

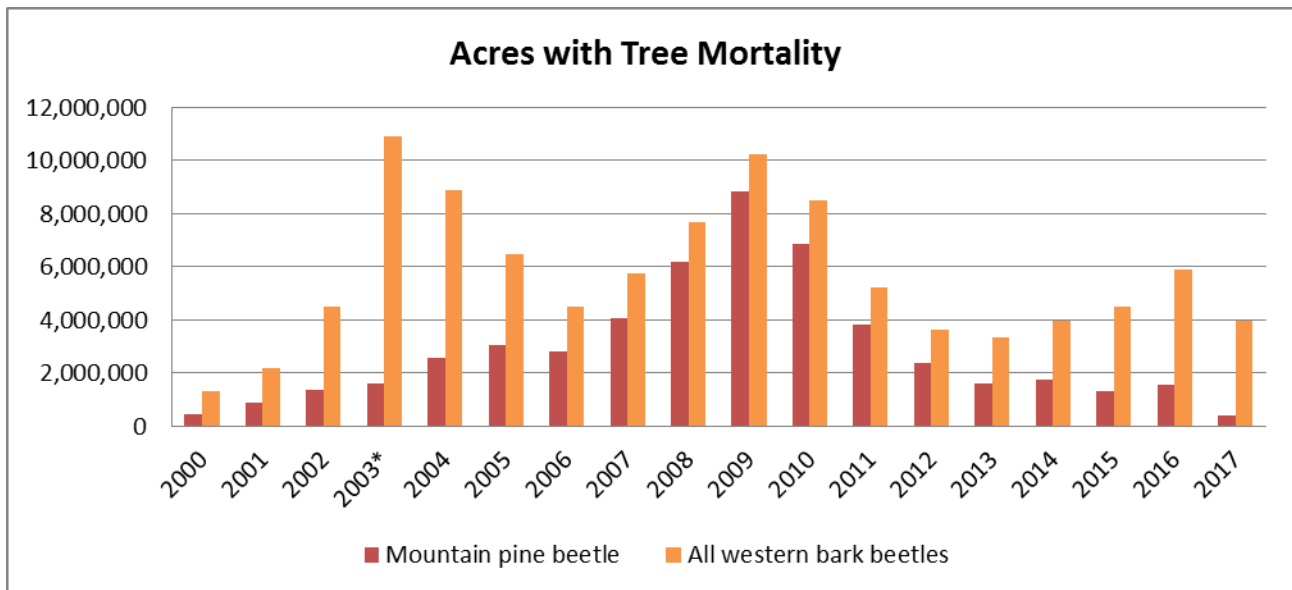
AREAS WITH TREE MORTALITY FROM BARK BEETLES

SUMMARY FOR 2000 – 2017
WESTERN US

18 YEAR FOOTPRINT FOR MOUNTAIN PINE BEETLE = 26.3 M ACRES

18 YEAR FOOTPRINT FOR ALL WESTERN BARK BEETLES = 55.6 M ACRES

Many areas of pest activity overlap from year to year. The footprint area is the cumulative area covered by pest activity with no double counting of acres between years.



*Spike in all western bark beetle acres in 2003 due to increased survey of pinyon pine mortality in the Southwest.

BARK BEETLE SPECIES INCLUDED:

- | | |
|------------------------------|----------------------------|
| California fivespined ips | pinyon ips |
| cedar & cypress bark beetles | red turpentine beetle |
| Douglas-fir beetle | roundheaded pine beetle |
| Douglas-fir engraver | silver fir beetle |
| Douglas-fir pole beetle | southern pine beetle |
| fir engraver | spruce beetle |
| flatheaded borer | tip beetles |
| ips engraver beetles | true fir bark beetles |
| Jeffrey pine beetle | twig beetles |
| lodgepole pine beetle | western balsam bark beetle |
| mountain pine beetle | western cedar bark beetle |
| pine engraver | western pine beetle |

Complexes, insect/disease and other multi damage phenomena that contain a bark beetle component like five-needle pine decline, subalpine fir mortality, true fir pest complex and pinyon pine mortality are also included.

