

**COST-BENEFIT ANALYSIS**

**Categorical Exclusions for Limited Timber Harvest  
Notice of Final Interim Directive**

**USDA Forest Service**

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# **COST-BENEFIT ANALYSIS**

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# **COST-BENEFIT ANALYSIS**

## **Categorical Exclusions for Limited Timber Harvest**

### **Executive Summary**

This analysis identifies the costs and benefits associated with three revisions to Forest Service Handbook 1909.15, Chapter 30, which contains directives for implementing the National Environmental Policy Act and Council on Environmental Quality (CEQ) regulations. Chapter 30 addresses actions categorically excluded from requirements to prepare environmental disclosure documents.

The current Forest Service NEPA procedures require preparation of an environmental assessment (EA) for most timber harvest projects using commercial timber sales. This analysis compares the costs and benefits associated with the current practice of preparing EA's for limited timber harvest projects with three new categorical exclusions (CE's).

The primary economic effects of the three new CE's for limited timber harvest are changes in costs of conducting environmental analysis and preparing NEPA documents. The three new CE's would reduce agency costs by reducing the documentation requirements for certain small timber sale and timber harvest projects.

Effects on local economies and small business entities are expected to be nearly the same using either an EA or CE for small timber sale projects. There is potential for an increase in small timber harvest projects since they would be faster and cheaper to prepare. However, timber sale volume and receipts under the three new CE's are not expected to vary significantly from preparing EA's for the same timber sale projects.

Based on the quantified costs, the average annual cost savings of the three new CE's are estimated to be \$6.4 million compared with continued use of EA's for small timber sale projects. The discounted value of the cost savings over a 10-year period is estimated to be \$47.5 million (see Tables 1 and 5). This quantitative assessment indicates a cost savings for using CE's for limited timber harvests for the agency.

In addition to the quantified analysis, numerous non-quantifiable benefits are expected to result from the Interim directive. As summarized in Table 1, the three new CE's will result in timely environmental analysis and documentation with the potential for improved salvage product quality, more timely action to prevent the spread of insects and disease, and more timely fuel hazard reduction. This resultant improvement in forest health has value beyond the estimated cost savings.

Other benefits such as improving salvage product quality and slowing the spread of insect and disease outbreaks due to shorter preparation time for the environmental documents were not quantified but also indicate a positive effect of using the three new CE's instead of preparing EA's.

**Table 1. Summary of Costs and Benefits of the Categorical Exclusions for Limited Timber Harvest compared to the Environmental Assessment**

<b>Category</b>	<b>Baseline (EA's)</b>	<b>Limited Timber Harvest CE's</b>
Agency costs associated with NEPA requirements (For actual costs see Table 5)	Annual average cost is estimated at \$8.3 million; ten-year total discounted cost at \$62.0 million.	Annual average cost is estimated at \$1.95 million with an annual savings of \$6.4 million over EA's. Ten-year total discounted cost is \$14.5 million, representing a savings of \$47.6 million.
Time for completing environmental analysis and documentation	An EA typically takes 4 to 6 months or longer to complete environmental analysis and documentation.	A CE usually takes one month or less to complete, representing a timesavings of 3 to 5 months. The three new CE's are intended to improve efficiency in planning activities that normally do not have significant environmental effects.
Timber volume and value	EA's could affect the quantity and quality of salvage timber sold due to taking longer time to complete analysis and documentation. Longer planning times can result in more decay before salvage products are sold, and lower product values.	Implementation of the three new CE's could affect the quantity and quality of salvage timber sold due to a more expedited planning process. Shorter planning times can result in less decay before salvage products are sold, and higher product values. In 1998, green timber harvests of 70 acres and less and salvage harvests of 250 acres or less under CE 4 accounted for less than 2% of the total timber volume harvested. The agency does not expect the three new CE's to cause a measurable change in the volume or value of timber harvested in the future.
Small Business	The number of small timber sales offered can be affected if the agency is spending longer time in sale preparation through the use of EA's.	Some increase in the number of small timber sales offered can be expected if the agency is able to spend less time and money in sale preparation through the use of the three new CE's.
Forest Health	The average preparation time for an EA is four to six months, enough time for some forest pests to go through two life cycles. Sanitation treatments taking this long to prepare will never get ahead of some insect outbreaks.	Using a CE to prepare a sanitation harvest would facilitate treatment of insect outbreaks before they spread, thus improving agency response to insect outbreaks.
Environmental Effects	No environmental effects are anticipated.	No environmental effects are anticipated due to the administrative nature of the changes.

