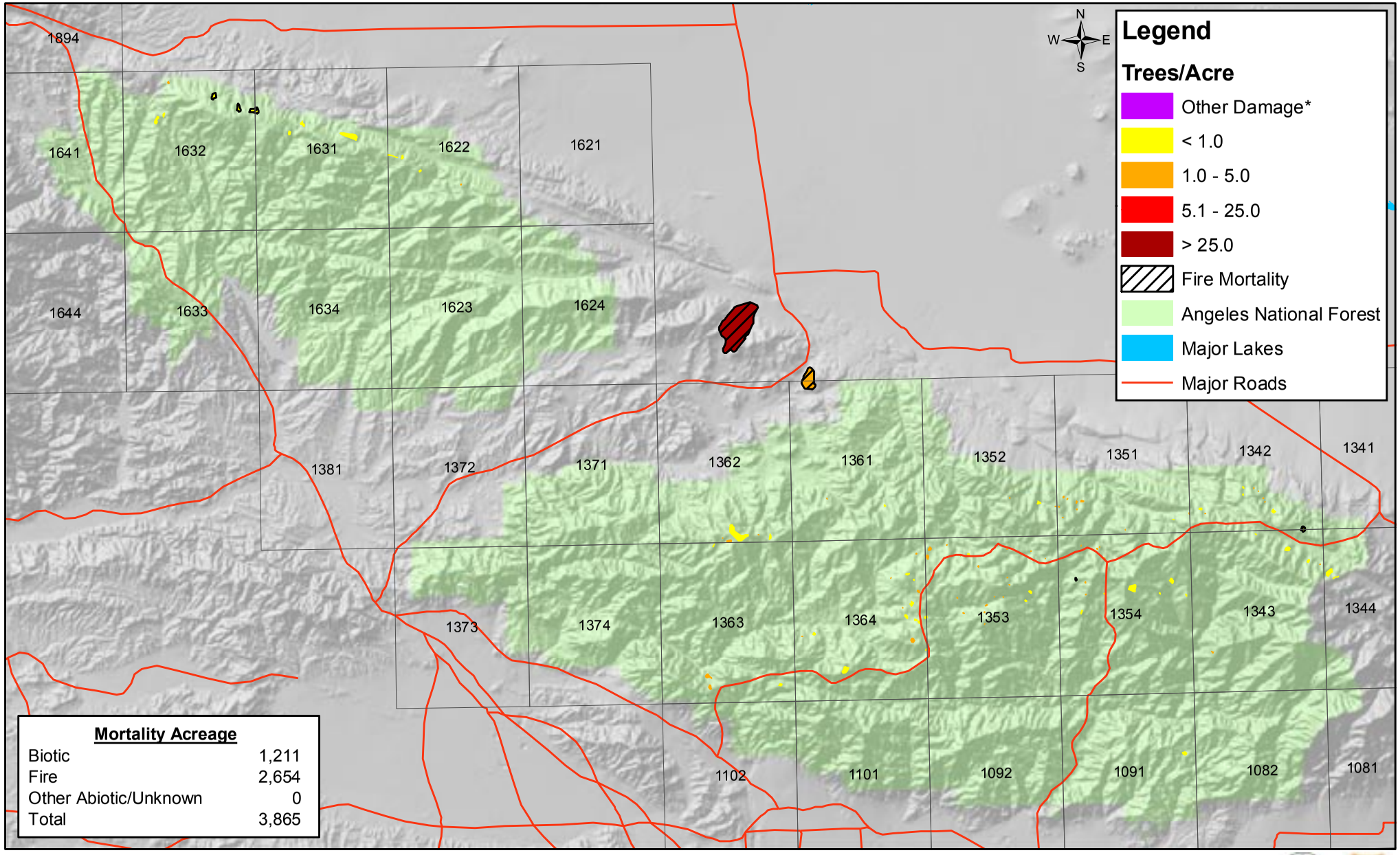
*Pest Trend-Impact Plot System Code

Chart Note

- Annual rainfall figures were calculated from October 1st of the previous year to September 30th of that year to correspond to precipitation occurring prior to the annual mortality survey (typically occurring August – September).

Angeles National Forest 2005 Mortality

Aerial Survey Sketch Mapping Program



Mortality Acreage	
Biotic	1,211
Fire	2,654
Other Abiotic/Unknown	0
Total	3,865

Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:450,000

0 1.5 3 6 9 12 Miles

* Other Damage includes defoliation, discoloration, flagging, and topkill.

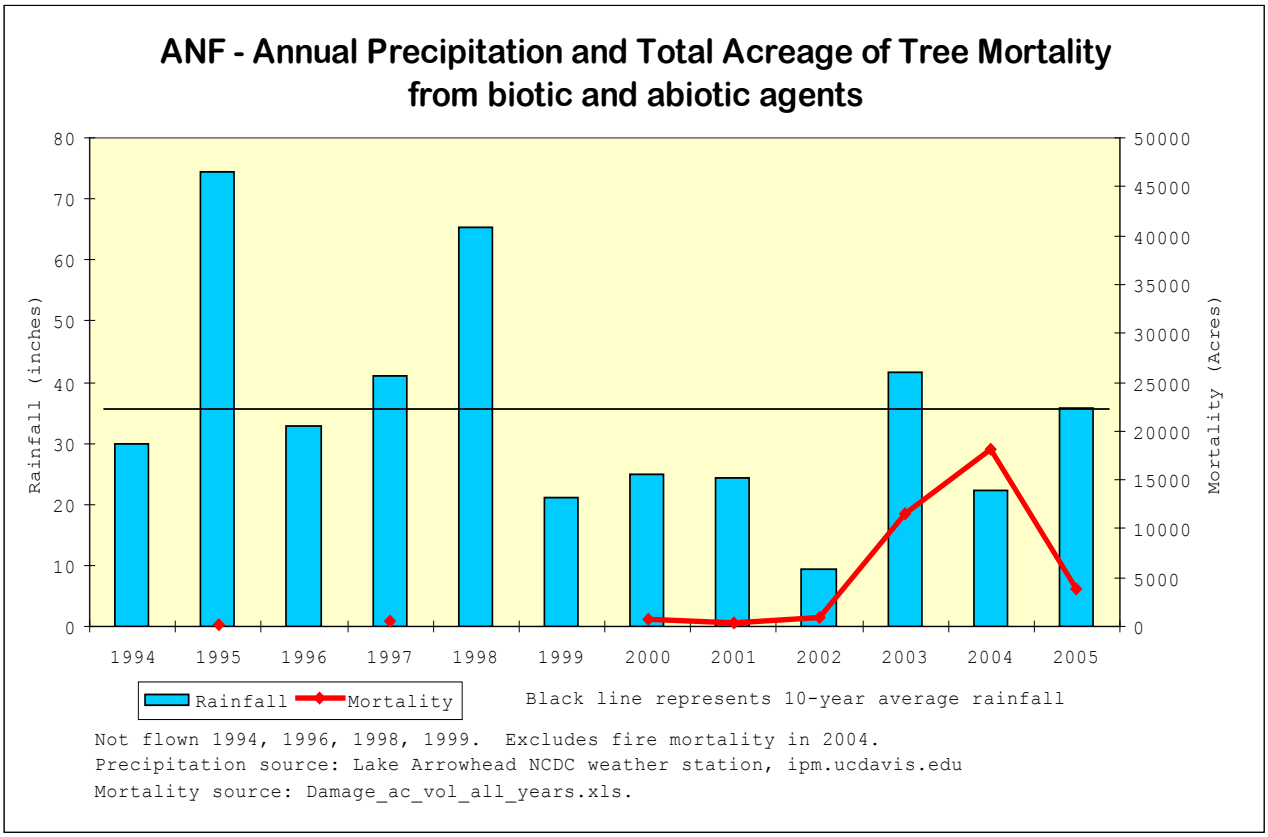
Angeles National Forest
2005 Mortality Acreage by Major Damage Type and Major Species Groups

ANF	Pine	Fir	Mixed	Hardwood	Total
Biotic	1,149	0	61	1	1,211
Fire	2,526	0	27	101	2,654
Other Abiotic/Unknown	0	0	0	0	0

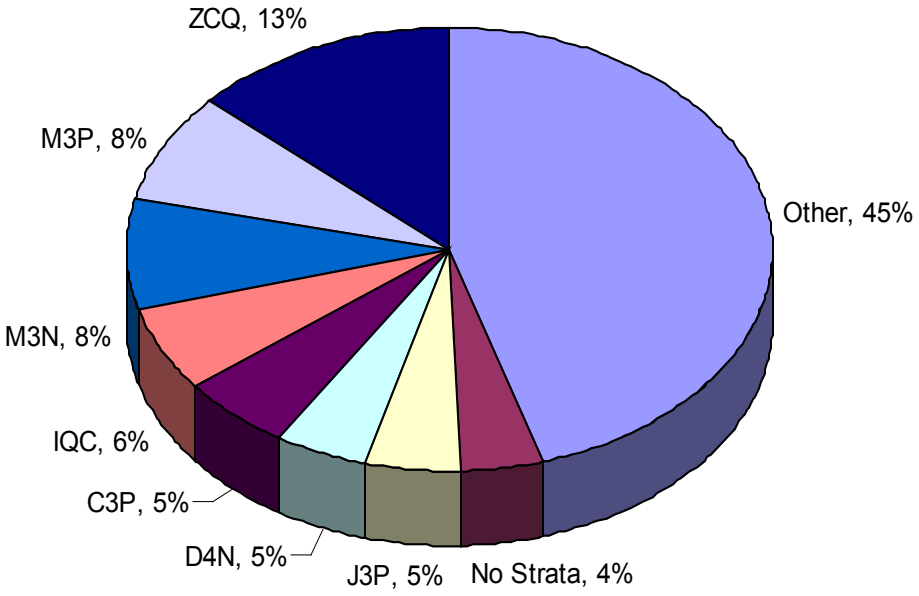
Number of Dead Trees by Major Damage Type and Major Species Groups

ANF	Pine	Fir	Mixed	Hardwood	Total
Biotic	1,008	0	17	2	1,027
Fire	75,425	0	10	70	75,505
Other Abiotic/Unknown	0	0	0	0	0

Historic Mortality and Precipitation



2005 Aerial Survey Angeles National Forest Percent Mortality by Strata



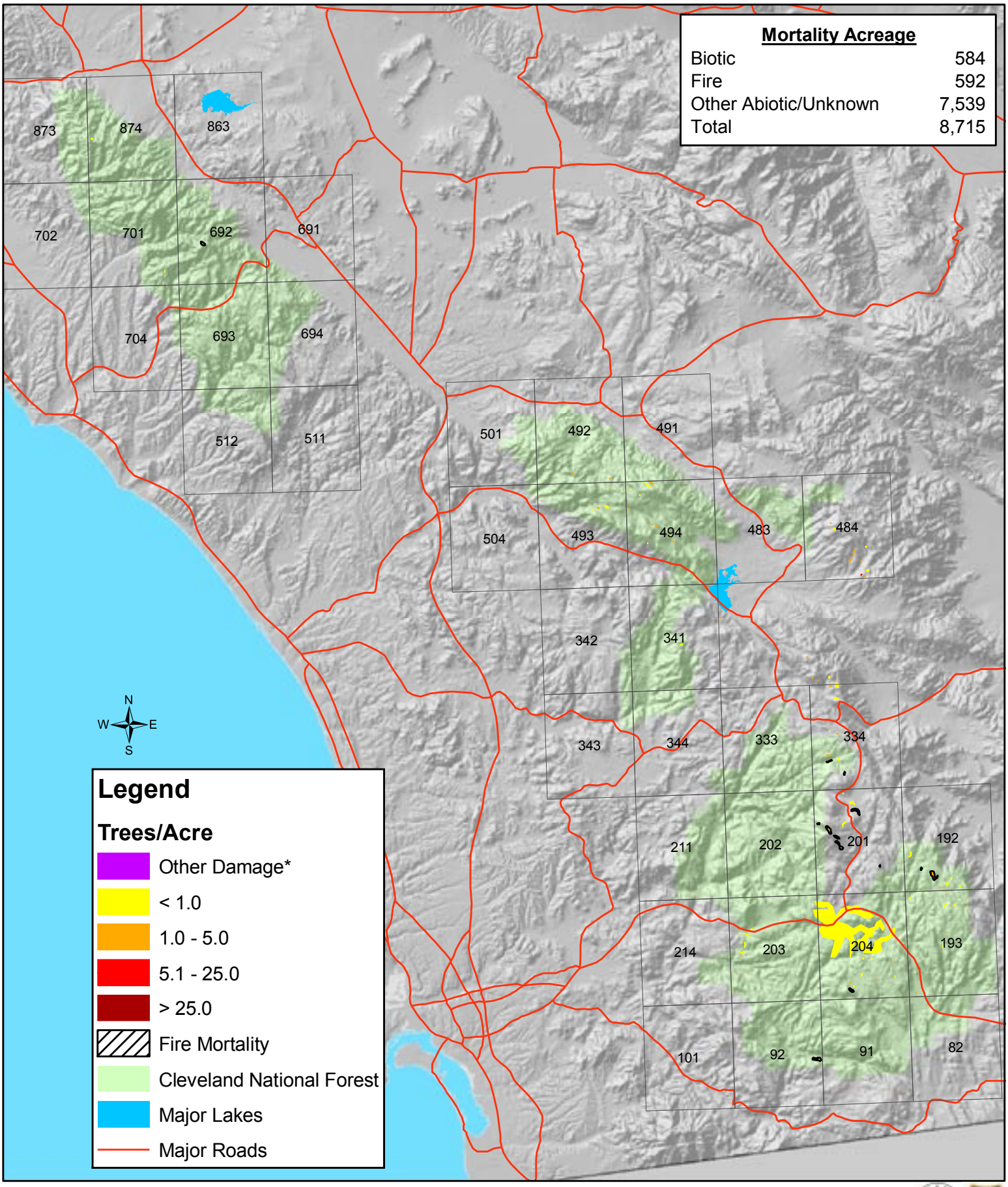
Total Pest Mortality = 1,211 Acres

"Other" includes all strata comprising less than 4% of total pest mortality acreage.

Data Sources: FIA Inventory/Strata Data (anfstra97_5), 2005 Aerial Mortality Survey Data (anf_mort05).
RSL GIS Library - http://www.fs.fed.us/r5/clearinghouse/data/shtml

Cleveland National Forest 2005 Mortality

Aerial Survey Sketch Mapping Program



Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:650,000

0 2 4 8 12 16 Miles

* Other Damage includes defoliation, discoloration, flagging, and topkill.

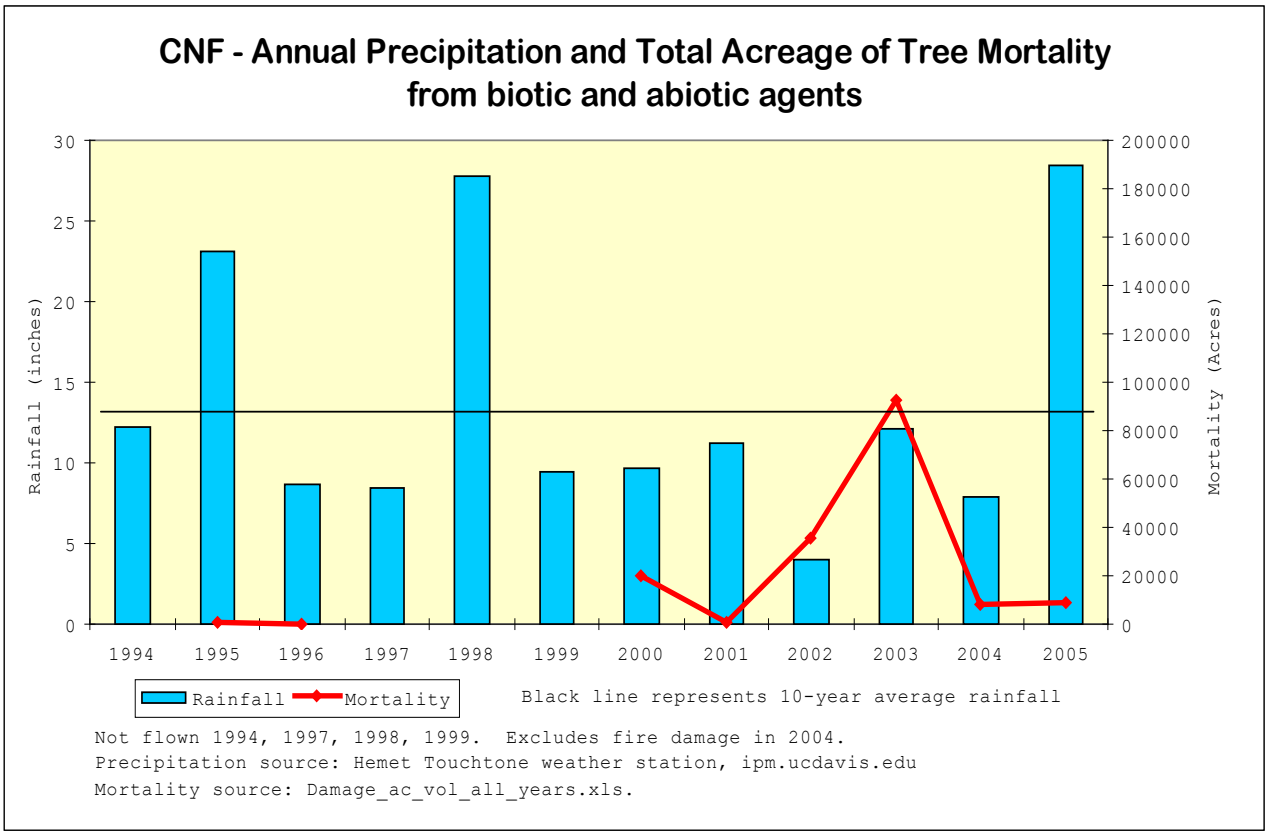
Cleveland National Forest
2005 Mortality Acreage by Major Damage Type and Major Species Groups

CNF	Pine	Fir	Mixed	Hardwood	Total
Biotic	458	0	125	0	584
Fire	356	0	157	79	592
Other Abiotic/Unknown	0	0	0	7,539	7,539

Number of Dead Trees by Major Damage Type and Major Species Groups

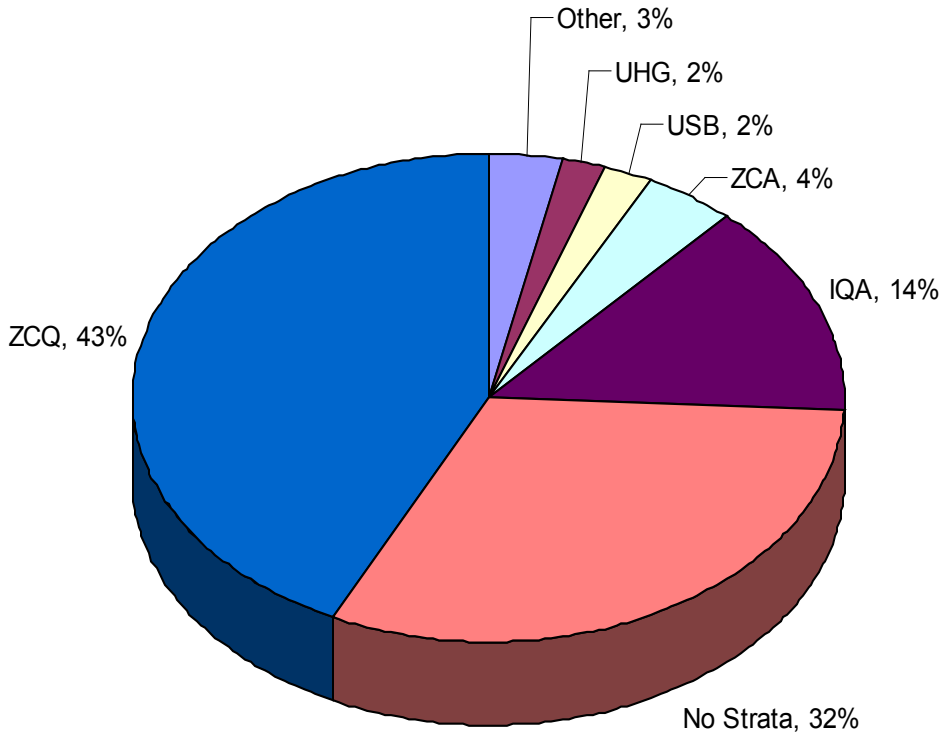
CNF	Pine	Fir	Mixed	Hardwood	Total
Biotic	440	0	120	0	560
Fire	270	0	165	20	455
Other Abiotic/Unknown	0	0	0	3,796	3,796

Historic Mortality and Precipitation



2005 Aerial Survey Cleveland National Forest Percent Mortality by Strata

biotic damage agents only



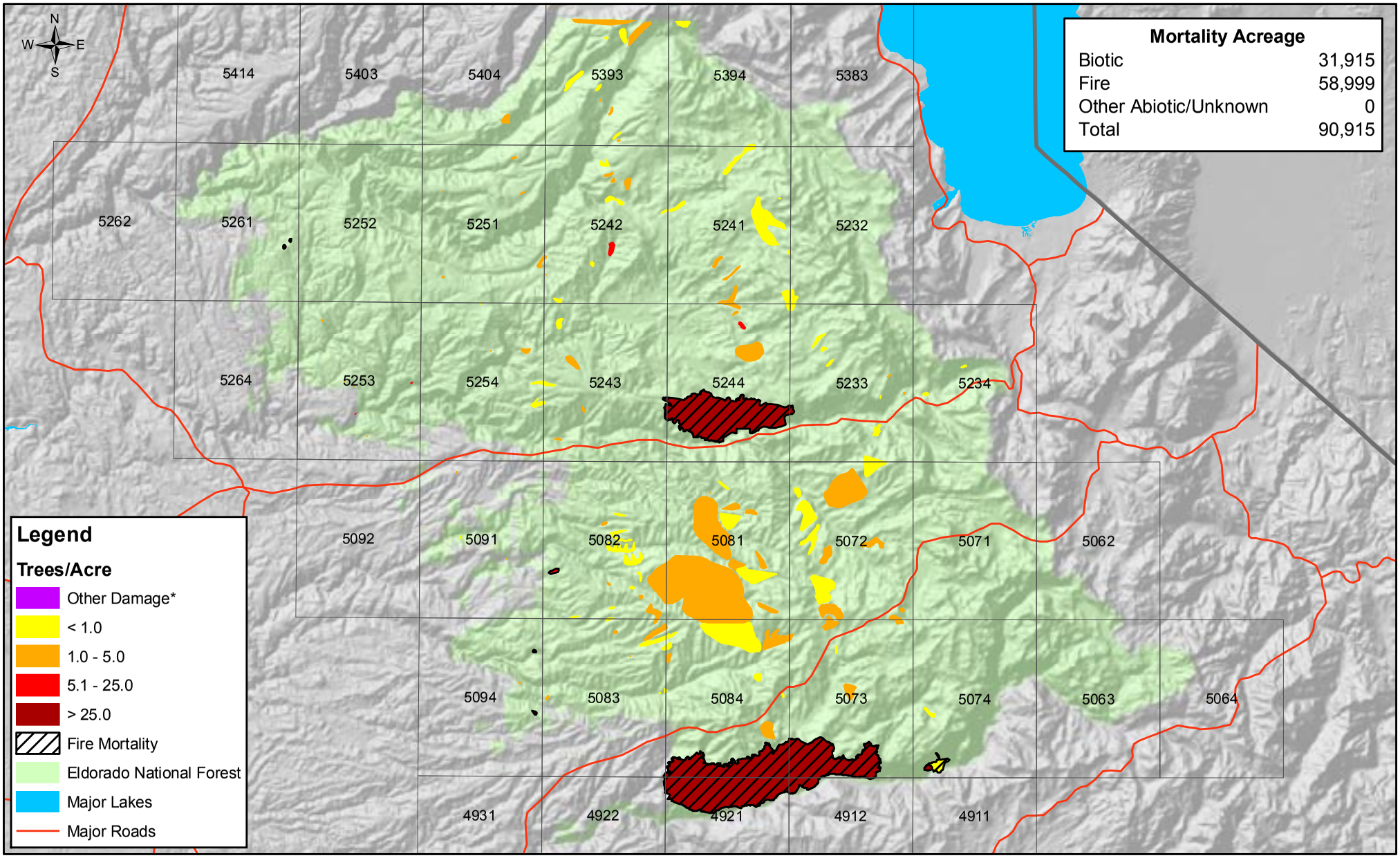
Total Pest Mortality =584 Acres

"Other" includes all strata comprising less than 2% of total pest mortality acreage.

Data Sources: FIA Inventory/Strata Data (cnfstra97_6), 2005 Aerial Mortality Survey Data (cnf_mort05).

RSL GIS Library - http://www.fs.fed.us/r5/clearinghouse/data/shtml

Eldorado National Forest, 2005 Mortality
Aerial Survey Sketch Mapping Program



Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:460,000

0 1.5 3 6 9 12 Miles

* Other Damage includes defoliation, discoloration, flagging, and topkill.

