

Potential Future Harvests for JDSF under Option A and JAG Recommendations¹

Cal Fire staff recently published a projection of potential harvests in JDSF with recommendations of the JAG incorporated in the Management Plan.²

Figures presented in the following pages (Section I) compare this latest projection (Matrix Forestry IV or MF IV³) with the Option A projection for the 2008 JDSF Management.

The latest Cal Fire projection used the same data bases and Cryptos program as used for Option A, but the parameters that govern the projection differed significantly. The different parameters caused harvests under JAG recommendations to be substantially lower absolutely (Figure 2) and as percentages of growth and percentages of inventories (Figure 4 and Figure 5).

Growth for MF IV is significantly higher than under Option A for most of the time (Figure 3). Given higher growth and lower harvests, forest inventories grow significantly faster in MF IV than in Option A (Figure 6).

A fundamental question that needs answering is why the latest projection shows much lower levels of “sustainable harvest” under JAG recommendations, when both growth and inventories are higher? The projected harvests are lower because lower percentages of growth and inventories are harvested, but why is the case? The JAG made no recommendations with respect to these percentages. They would seem to be policy choices, not modeling choices or results. I would think that the constraint for sustainable harvests would be that harvests not exceed harvestable growth, but in MF IV, harvests appear to be well below harvestable growth.

Section II presents an alternative approach to estimating the effects of JAG recommendations on future harvest potential. The alternative approach takes the Option A estimates as its starting points. It then calculates the incremental effects of the JAG allocation and silvicultural recommendations. The future harvest levels are estimated by adding (or subtracting) the incremental effects in each time period from the Option A estimates. Table 1 summarizes the results. Following tables show the components of the estimate.

The alternative approach yields a radically different estimate of the effects of the JAG recommendations (Table 1). For the first 50 years, the estimated average reduction in harvest levels is less than 1 mbf/year, compared to 12 mbf/year projected in MF IV.

Admittedly, the estimates of alternative approach are rough approximations, but even substantial errors would not significantly change the gap between the two estimates.

No conclusions should be reached based on the MF IV projections until further review and analysis is done that explains the gap between the two sets of estimates.

¹ The analysis contained herein has not been reviewed by Cal Fire staff nor has it been endorsed by the JAG. The conclusions expressed are those of the author and do not necessarily reflect those of the JAG.

² Helge Eng and Jeff Liddy, *An analysis of Sustainable Harvest Levels Achievable Under the Jackson Demonstration State Forest Advisory Group February 2011 Recommendations*, January 11, 2011.

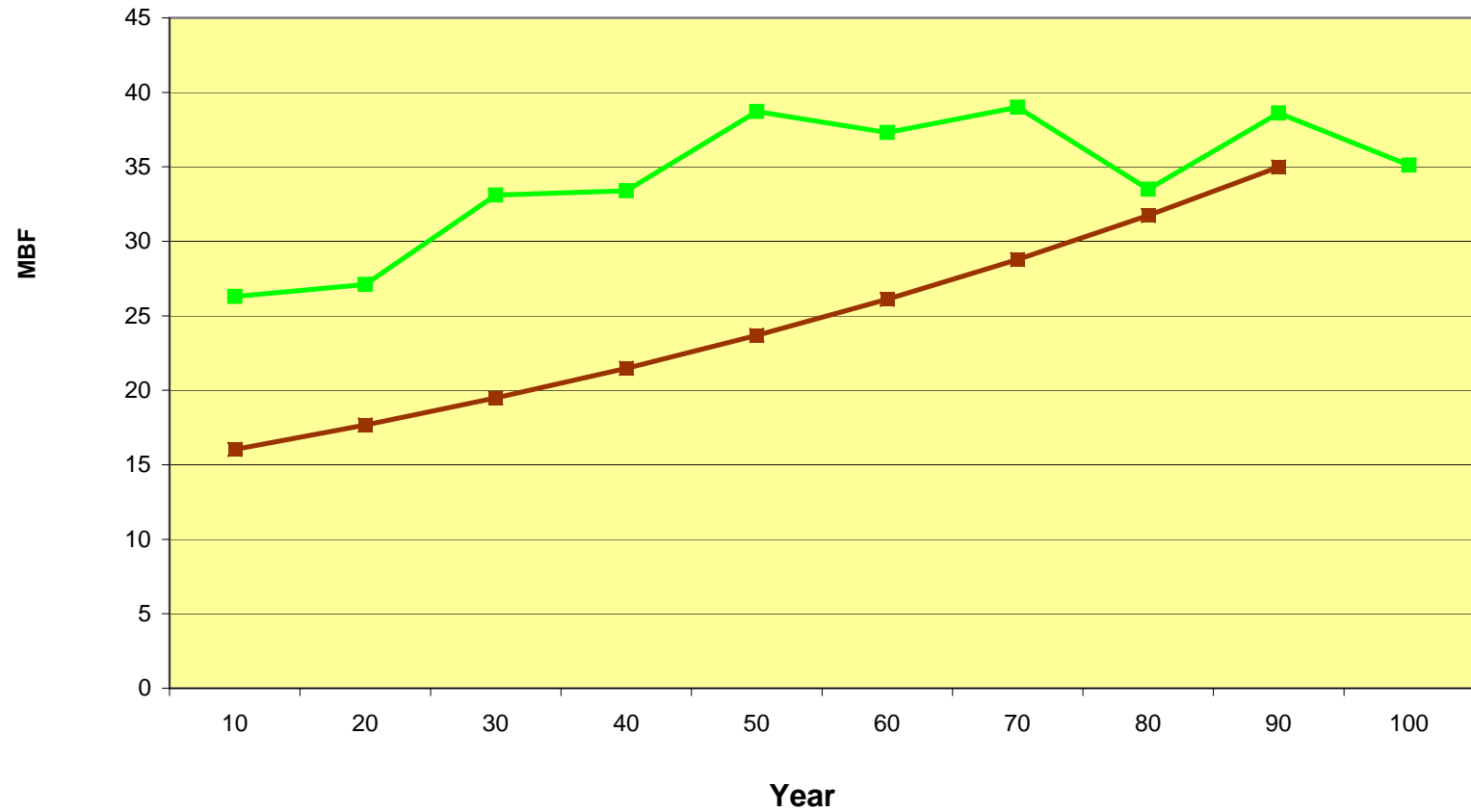
³ The projection is termed Matrix IV because it is the fourth set of projections reflecting JAG recommendations done by Cal Fire.