# **COST-BENEFIT ANALYSIS**

## **Categorical Exclusions for Limited Timber Harvest**

### **Introduction**

The CEQ regulations at 40 CFR 1507.3 provide that agencies may, after notice and comment, adopt categories of actions that do not normally have significant impacts on the human environment and do not require preparation of an environmental assessment (EA) or an environmental impact statement (EIS). Current Forest Service procedures for complying with and implementing the National Environmental Policy Act (NEPA) are set out in Forest Service Handbook (FSH) 1909.15. Chapter 30 of FSH 1909.15 establishes two types of categorical exclusions (CE's). The first, set out at section 31.1, consists of categories of actions that are so routine and limited that a record is not required. The second type, set out at section 31.2, consists of categories of routine actions that require a Decision Memo documenting the rationale for not preparing an EA or an EIS.

The Forest Service is adding three new categories to the existing CE's in Chapter 30 of Forest Service Handbook 1909.15, which contains directives for implementing Council on Environmental Quality (CEQ) regulations.

This analysis examines the economic costs and benefits associated with the three new CE's for limited timber harvest.

### **Action**

The Forest Service is adding three new CE's to its Environmental Policy and Procedures Handbook (FSH 1909.15). These categories would appear in section 31.2, Categories of Actions for Which a Project or Case File and Decision Memo Are Required, and would provide specific, narrow CE's for limited timber harvest.

The three new limited timber harvest categories include: (1) removal of live trees up to a total of 70 acres requiring no more than ½ mile of temporary road construction, (2) salvage of dead and/or dying trees up to 250 acres, requiring no more than ½ mile of temporary road construction, and (3) commercial and non-commercial sanitation harvest of trees to control insects or disease not to exceed 250 acres, requiring no more than ½ mile of temporary road construction, including removal of infested/infected trees and adjacent live uninfested/uninfected trees as determined necessary to control the spread of insects or disease. These activities were all included in the previous Categorical Exclusion 4 (CE 4) in Forest Service Handbook 1909.15, Chapter 30, section 31.2. However, the three new CE's are much more limited by size and the type of activity allowed, based on 2001 timber harvest review data.

It should be noted that the salvage and the sanitation categories include essentially the same actions but are for different purposes. Both of these categories of actions involve removal of dead or dying trees. The agency believes it will be less confusing to field personnel and the public if these activities are described in separate categories. For example, the sanitation category provides for removal of adjacent live uninfested/uninfected trees as determined necessary to control the spread of insects or disease, where the salvage category does not. Since

the actions and environmental effects are essentially the same, the agency did not distinguish between sanitation and salvage harvests when collecting and reviewing historical harvest data. Accordingly, the economic analyses for these two categories were done together.

Having reconsidered the basis for establishing categorical exclusions for small timber harvests, the Forest Service now believes that acreage is a more useful measure of project magnitude than timber volume. Acreage is easily delineated and quantified when developing a proposal, while estimating timber volume within a given acreage may vary considerably based on statistical samples, merchantability standards, and condition of the timber.

The scope of the three new categories is quite limited in comparison to the scope of the 154 projects examined in the 2001 review, each of which had no significant environmental effects. Consequently, the level of effects associated with these three new categories would clearly be below the level of significant environmental effects. Green tree harvests monitored in the 2001 review averaged 70 acres in size while sanitation and salvage harvests averaged 253 acres in size. The 2001 review data indicates that projects that would have qualified under CE 4 built an average of ½ mile of temporary road. Therefore, the agency has selected ½ mile for the upper limit of temporary road construction. The Forest Service believes the limits included would allow accomplishment of most routine activities designed to meet silvicultural objectives.

Any timber harvest performed using the three new categorical exclusions must meet all applicable Federal, State, and local laws, as well as land and resource management plan standards and guidelines. It is the combination of these standards and guidelines, the limited scope of the three new categorical exclusions, the results of the 2001 review, and the agency's long experience dealing with low-impact silvicultural treatments that leads the agency to conclude that implementation of the three new categories would not result in cumulatively significant effects on the human environment.