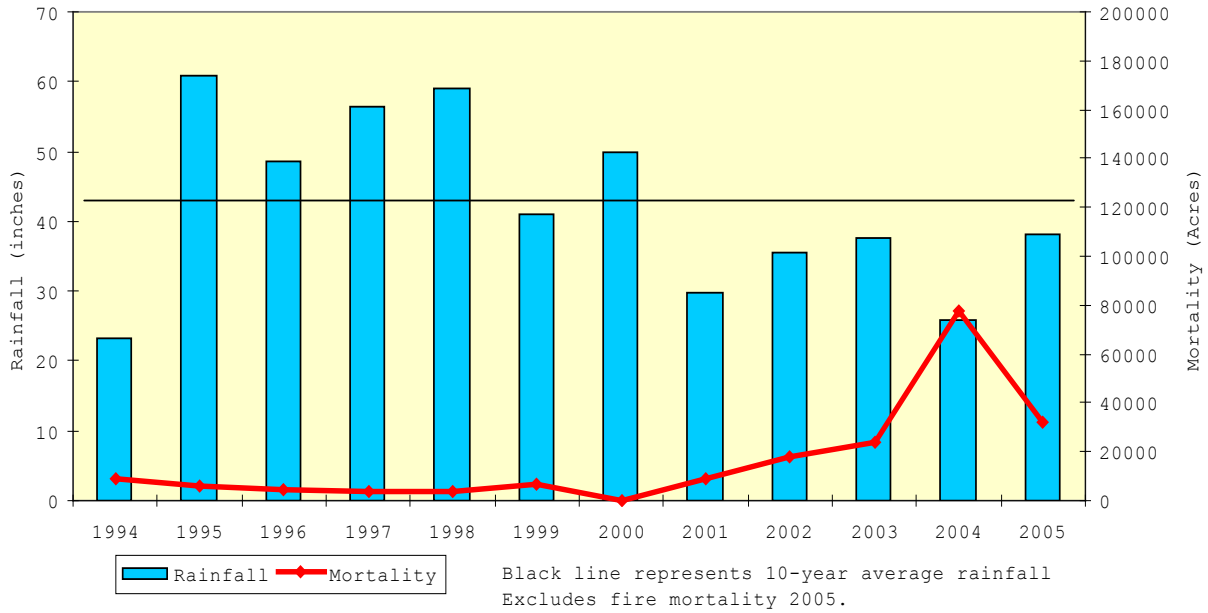
Eldorado National Forest
2005 Mortality Acreage by Major Damage Type and Major Species Groups

ENF	Pine	Fir	Mixed	Hardwood	Total
Biotic	3,979	8,942	18,995	0	31,915
Fire	30	0	58,970	0	58,999
Other Abiotic/Unknown	0	0	0	0	0

Number of Dead Trees by Major Damage Type and Major Species Groups

ENF	Pine	Fir	Mixed	Hardwood	Total
Biotic	7,556	18,137	51,169	0	76,862
Fire	376	0	3,158,040	0	3,158,416
Other Abiotic/Unknown	0	0	0	0	0

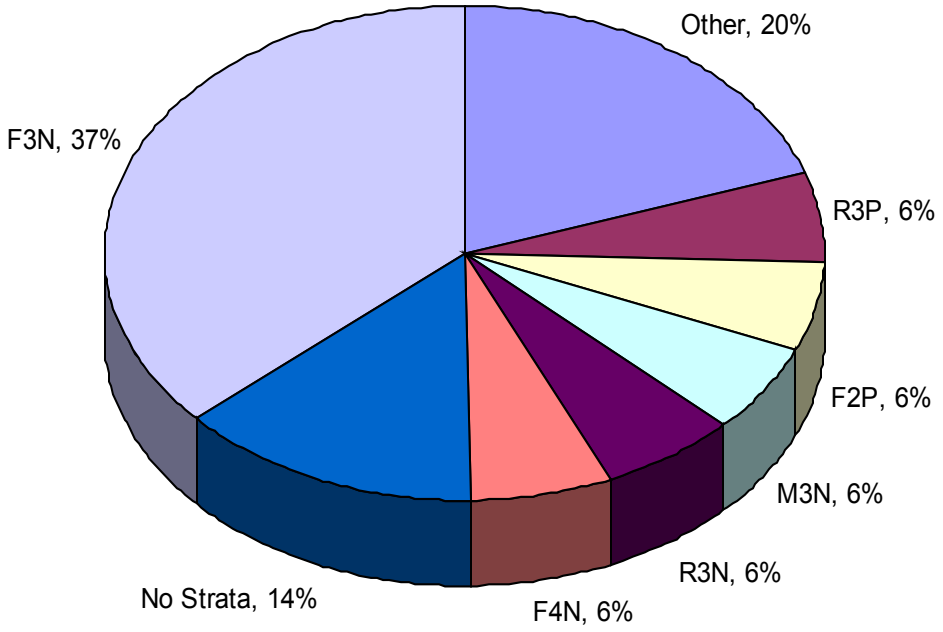
Historic Mortality and Precipitation



Precipitation source: Camino CIMIS weather station, wwwcimis.water.ca.gov
Mortality source: Damage_ac_vol_all_years.xls

2005 Aerial Survey Eldorado National Forest Percent Mortality by Strata

biotic damage agents only



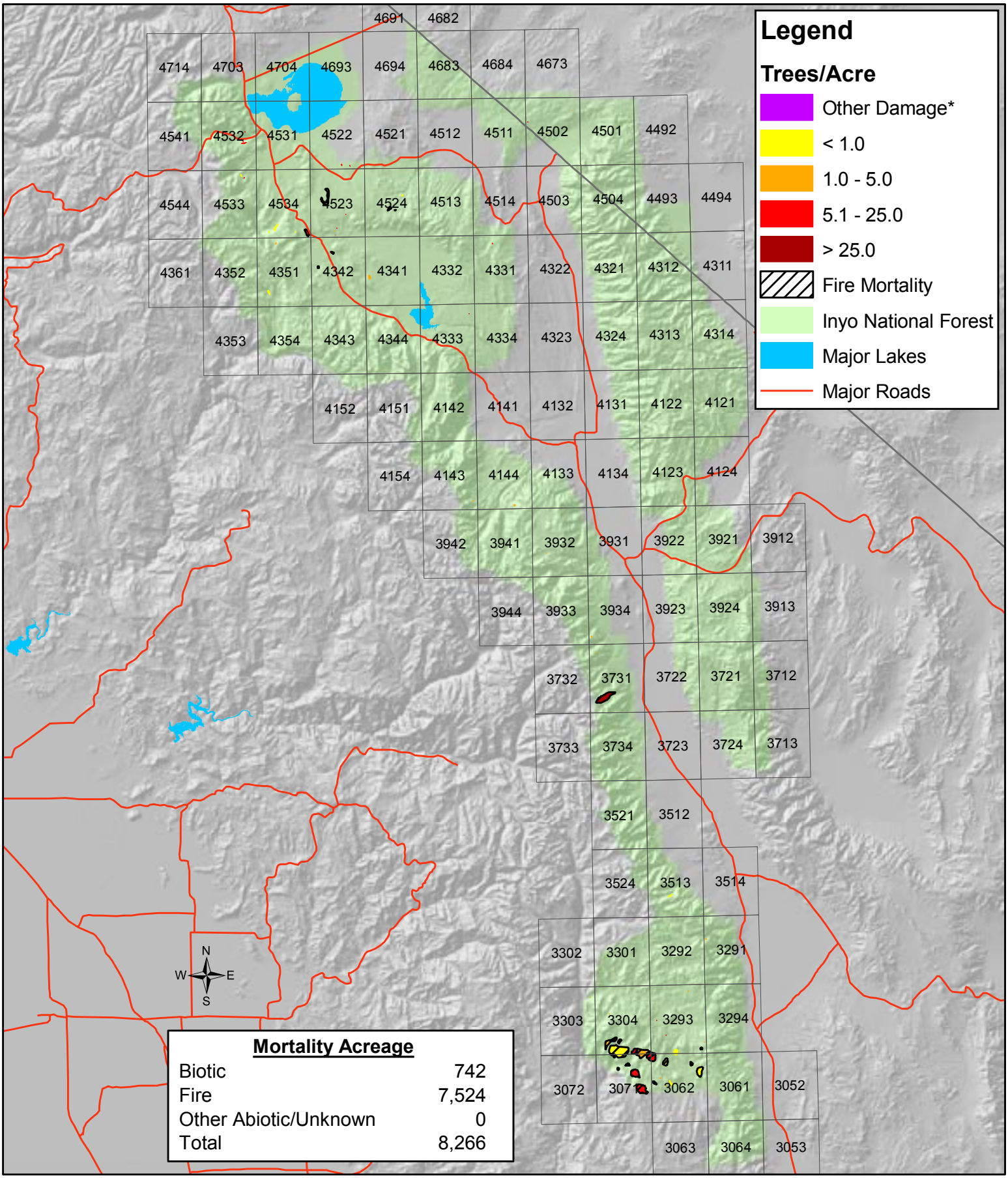
Total Pest Mortality = 31,915 Acres

"Other" includes all strata comprising less than 4% of total pest mortality acreage.

Data Sources: FIA Inventory/Strata Data (enfstra03_2), 2005 Aerial Mortality Survey Data (enf_mort05).

RSL GIS Library - http://www.fs.fed.us/r5/clearinghouse/data/shtml

Inyo National Forest, 2005 Mortality
Aerial Survey Sketch Mapping Program



Mortality Acreage

Biotic	742
Fire	7,524
Other Abiotic/Unknown	0
Total	8,266

Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:1,000,000

0 3 6 12 18 24 Miles

* Other Damage includes defoliation, discoloration, flagging, and topkill.

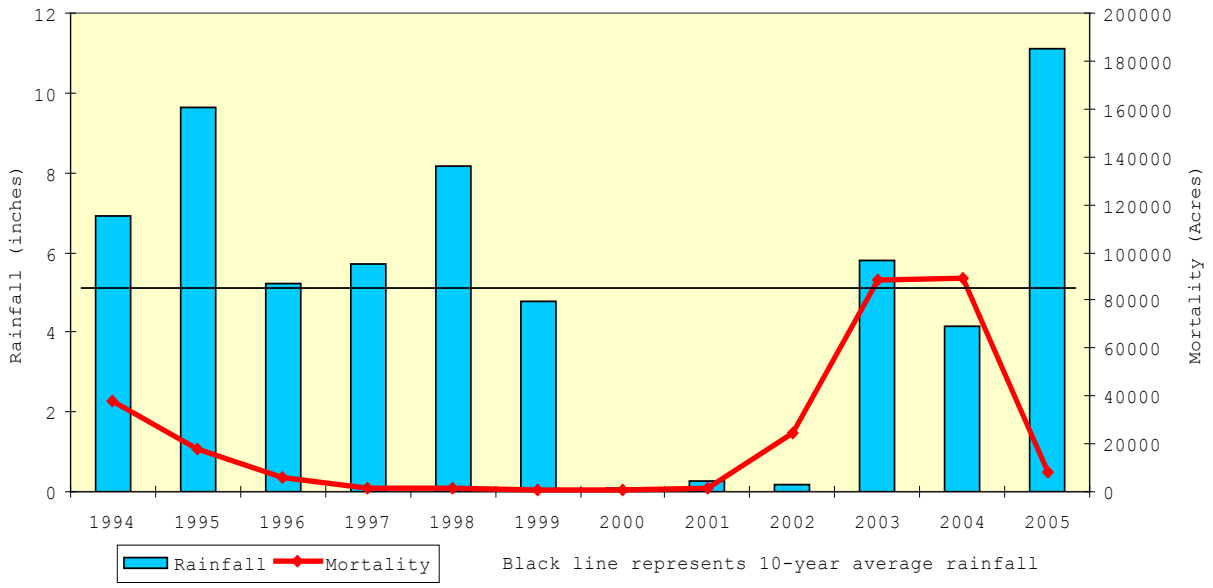
Inyo National Forest
2005 Mortality Acreage by Major Damage Type and Major Species Groups

INF	Pine	Fir	Mixed	Hardwood	Total
Biotic	566	170	6	0	742
Fire	542	0	6,982	0	7,524
Other Abiotic/Unknown	0	0	0	0	0

Number of Dead Trees by Major Damage Type and Major Species Groups

INF	Pine	Fir	Mixed	Hardwood	Total
Biotic	1,097	173	10	0	1,280
Fire	2,754	0	168,033	0	170,787
Other Abiotic/Unknown	0	0	0	0	0

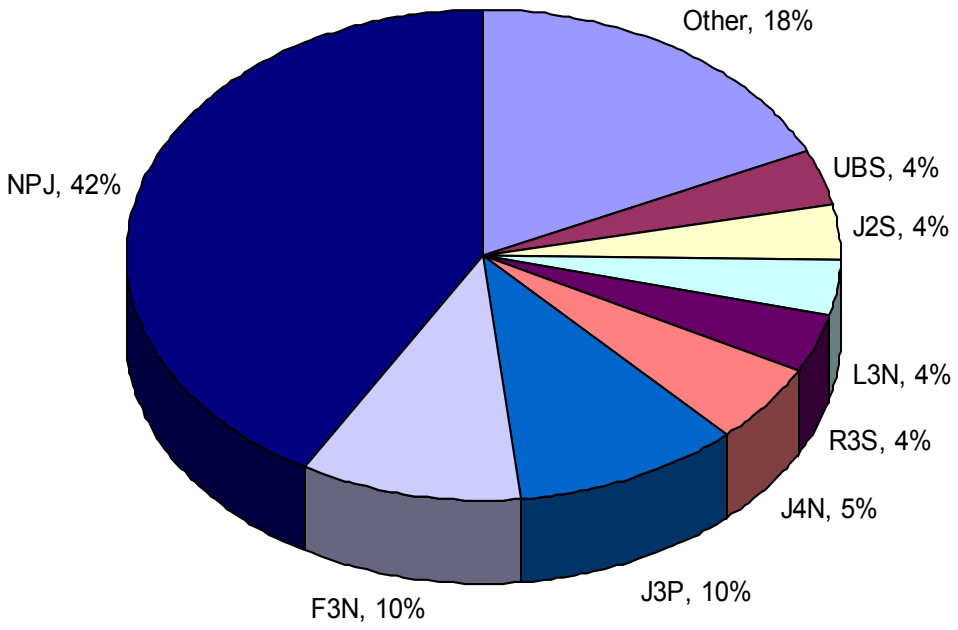
Historic Mortality and Precipitation



Precipitation source: Bishop CIMIS weather station, wwwcimis.water.ca.gov
Mortality source: Damage_ac_vol_all_years.xls

2005 Aerial Survey Inyo National Forest Percent Mortality by Strata

biotic damage agents only



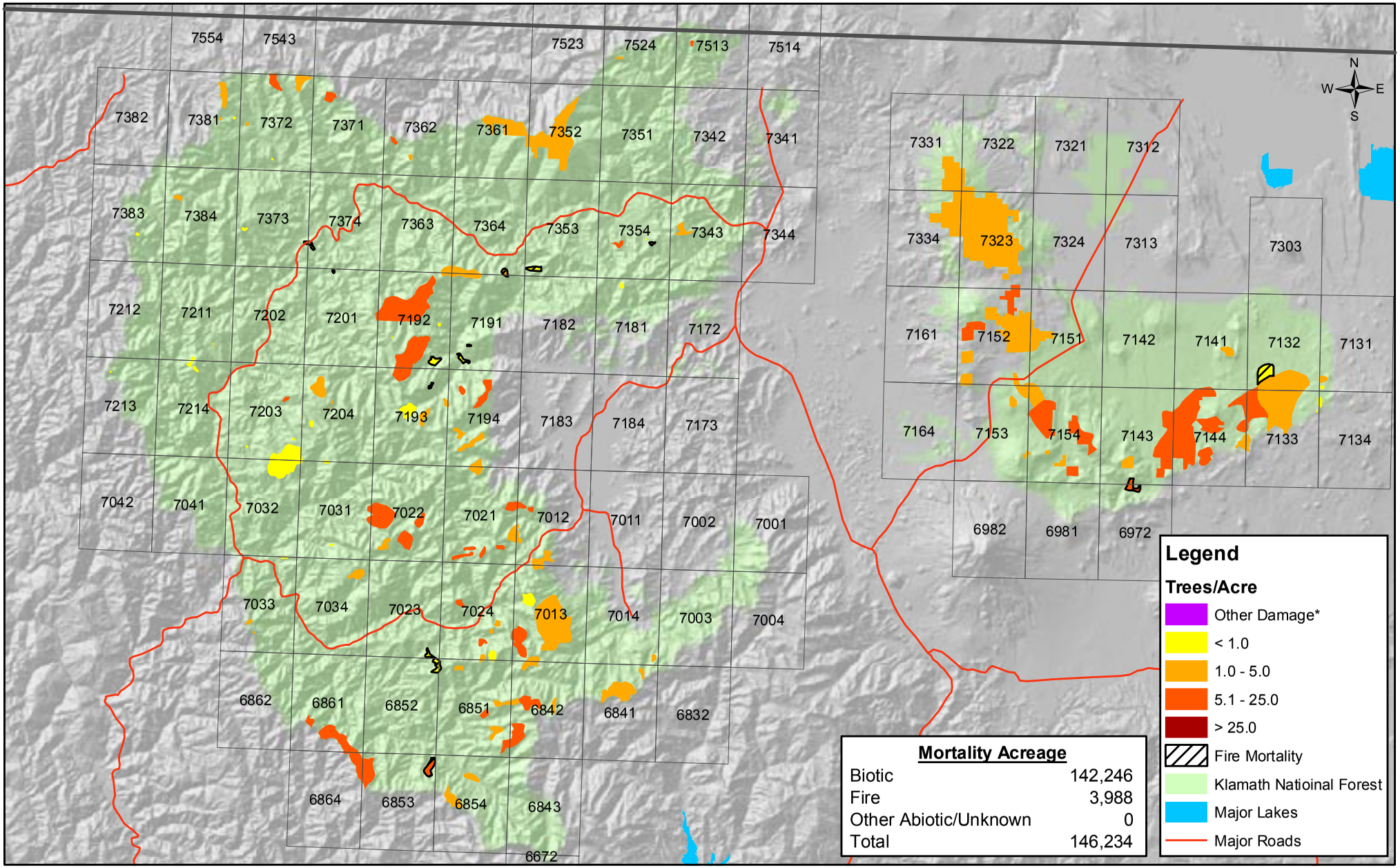
Total Pest Mortality = 742 Acres

"Other" includes all strata comprising less than 4% of total pest mortality acreage.

Data Sources: FIA Inventory/Strata Data (infstra97_9), 2005 Aerial Mortality Survey Data (inf_mort05).

RSL GIS Library - http://www.fs.fed.us/r5/clearinghouse/data/shtml

Klamath National Forest, 2005 Mortality
Aerial Survey Sketch Mapping Program



Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:750,000

0 2.5 5 10 15 20 Miles

*Other Damage includes defoliation, discoloration, flagging and topkill.

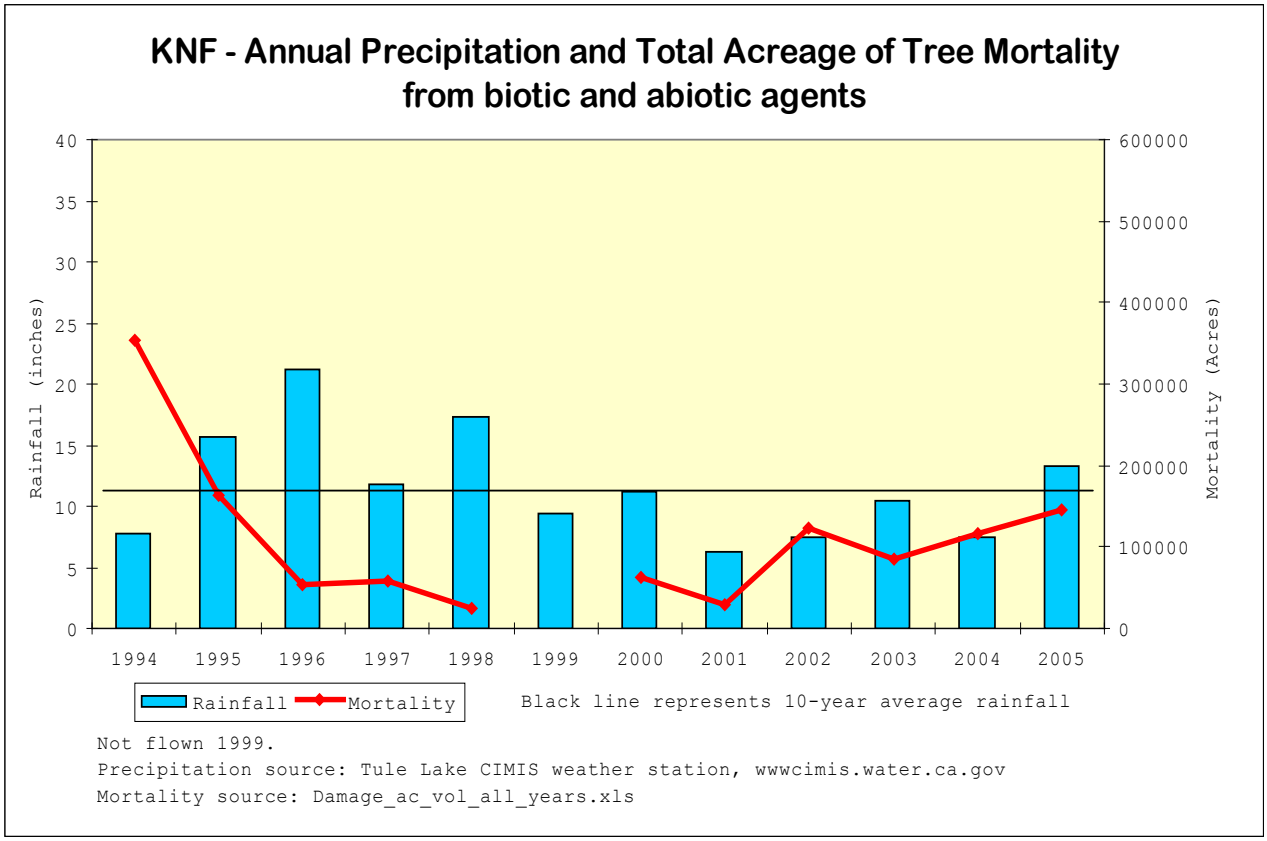
Klamath National Forest
2005 Mortality Acreage by Major Damage Type and Major Species Groups

KNF	Pine	Fir	Mixed	Hardwood	Total
Biotic	27,116	77,861	37,270	0	142,246
Fire	1,062	569	2,357	0	3,988
Other Abiotic/Unknown	0	0	0	0	0

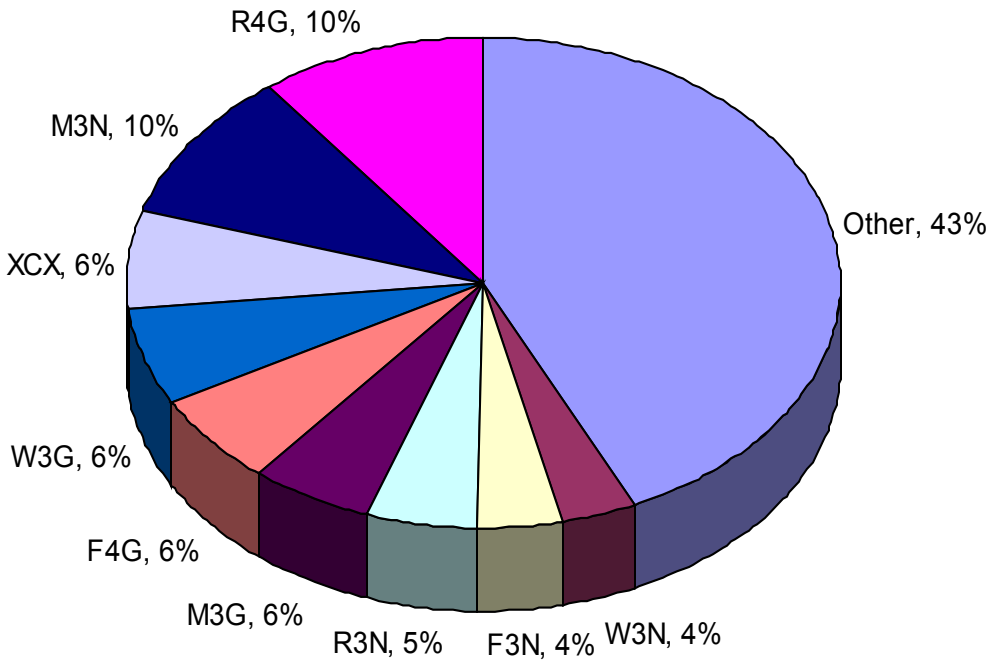
Number of Dead Trees by Major Damage Type and Major Species Groups

KNF	Pine	Fir	Mixed	Hardwood	Total
Biotic	166,095	437,859	207,483	0	811,437
Fire	1,062	6,828	7,128	0	15,018
Other Abiotic/Unknown	0	0	0	0	0

Historic Mortality and Precipitation



2005 Aerial Survey Klamath National Forest
Percent Mortality by Strata
biotic damage agents only



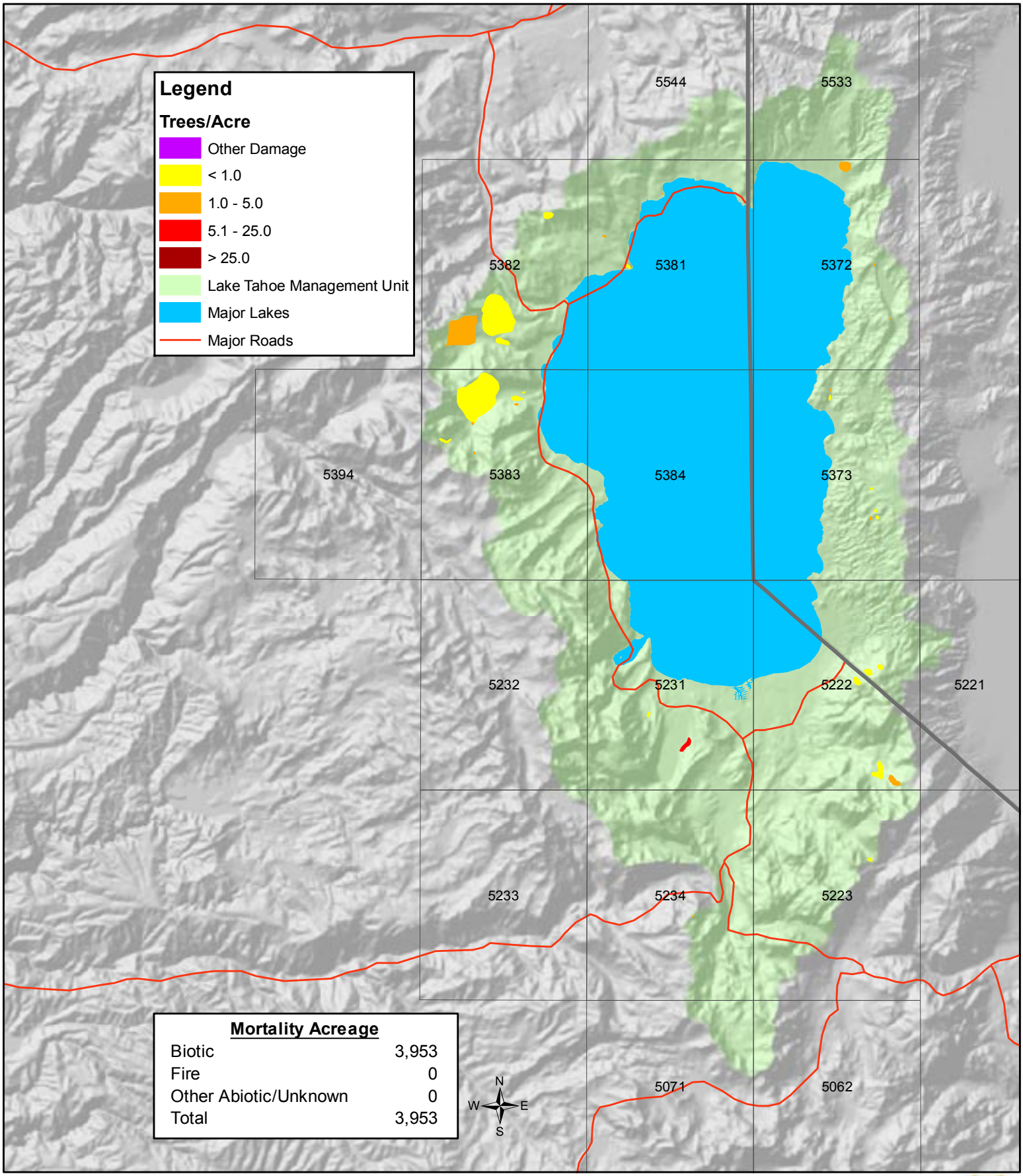
Total Pest Mortality = 142,246 Acres

"Other" includes all strata comprising less than 4% of total pest mortality acreage.