The JAG allocation recommendations were modest in scale and the silvicultural recommendations were not intended to and should not significantly reduce production in areas managed primarily for production. Given these considerations, the alternative approach would seem to more accurately reflect the incremental effects of the JAG recommendations.

Finally, it is worth noting that sustainable production in JDSF may well be significantly less than projected by the Option A analysis. In my considered opinion, if this is so, it would be due to defects in the Option A analysis that cause it to be an overestimate, not because of effects of JAG recommendations.

Section I: Figures Comparing MF IV and Option A Projections

Figure 1: Harvest per Year



Option A MF IV

Figure 2: MF IV Harvest as a percent of Option A Harvest

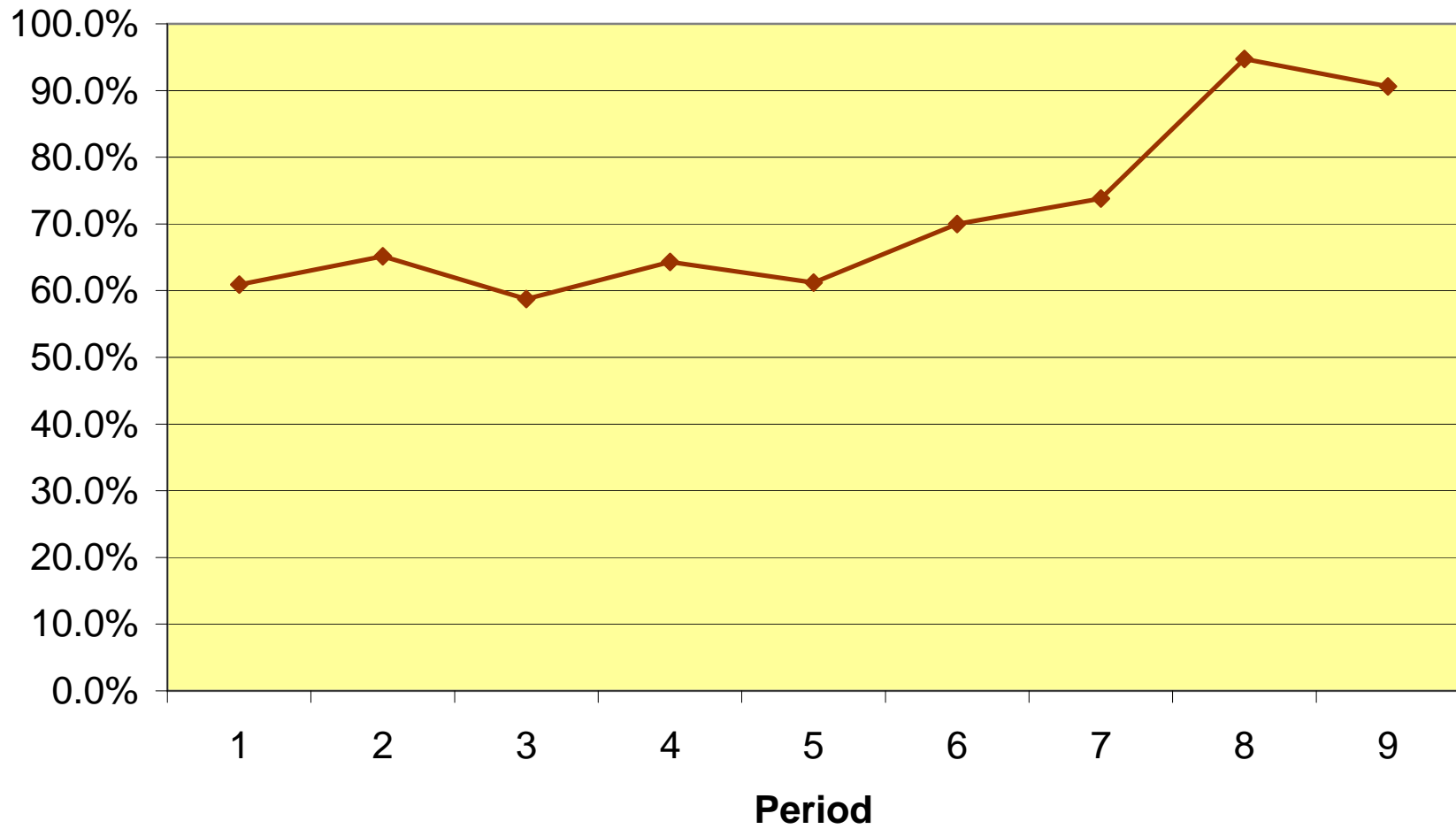