ACRES SUMMARY BY YEAR 2000 – 2017

MOUNTAIN PINE BEETLE

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Arizona		54.9	174.1	131.7	5.7	0.2		127.1	2.8			3.5	2.0	10,243.2	3,948.5	367.0	18.0	0.8
California	5,602.8	71,330.2	16,086.7	25,738.8	51,038.9	40,658.6	60,568.3	56,982.3	52,492.0	91,901.4	90,277.6	89,917.1	187,348.2	136,442.0	224,085.8	595,124.9	1,086,056.6	113,196.7
Colorado	139,513.3	151,475.7	209,757.3	236,094.8	437,003.3	500,651.7	668,418.0	987,388.9	1,155,996.0	1,047,517.3	879,116.8	754,464.5	264,727.4	96,637.3	15,365.3	3,950.1	936.6	877.4
Idaho	118,027.2	170,283.0	336,156.3	343,564.0	549,662.4	512,195.0	298,662.6	391,448.4	1,008,119.2	1,923,854.4	1,940,650.9	783,239.7	708,573.3	298,316.8	295,853.0	159,974.0	96,656.9	28,124.0
Montana	41,168.2	112,412.7	247,216.9	286,032.9	450,104.0	749,141.1	795,120.6	732,886.4	1,766,628.9	3,490,829.4	2,055,313.5	971,313.9	631,117.8	522,805.0	590,577.5	172,621.4	10,787.3	7,979.1
Nebraska								1.0			4.8	302.6	8.6	143.3				8.4
Nevada	1,007.1	1,645.2	3,081.4	2,357.8	3,919.7	2,757.8	3,912.0	8,772.5	25,679.8	40,277.5	19,656.8	16,574.0	3,602.9	1,110.9	3,511.0	2,526.6	3,357.0	2,559.7
New Mexico	822.2	2,300.5	3,786.1			5.5								9.6		97.7		2.3
Oregon	42,943.4	68,993.7	167,930.6	173,295.9	219,060.3	256,163.5	351,041.9	500,640.6	498,313.3	394,530.8	418,036.8	236,844.1	224,890.5	300,178.8	339,045.9	269,869.6	227,802.3	82,357.7
South Dakota	13,552.7	102,699.0	102,840.3	189,803.4	57,638.2	19,327.8	40,013.1	25,700.4	25,179.2	22,450.8	44,176.6	66,212.5	30,430.8	33,351.5	15,620.5	15,064.7	2,105.3	2,919.9
Utah	2,163.4	17,664.3	26,867.1	53,653.5	144,489.7	111,987.3	83,222.5	273,585.0	274,949.3	227,171.5	225,147.8	67,628.0	27,666.6	31,670.6	12,745.5	7,935.0	1,506.8	610.4
Washington	62,313.9	118,835.7	150,343.5	204,883.9	277,426.4	472,207.1	190,055.4	220,844.8	262,873.1	404,256.1	237,391.5	108,504.4	154,244.3	103,636.0	135,254.9	59,605.6	112,350.3	165,990.3
Wyoming	9,427.0	55,239.1	101,606.2	90,382.9	383,879.3	383,400.3	320,664.4	862,156.5	1,106,503.2	1,199,904.3	932,955.8	717,730.8	161,337.3	81,712.7	112,354.6	33,239.6	5,826.5	4,234.8
Grand Total	436,541.1	872,933.9	1,365,846.4	1,605,939.5	2,574,227.8	3,048,495.8	2,811,678.7	4,060,533.9	6,176,736.7	8,842,693.5	6,842,729.0	3,812,735.2	2,393,949.6	1,616,257.5	1,748,362.3	1,320,376.1	1,547,405.9	408,859.1