Data Sources: FIA/Inventory Strata Data (knfstra02_1), 2005 Aerial Mortality Survey Data (knf_mort05).

RSL GIS Library - http://www.fs.fed.us/r5/clearinghouse/data/shtml

Lake Tahoe Basin Management Unit, 2005 Mortality
Aerial Survey Sketch Mapping Program



Mortality Acreage	
Biotic	3,953
Fire	0
Other Abiotic/Unknown	0
Total	3,953

Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:325,000

0 1.25 2.5 5 7.5 10 Miles

* Other Damage includes defoliation, discoloration, flagging, and topkill.

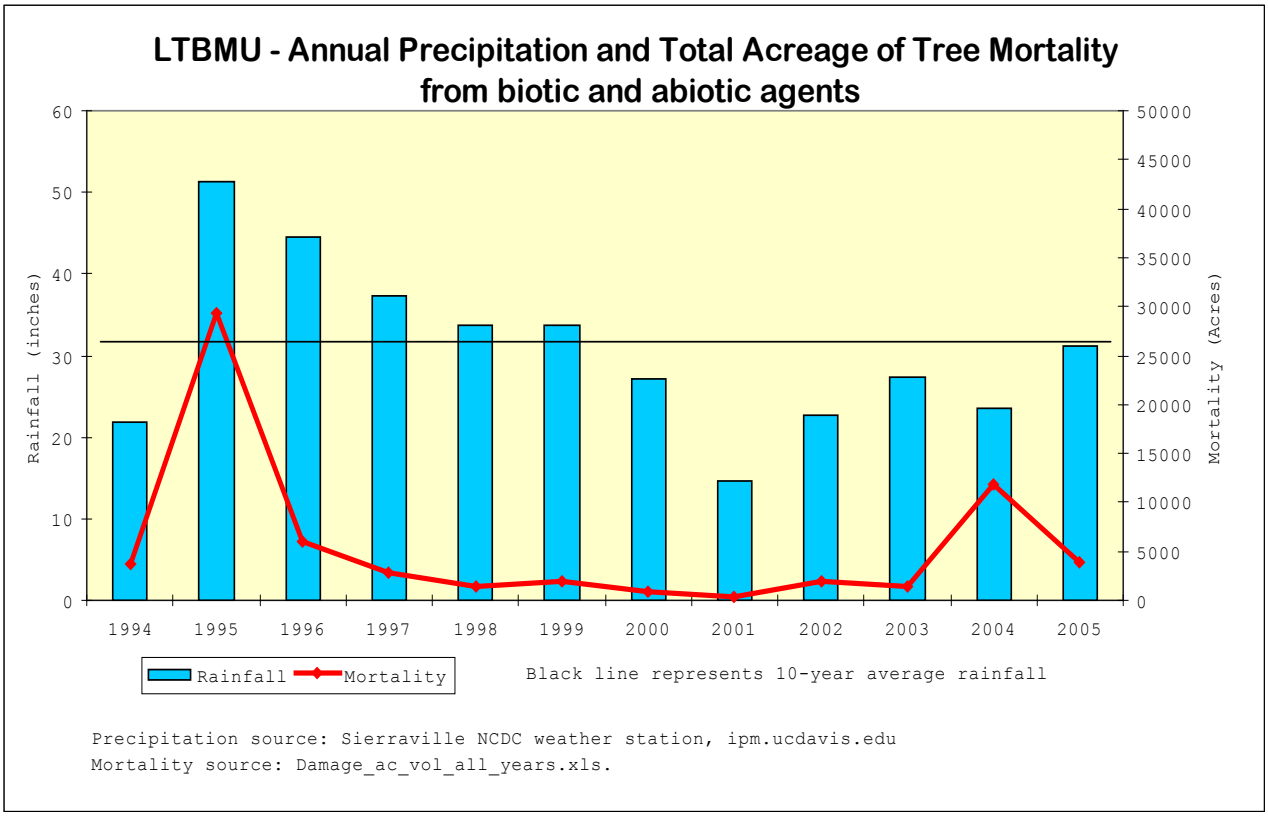
Lake Tahoe Basin Management Unit
2005 Mortality Acreage by Major Damage Type and Major Species Groups

TMU	Pine	Fir	Mixed	Hardwood	Total
Biotic	131	3,392	430	0	3,953
Fire	0	0	0	0	0
Other Abiotic/Unknown	0	0	0	0	0

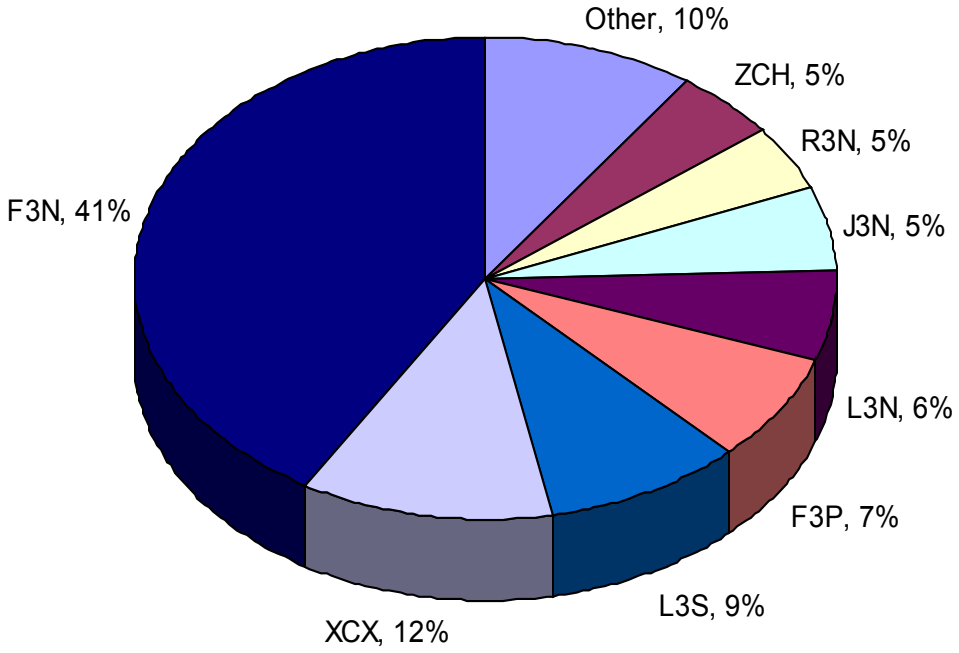
Number of Dead Trees by Major Damage Type and Major Species Groups

TMU	Pine	Fir	Mixed	Hardwood	Total
Biotic	950	4,326	1,062	0	6,338
Fire	0	0	0	0	0
Other Abiotic/Unknown	0	0	0	0	0

Historic Mortality and Precipitation



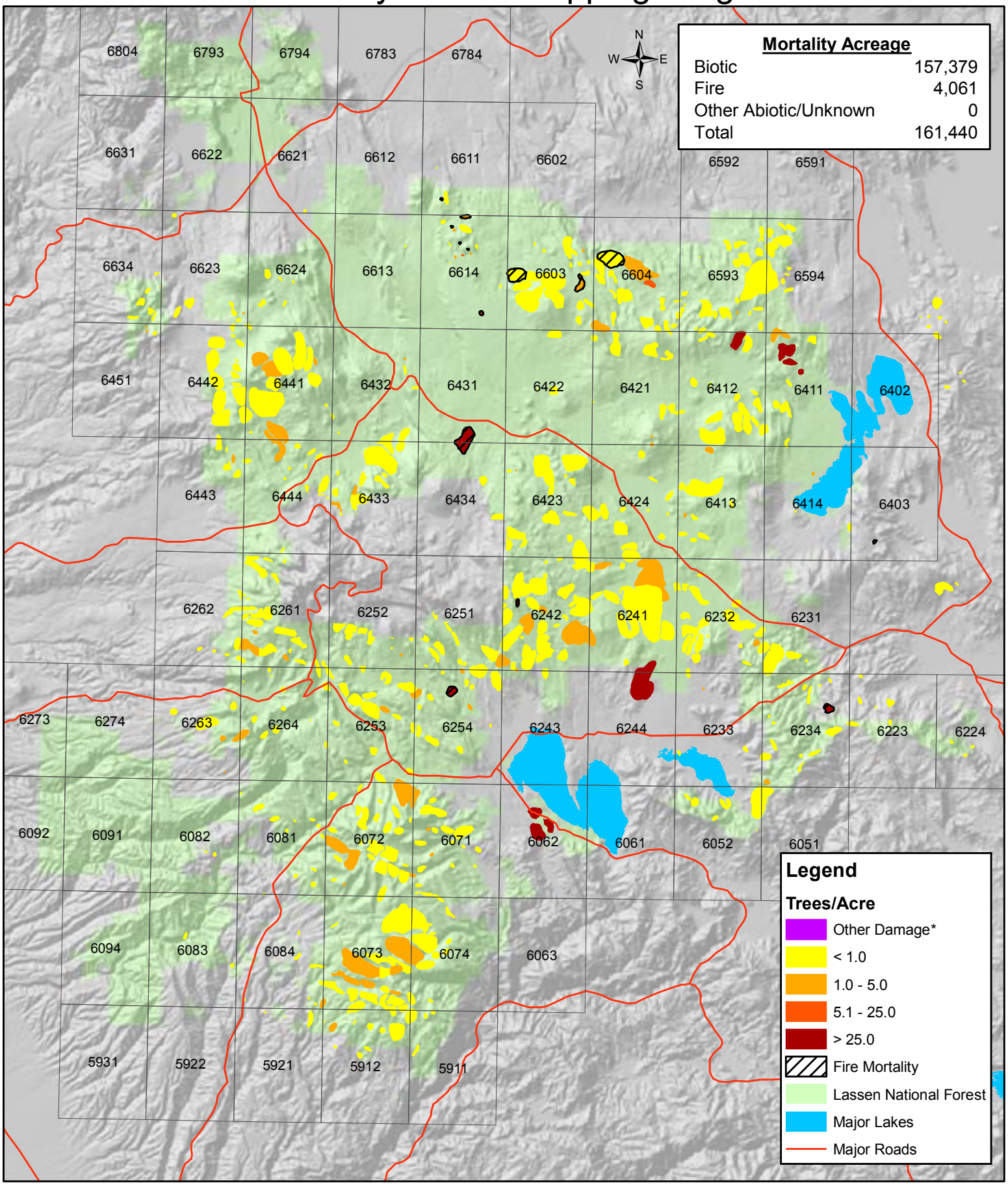
2005 Aerial Survey Lake Tahoe Basin Management Unit
Percent Mortality by Strata
biotic damage agents only



Total Pest Mortality = 3,953 Acres

"Other" includes all strata comprising less than 4% of total pest mortality.
Data Sources: FIA Inventory/Strata Data (tmustra03_1), 2005 Aerial Mortality Survey Data (tmu_mort05).
RSL GIS Library - http://www.fs.fed.us/r5/clearinghouse/data/shtml

Lassen National Forest, 2005 Mortality
Aerial Survey Sketch Mapping Program



Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:600,000

0 1.5 3 6 9 12 Miles

* Other Damage includes defoliation, discoloration, flagging, and topkill.

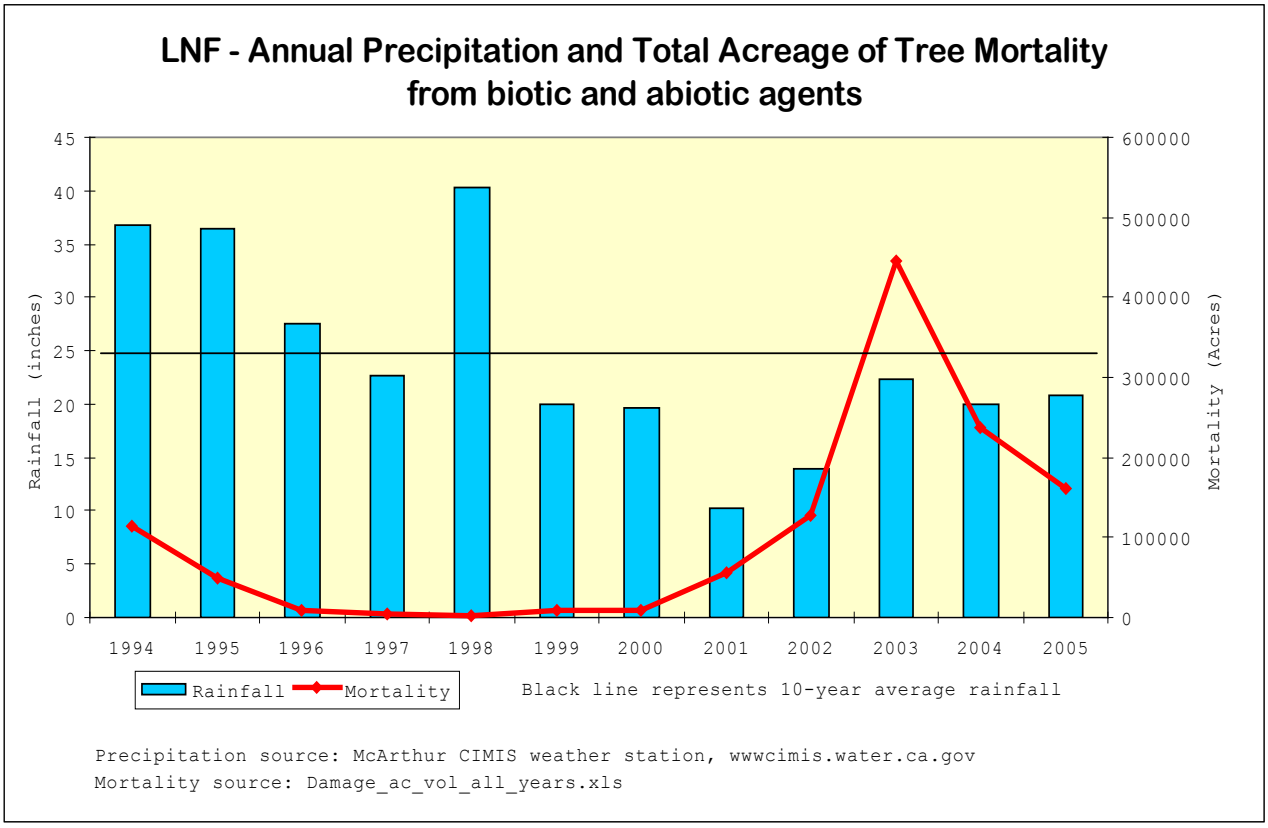
Lassen National Forest
2005 Mortality Acreage by Major Damage Type and Major Species Groups

LNF	Pine	Fir	Mixed	Hardwood	Total
Biotic	35,397	57,106	64,876	0	157,379
Fire	1,482	59	2,521	0	4,061
Other Abiotic/Unknown	0	0	0	0	0

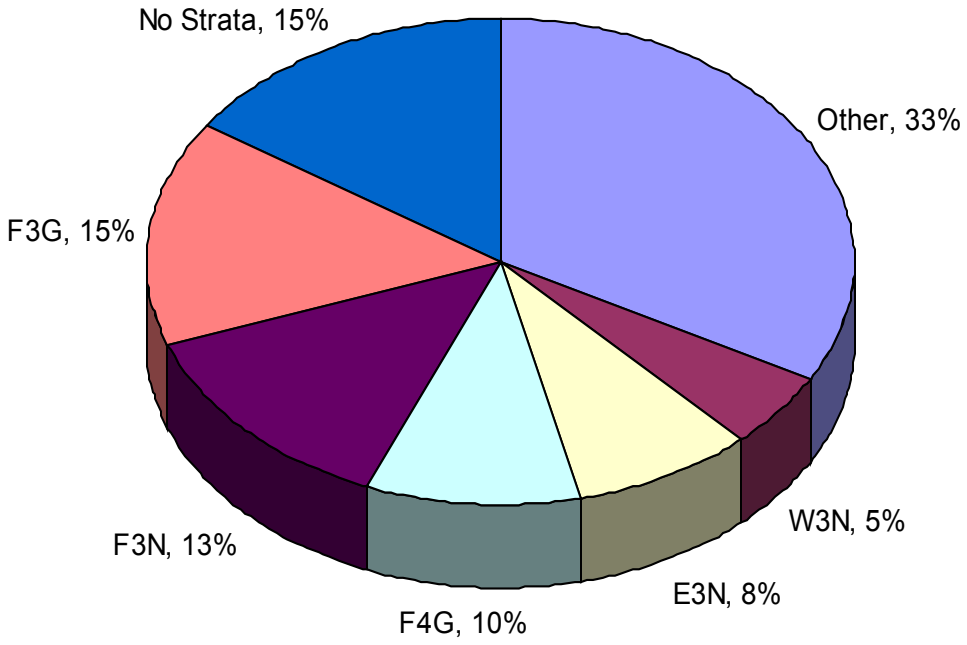
Number of Dead Trees by Major Damage Type and Major Species Groups

LNF	Pine	Fir	Mixed	Hardwood	Total
Biotic	122,582	71,812	363,432	0	557,826
Fire	26,677	4,402	98,594	0	129,673
Other Abiotic/Unknown	0	0	0	0	0

Historic Mortality and Precipitation



2005 Aerial Survey Lassen National Forest
Percent Mortality by Strata
biotic damage agents only



Total Pest Mortality = 157,379 Acres

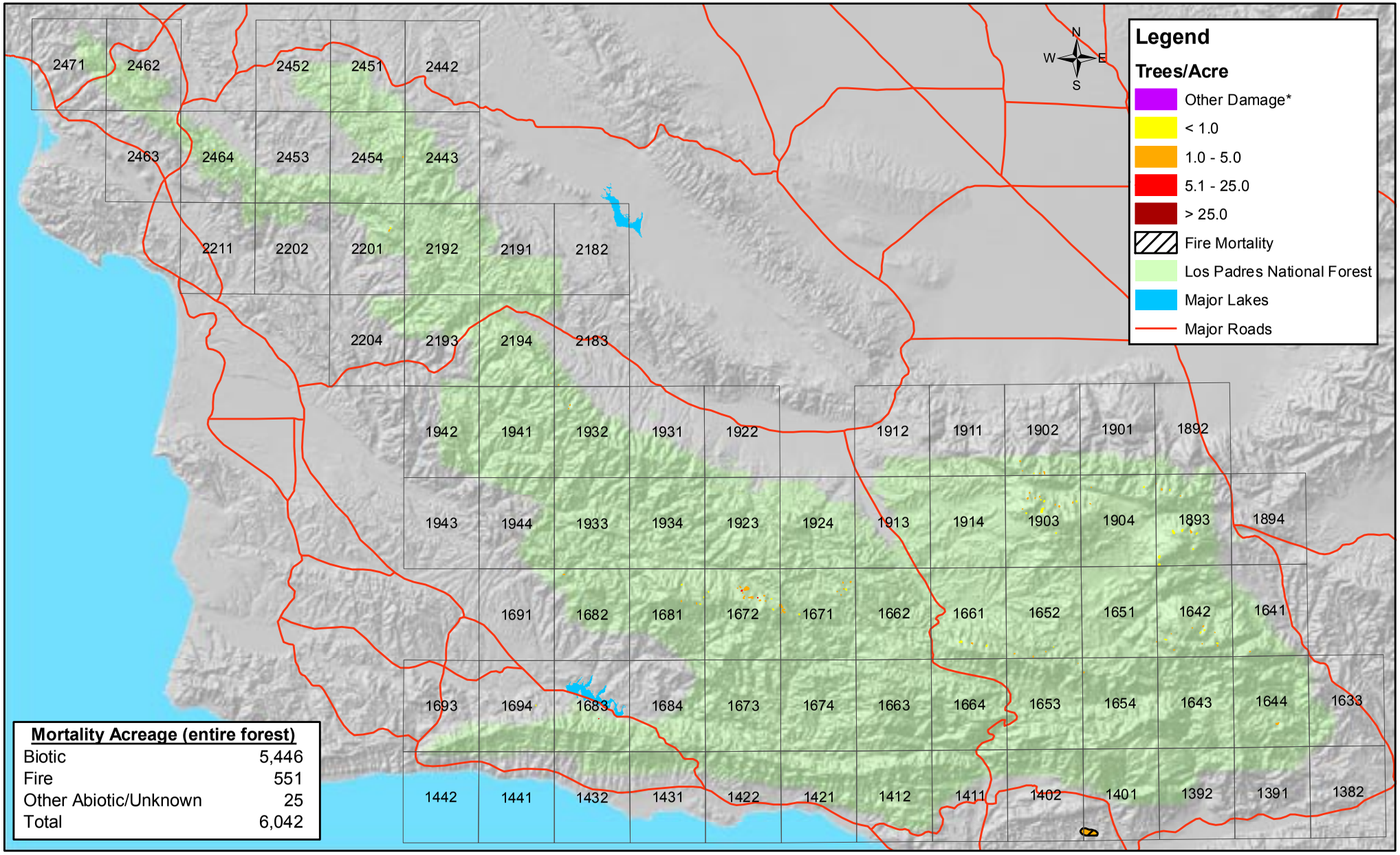
"Other" includes all strata comprising less than 4% of total pest mortality acreage.

Data Sources: FIA Inventory/Strata Data (lnfstra02_1), 2005 Aerial Mortality Survey Data (lnf_mort05).

RSL GIS Library - http://www.fs.fed.us/r5/clearinghouse/data/shtml

Los Padres National Forest, Main Division, 2005 Mortality

Aerial Survey Sketch Mapping Program



Mortality Acreage (entire forest)

Biotic	5,446
Fire	551
Other Abiotic/Unknown	25
Total	6,042

Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

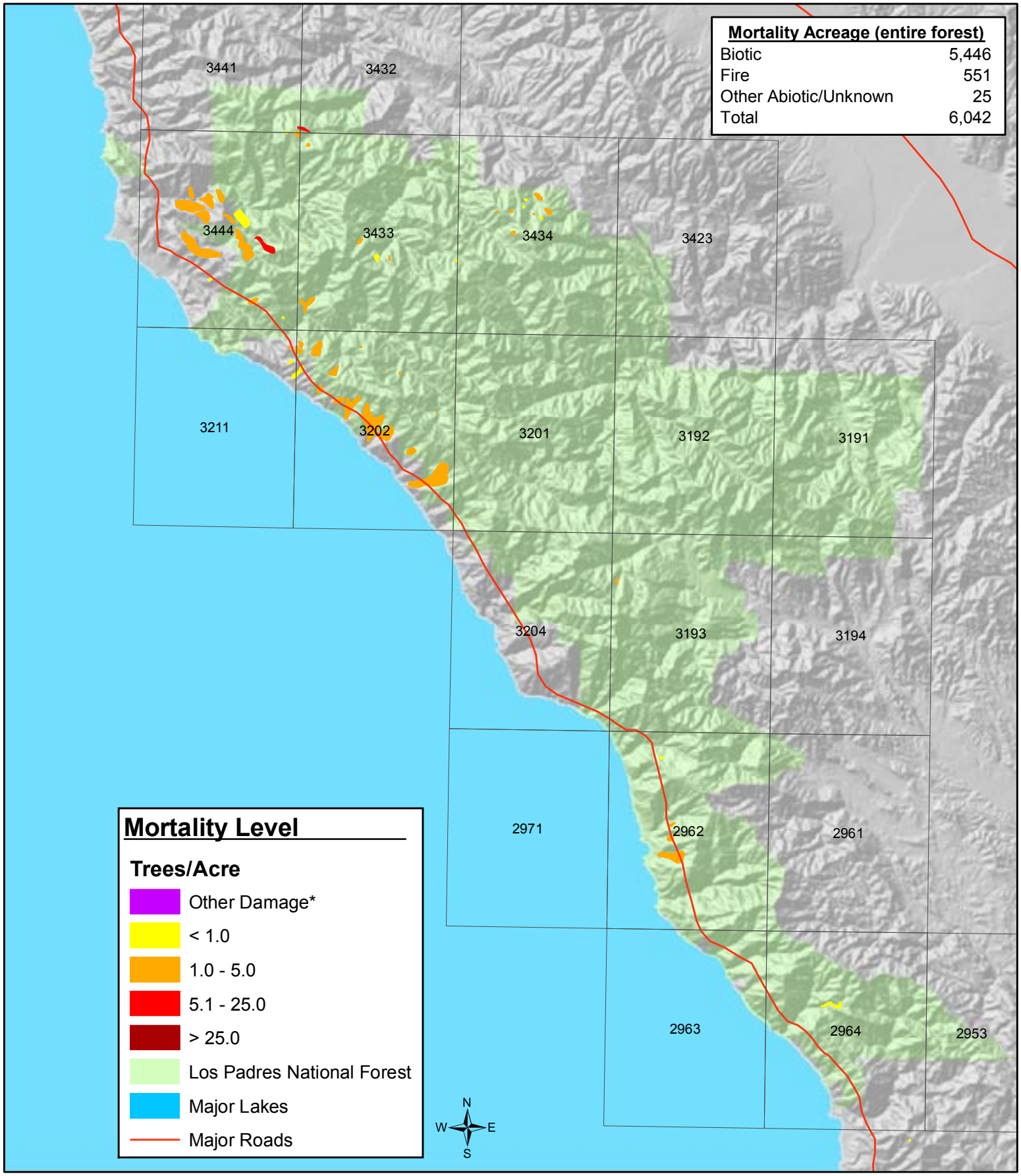
1:790,000

0 2.5 5 10 15 20 Miles

* Other Damage includes defoliation, discoloration, flagging, and topkill.

Los Padres National Forest, Monterey R.D., 2005 Mortality

Aerial Survey Sketch Mapping Program



Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:350,000

0 1.25 2.5 5 7.5 10 Miles

* Other Damage includes defoliation, discoloration, flagging, and topkill.