Figure 3: MF IV and Option A Annual Growth

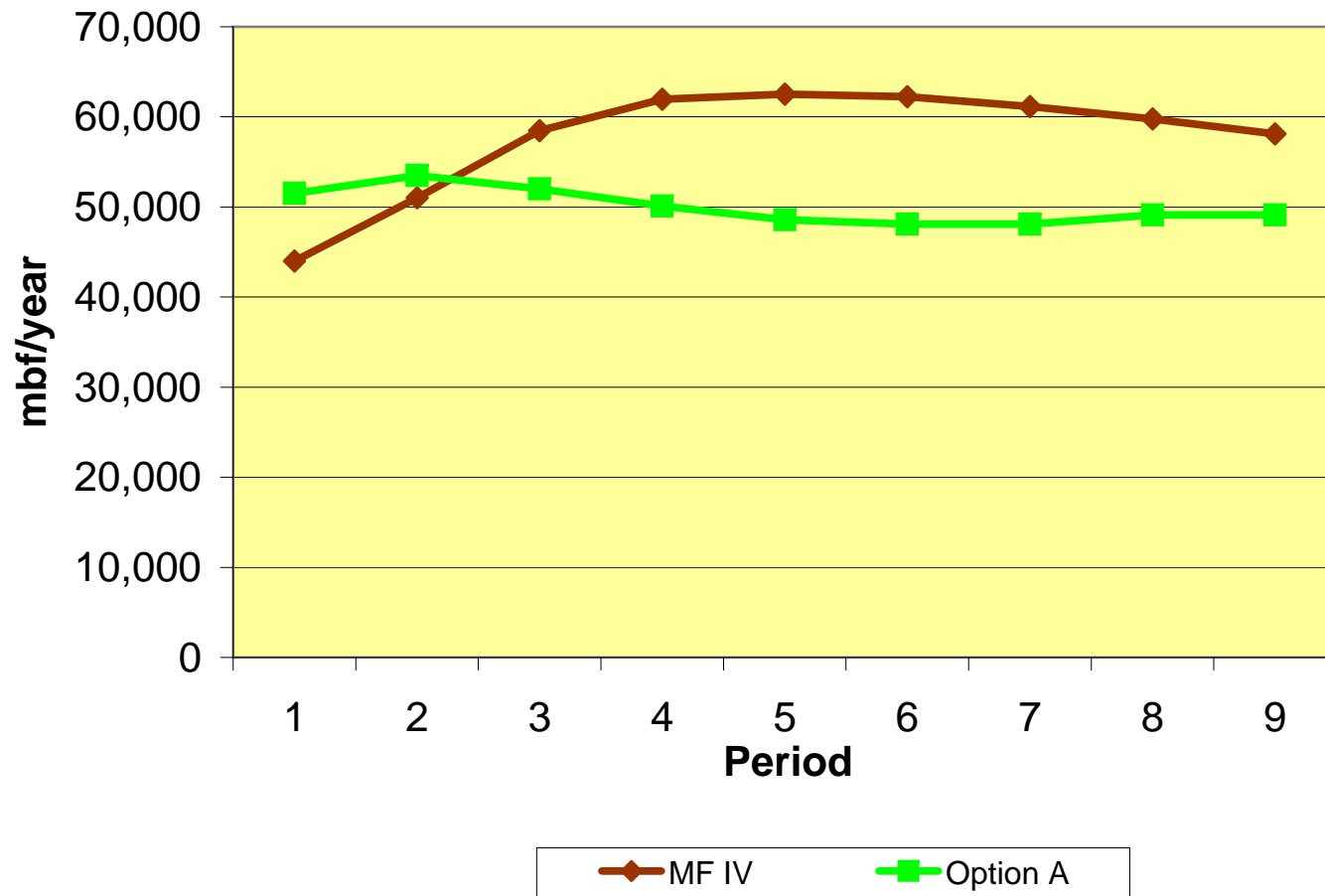


Figure 4: Harvest as a percent of Growth

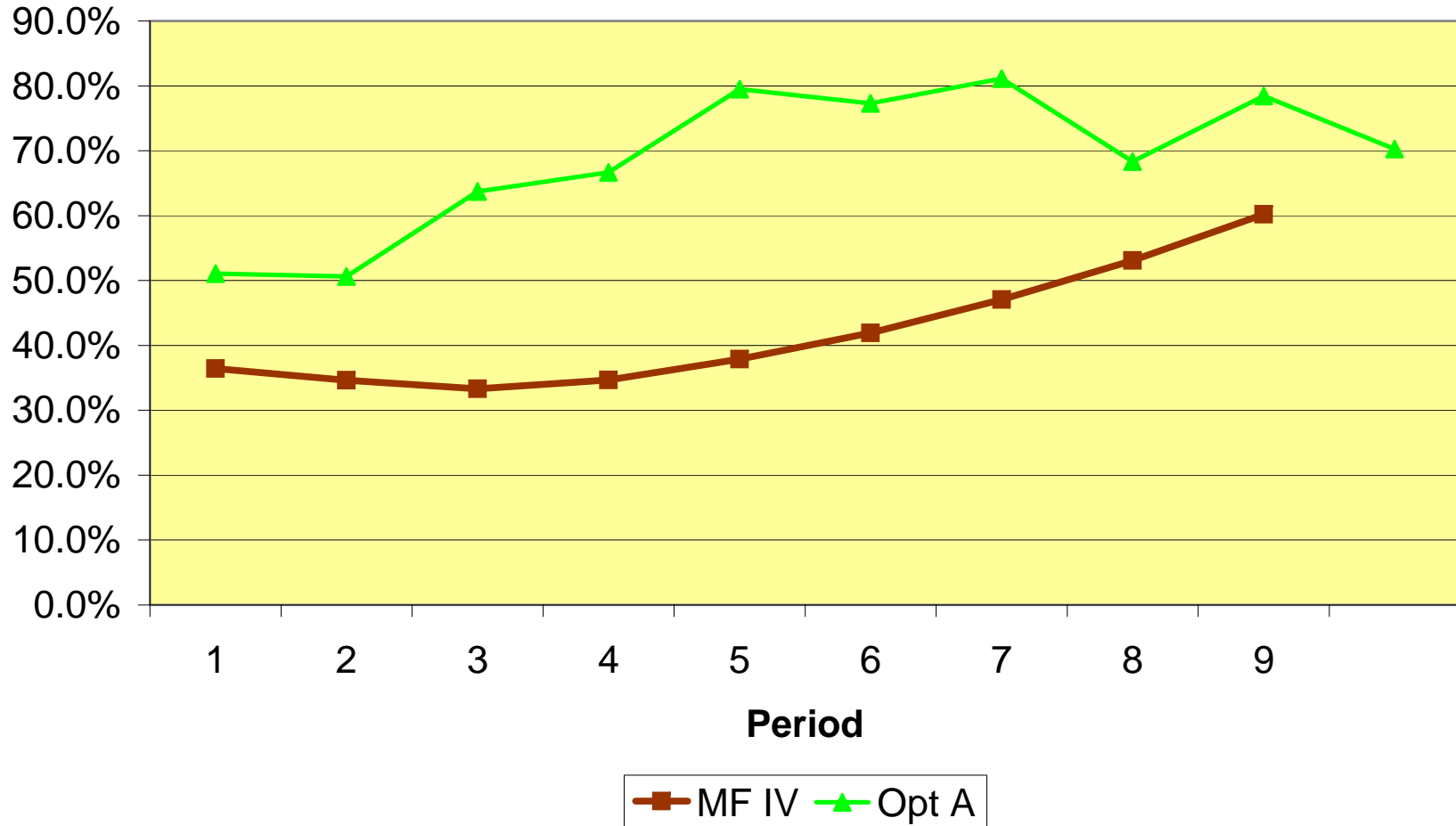


Figure 5: Decade Harvest as percent of Inventory

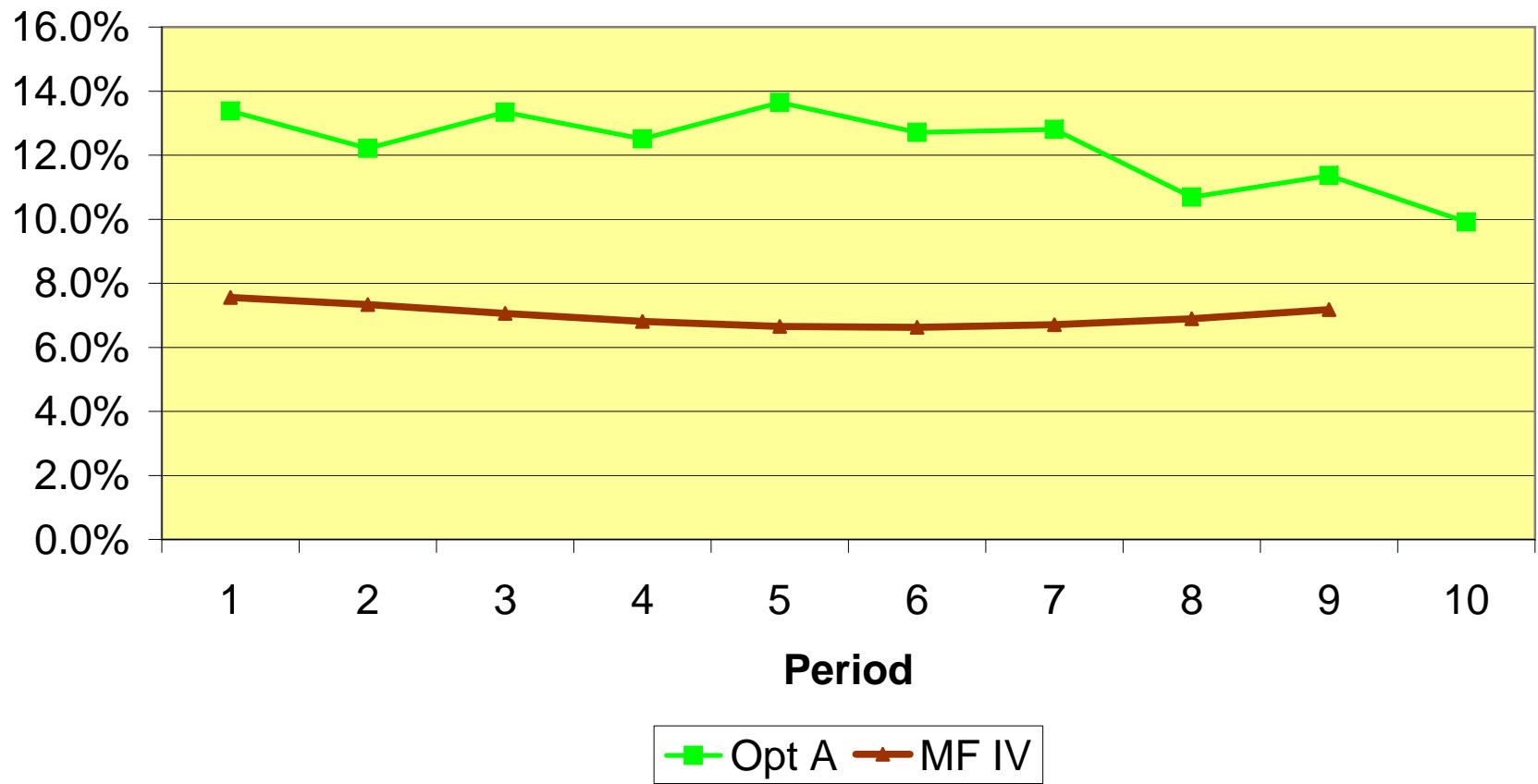
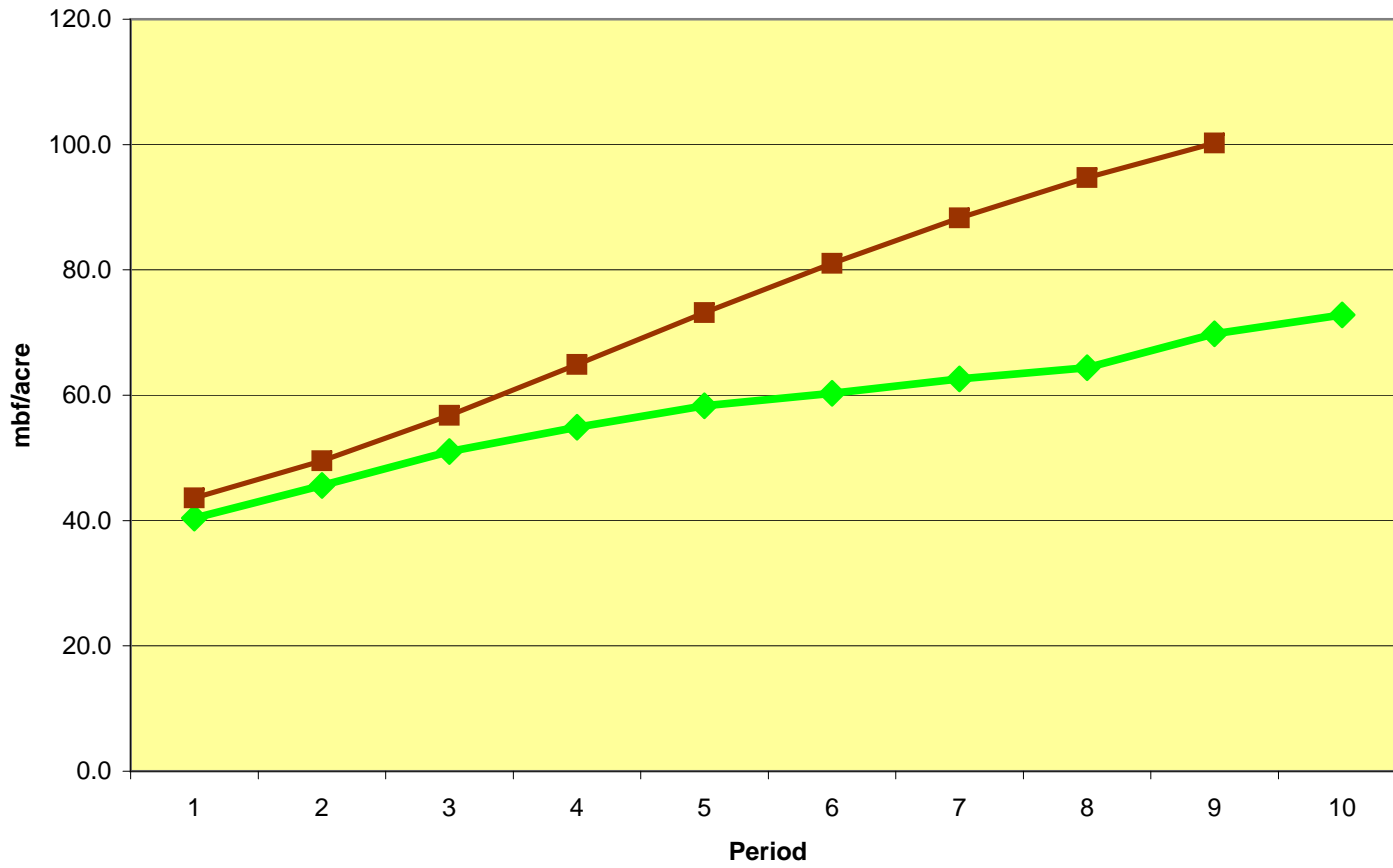