### **Need for the Action**

In 1992, the Forest Service revised its National Environmental Protection Act (NEPA) procedures (57 FR 43180-43212). The revised procedures included a list of CE's (Chapter 30 of FSH 1909.15). These CE's enable a project to be designed and implemented without extensive environmental documentation.

On September 18, 1998, a lawsuit was filed against the Forest Service arguing that the 1992 CE's were improperly promulgated. On September 28, 1999, the United States District Court for the Southern District of Illinois found that the CE's were properly promulgated. However, the court found insufficient evidence to support the agency's decision to set the volume limits in CE 4 at 250,000 board feet of merchantable wood products for timber harvest and 1,000,000 board feet of merchantable wood products for salvage. The court declared CE 4 in section 31.2 of Chapter 30 FSH 1909.15 null and void and enjoined the agency from its further use.

Most timber harvest projects pending implementation that were originally excluded under CE 4 were subsequently reconsidered, analyzed, and documented in an environmental assessment. However, field offices reported that the level of documentation and analysis required for these environmental assessments forced agency personnel to expend undue energy and funding on minor projects and to extend timeframes for completing minor timber harvesting projects.

In response to field concerns during the fall of 2001, the Associate Deputy Chief for National Forest System requested field units to monitor selected timber harvests that would have qualified under former CE 4. Data was collected on 154 randomly selected timber harvests, which were similar in scope to those that would be covered by the three new CE's in this notice. The review's objective was to determine if these harvests did or did not have significant effects on the human environment. None of the 154 projects reviewed were determined to have had a significant effect on the human environment. The agency's proposal is based on this review and the agency's extensive experience with small timber harvest projects.

## **Purpose of the Analysis**

This analysis identifies and compares the costs and benefits associated with the current required NEPA procedures - EA's on these limited timber harvest projects - with the three new CE's. It provides quantitative estimates of potential savings to the agency for environmental analysis and documentation for limited timber harvest projects. It also discusses some potential beneficial effects that are not readily quantified in financial terms.

The analysis and report were prepared according to the following Office of Management and Budget (OMB) direction:

1. Memorandum M-00-08 Guidelines to Standardize Measures of Costs and Benefits and the Format of Accounting Statements,
2. Office of Information and Regulatory Affairs January 11, 1996, guidance on "Economic Analysis of Federal Regulations under Executive Order 12866."

## **Economic Analysis**

This analysis focuses on comparing the Forest Service's financial costs for preparing an EA and costs associated with doing a CE for limited timber harvest projects. Cost changes are measured in terms of time and budget expenditures. Although they are not the purpose of establishing these three new CE's, potential benefits in terms of forest health, timber supply for small businesses, and returns to the Treasury are possible. Many of these beneficial effects are not readily quantified in financial terms. These effects will also be discussed.

## **Quantified Effects**

### **General Assumptions**

This analysis compares quantitative differences between the costs involved in doing an EA versus the costs of categorically excluding a project. The baseline, no action alternative is assumed to be the continuation of doing EA's for small timber sale projects. Potential effects under the three new CE's are estimated in comparison to the no action alternative.

In an effort to assess the impacts of the 1999 court action on small timber sale projects, the Forest Service collected information on the use of categorically excluded timber harvests for fiscal year 1998. This 1998 timber sale information is used for estimating the economic effects

of the three new CE's for limited timber harvest projects and is summarized in Table 2. In 1998, of the 306 projects that relied on CE 4, 176 (58%) of the total timber harvesting projects were salvage sales of 250 acres or less and 77 (25%) of the total timber harvesting projects were green sales of 70 acres or less. All timber sales for fiscal year (FY) 1998 that were categorically excluded represented approximately 3% of the total timber sale program volume for that year<sup>1</sup>. Categorically excluded green sales of 70 acres and less and salvage sales of 250 acres or less constituted less than 2% of the total timber sale program volume for 1998<sup>2</sup>.

The agency does not expect the three new CE's to cause a measurable change in the volume or value of timber harvested in the future.