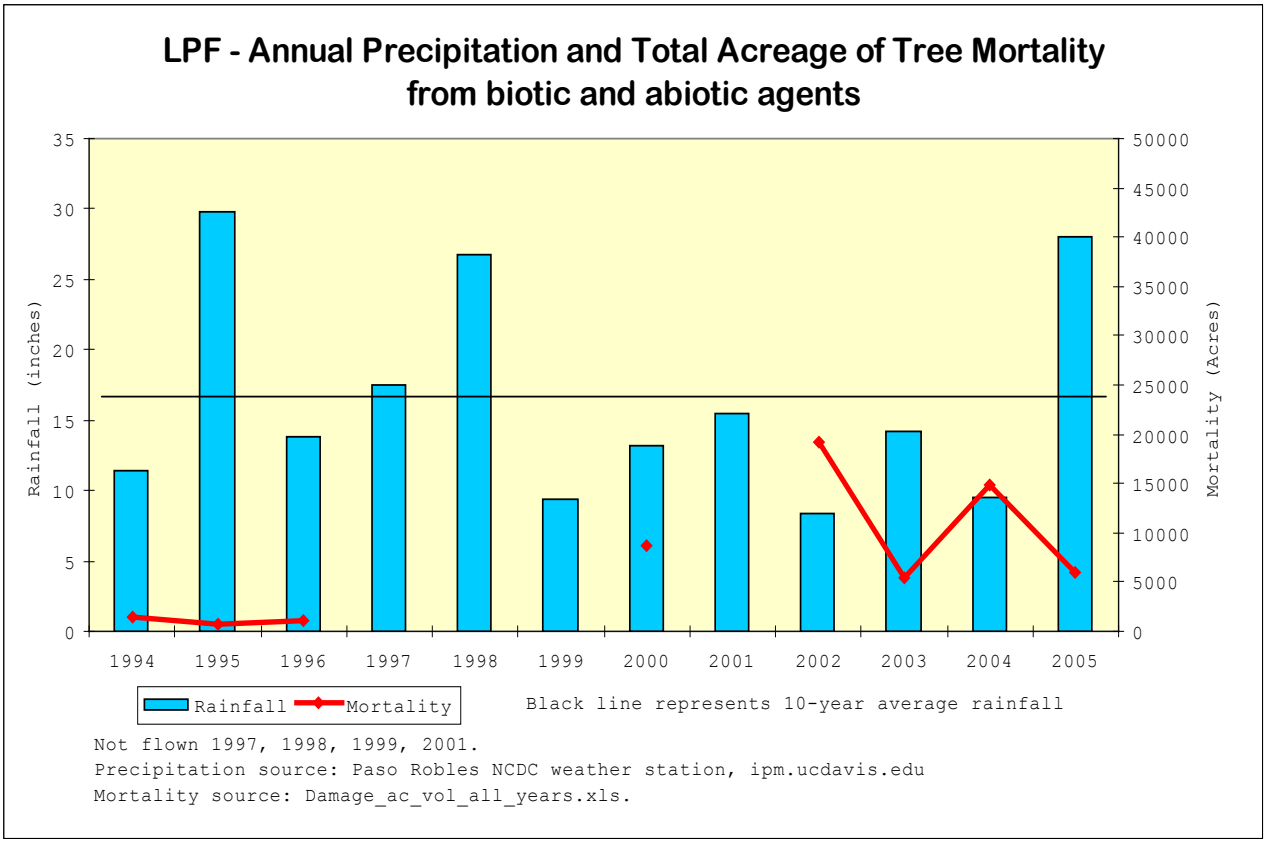
Los Padres National Forest
2005 Mortality Acreage by Major Damage Type and Major Species Groups

LPF	Pine	Fir	Mixed	Hardwood	Total
Biotic	1,079	145	13	4,230	5,466
Fire	5	0	0	546	551
Other Abiotic/Unknown	0	0	0	25	25

Number of Dead Trees by Major Damage Type and Major Species Groups

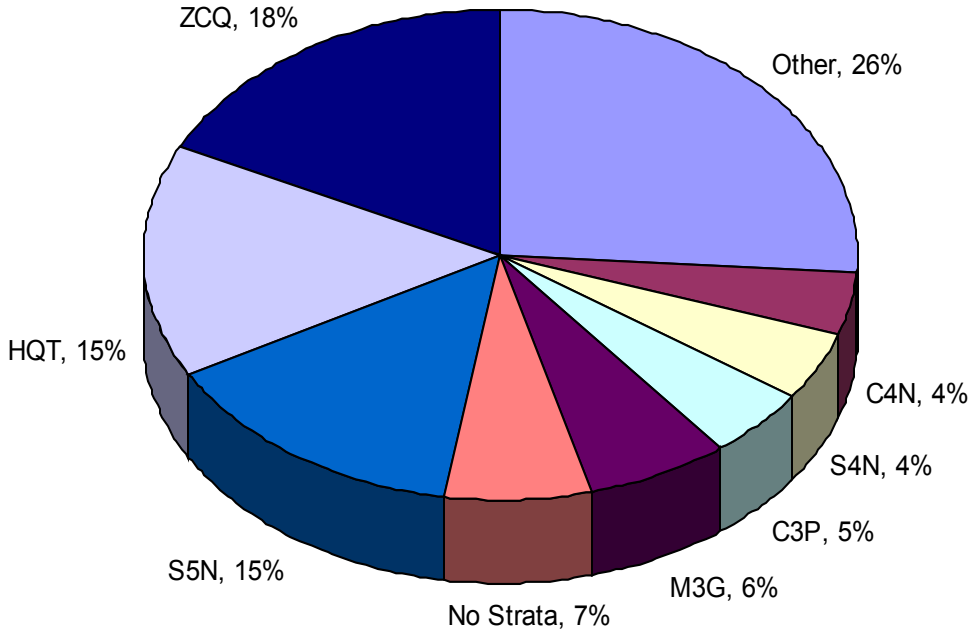
LPF	Pine	Fir	Mixed	Hardwood	Total
Biotic	1,692	135	8	18,295	20,130
Fire	8	0	0	2,731	2,739
Other Abiotic/Unknown	0	0	0	126	126

Historic Mortality and Precipitation



2005 Aerial Survey Los Padres National Forest Percent Mortality by Strata

biotic damage agents only



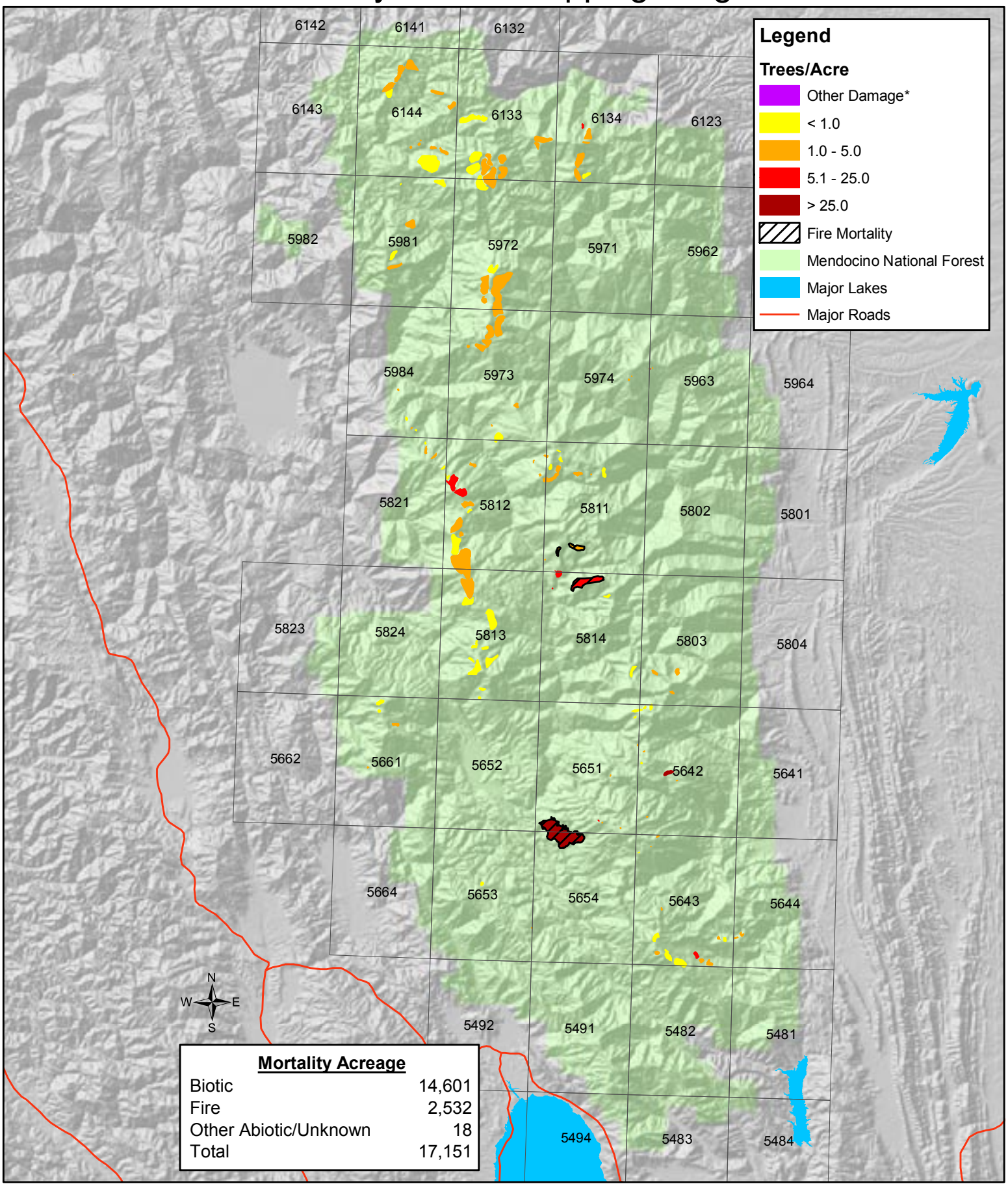
Total Pest Mortality = 5,466 Acres

"Other" includes all strata comprising less than 4% of total pest mortality acreage.

Data Sources: FIA Inventory/Strata Data (lpfstra97_5), 2005 Aerial Mortality Survey Data (lpf_mort05).

RSL GIS Library - http://www.fs.fed.us/r5/clearinghouse/data/shtml

Mendocino National Forest, 2005 Mortality
Aerial Survey Sketch Mapping Program



Mortality Acreage

Biotic	14,601
Fire	2,532
Other Abiotic/Unknown	18
Total	17,151

Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:525,000

0 1.25 2.5 5 7.5 10 Miles

* Other Damage includes defoliation, discoloration, flagging, and topkill.

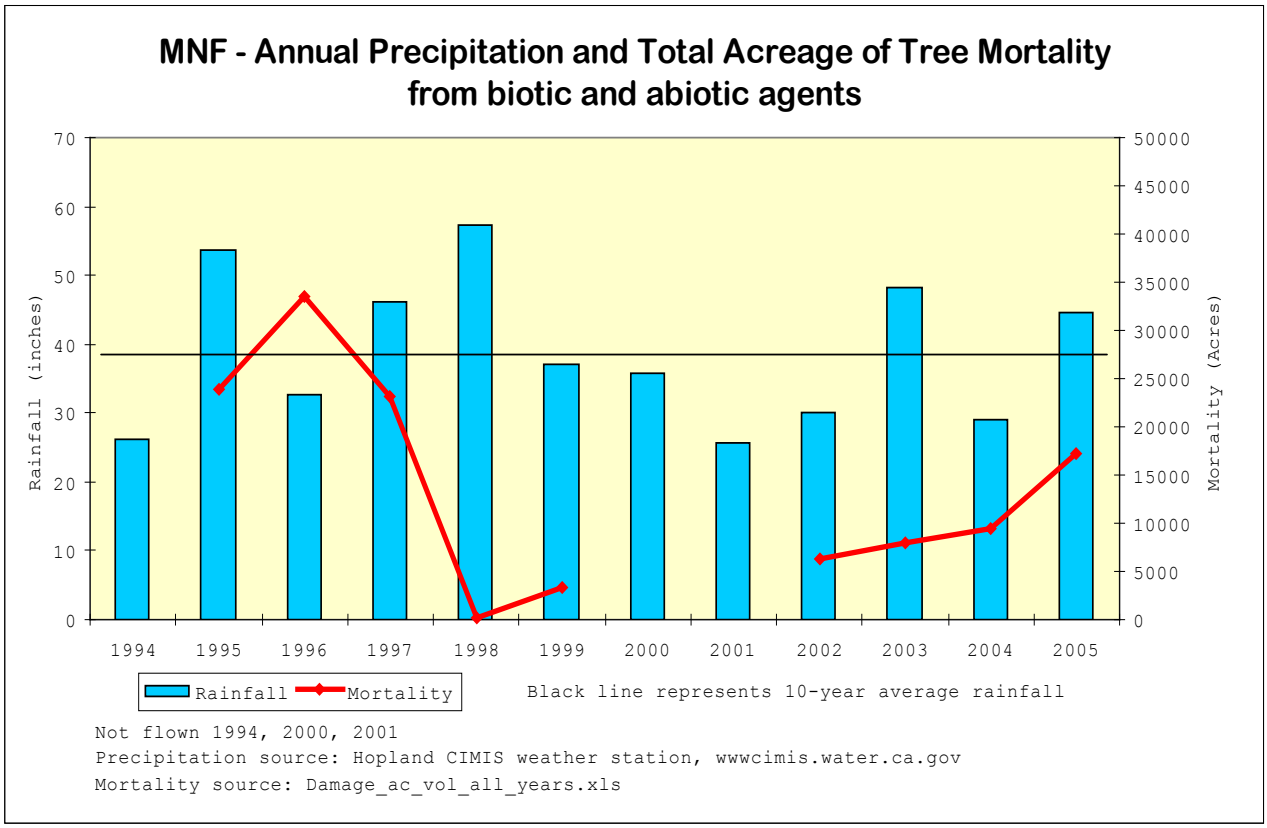
Mendocino National Forest
2005 Mortality Acreage by Major Damage Type and Major Species Groups

MNF	Pine	Fir	Mixed	Hardwood	Total
Biotic	1,257	11,726	1,618	0	14,601
Fire	0	45	2,487	0	2,532
Other Abiotic/Unknown	0	0	18	0	18

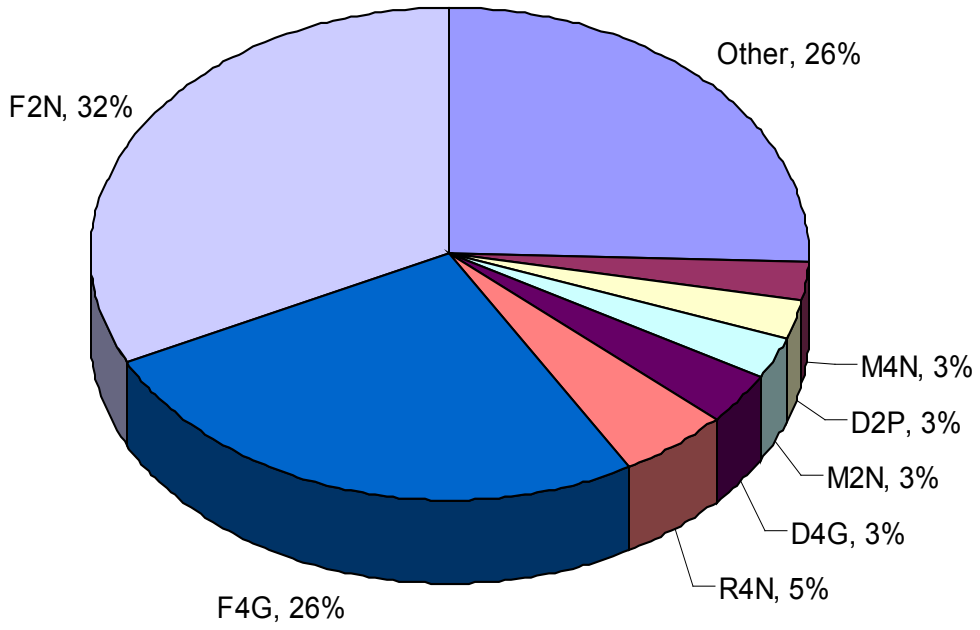
Number of Dead Trees by Major Damage Type and Major Species Groups

MNF	Pine	Fir	Mixed	Hardwood	Total
Biotic	1,960	32,466	8,593	0	43,019
Fire	0	178	91,041	0	91,219
Other Abiotic/Unknown	0	0	100	0	100

Historic Mortality and Precipitation



2005 Aerial Survey Mendocino National Forest
Percent Mortality by Strata
biotic damage agents only



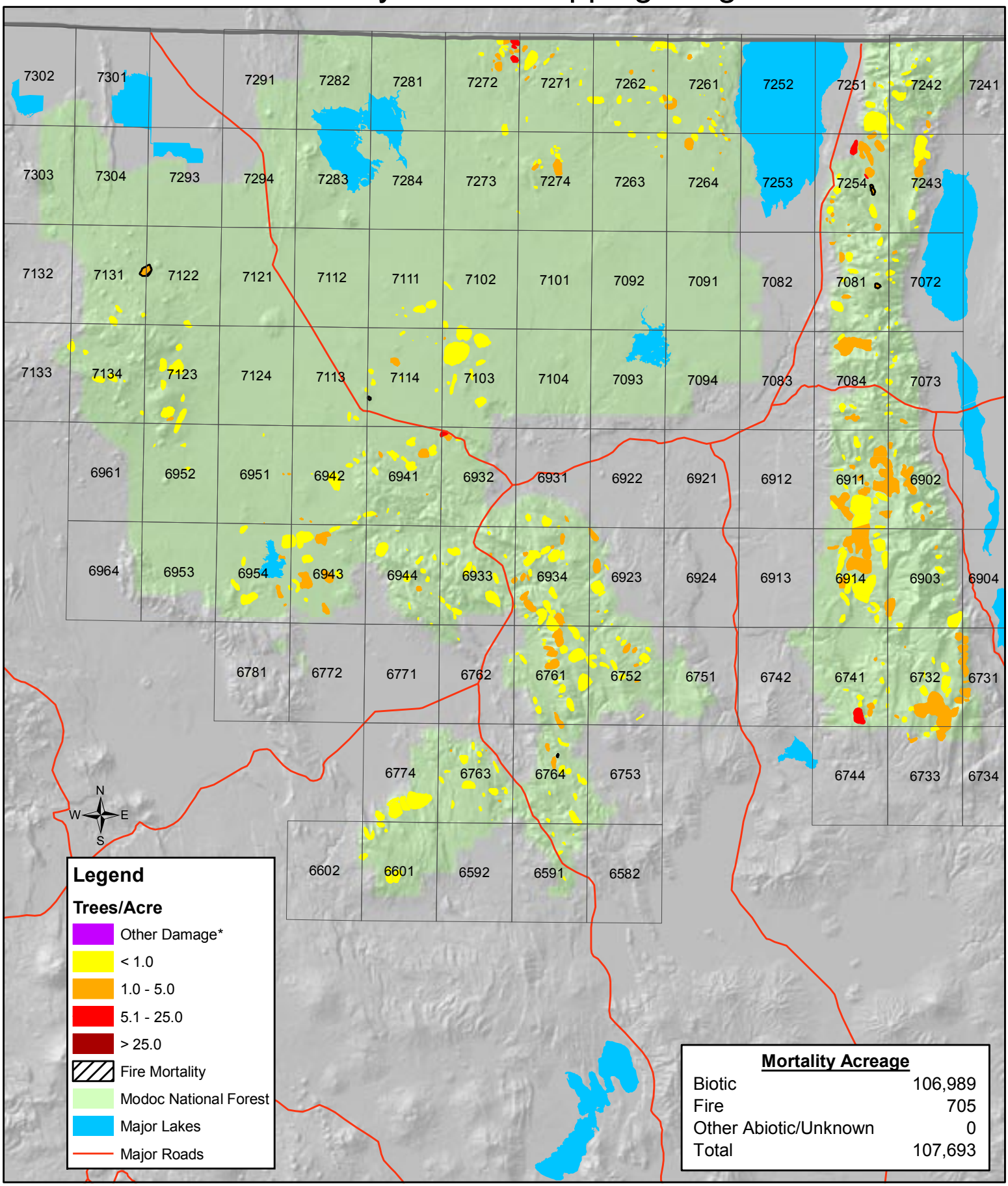
Total Pest Mortality = 14,601 Acres

"Other" includes all strata comprising less than 3% of total pest mortality acreage.

Data Sources:FIA Inventory/Strata Data (mnfstra01_1), 2005 Aerial Mortality Survey Data (mnf_mort05).

RSL GIS Library - http://www.fs.fed.us/r5/clearinghouse/data/shtml

Modoc National Forest, 2005 Mortality
Aerial Survey Sketch Mapping Program



Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:690,000

0 1.5 3 6 9 12 Miles

* Other Damage includes defoliation, discoloration, flagging, and topkill.

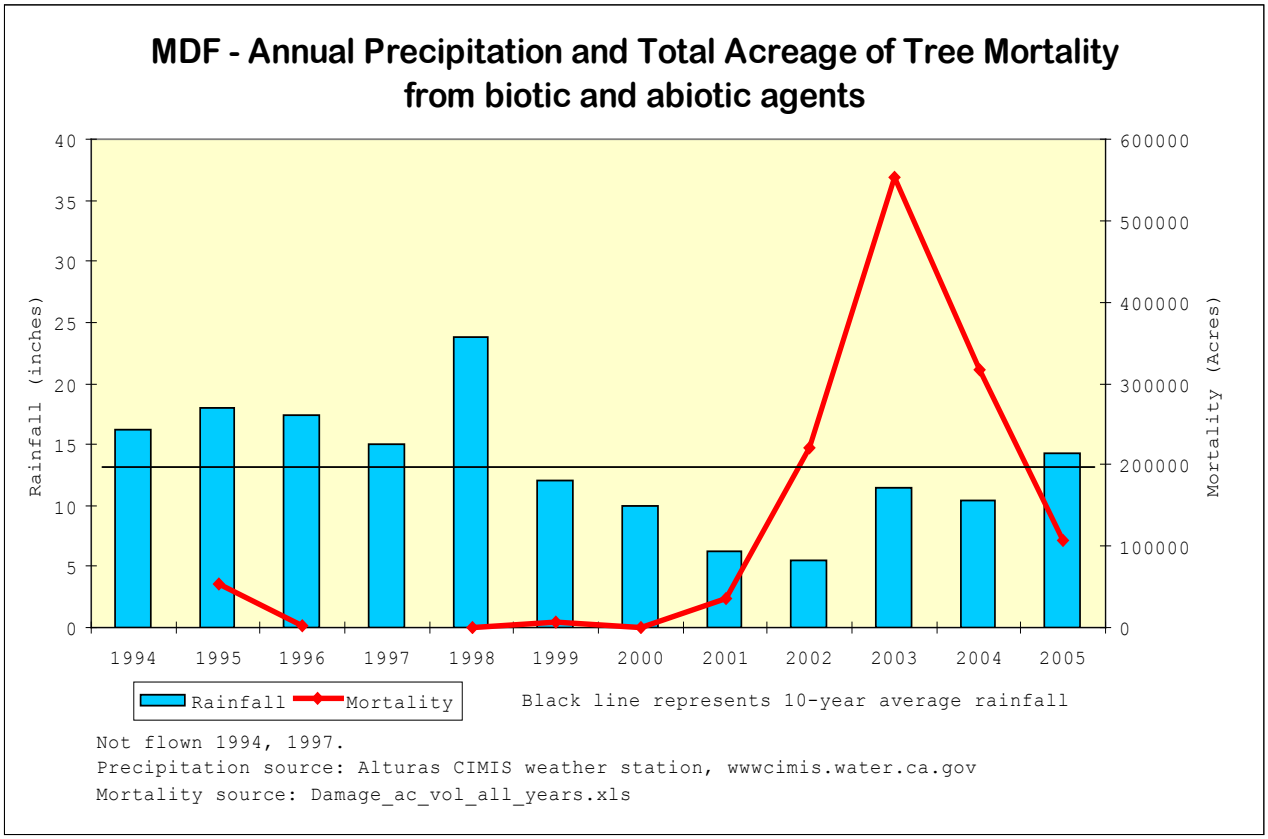
Modoc National Forest
2005 Mortality Acreage by Major Damage Type and Major Species Groups

MDF	Pine	Fir	Mixed	Hardwood	Total
Biotic	42,427	35,643	28,919	0	106,989
Fire	617	88	0	0	705
Other Abiotic/Unknown	0	0	0	0	0

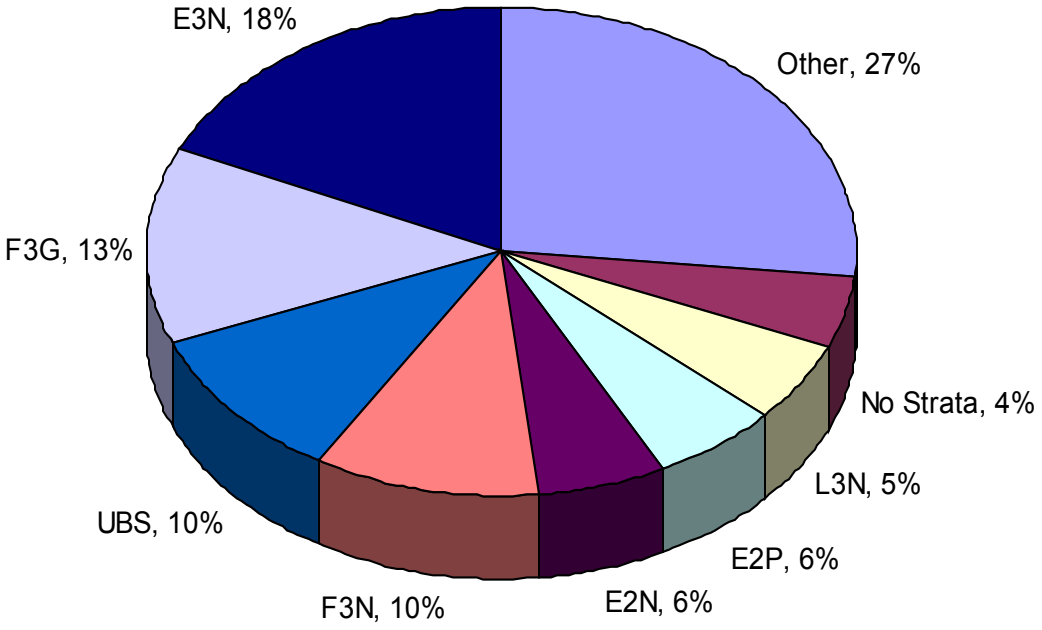
Number of Dead Trees by Major Damage Type and Major Species Groups

MDF	Pine	Fir	Mixed	Hardwood	Total
Biotic	66,968	69,431	55,377	0	191,776
Fire	1,396	176	0	0	1,572
Other Abiotic/Unknown	0	0	0	0	0

Historic Mortality and Precipitation



2005 Aerial Survey Modoc National Forest
Percent Mortality by Strata
biotic damage agents only



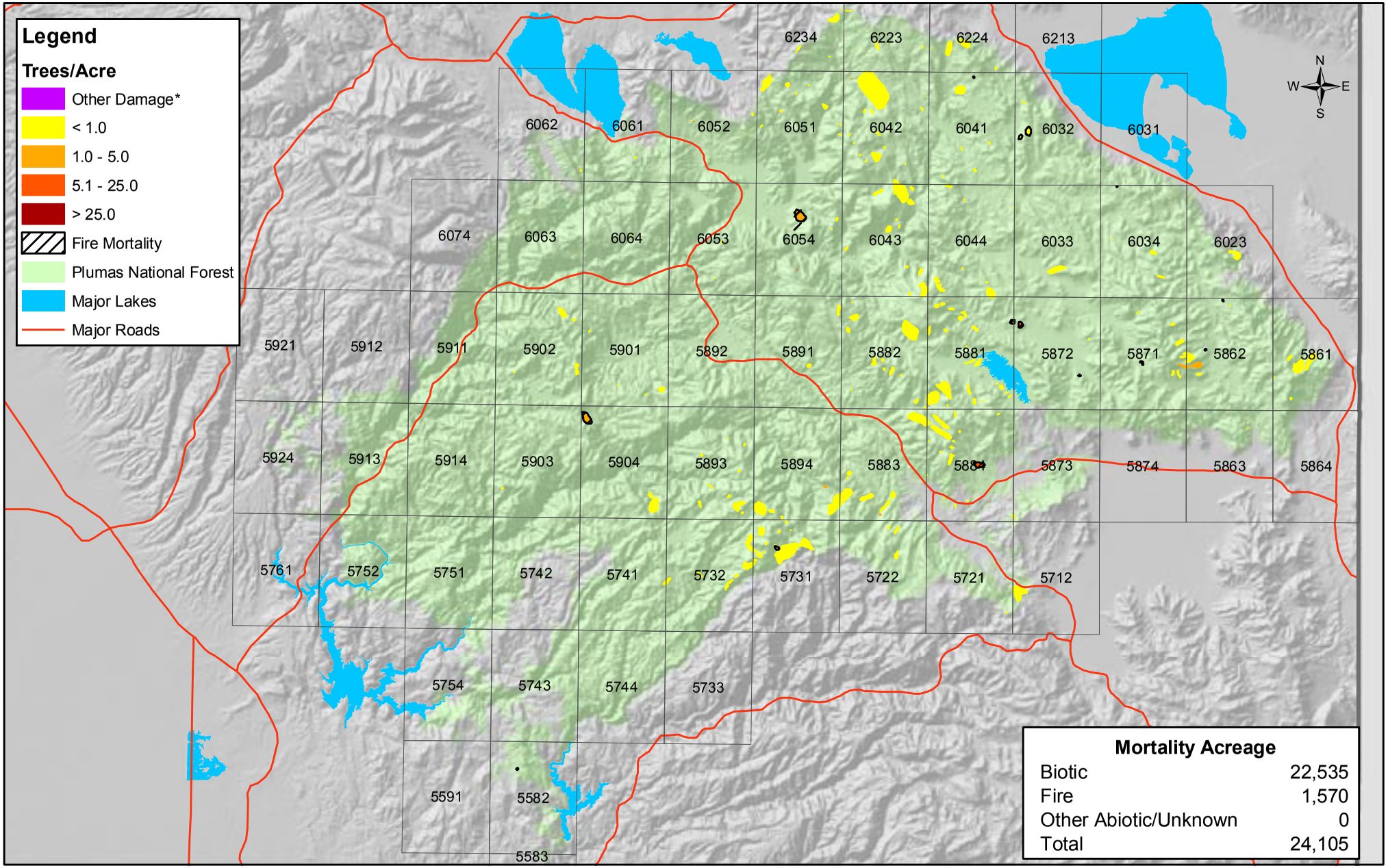
Total Pest Mortality = 106,989 Acres

"Other" includes all strata comprising less than 4% of total pest mortality acreage.