Figure 6: Inventory per Acre



Option A MF IV

**Section II: Summary of Effects of JAG
Recommendations on Future Potential Harvests
in JDSF – An Alternative Analysis**

Summary Tables of Effects of JAG Recommendations on Future Potential Harvests in JDSF – An Alternative Analysis

Below are the tables and figures that summarize an alternative analysis of the effects of JAG recommendations on Future Potential Harvests in JDSF. The full analysis with text is in a separate document.¹ The analysis used the JDSF 2008 Management Plan Option A harvest projections to estimate the incremental effects of JAG allocation and silviculture recommendations on future harvest potentials. The incremental effects are then added to (or subtracted from) the Option A estimates to obtain estimates of harvest levels under the JAG recommendations.

Table 1: Option A-Based Estimate of the Effects on Future Harvest Potential of Changes Recommended by JAG			
		Changes in Potential Annual Harvest (board feet)	
	Acres	50-year Average	100-year Average
Added LSDAs (1)	944	-251,898	-250,587
Added OFDAs (2)	2,274	-321,647	-463,636
Added Reserves	2,102	-1,089,604	-1,185,234
Matrix Silviculture	23,000	816,612	250,349
Total Changes		-846,537	-1,649,108
2008 Option A Average Harvest		31,769,000	37,693,000
Average Harvest with JAG Recommendations		30,922,463	36,043,892
Notes: (1) LSDA: Late Seral Development Area (2) OFDA: Old Forest Development Area			

The estimates in Table 1 include all allocation changes from the 2008 Management Plan, including those that were initiated in a negotiated settlement and later endorsed by the JAG. The harvest potential with JAG recommendations is smaller but relatively close to the JAG Option A projections for both the 40-year and 100-year periods.

Figure 1 presents Table 1 graphically.

¹ Vince Taylor, *Analysis of Effects of JAG Recommendations on Future Potential Harvests in JDSF*, February 24, 2011.