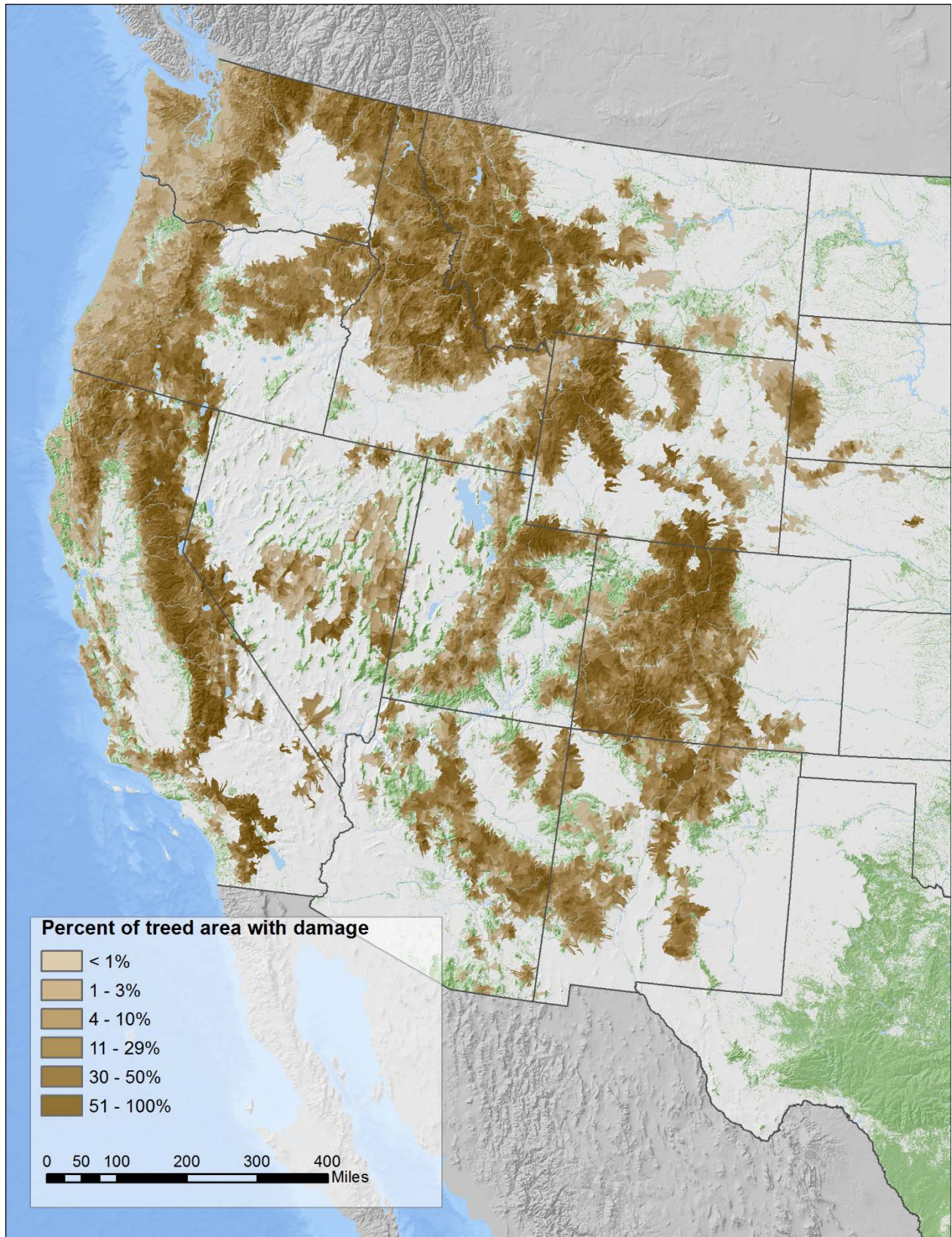
ALL WESTERN BARK BEETLES

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Arizona	16,399.7	88,317.9	517,620.4	1,694,985.2	139,254.6	39,049.5	31,117.2	21,909.5	10,617.0	2,047.2	21,083.9	5,501.8	34,517.6	166,996.2	137,296.0	37,022.0	111,831.1	44,881.1
California	55,047.7	78,263.0	911,818.1	2,902,483.2	1,706,069.3	850,393.1	309,744.6	196,803.5	171,082.0	367,548.6	684,892.6	508,657.9	399,051.0	378,431.5	799,080.3	2,444,497.3	3,968,452.9	2,409,321.8
Colorado	364,039.5	427,892.2	669,735.0	1,836,753.2	1,448,787.0	1,191,418.9	1,149,106.6	1,471,831.9	1,575,774.7	1,367,813.5	1,370,154.6	1,212,201.5	817,981.3	762,019.2	741,514.2	567,987.4	503,602.2	287,555.0
Idaho	313,896.9	396,023.0	588,356.9	650,865.0	1,089,003.3	683,766.4	366,555.5	439,626.1	1,292,156.1	2,084,867.1	2,049,117.5	887,604.4	772,749.4	355,976.0	377,770.5	231,998.9	188,819.8	150,976.7
Montana	104,488.9	224,724.0	395,996.8	440,514.8	669,578.2	1,081,896.7	923,413.5	836,789.8	1,831,838.4	3,563,819.2	2,089,476.5	992,239.3	636,947.3	546,115.6	618,788.6	191,486.3	49,977.0	37,757.9
Nebraska				10,320.5	12,080.2	1,525.3	3,242.5	788.9	7,232.1	168.7	92.1	380.0	8.6	321.3	8,332.4	1,042.0		53.5
Nevada	2,410.9	9,772.9	73,886.1	402,197.7	806,037.5	53,792.5	24,571.4	14,520.7	32,057.3	128,802.5	28,560.1	21,064.4	7,709.6	3,786.4	29,099.2	7,741.0	11,685.8	26,980.3
New Mexico	46,749.8	72,002.4	177,279.0	909,671.1	293,502.1	168,314.1	180,176.9	123,955.3	99,976.5	36,682.5	20,946.1	166,699.6	172,159.4	339,896.3	200,027.7	120,480.0	104,198.4	83,644.7
North Dakota															36.0			4.0