## Costs

The analysis includes annual expenses for interdisciplinary teams working on scoping, environmental analysis, and documentation. There is a significant difference in the cost, time, and workload associated with an EA for a small timber sale and a CE for the same project. An EA typically involves 3-4 members of an interdisciplinary team to develop alternatives, conduct analysis and prepare the documentation. Interdisciplinary teams conducting environmental analyses generally consist of journey-level resource specialists of similar pay grade agency-wide. Estimating costs associated with environmental analyses is a matter of estimating the amount of staff time involved and multiplying by staff cost per day. A survey of Forest Service Regions

**Table 2. Timber Sales Categorically Excluded during FY 1998 using CE 4**

	Number of Green sales ≤ 70 ac	≤70 ac Green Volume (mbf)	Total Number of Green Sales	Number of Salvage and Sanitation Sales ≤ 250 ac	≤250 ac Salvage and Sanitation Sales Volume (mbf)	Total Number of Salvage Sales
<b>Region 1</b>	9	1080	10	39	8391	43
<b>Region 2</b>	2	54	3	9	3060	10
<b>Region 3</b>	6	461	11	4	3046	5
<b>Region 4</b>	5	708	6	13	5904	14
<b>Region 5</b>	2	315	8	23	8086	32
<b>Region 6</b>	7	727	9	39	8725	44
<b>Region 8</b>	43	4410	52	33	5735	36
<b>Region 9</b>	2	567	3	5	2631	8
<b>Region 10</b>	1	131	1	11	4003	11
<b>Total</b>	77	8453	103	176	49581	203

*Note: There is no Region 7.*

shows that an EA typically takes 4-6 months or longer to complete as opposed to a CE, which takes approximately one month or less of staff time to complete the analysis and documentation.

Costs associated with preparation of EA's and CE's vary with the nature and complexity of proposed actions. The size of a proposal does not directly contribute to overall cost of analysis

1 From 1998 Timber Cut and Sold Report: 80,229 MBF in CE's and 2,955,292 MBF in total sold sales.  $(80,229/2,955,292)*100 = 2.7\%$  (MBF=1,000 board feet)

2 From 1998 Timber Cut and Sold Report: 58,084 MBF in CE's and 2,955,292.11 MBF in total sold sales.  $(58,084/2,955,292)*100 = 1.97\%$



and documentation. Parameters of the three new CE's (activity constraints, acreage limits, road length limits) were selected because they have been found to have no significant impacts on the human environment, not because of any particular associated cost.

### **Sources of cost data**

Cost data compiled by the Flathead National Forest for environmental analysis and documentation was used for this analysis. The Flathead National Forest employs a representative range of resource specialists engaged in the type of environmental analysis and documentation being compared here. As stated earlier, these specialists are of similar pay grades agency-wide and follow agency environmental analysis procedures.

The Flathead National Forest's small timber harvest projects are similar in nature and complexity to those of other National Forests conducting timber harvest activities. Key facets of small project planning in common with other national forests include consideration of effects on threatened, endangered, and sensitive species; heritage resources; soil productivity; and water quality. Project objectives on the Flathead, such as insect and disease control, fuel hazard reduction, and salvage are also common to most other national forests.

According to the data, costs for analysis and documentation for CE's range from \$2,500 to \$7,000. The cost estimate for a CE is assumed to be \$7,000 for the analysis. On the other hand, analysis and documentation for an EA cost from \$30,000 to \$100,000. The cost estimate for an EA is assumed to be \$30,000 for the analysis. Although the cost estimates represent the best information available, they are of limited precision and changing circumstances can affect the environmental analysis costs. Therefore, the worst case (highest estimate) is used for CE's and the best case (lowest estimate) is used for EA's.

### **Timeframe for analysis**

The timeframe for the analysis is assumed to be 10 years. The Forest Service Handbook 1909.15 was revised in 1992 to include a list of CE's. As a result of the September 1999 court action, the Forest Service lost the ability to use CE 4 from NEPA documentation for small timber sale projects. Almost 10 years after the 1992 revision of FSH 1909.15, the NEPA procedure is being updated to add three new categories for limited timber harvest. A 10-year cycle is assumed as a reasonable timeframe for these categories to remain in place.

The scheduling estimates for the 10-year period begin with 2001. Costs are compiled over that cycle and discounted at an annual rate of 7 percent as provided by OMB, Office of Information and Regulatory Affairs January 11, 1996, guidance on "Economic Analysis of Federal Regulations under Executive Order 12866." The dollar estimates for the alternative environmental analysis costs (adjusted for inflation) associated with EA's and CE's are estimated for the analysis (see Appendix A table 5).