Data Sources: FIA Inventory/Strata Data (mdfstra02_1), 2005 Aerial Mortality Survey Data (mdf_mort05).

RSL GIS Library - http://www.fs.fed.us/r5/clearinghouse/data/shtml

Plumas National Forest, 2005 Mortality
Aerial Survey Sketch Mapping Program



Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:640,000

0 2 4 8 12 16 Miles

* Other Damage includes defoliation, discoloration, flagging, and topkill.

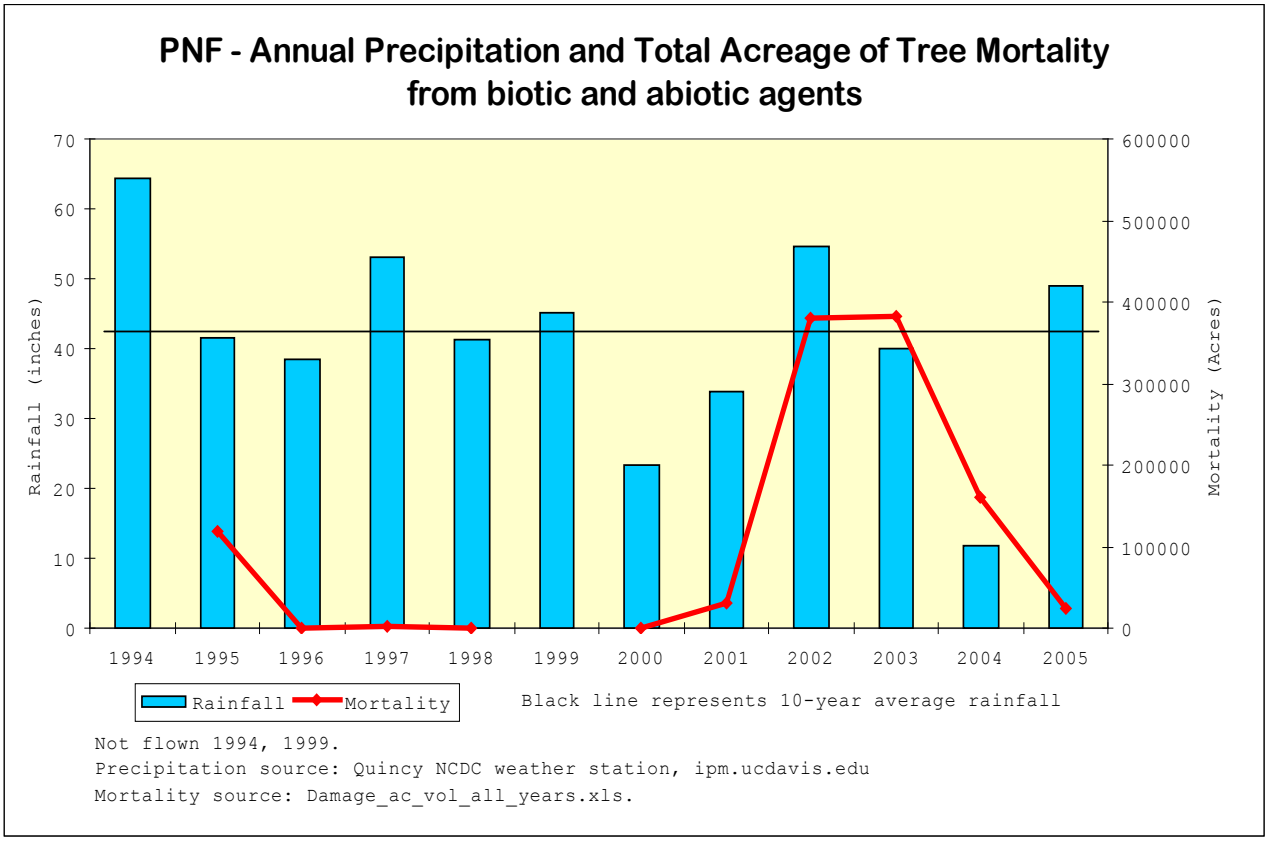
Plumas National Forest
2005 Mortality Acreage by Major Damage Type and Major Species Groups

PNF	Pine	Fir	Mixed	Hardwood	Total
Biotic	1,132	18,797	2,607	0	22,535
Fire	1,037	325	208	0	1,570
Other Abiotic/Unknown	0	0	0	0	0

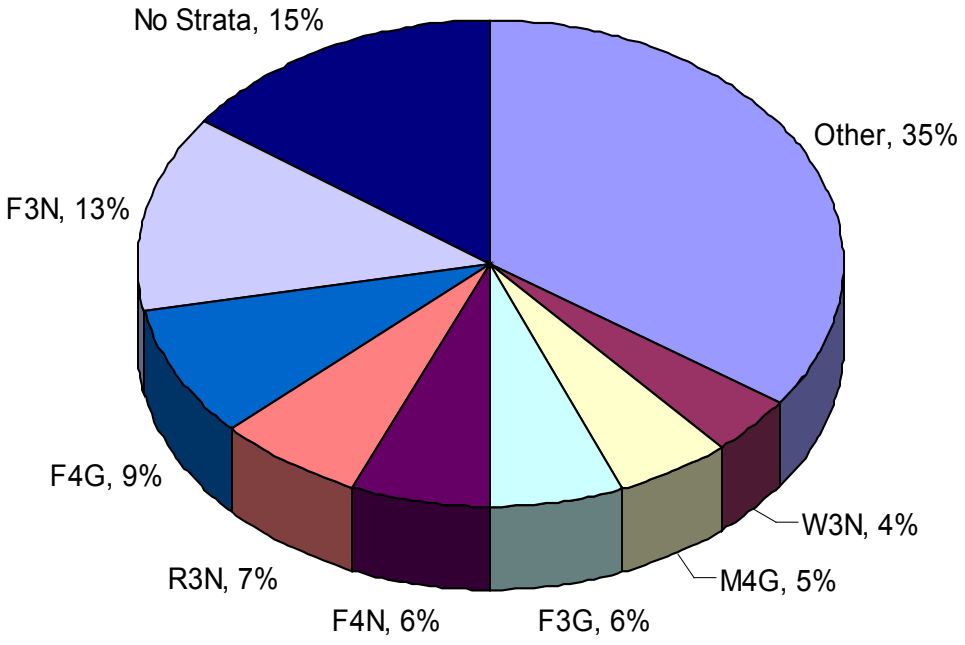
Number of Dead Trees by Major Damage Type and Major Species Groups

PNF	Pine	Fir	Mixed	Hardwood	Total
Biotic	592	14,541	2,049	0	17,182
Fire	4,580	1,424	214	0	6,218
Other Abiotic/Unknown	0	0	0	0	0

Historic Mortality and Precipitation



2005 Aerial Survey Plumas National Forest
Percent Mortality by Strata
biotic damage agents only



Total Pest Mortality = 22,535 Acres

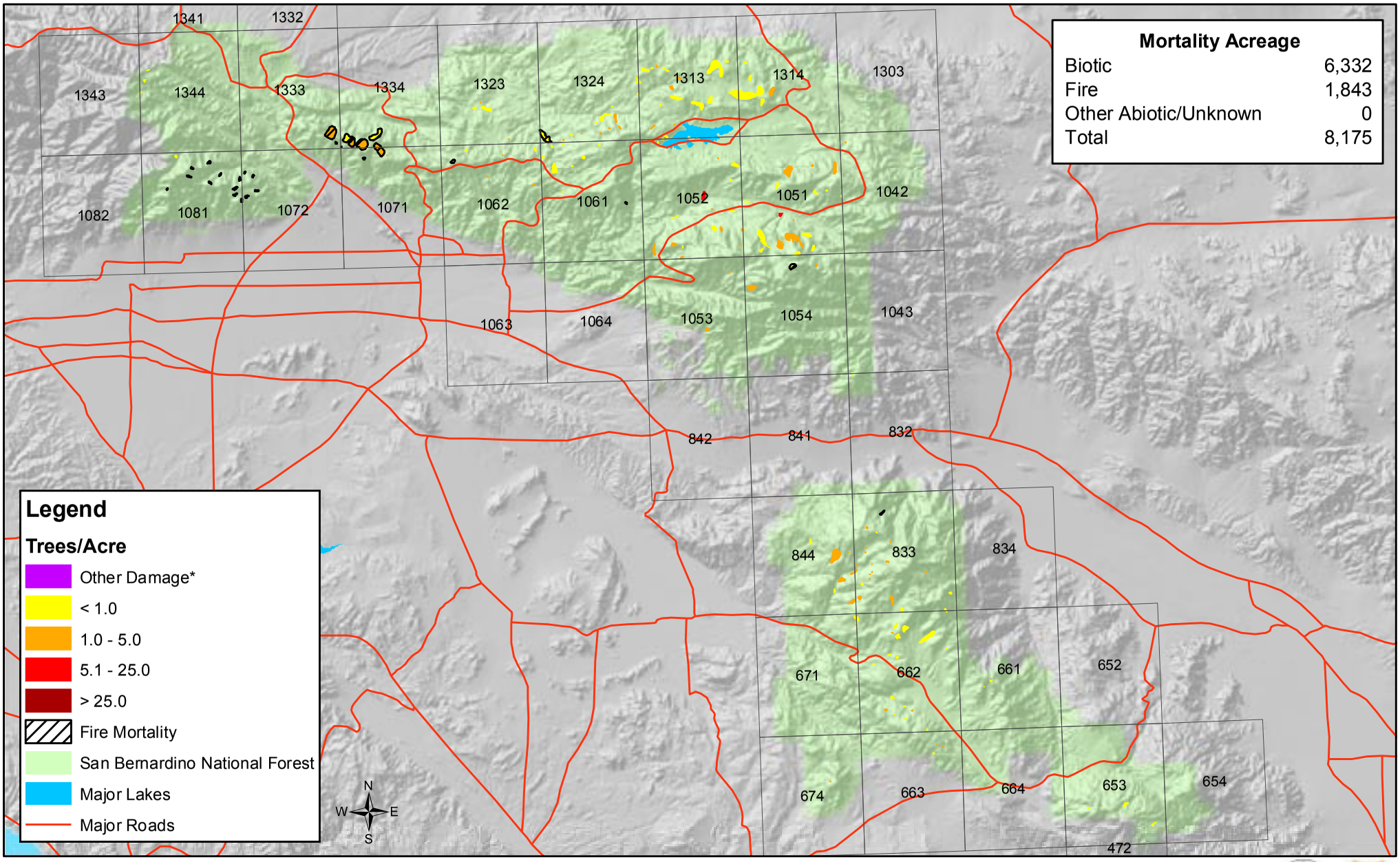
"Other" includes all strata comprising less than 4% of total pest mortality acreage.

Data Sources: FIA Inventory/Strata Data (pnfstra03_1), 2005 Aerial Mortality Survey Data (pnf_mort05).

RSL GIS Library - http://www.fs.fed.us/r5/clearinghouse/data/shtml

San Bernardino National Forest 2005 Mortality

Aerial Survey Sketch Mapping Program



Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:600,000

0 2 4 8 12 16 Miles

* Other Damage includes defoliation, discoloration, flagging, and topkill.

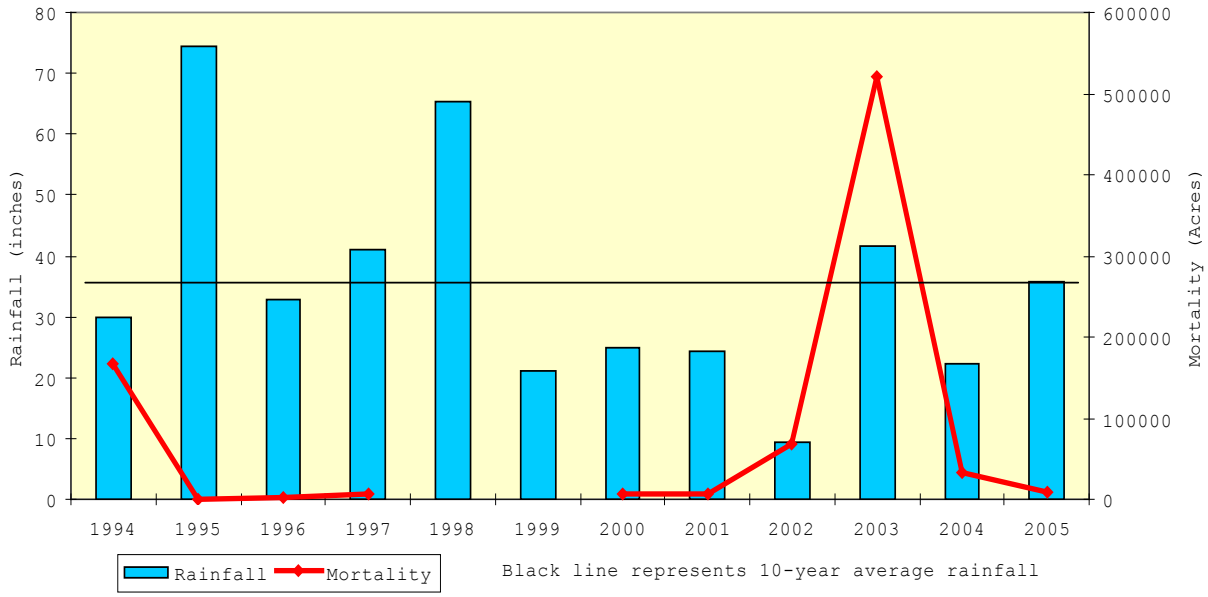
San Bernardino National Forest
2005 Mortality Acreage by Major Damage Type and Major Species Groups

BDF	Pine	Fir	Mixed	Hardwood	Total
Biotic	4,596	146	1,584	6	6,332
Fire	195	0	1,639	8	1,843
Other Abiotic/Unknown	0	0	0	0	0

Number of Dead Trees by Major Damage Type and Major Species Groups

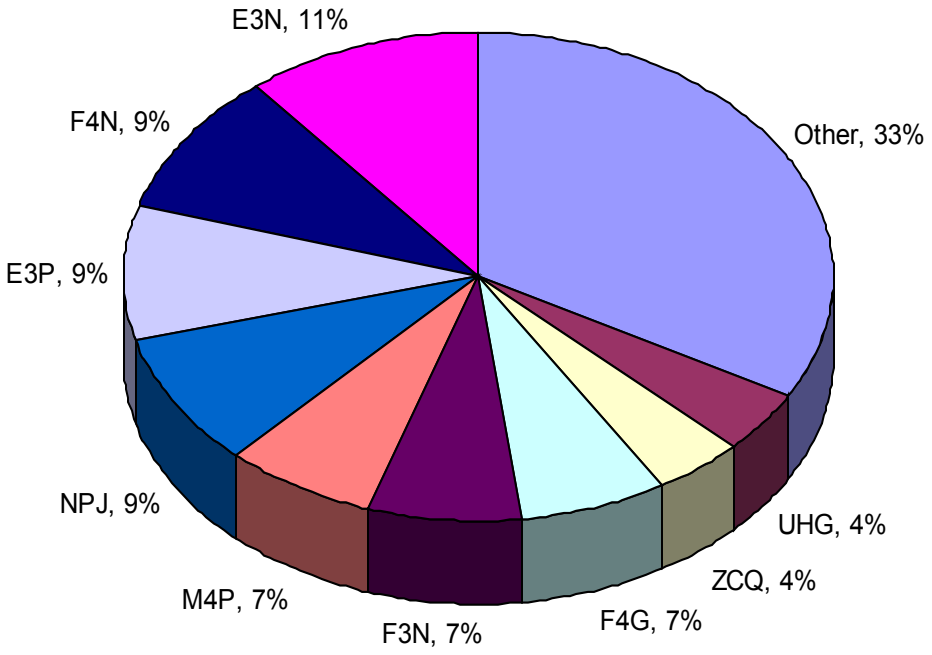
BDF	Pine	Fir	Mixed	Hardwood	Total
Biotic	6,288	404	4,992	5	11,689
Fire	195	0	7,619	8	7,822
Other Abiotic/Unknown	0	0	0	0	0

Historic Mortality and Precipitation



Not flown 1994, 1996, 1998, 1999. Excludes fire mortality in 2004.
Precipitation source: Lake Arrowhead NCDC weather station, ipm.ucdavis.edu
Mortality source: Damage_ac_vol_all_years.xls.

2005 Aerial Survey San Bernardino National Forest Percent Mortality by Strata
biotic damage agents only



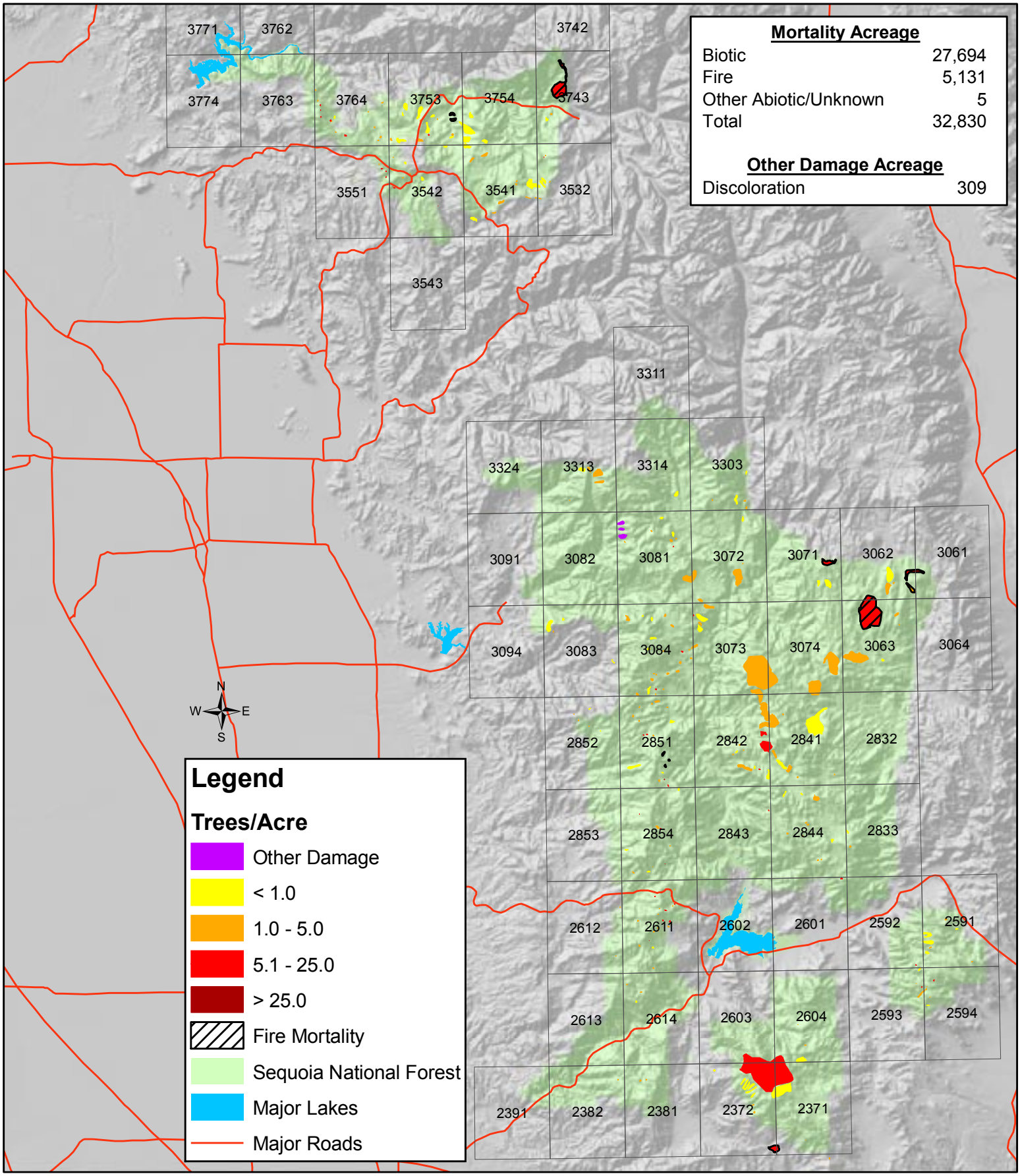
Total Pest Mortality = 6,332 Acres

"Other" includes all strata comprising less than 4% of total pest mortality acreage.

Data Sources: FIA Inventory/Strata Data (bdfstra97_5), 2005 Aerial Mortality Survey Data (bdf_mort05).

RSL GIS Library - http://www.fs.fed.us/r5/clearinghouse/data/shtml

Sequoia National Forest, 2005 Mortality
Aerial Survey Sketch Mapping Program



Mortality Acreage

Biotic	27,694
Fire	5,131
Other Abiotic/Unknown	5
Total	32,830

Other Damage Acreage

Discoloration	309

Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:750,000

0 2.5 5 10 15 20 Miles

* Other Damage includes defoliation, discoloration, flagging, and topkill.