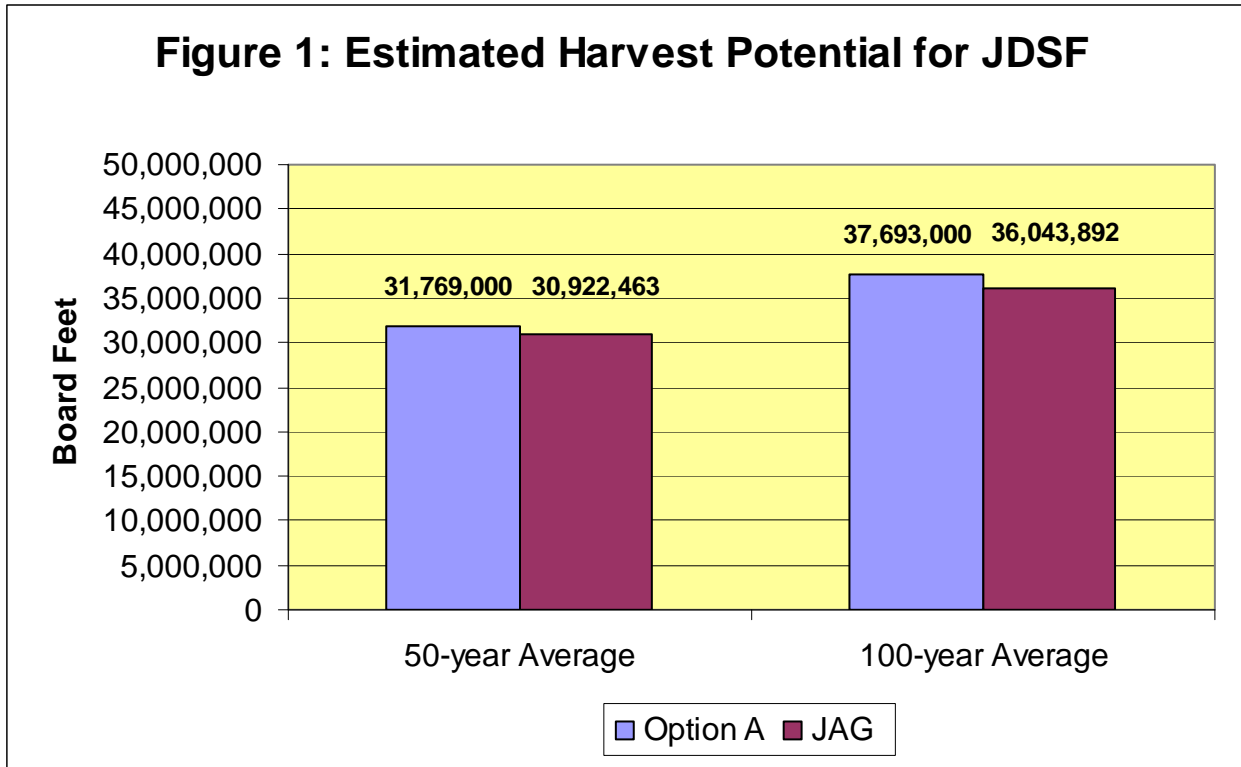


Table 4: Option A-Based Estimate of the Effects on Future Harvests of LSDA Acres Added after the 2008 Management

LSDA Acres Added by JAG	Reduction in 50-year average annual harvest potential per acre	50-year annual average potential harvest loss (bf)	Reduction in 100-year average annual harvest potential per acre	Reduction in 100-year annual average potential harvest (bf)
215	301	-64,691	236	-50,734
LSDA Acres Added by Negotiated Settlement	Reduction in average annual harvest potential per acre: years 20-50	50-year annual average potential harvest loss (bf)(Note 2)	Reduction in 100-year average annual harvest potential per acre (Note 2)	Reduction in 100-year annual average potential harvest (bf) (Note 2)
729	428	-187,207	274	-199,853
Totals				
944		-251,898		-250,587

Notes: Estimates of loss in Harvest potential are from the 2008 JDSF Option A analysis. The loss is calculated as the difference between harvest potentials of OFSZ acres (renamed OFDA acres by JAG) and LSDA acres. This assumes all acres shifted to LSD were average OFSZ acres.

Note 2: Initial harvests on these added acres were done in 2010 and won't be re-entered for 20 years. These acres will not contribute to production potential in the first 20 years, and this is reflected in the calculation by setting the effect of the allocation change to zero for the first 20 years.

Table 5: Option A-Based Estimate of the Effects on Future Harvests of OFDA Acres Added from 2008 MP (1)		
	Annual Harvest per acre	
	50-year Average	100-year Average
OFDA	682	695
Option A "Matrix" Average	824	899
OFDA – Forest Average	-141	-204
Added OFDA Acres	2,274	2,274
Production Change from added OFDA acres (bf per year)	-321,647	-463,636
<p>(1) The future harvests projected for a specific silvicultural category were multiplied by an “inventory adjustment factor” equal to the forest average inventory per acre divided by /the category initial inventory per acre. This compensates for differing initial inventories per acre in different categories.</p>		

Table 6: Option A-Based Estimates of the Loss in Future Harvests from Additions to Reserves after the 2008 Management Plan

	Acres	Notes	50-year average annual harvest potential per acre	Reserves 50-year annual average potential harvest (bf)	100-year average annual harvest potential per acre	Reserves 100-year annual average potential harvest (bf)
Reserves Added by JAG						
Indian Springs Fire Study (includes 106 acres of tanoak study area)	107	1	824	88,129	899	96,167
Bob's Woods Meadow	8		0			
Jughandle Pine/Cypress Extension	1,156					
Redwood Douglas Fir Acres	792	2	824	652,186	899	711,668
WLPZ Acres	108	3	381	41,084	381	41,084
Tanoak Study Reserves	671	4	165	110,532	180	120,613
Total Acres and Harvest Loss from JAG Reserve Additions	1,942			-891,931		-969,533
Reserves Added by Negotiated Settlement						
Camp 3 Control/Reserve	160	5	1,235	197,673	1,348	215,702
Acres and Harvest Loss from Negotiated Settlement Reserve Addition	160			-197,673		-215,702
Total Acres and Harvest Loss from All Reserve Additions	2,102			-1,089,604		-1,185,234
Notes:						
1. Average Option A Matrix productivity.						
2. Average Option A Matrix productivity.						
3. WLPZ acres; average Option A Late Seral (includes WLPZ) productivity.						
4. Tanoak dominated stands; use 20% of Option A Matrix productivity.						
5. High site, use 150% of Option A Matrix Productivity						

Figure 6: Matrix Acres Annual Potential Harvest -- Matrix Silviculture Compared to Option A Silviculture Mix