The alternative estimates of the economic effects in the revision of FSH 1909.15 are displayed in Tables 3-4. The undiscounted and discounted cost comparisons over the 10-year period are also displayed.

### **Comparison of Alternatives**

The estimation of the environmental analysis costs under the no action alternative (EA's) and the three new CE's are based on FY1998 small timber sale information. Under the assumption that the number of timber sale projects within the acreage limits remains constant for the 10-year study period from 2001 to 2010, the environmental analysis costs under EA's is assumed to be \$30,000 per project and is adjusted for inflation at a rate of 2.1% for the study period (see Table 5). The annual cost estimates for 2001 to 2010 were then discounted at 7% annually as provided by the OMB Office of Information and Regulatory Affairs January 11, 1996, guidance on "Economic Analysis of Federal Regulations under Executive Order 12866." The average annual EA cost estimate for the 10-year period for both undiscounted and discounted costs are used to compare with the average annual cost of CE for the same timber sale projects.

For undiscounted costs, total costs for CE's were estimated at \$19.4 million with an annual average cost of \$1.95 million, while the undiscounted cost for EA's for the same timeframe would be \$83.5 million with an annual average cost of \$8.3 million. There is an annual average cost saving of \$6.4 million for the three new CE's. A comparison of the discounted costs also shows the same direction of cost saving for CE's over EA's. An annual average saving of discounted cost of \$4.8 million for CE's is estimated.

## **Non-Quantified Effects**

This section discusses other benefits that are not readily quantified but also indicate the positive effect by using CE's for small timber sale projects. The list of benefits includes the following:

- Time for Completion
- Forest Health
- Timber Volume and Value
- Small Business
- Environmental Effects

## **Time for Completion**

The policy on the three new CE's for limited timber harvest projects is designed to reduce Service-wide environmental documentation costs and enable the agency to accomplish the treatment of small fire hazard areas, insect and disease outbreaks, and hazard tree removal in a more timely and efficient manner. Since an EA typically takes 4-6 months or longer to complete as opposed to a CE, which takes approximately one month or less, the three new CE's represent a potential savings of 3-5 months of staff time to complete the analysis and documentation. The intended result is to improve efficiency in planning activities that normally do not have significant environmental effects. It would be speculative to state how each forest would apply savings in staff time and funding. Savings could be applied to planning additional small harvest projects or to planning other activities documented in an EA or EIS.

## **Forest Health**

Implementation of the new directive is expected to improve agency response to insect outbreaks. The average preparation time for an EA is four to six months, enough time for some forest pests to go through two life cycles. Sanitation treatments taking this long to prepare will never get

ahead of some insect outbreaks. Using a CE to prepare a sanitation harvest would facilitate treatment of insect outbreaks before they spread. Such benefits are difficult to predict and quantify because of the variability of the natural occurrence of insect outbreaks and the difficulty of pricing these benefits.

The three new CE's may have some limited utility for facilitating more efficient planning of small timber harvests to reduce fuel concentrations in wildland-urban interface areas. Most projects implementing the National Fire Plan are expected to involve a combination of activities such as thinning, pruning, and prescribed burning, and are expected to be larger in size, which would take them beyond the scope of these three new CE's.

### **Timber Volume and Value**

Implementation of the three new CE's could affect the quantity and quality of salvage timber sold due to a more expedited planning process. Quality and merchantability of wood deteriorate over time after a tree dies. Decay and deterioration can result in a hierarchy of progressively less valuable products as the wood deteriorates while standing. A simplified hierarchy may consist of timber suitable for lumber and studs (highest commercial value), chips, pulp, hog fuel, and finally, personal use firewood (lowest commercial value). Shorter planning times can result in less decay before salvage products are sold, and higher product values. These effects are not readily quantified in financial terms; however, benefits would accrue primarily to the Treasury from more expedient salvage sales. Not including these effects introduces a small bias in the cost-benefit analysis by decreasing the benefits of using the three new CE's.

There is potential for an increase in small timber projects since they would be faster and cheaper to prepare. As previously stated, however, timber sale volume and receipts under the three new CE's are not expected to vary measurably from preparing EA's for the same timber sale projects. Using data from 1998, the last year the agency used a timber-related CE, categorically excluded timber harvests within the prescribed acreage limits accounted for less than 2% of the total timber volume harvested.