Oregon	107,835.7	118,187.2	339,045.6	550,683.0	670,862.5	467,785.7	453,669.8	593,373.7	614,447.3	448,317.1	536,968.5	301,418.0	258,876.9	344,271.4	410,250.1	468,780.9	533,362.5	479,107.5
South Dakota	13,598.2	140,063.9	117,576.0	238,196.2	101,482.1	23,860.7	41,245.6	27,388.0	26,471.8	23,291.5	44,636.4	66,239.6	30,430.8	33,463.5	15,716.2	15,161.5	2,272.5	3,671.8
Utah	57,956.7	140,163.9	105,441.4	363,830.0	565,237.3	325,397.9	122,789.8	434,801.5	358,634.1	271,314.7	279,134.1	98,128.5	56,951.1	100,326.2	147,409.9	145,916.5	146,487.2	130,120.2
Washington	149,800.9	289,287.2	329,942.0	630,829.1	719,644.2	850,307.5	419,422.7	541,105.7	493,781.5	664,584.2	361,599.0	180,692.9	263,289.6	160,183.7	217,218.0	115,154.9	222,987.7	283,027.1
Wyoming	89,214.0	210,739.6	272,549.0	290,766.3	668,717.0	742,073.6	494,457.9	1,070,495.7	1,189,504.5	1,256,845.9	1,015,098.4	800,404.6	204,847.6	144,622.4	246,451.3	129,451.7	64,253.3	48,353.2
Grand Total	1,321,439.0	2,195,437.0	4,499,246.4	10,922,095.2	8,890,255.4	6,479,581.8	4,519,514.0	5,773,390.1	7,703,573.4	10,216,102.5	8,501,759.7	5,241,232.5	3,655,520.3	3,336,409.7	3,948,990.4	4,476,720.4	5,907,987.7	3,985,427.0

Note: Numbers are for each year's "current" damage and are not cumulative from year to year. Numbers should not be added across years because there may be significant overlap from year to year. Numbers are from the National Insect & Disease Survey database.

AREA WITH TREE MORTALITY FROM ALL WESTERN BARK BEETLES 2000 – 2017

PERCENT OF TREAED AREA WITH DAMAGE BY SUBWATERSHEDS (6TH LEVEL HUCS)



AREA WITH TREE MORTALITY FROM MOUNTAIN PINE BEETLE 2000 – 2017

PERCENT OF TREADED AREA WITH DAMAGE BY SUBWATERSHEDS (6TH LEVEL HUCS)