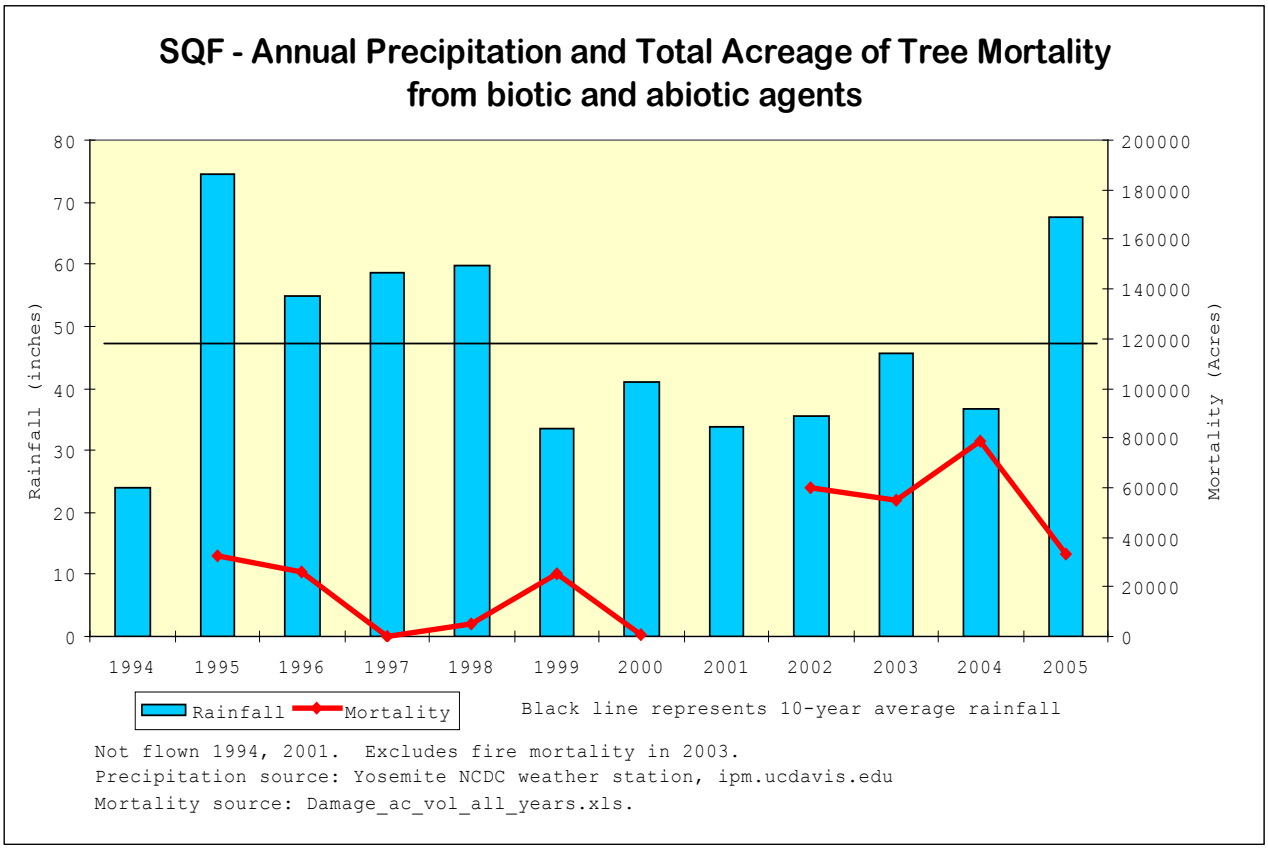
Sequoia National Forest
2005 Mortality Acreage by Major Damage Type and Major Species Groups

SQF	Pine	Fir	Mixed	Hardwood	Total
Biotic	17,945	1,554	8,195	0	27,694
Fire	3,825	0	1,306	0	5,131
Other Abiotic/Unknown	0	0	0	5	5

Number of Dead Trees by Major Damage Type and Major Species Groups

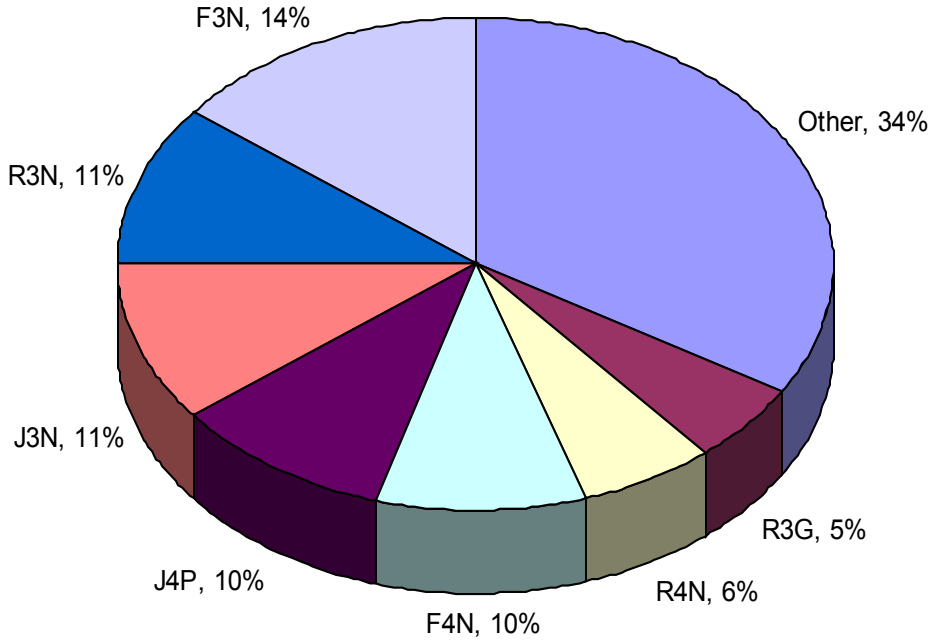
SQF	Pine	Fir	Mixed	Hardwood	Total
Biotic	63,585	2,197	29,709	0	95,491
Fire	39,463	0	23,809	0	63,272
Other Abiotic/Unknown	0	0	0	40	40

Historic Mortality and Precipitation



2005 Aerial Survey Sequoia National Forest Percent Mortality by Strata

biotic damage agents only



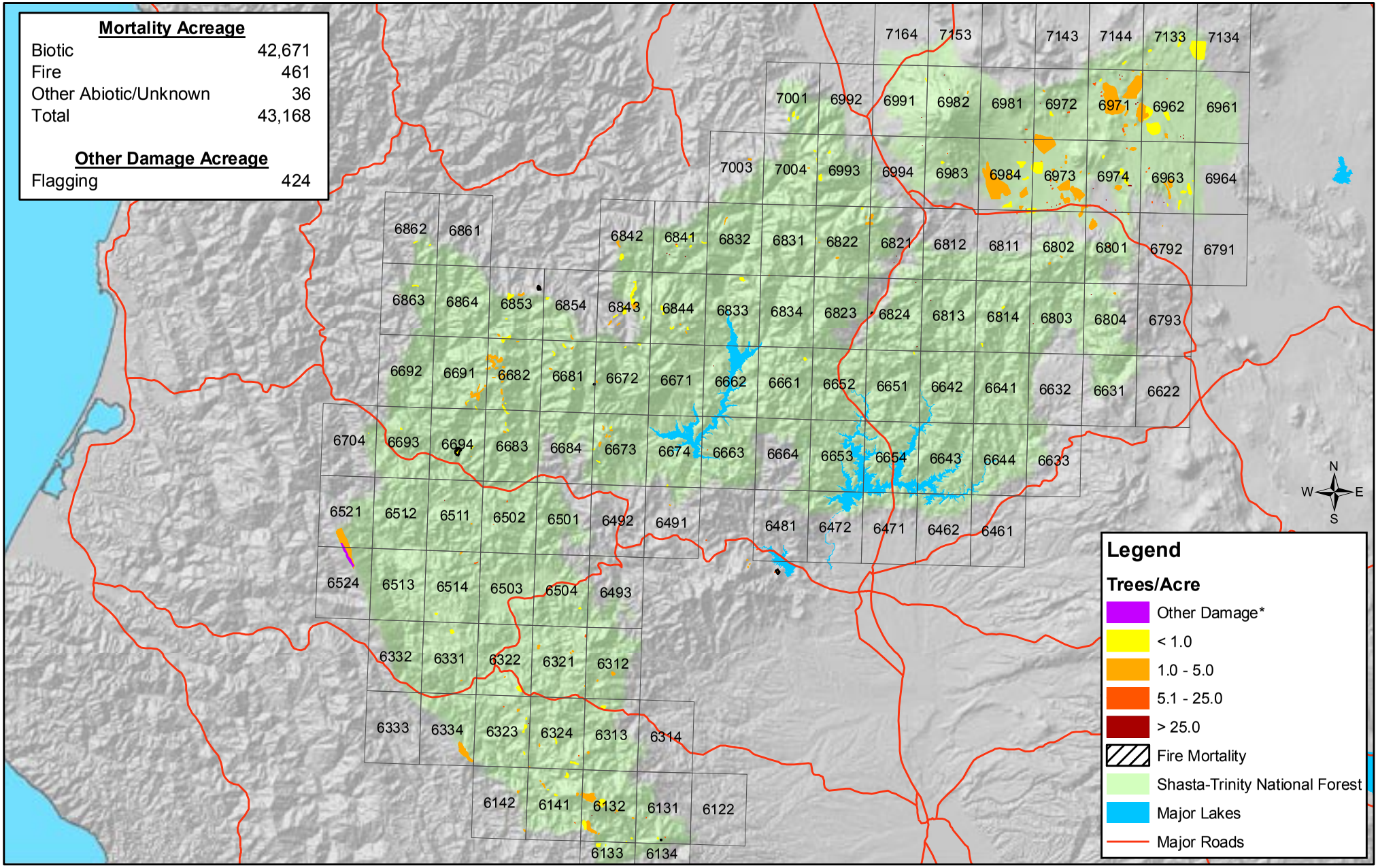
Total Pest Mortality = 27,694 Acres

"Other" includes all strata comprising less than 4% of total pest mortality acreage.

Data Sources: FIA Inventory/Strata Data (sqfstra97_8), 2005 Aerial Mortality Survey Data (sqf_mort05).

RSL GIS Library - http://www.fs.fed.us/r5/clearinghouse/data/shtml

Shasta-Trinity National Forest, 2005 Mortality
Aerial Survey Sketch Mapping Program



Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:1,000,000

0 3.75 7.5 15 22.5 30 Miles

* Other Damage includes defoliation, discoloration, flagging, and topkill.

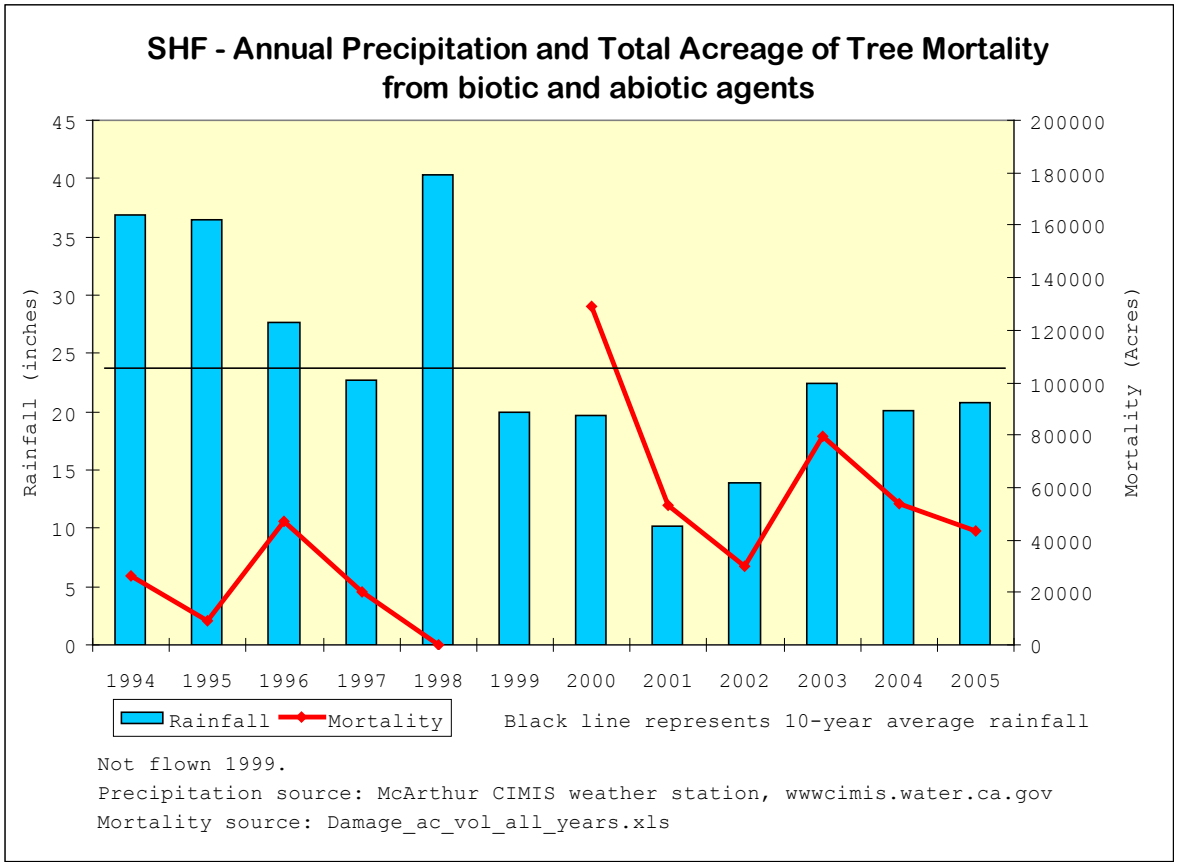
Shasta-Trinity National Forest
2005 Mortality Acreage by Major Damage Type and Major Species Groups

SHF	Pine	Fir	Mixed	Hardwood	Total
Biotic	31,347	11,324	0	0	42,671
Fire	20	88	353	0	461
Other Abiotic/Unknown	0	0	33	3	36

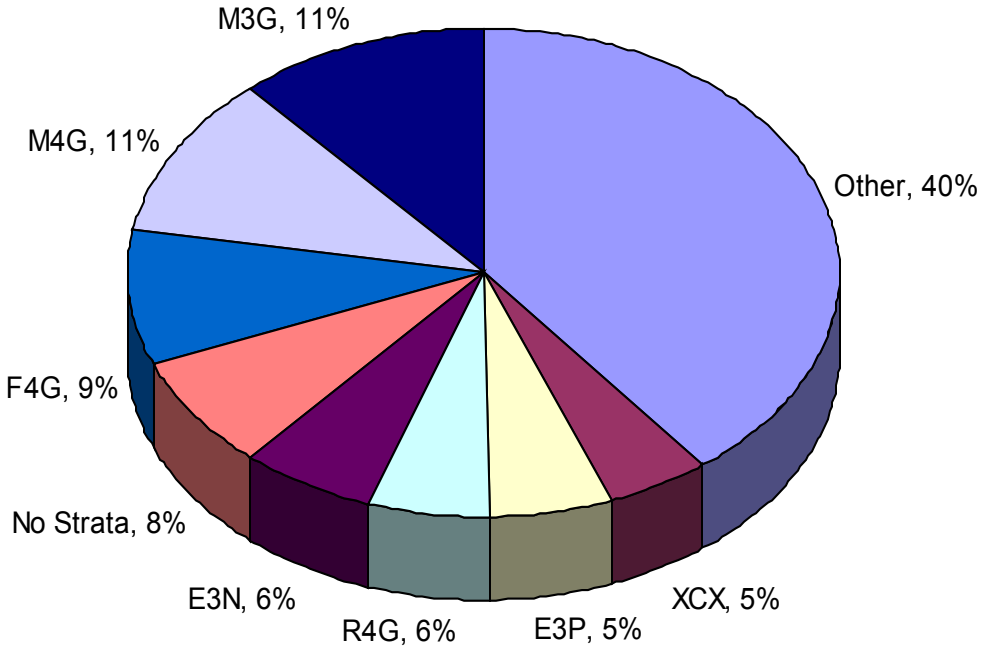
Number of Dead Trees by Major Damage Type and Major Species Groups

SHF	Pine	Fir	Mixed	Hardwood	Total
Biotic	70,501	23,374	0	0	93,875
Fire	70	243	467	0	780
Other Abiotic/Unknown	0	0	30	3	33

Historic Mortality and Precipitation



2005 Aerial Survey Shasta-Trinity National Forest
Percent Mortality by Strata
biotic damage agents only



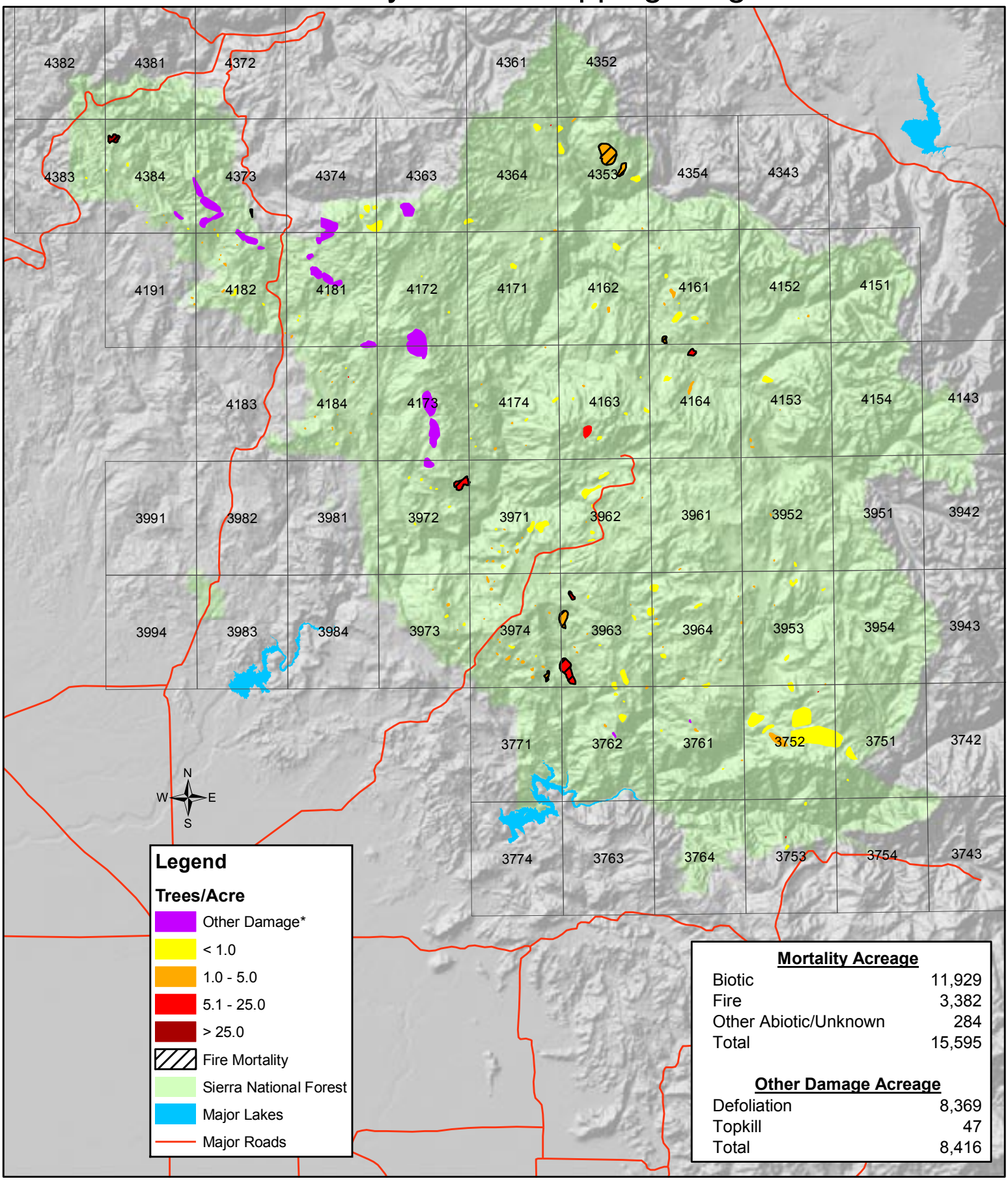
Total Pest Mortality = 42.671 Acres

"Other" includes all strata comprising less than 5% of total pest mortality acreage.

Data Sources: FIA Inventory/Strata Data (shfstra01_1), 2005 Aerial Mortality Survey Data (shf_mort05).

RSL GIS Library - http://www.fs.fed.us/r5/clearinghouse/data/shtml

Sierra National Forest, 2005 Mortality
Aerial Survey Sketch Mapping Program



Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:600,000

0 2 4 8 12 16 Miles

* Other Damage includes defoliation, discoloration, flagging, and topkill.

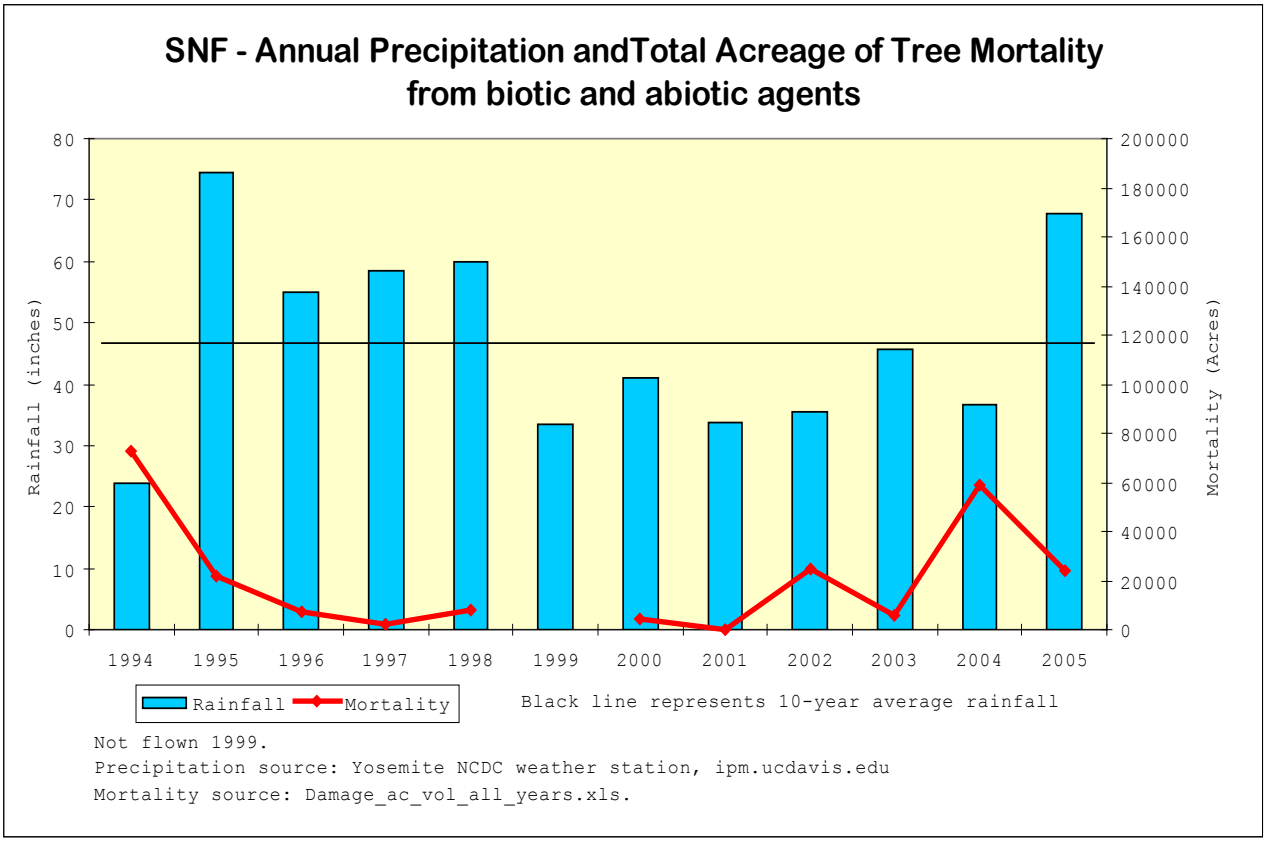
Sierra National Forest
2005 Mortality Acreage by Major Damage Type and Major Species Groups

SNF	Pine	Fir	Mixed	Hardwood	Total
Biotic	2,078	8,769	1,082	0	11,929
Fire	1,707	0	1,448	228	3,382
Other Abiotic/Unknown	0	284	0	0	284

Number of Dead Trees by Major Damage Type and Major Species Groups

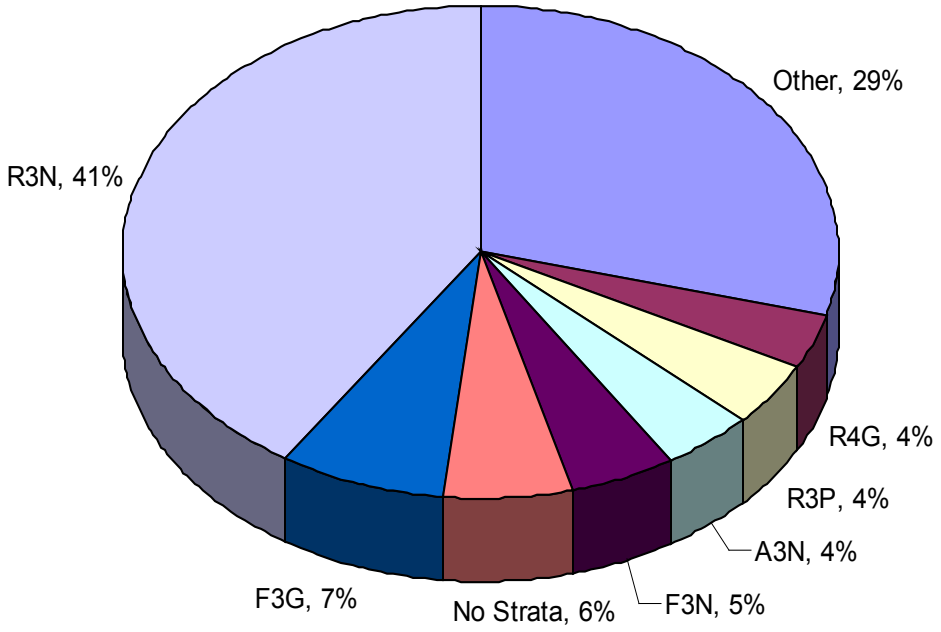
SNF	Pine	Fir	Mixed	Hardwood	Total
Biotic	2,139	10,365	1,186	0	13,690
Fire	14,599	0	12,176	11,395	38,170
Other Abiotic/Unknown	0	2,847	0	0	2,847

Historic Mortality and Precipitation



2005 Aerial Survey Sierra National Forest Percent Mortality by Strata

biotic damage agents only



Total Pest Mortality = 11,929 Acres

"Other" includes all strata comprising less than 4% of total pest mortality acreage.

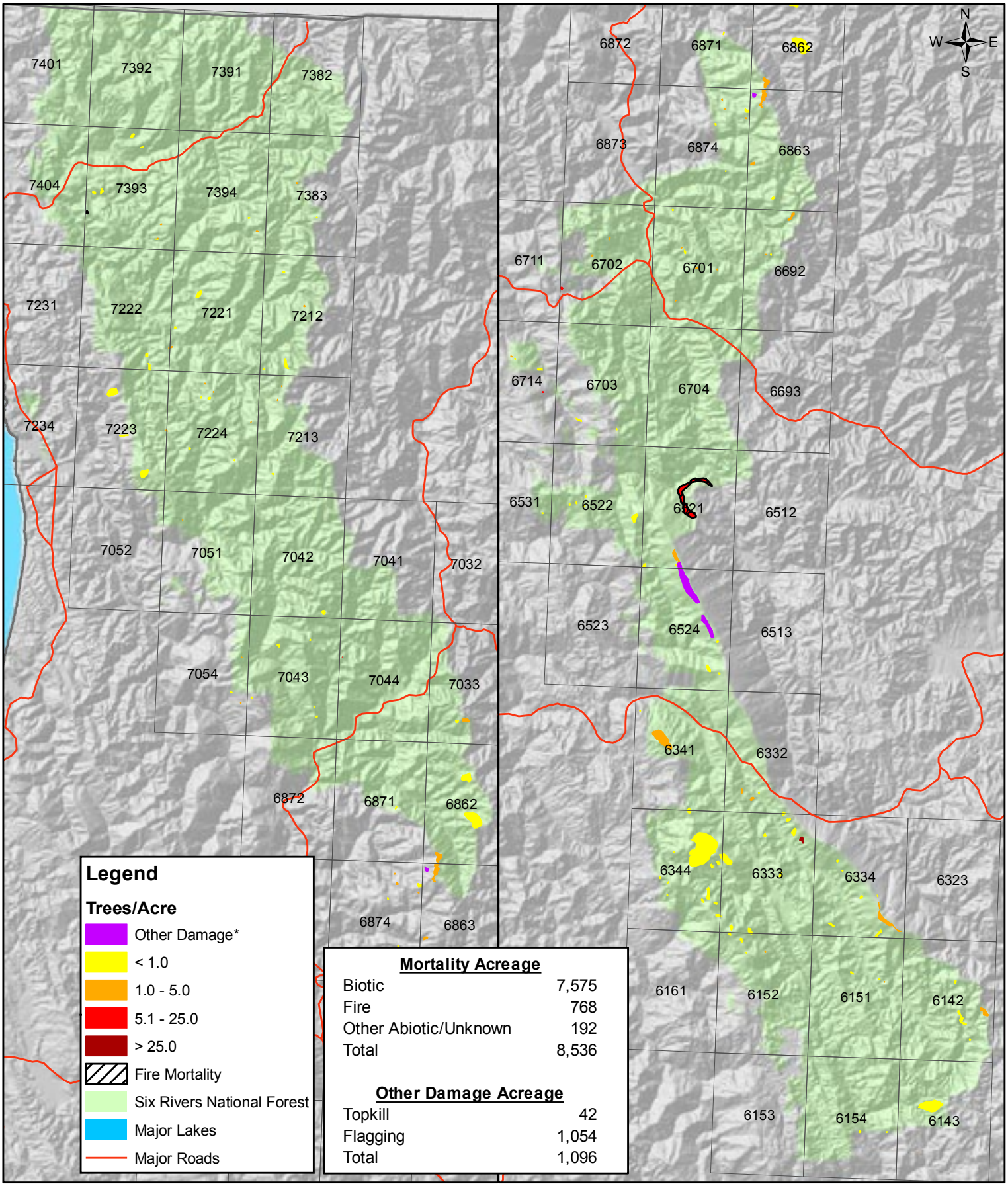
Data Sources: FIA Inventory/Strata Data (snfstra97_6), 2005 Aerial Mortality Survey Data (snf_mort05).