### **Small Business**

Effects on local economies and small business entities are expected to be nearly the same using either an environmental assessment (EA) or CE for small timber sale projects. There is potential for an increase in small timber harvest projects since they would be faster and cheaper to prepare, but the potential is so dependent on local conditions that it cannot be reasonably quantified. Forest Service experience indicates that local communities are the traditional market for the small sales that would fall under the three new CE's. Locally owned mills whose market area may be more restricted than that of national or multi-national corporations, may benefit from an increased supply of forest products. However, timber sale receipts under the three new CE's are not expected to vary significantly from preparing EA's for the same timber sale projects.

### **Environmental Effects**

This analysis does not and cannot evaluate the environmental effects of future projects that may qualify for a categorical exclusion. Rather, it focuses on the changes that may occur because new categorical exclusions are adopted. Consequently, no environmental effects are anticipated,

due to the administrative nature of the changes (i.e. comparing one type of documentation to another, lengthier type of documentation).

## **Conclusions**

The cost-benefit analysis focused on analyzing the economic costs and benefits associated with revisions to Forest Service Handbook 1909.15, Chapter 30, which contains direction for implementing the National Environmental Policy Act and Council on Environmental Quality regulations. The action adds three new CE's for limited timber harvest to the agency's National Environmental Policy Act Handbook.

Numerous intangible benefits are expected to result from the interim directive. Other benefits such as preparing the environmental documents in a timely manner, improving salvage product quality, preventing the spread of insect and disease outbreaks, and reducing fire risks were not readily quantified.

Based on the quantified cost estimates, the average annual cost savings of the three new CE's are estimated to be \$6.4 million compared with continued use of EA's for small timber sale projects. The discounted value of the cost savings over a 10-year period is estimated to be \$47.5million (see Table 1). This quantitative assessment indicates a cost savings for using CE's for limited timber harvests for the agency.

## Appendix A

**Table 3. Cost of Environmental Assessment vs. Categorical Exclusion under 250 Acres Limit on Salvage and Sanitation Sales**

Year	Environmental Assessment (EA)			Categorical Exclusion (CE)			Cost Savings <sup>3</sup>	
	Discount factor @ 7%	Undiscounted costs	Discounted costs	Discount factor @ 7%	Undiscounted costs	Discounted costs	Undiscounted	Discounted
		\$	\$		\$	\$	\$	\$
2001	1	5,280,000	5,280,000	1	1,232,000	1,232,000	4,048,000	4,048,000
2002	0.93458	5,390,880	5,038,203	0.93458	1,257,872	1,175,581	4,133,008	3,862,622
2003	0.87344	5,504,088	4,807,486	0.87344	1,284,287	1,121,747	4,219,801	3,685,739
2004	0.81630	5,619,674	4,587,329	0.81630	1,311,257	1,070,377	4,308,417	3,516,952
2005	0.76290	5,737,687	4,377,253	0.76290	1,338,794	1,021,359	4,398,894	3,355,894
2006	0.71299	5,858,179	4,176,800	0.71299	1,366,908	974,587	4,491,271	3,202,213
2007	0.66634	5,981,201	3,985,525	0.66634	1,395,613	929,956	4,585,587	3,055,569
2008	0.62275	6,106,806	3,803,013	0.62275	1,424,921	887,370	4,681,885	2,915,644
2009	0.58201	6,235,049	3,628,855	0.58201	1,454,845	846,733	4,780,204	2,782,122
2010	0.54393	6,365,985	3,462,676	0.54393	1,485,396	807,958	4,880,588	2,654,718
Total		58,079,550	43,147,139		13,551,895	10,067,666	44,527,655	33,079,473
Average		5,807,955			1,355,189		4,452,765	