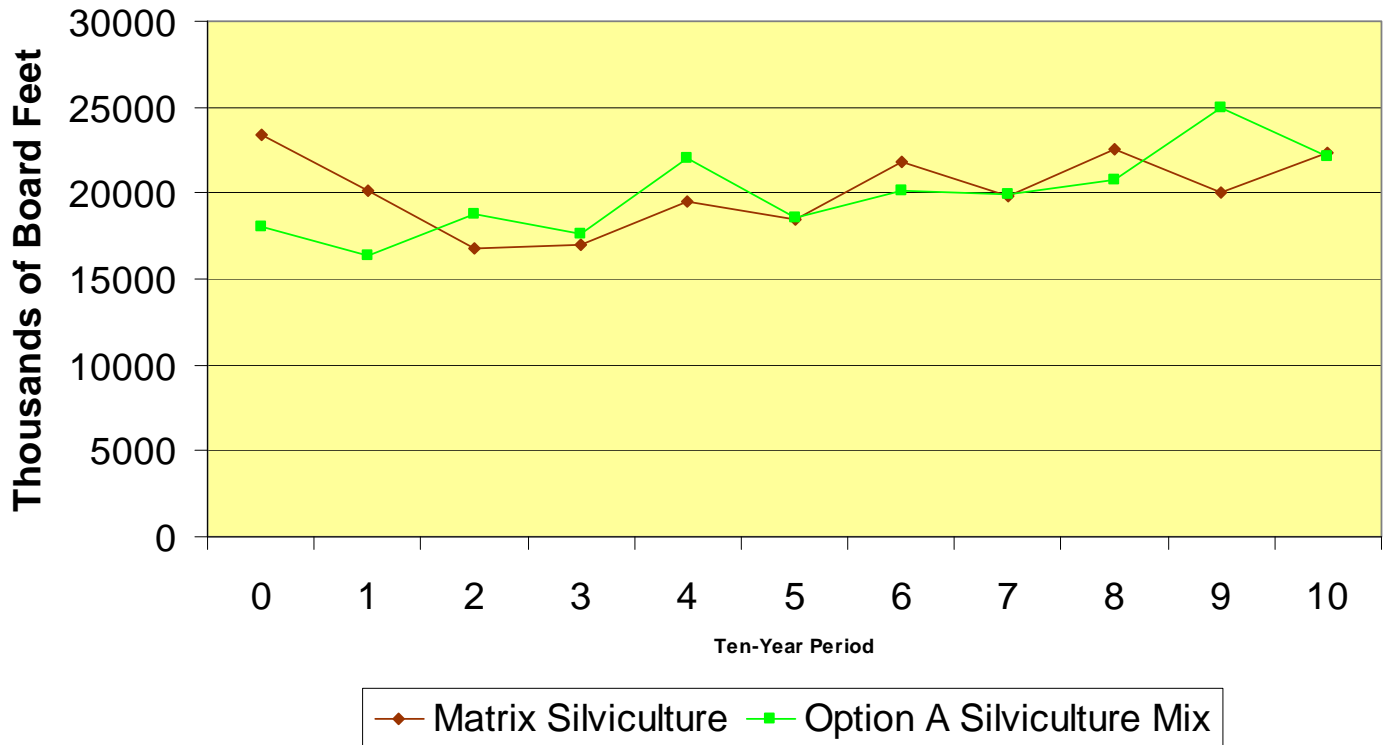


Table 7														
Matrix Silviculture Conifer Harvest on JAG Matrix Acres (mbf per year)														
Prescription Group	Adjusted Acres	Period											All period Average	
		0	1	2	3	4	Period 0-4 Average	5	6	7	8	9		10
Sel1	23000	23391	20163	16763	17028	19473	19364	18513	21836	19848	22574	20068	22349	20182
2008 Option A Mix Conifer Harvest on JAG Matrix Acres (mbf per year)														
Prescription Group	Adjusted Acres	Period											All period Average	
		0	1	2	3	4	Period 0-4 Average	5	6	7	8	9		10
Sel1	5889	6555	5650	4697	4772	5457	5426	5188	6119	5562	6326	5624	6263	5656
Sel2	5013	2707	4461	4301	3267	4676	3882	4028	5595	4472	6173	5030	5937	4604
Gsel1	2115	893	1414	1490	1422	1554	1355	1937	1984	2425	2386	2880	2225	1874
Gsel2	2119	619	974	1323	1611	1878	1281	2196	2395	2739	2862	3233	2431	2024
Selection Total	15136	10773	12500	11812	11072	13565	11944	13349	16093	15198	17747	16766	16856	14157
2Age	1716	1245	844	934	1192	1673	1820	582	373	1214	860	2045	501	1334
CLCT	539	480	530	519	662	871	905	114	107	270	268	442	647	580
CLCT-Thin	659	213	180	825	760	742	861	796	781	143	129	407	596	651
ST	244	84	242	250	286	357	428	89	50	90	143	161	602	298
ST-Thin	314	30	110	171	407	449	489	387	470	124	71	104	603	382
VR1	1147	2317	822	604	770	1334	1122	541	216	1119	525	1713	651	943
VR1-Thin	1056	571	254	1741	985	970	1119	1111	988	298	199	846	579	874
VR2	1132	1751	636	474	605	1218	950	616	259	1139	562	1659	587	870
VR2-Thin	1056	571	254	1406	835	839	958	968	822	337	229	862	515	775
Even-Age Total	7864	7263	3871	6924	6502	8453	6603	5203	4068	4734	2985	8238	5282	5775
All	23000	18036	16371	18735	17574	22018	18547	18552	20161	19932	20732	25004	22137	19932
JAG Minus Option A		5355	3792	-1972	-547	-2545	817	-39	1675	-83	1842	-4936	212	250