RSL GIS Library - http://www.fs.fed.us/r5/clearinghouse/data/shtml

Six Rivers National Forest, 2005 Mortality
Aerial Survey Sketch Mapping Program

Orleans & Gasquet Ranger Districts

Lower Trinity and Mad River Ranger Districts



Mortality Acreage

Biotic	7,575
Fire	768
Other Abiotic/Unknown	192
Total	8,536

Other Damage Acreage

Topkill	42
Flagging	1,054
Total	1,096

Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:575,000

0 1.5 3 6 9 12 Miles

* Other Damage includes defoliation, discoloration, flagging, and topkill.

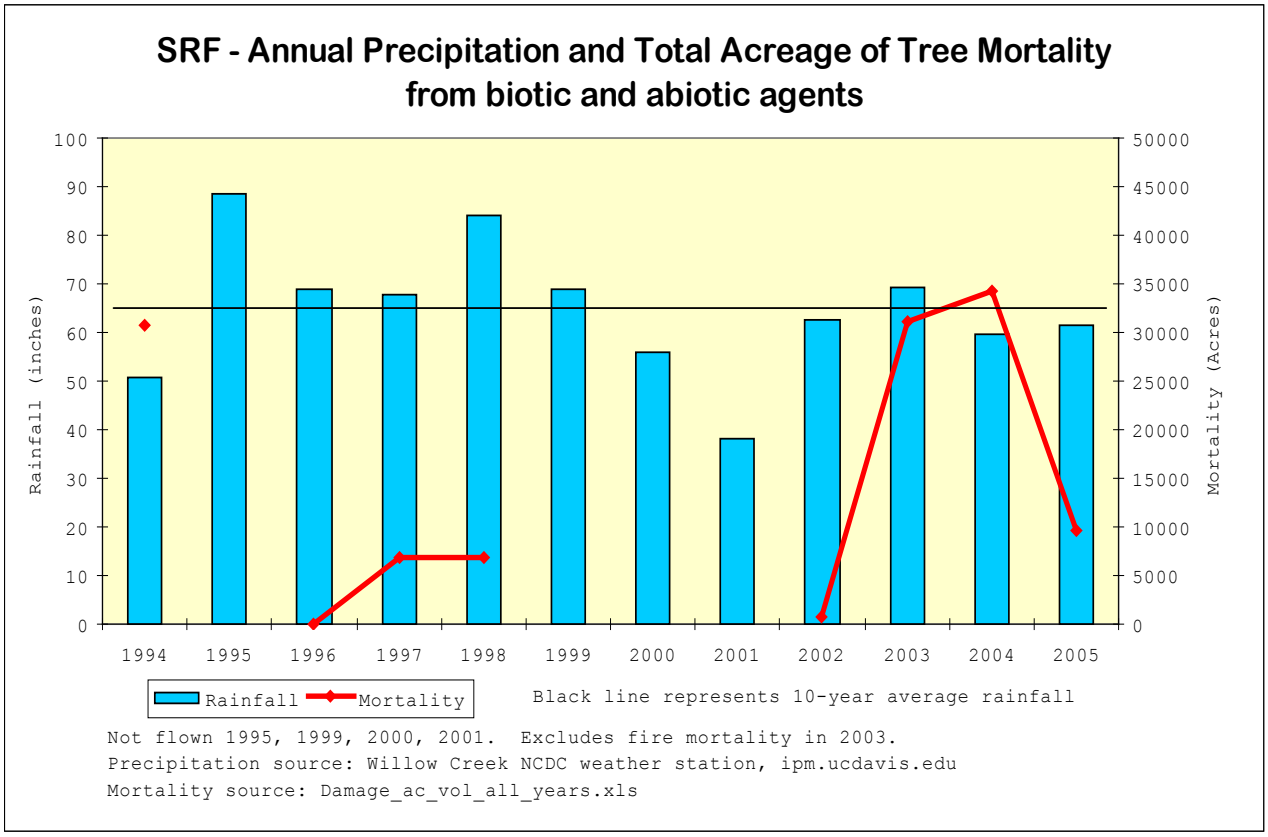
Six Rivers National Forest
2005 Mortality Acreage by Major Damage Type and Major Species Groups

SRF	Pine	Fir	Mixed	Hardwood	Total
Biotic	959	5,625	956	35	7,575
Fire	0	0	768	0	768
Other Abiotic/Unknown	0	0	0	192	192

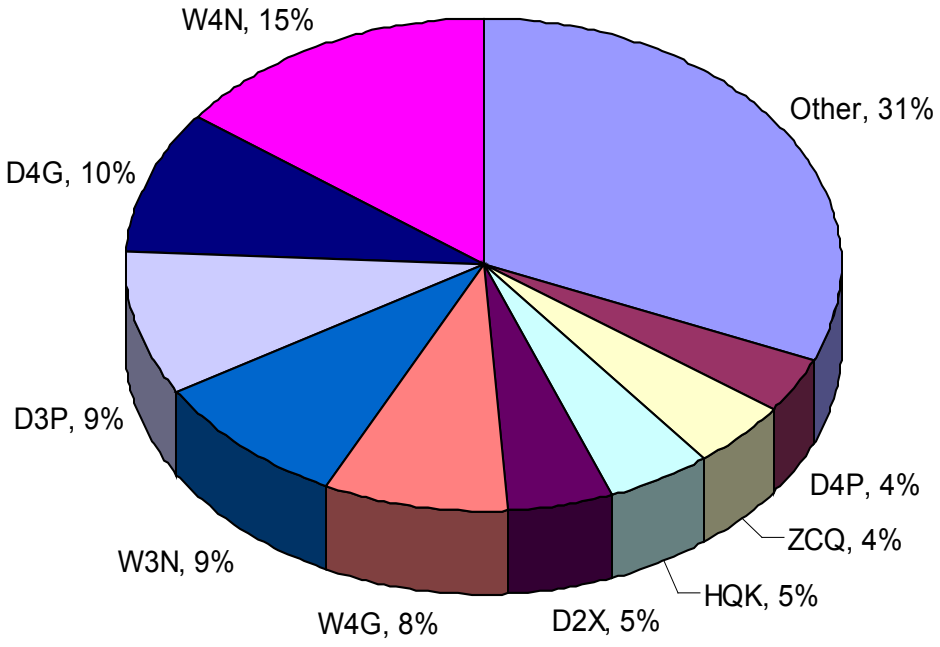
Number of Dead Trees by Major Damage Type and Major Species Groups

SRF	Pine	Fir	Mixed	Hardwood	Total
Biotic	773	7,096	877	16	8,762
Fire	0	0	22,632	0	22,632
Other Abiotic/Unknown	0	0	0	1,777	1,777

Historic Mortality and Precipitation



2005 Aerial Survey Six Rivers National Forest
Percent Mortality by Strata
biotic damage agents only



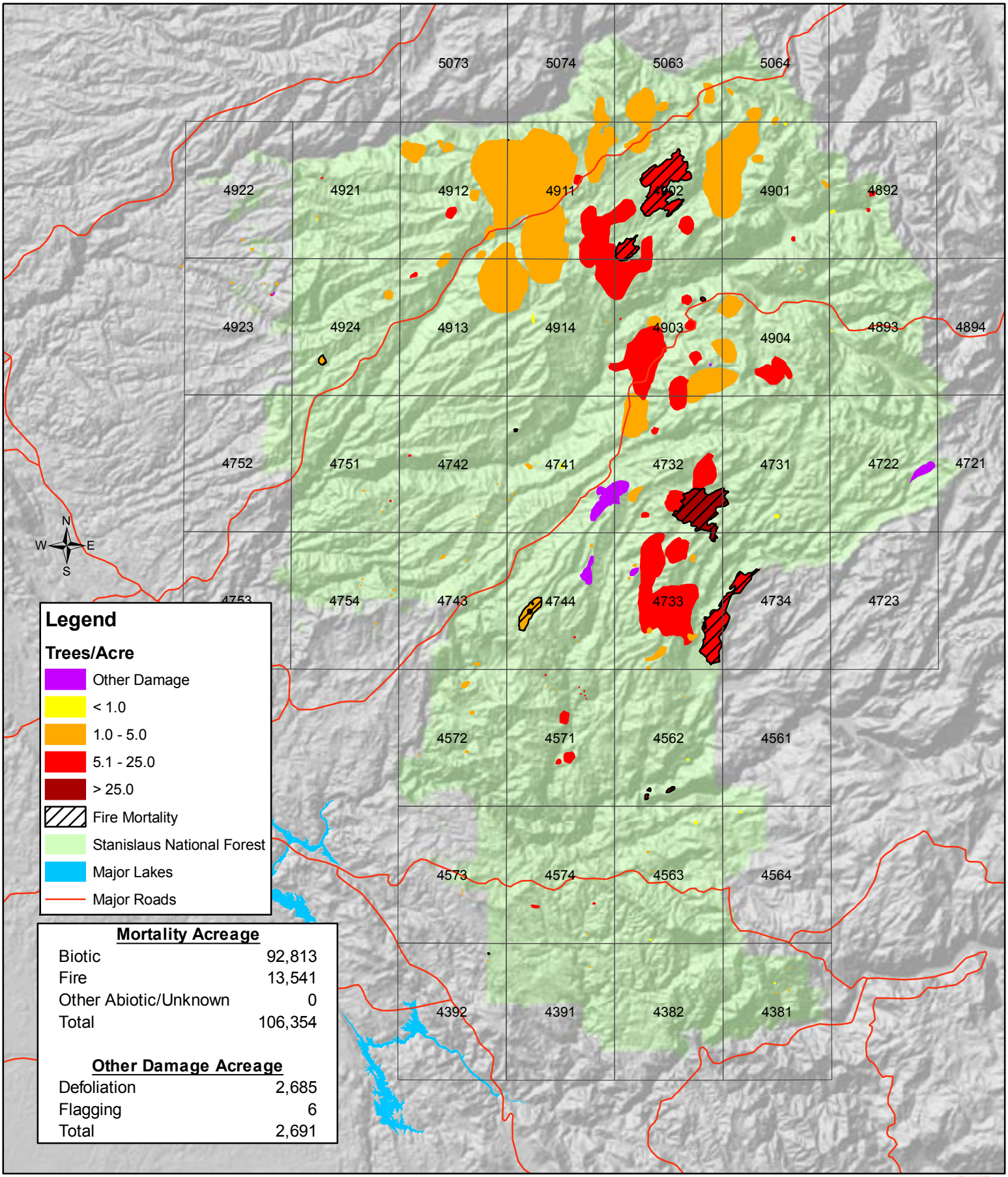
Total Pest Mortality = 7.575 Acres

"Other" includes all strata comprising less than 4% of total pest mortality acreage.

Data Sources: FIA Inventory/Strata Data (mnfstra01_1), 2005 Aerial Mortality Survey Data (srf_mort05).

RSL GIS Library - http://www.fs.fed.us/r5/clearinghouse/data/shtml

Stanislaus National Forest, 2005 Mortality
Aerial Survey Sketch Mapping Program



Mortality Acreage

Biotic	92,813
Fire	13,541
Other Abiotic/Unknown	0
Total	106,354

Other Damage Acreage

Defoliation	2,685
Flagging	6
Total	2,691

Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:500,000

0 1.25 2.5 5 7.5 10 Miles

*Other Damage includes defoliation, discoloration, flagging, and topkill.

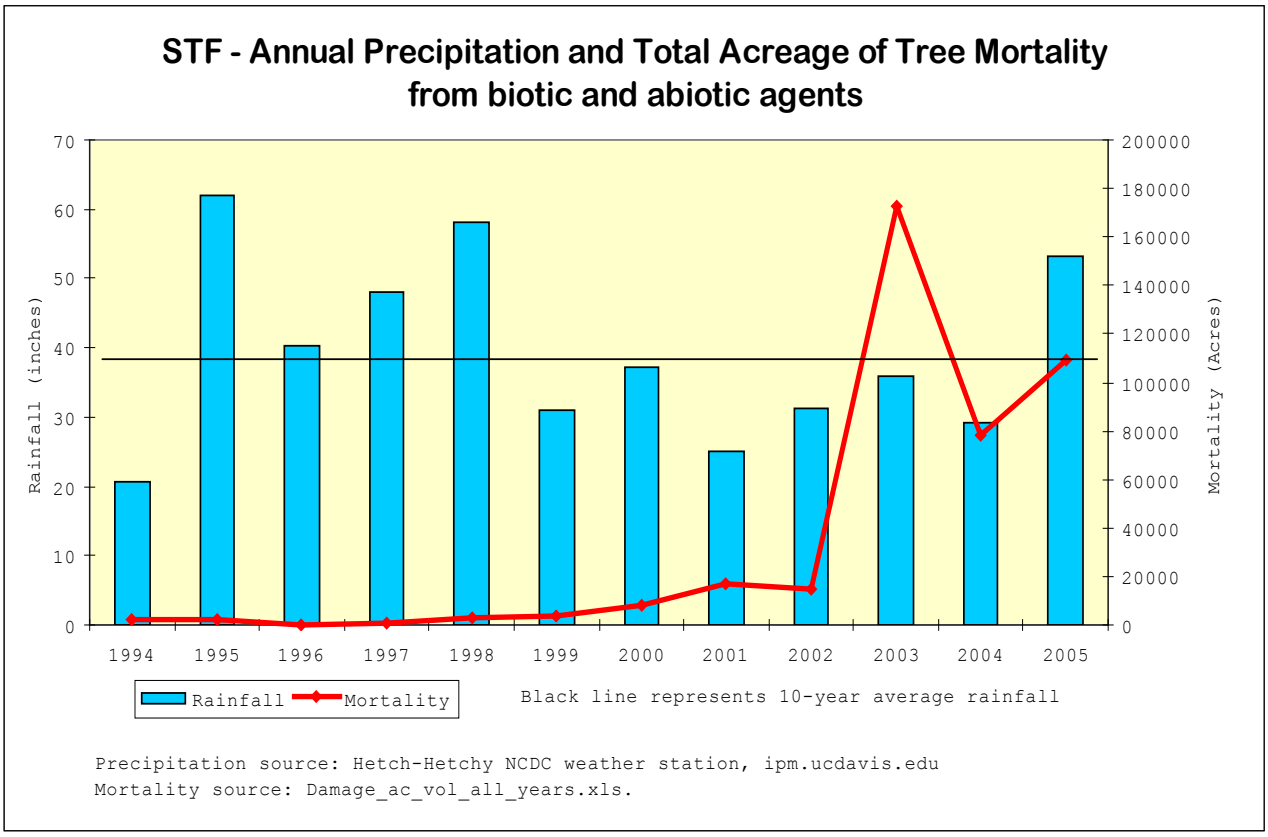
Stanislaus National Forest
2005 Mortality Acreage by Major Damage Type and Major Species Groups

STF	Pine	Fir	Mixed	Hardwood	Total
Biotic	4,990	45,899	41,925	0	92,813
Fire	1,107	901	11,534	0	13,541
Other Abiotic/Unknown	0	0	0	0	0

Number of Dead Trees by Major Damage Type and Major Species Groups

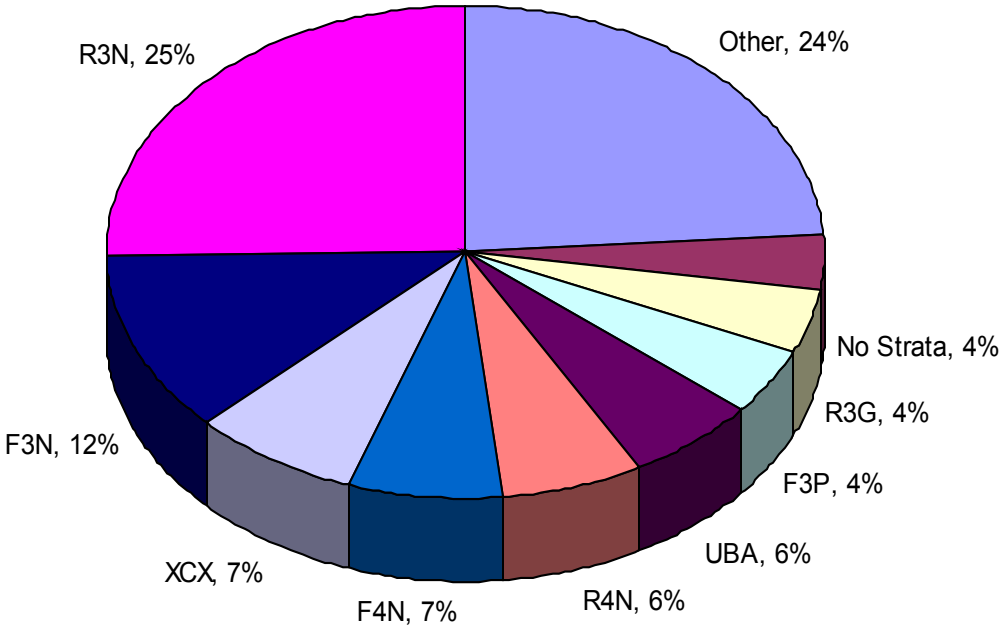
STF	Pine	Fir	Mixed	Hardwood	Total
Biotic	27,724	232,480	338,361	0	598,565
Fire	8,706	18,386	260,313	0	287,405
Other Abiotic/Unknown	0	0	0	0	0

Historic Mortality and Precipitation



2005 Aerial Survey Stanislaus National Forest Percent Mortality by Strata

biotic damage agents only



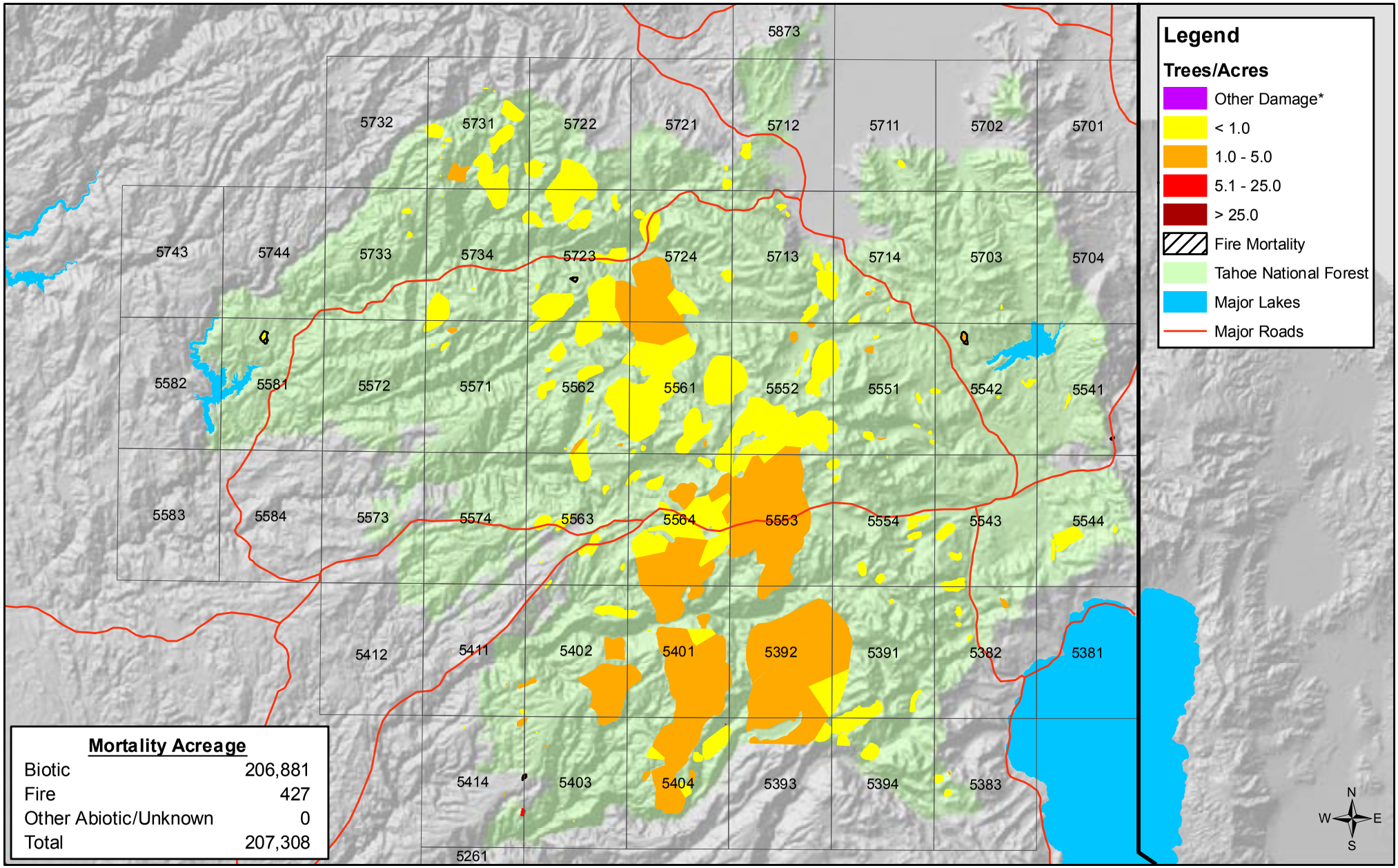
Total Pest Mortality = 92,813 Acres

"Other" includes all strata comprising less than 4% of total pest mortality acreage.

Data Sources: FIA Inventory/Strata Data (stfstra01_1), 2005 Aerial Mortality Survey Data (stf_mort05).

RSL GIS Library - http://www.fs.fed.us/r5/clearinghouse/data/shtml

Tahoe National Forest, 2005 Mortality
Aerial Survey Sketch Mapping Program



Mortality Acreage

Biotic	206,881
Fire	427
Other Abiotic/Unknown	0
Total	207,308

Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:550,000

0 2 4 8 12 16 Miles

* Other Damage includes defoliation, discoloration, flagging, and topkill.

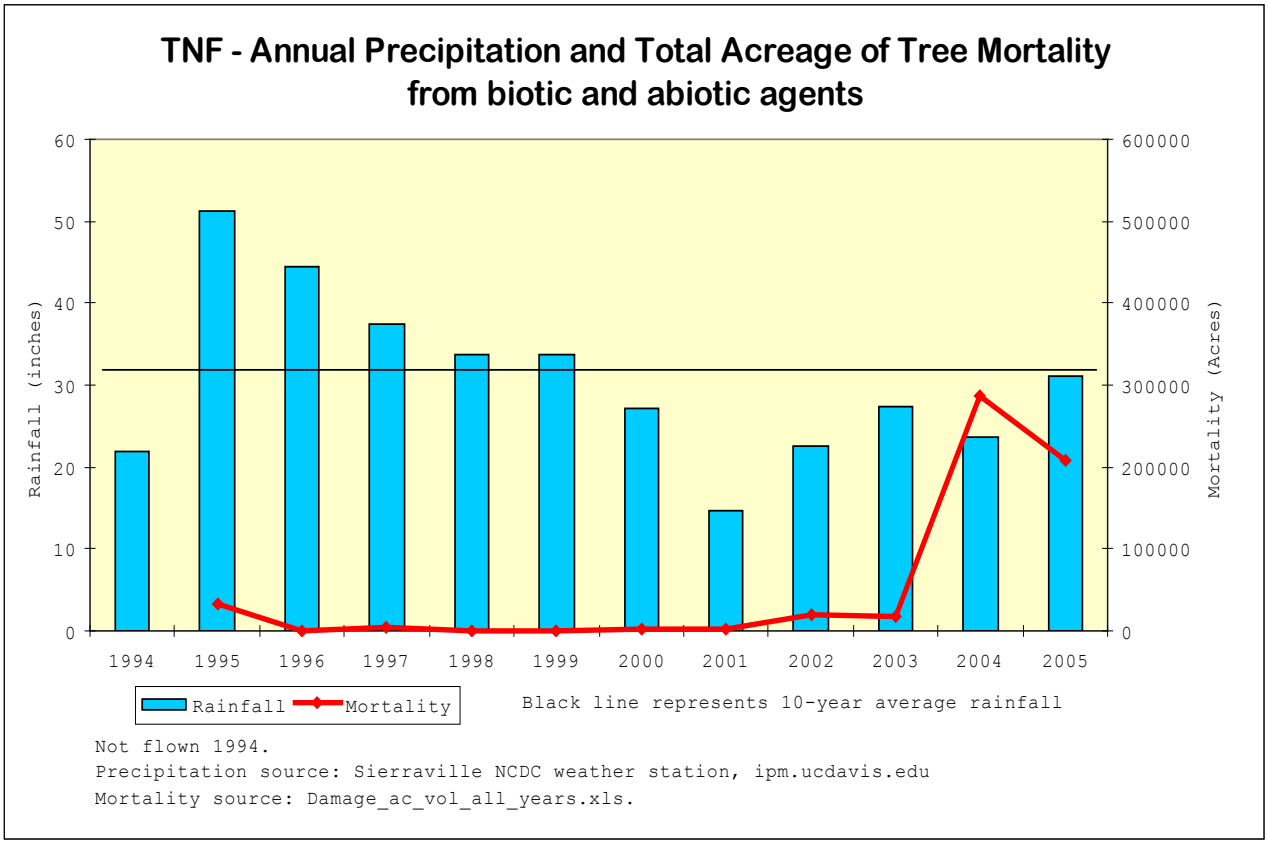
Tahoe National Forest
2005 Mortality Acreage by Major Damage Type and Major Species Groups

TNF	Pine	Fir	Mixed	Hardwood	Total
Biotic	3,267	155,149	48,465	0	206,881
Fire	373	54	0	0	427
Other Abiotic/Unknown	0	0	0	0	0