<sup>3</sup> Cost of EA minus cost of CE

**Table 4. Cost of Environmental Assessment vs. Categorical Exclusion under 70 acres Limit on Green Sales**

Year	Environmental Assessment (EA)			Categorical Exclusion (CE)			Cost Savings <sup>4</sup>	
	Discount factor @ 7%	Undiscounted costs	Discounted costs	Discount factor @ 7%	Undiscounted costs	Discounted costs	Undiscounted	Discounted
		\$	\$		\$	\$	\$	\$
2001	1	2,310,000	2,310,000	1	539,000	539,000	1,771,000	1,771,000
2002	0.93458	2,358,510	2,204,216	0.93458	550,319	514,317	1,808,191	1,689,899
2003	0.87344	2,408,039	2,103,277	0.87344	561,876	490,765	1,846,163	1,612,513
2004	0.81630	2,458,608	2,006,961	0.81630	573,675	468,291	1,884,932	1,538,670
2005	0.76290	2,510,238	1,915,061	0.76290	585,722	446,848	1,924,516	1,468,213
2006	0.71299	2,562,953	1,827,360	0.71299	598,022	426,384	1,964,931	1,400,976
2007	0.66634	2,616,775	1,743,662	0.66634	610,581	406,854	2,006,194	1,336,808
2008	0.62275	2,671,728	1,663,818	0.62275	623,403	388,224	2,048,324	1,275,594
2009	0.58201	2,727,834	1,587,627	0.58201	636,495	370,446	2,091,339	1,217,180
2010	0.54393	2,785,118	1,514,909	0.54393	649,861	353,479	2,135,257	1,161,431
Total		25,409,803	18,876,892		5,928,954	4,404,608	19,480,849	14,472,284
Average		2,540,980			592,895		1,948,085	

<sup>4</sup> Cost of EA minus CE

**Table 5. Total Cost of Environmental Assessment vs. Categorical Exclusion for under 250 Acres Limit on Salvage and Sanitation Sales and 70 acres Limit on Green Sales**

Year	Environmental Assessment (EA)			Categorical Exclusion (EC)			Cost Savings <sup>5</sup>	
	Discount factor @ 7%	Undiscounted costs	Discounted costs	Discount factor @ 7%	Undiscounted costs	Discounted costs	Undiscounted	Discounted
		\$	\$		\$	\$	\$	\$
2001	1	7,590,000	7,590,000	1	1,771,000	1,771,000	5,819,000	5,819,000
2002	0.93458	7,749,390	7,242,417	0.93458	1,808,191	1,689,897	5,941,199	5,552,520
2003	0.87344	7,912,127	6,910,760	0.87344	1,846,163	1,612,511	6,065,964	5,298,250
2004	0.81630	8,078,282	6,594,285	0.81630	1,884,932	1,538,667	6,193,349	5,055,619
2005	0.76290	8,247,926	6,292,301	0.76290	1,924,516	1,468,204	6,323,410	4,824,098
2006	0.71299	8,421,132	6,004,149	0.71299	1,964,931	1,400,968	6,456,201	4,603,181
2007	0.66634	8,597,976	5,729,193	0.66634	2,006,194	1,336,812	6,591,782	4,392,381
2008	0.62275	8,778,533	5,466,832	0.62275	2,048,324	1,275,594	6,730,209	4,191,238
2009	0.58201	8,962,883	5,216,478	0.58201	2,091,339	1,217,178	6,871,543	3,999,300
2010	0.54393	9,151,103	4,977,596	0.54393	2,135,257	1,161,439	7,015,846	3,816,157
Total		83,489,352	62,024,012		19,480,849	14,472,270	64,008,504	47,551,743
Average		8,348,935			1,948,085		6,400,850	

<sup>5</sup> Cost of EA minus cost of CE

**Table 6. Summary of Estimated Cost Savings of Categorical Exclusion (CE) over Environmental Assessment (EA)**

	Undiscounted			Discounted		
	Environmental Assessment	Categorical Exclusion	Cost Savings of CE over EA	Environmental Assessment	Categorical Exclusion	Cost Savings of CE over EA
	\$	\$	\$	\$	\$	\$
All three new CE's:						
Total	83,489,352	19,480,849	64,008,504	62,024,012	14,472,270	47,551,743
Average	8,348,935	1,948,085	6,400,850			
Salvage and Sanitation Sales under 250 acres limit:						
Total	58,079,550	13,551,895	44,527,655	43,147,139	10,067,666	33,079,473
Average	5,807,955	1,355,189	4,452,765			
Green Sales of 70 acres limit:						
Total	25,409,803	5,928,954	19,480,849	18,876,892	4,404,608	14,472,284
Average	2,540,980	592,895	1,948,085			