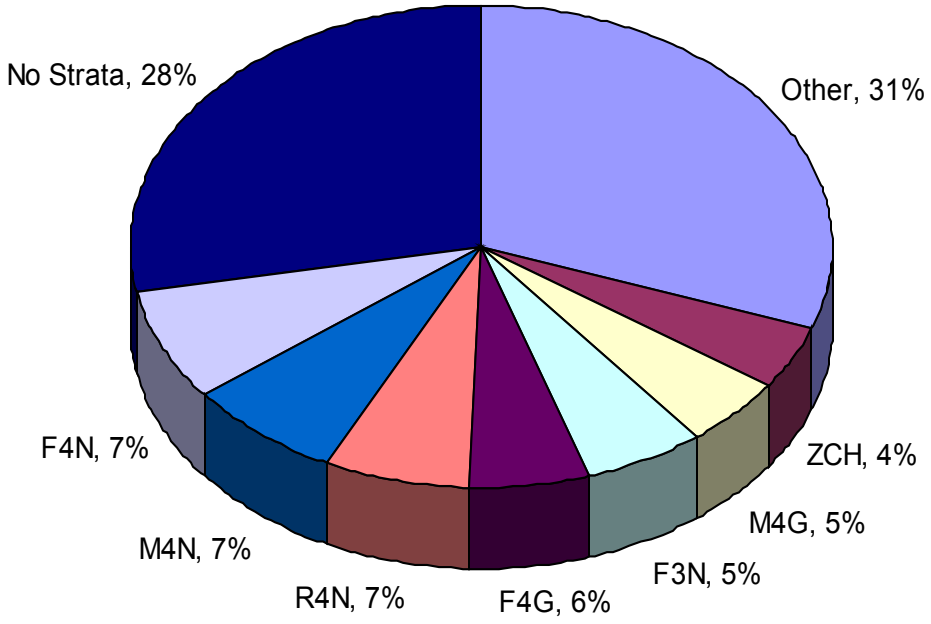
Number of Dead Trees by Major Damage Type and Major Species Groups

TNF	Pine	Fir	Mixed	Hardwood	Total
Biotic	4,638	286,309	129,012	0	419,959
Fire	989	272	0	0	1,261
Other Abiotic/Unknown	0	0	0	0	0

Historic Mortality and Precipitation



2005 Aerial Survey Tahoe National Forest
Percent Mortality by Strata
biotic damage agents only



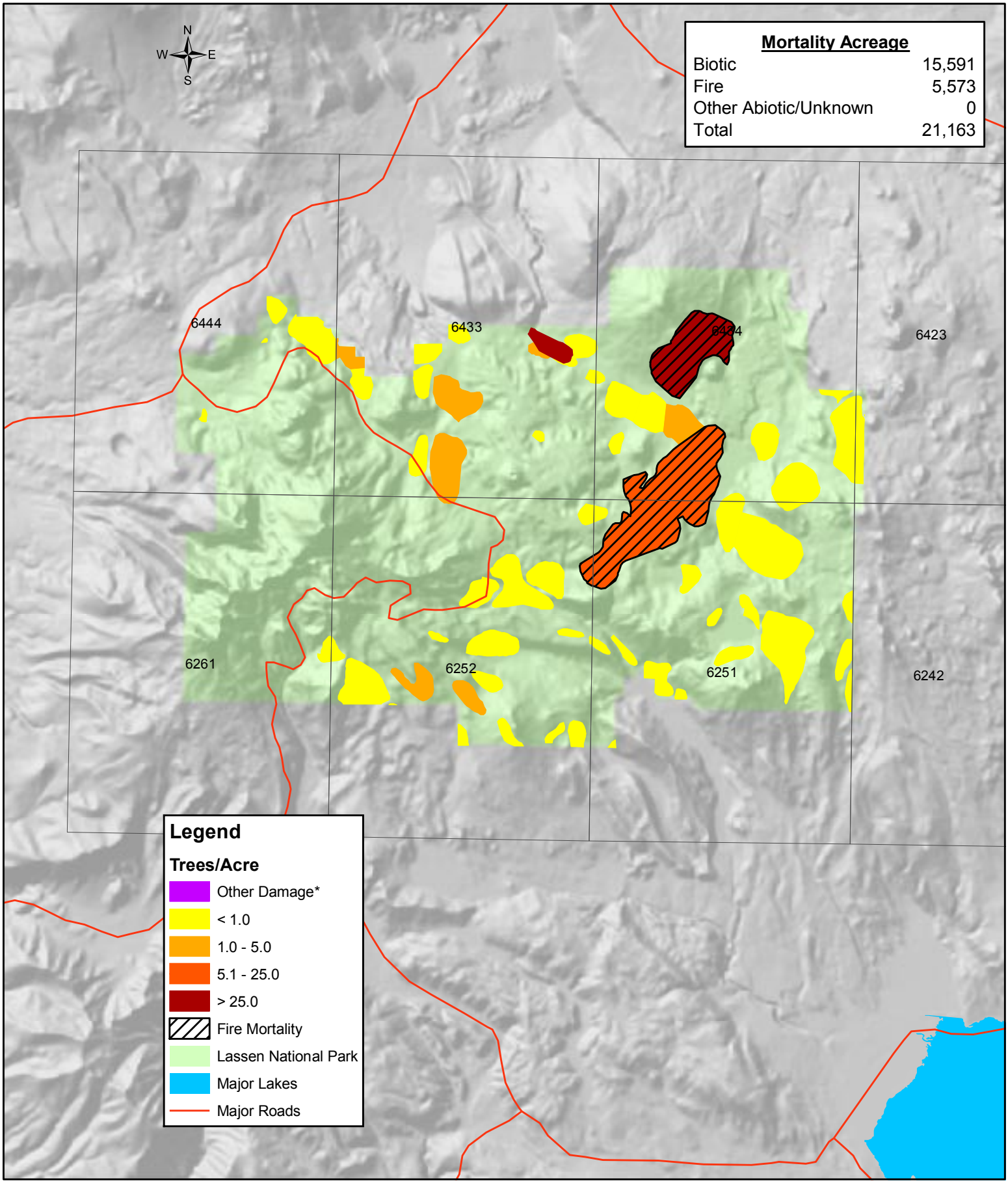
Total Pest Mortality = 206,881 Acres

"Other" includes all strata comprising less than 4% of total pest mortality acreage.

Data Sources: FIA Inventory/Strata Data (tnfstra03_1), 2005 Aerial Mortality Survey Data (tnf_mort05).

RSL GIS Library - http://www.fs.fed.us/r5/clearinghouse/data/shtml

Lassen Volcanic National Park, 2005 Mortality
Aerial Survey Sketch Mapping Program



Mortality Acreage

Biotic	15,591
Fire	5,573
Other Abiotic/Unknown	0
Total	21,163

Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:200,000

0 0.45 0.9 1.8 2.7 3.6 Miles

* Other Damage includes defoliation, discoloration, flagging, and topkill.

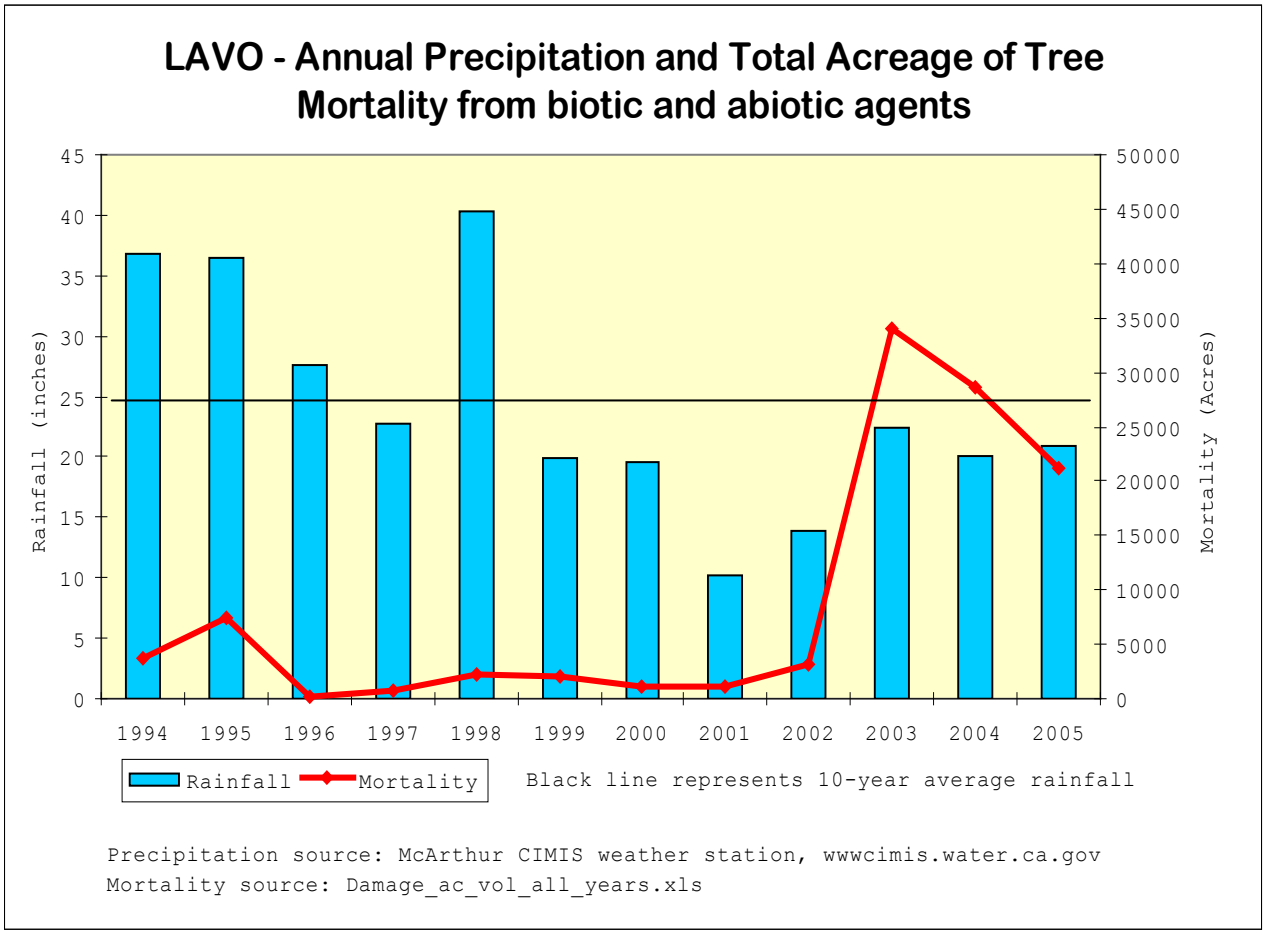
Lassen Volcanic National Park
2005 Mortality Acreage by Major Damage Type and Major Species Groups

LAVO	Pine	Fir	Mixed	Hardwood	Total
Biotic	2,293	5,418	7,880	0	15,591
Fire	0	0	5,573	0	5,573
Other Abiotic/Unknown	0	0	0	0	0

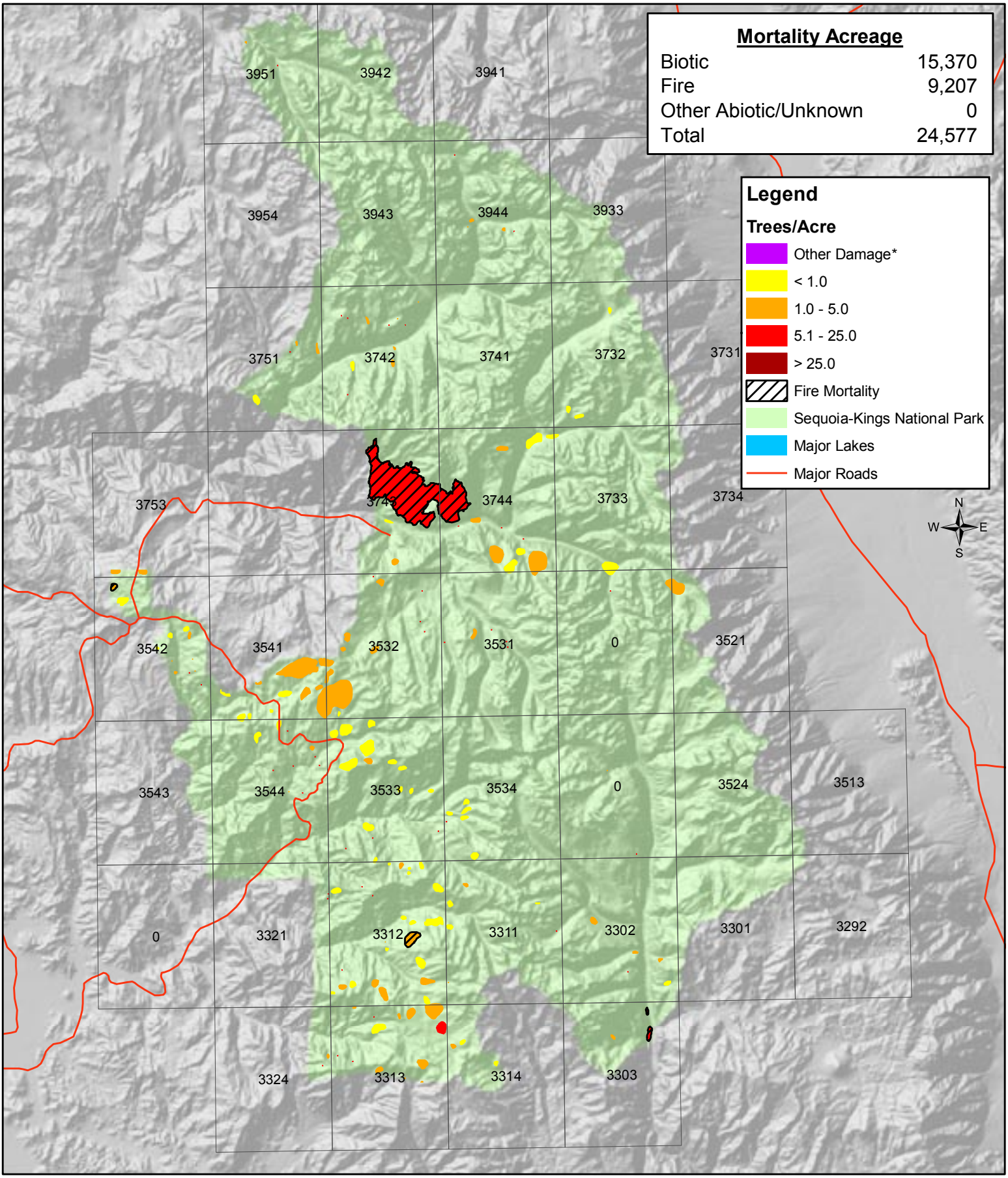
Number of Dead Trees by Major Damage Type and Major Species Groups

LAVO	Pine	Fir	Mixed	Hardwood	Total
Biotic	2,874	6,251	30,692	0	39,817
Fire	0	0	427,940	0	427,940
Other Abiotic/Unknown	0	0	0	0	0

Historic Mortality and Precipitation



Sequoia-Kings National Park, 2005 Mortality
Aerial Survey Sketch Mapping Program



Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:475,000

0 1.5 3 6 9 12 Miles

* Other Damage includes defoliation, discoloration, flagging, and topkill.

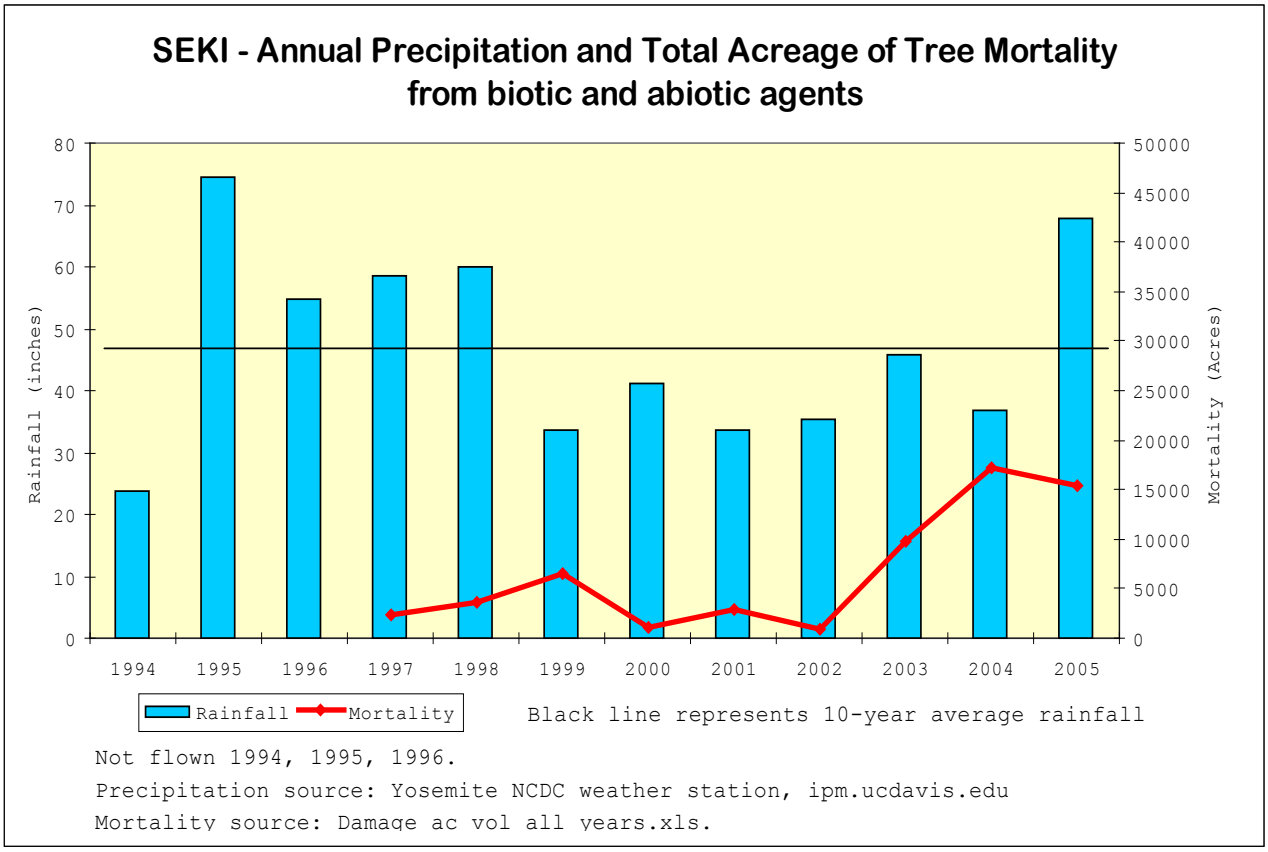
Sequoia – Kings Canyon National Park
2005 Mortality Acreage by Major Damage Type and Major Species Groups

SEKI	Pine	Fir	Mixed	Hardwood	Total
Biotic	4,394	1,344	9,632	0	15,370
Fire	208	0	9,000	0	9,207
Other Abiotic/Unknown	0	0	0	0	0

Number of Dead Trees by Major Damage Type and Major Species Groups

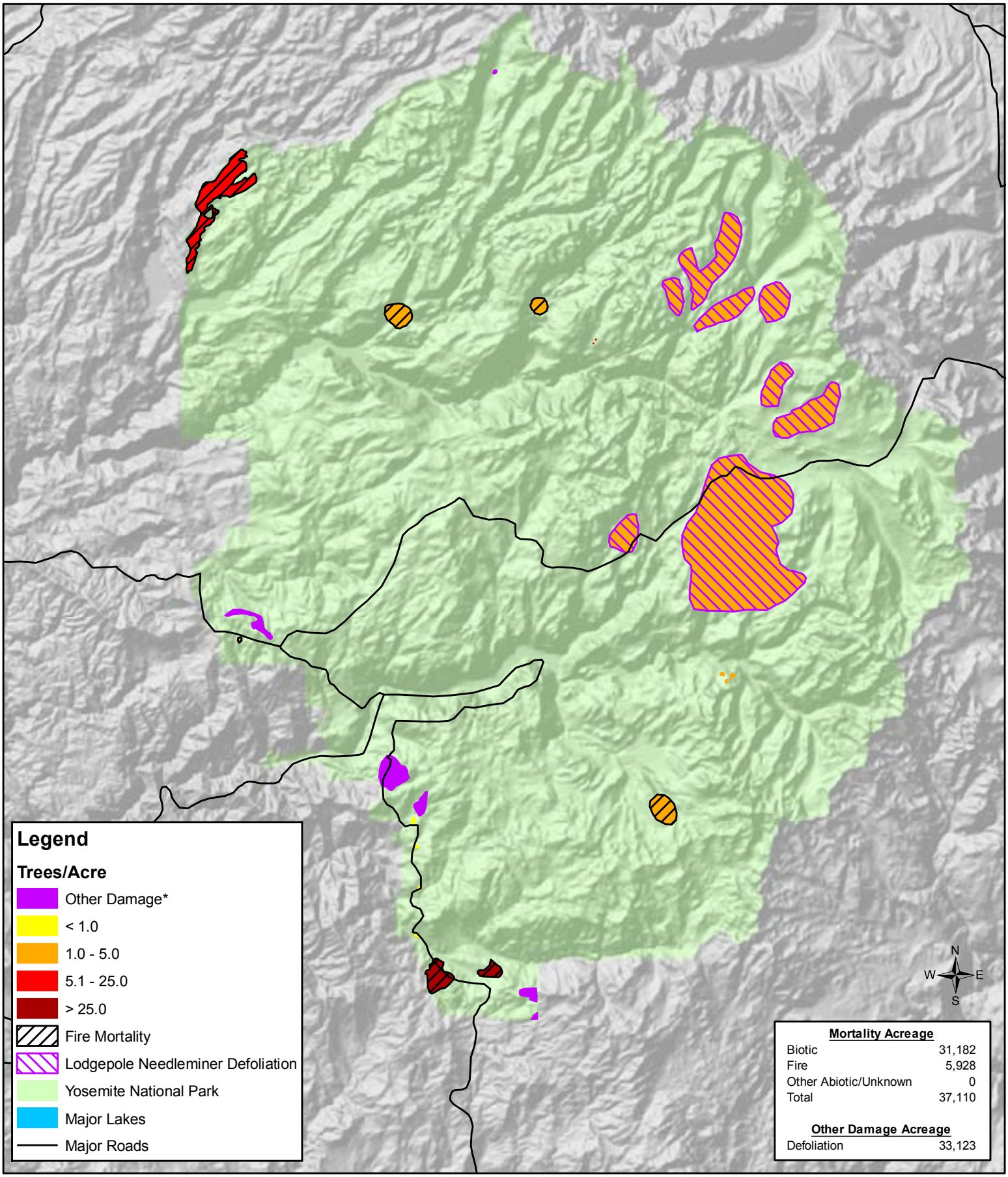
SEKI	Pine	Fir	Mixed	Hardwood	Total
Biotic	11,347	3,870	24,303	0	39,520
Fire	1,489	0	174,146	0	175,635
Other Abiotic/Unknown	0	0	0	0	0

Historic Mortality and Precipitation



Yosemite National Park, 2005 Mortality

Aerial Survey Sketch Mapping Program



Forest Health Protection program standards adhered to for mapping, see http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html

1:375,000

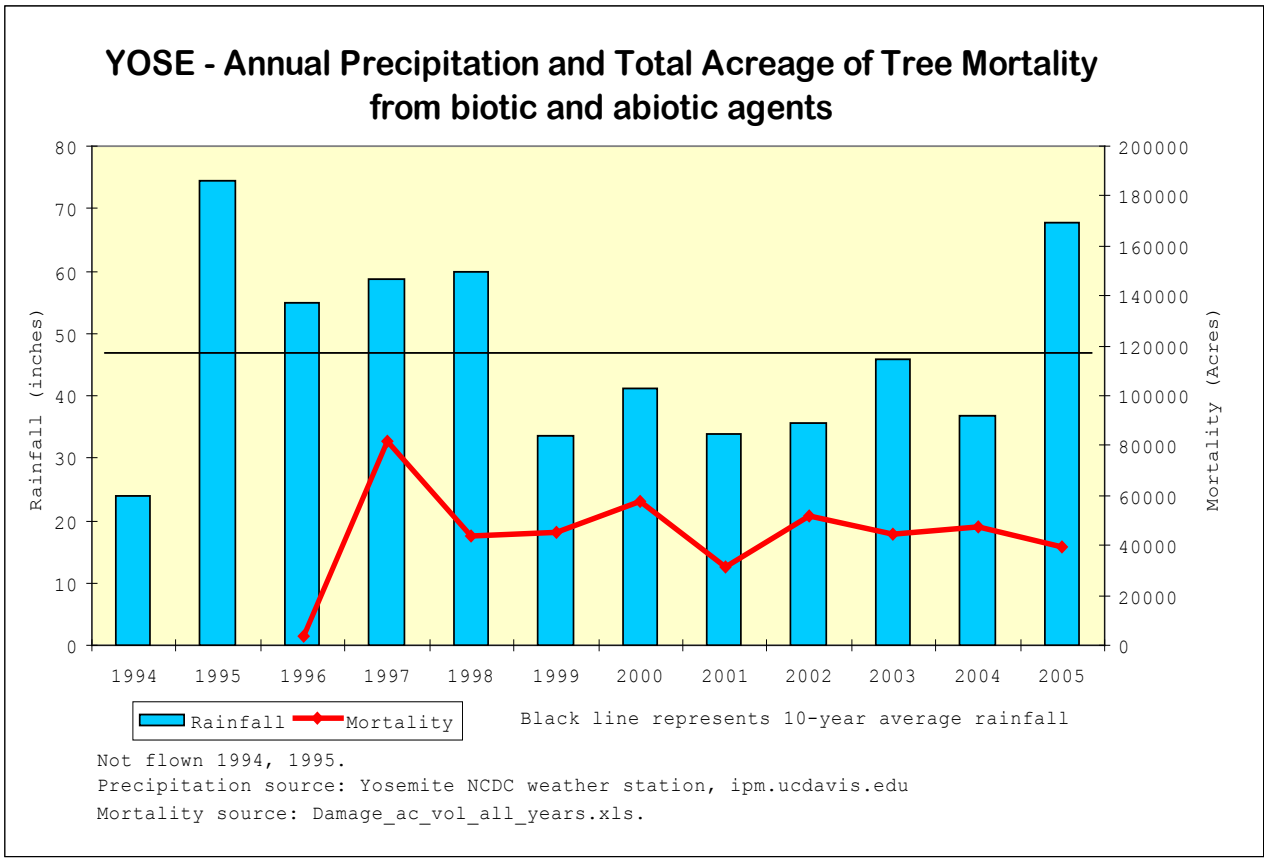
0 1.25 2.5 5 7.5 10 Miles

* Other Damage includes defoliation, discoloration, flagging, and topkill.

Yosemite National Park
2005 Mortality Acreage by Major Damage Type and Major Species Groups

YOSE	Pine	Fir	Mixed	Hardwood	Total
Biotic	31,179	3	0	0	31,182
Fire	4,041	1,887	0	0	5,928
Other Abiotic/Unknown	0	0	0	0	0

Number of Dead Trees by Major Damage Type and Major Species Groups

YOSE	Pine	Fir	Mixed	Hardwood	Total
Biotic	155,442	16	0	0	155,458
Fire	129,638	8,267	0	0	137,905
Other Abiotic/Unknown	0	0	0	0	0

Historic Mortality and Precipitation