

様式 2

事業費集計表  
(森林整備事業)

事業名： 水源林造成事業  
 施行箇所： 九頭竜川広域流域 50年経過契約地

(単位:千円)

年度	事業費			年度	事業費		
	事業費	割引率	現在価値額		事業費	割引率	現在価値額
S 3 6		× 7.3910		H 3 4	0	× 0.6756	0
S 3 7	1,469,087	× 7.1067	10,440,361	H 3 5	0	× 0.6496	0
S 3 8	419,359	× 6.8333	2,865,606	H 3 6	0	× 0.6246	0
S 3 9	337,319	× 6.5705	2,216,354	H 3 7	0	× 0.6006	0
S 4 0	228,778	× 6.3178	1,445,374	H 3 8	0	× 0.5775	0
S 4 1	176,793	× 6.0748	1,073,982	H 3 9	0	× 0.5553	0
S 4 2	160,592	× 5.8412	938,050	H 4 0	0	× 0.5339	0
S 4 3	0	× 5.6165	0	H 4 1	0	× 0.5134	0
S 4 4	71,411	× 5.4005	385,655	H 4 2	0	× 0.4936	0
S 4 5	0	× 5.1928	0	H 4 3	0	× 0.4746	0
S 4 6	83,247	× 4.9931	415,661	H 4 4	0	× 0.4564	0
S 4 7	7,374	× 4.8010	35,403	H 4 5	0	× 0.4388	0
S 4 8	172,503	× 4.6164	796,343	H 4 6	0	× 0.4220	0
S 4 9	0	× 4.4388	0	H 4 7	0	× 0.4057	0
S 5 0	310,823	× 4.2681	1,326,624	H 4 8	0	× 0.3901	0
S 5 1	0	× 4.1039	0	H 4 9	0	× 0.3751	0
S 5 2	45,705	× 3.9461	180,357	H 5 0	0	× 0.3607	0
S 5 3	0	× 3.7943	0	H 5 1	0	× 0.3468	0
S 5 4	75,386	× 3.6484	275,038	H 5 2	0	× 0.3335	0
S 5 5	0	× 3.5081	0	H 5 3	0	× 0.3207	0
S 5 6	148,375	× 3.3731	500,484				
S 5 7	109,165	× 3.2434	354,066				
S 5 8	0	× 3.1187	0				
S 5 9	0	× 2.9987	0				
S 6 0	0	× 2.8834	0				
S 6 1	0	× 2.7725	0				
S 6 2	219,165	× 2.6658	584,250				
S 6 3	0	× 2.5633	0				
H 1	0	× 2.4647	0				
H 2	0	× 2.3699	0				
H 3	0	× 2.2788	0				
H 4	0	× 2.1911	0				
H 5	0	× 2.1068	0				
H 6	0	× 2.0258	0				
H 7	0	× 1.9479	0				
H 8	0	× 1.8730	0				
H 9	0	× 1.8009	0				
H 1 0	0	× 1.7317	0				
H 1 1	0	× 1.6651	0				
H 1 2	0	× 1.6010	0				
H 1 3	0	× 1.5395	0				
H 1 4	0	× 1.4802	0				
H 1 5	0	× 1.4233	0				
H 1 6	0	× 1.3686	0				
H 1 7	0	× 1.3159	0				
H 1 8	0	× 1.2653	0				
H 1 9	0	× 1.2167	0				
H 2 0	0	× 1.1699	0				
H 2 1	0	× 1.1249	0				
H 2 2	0	× 1.0816	0				
H 2 3	0	× 1.0400	0				
H 2 4	0	× 1.0000	0				
H 2 5	0	× 0.9615	0				
H 2 6	0	× 0.9246	0				
H 2 7	0	× 0.8890	0				
H 2 8	0	× 0.8548	0				
H 2 9	26,202	× 0.8219	21,535				
H 3 0	0	× 0.7903	0				
H 3 1	0	× 0.7599	0				
H 3 2	0	× 0.7307	0				
H 3 3	0	× 0.7026	0				
				合 計			23,855,143
				C =			23,855,143 千円

$$B = \sum_{t=1}^{T-1} \frac{t}{T \times (1+i)^t} + \sum_{t=T}^Y \frac{1}{(1+i)^t} \times \frac{(f1-f2) \times \alpha \times A \times U}{360}$$

- U: 治水ダムの単位雨量流出量当たりの年間減価償却費(円/㎡/sec) 3,740,000
- 出典:「ダム年鑑2011」
- f1: 事業実施前の流出係数 浸透能大 急 要整備森林(疎林) 0.55
- 出典:「治山設計」(山口伊佐夫著,1979)
- f2: 事業実施後、T年経過後の流出係数 浸透能大 急 整備済森林 0.45
- 出典:「治山設計」(山口伊佐夫著,1979)
- T: 事業実施後、流出係数が安定するのに必要な年数 15
- α: 100年確率時雨量(mm/h) 73.45
- 出典:気象統計情報(気象庁)
- A: 事業対象区域面積(ha) 1,048.35 ~ 1,048.35
- 360: 単位合わせのための調整値
- Y: 評価期間 80

年度	社会的割引率	事業対象区域面積	事業効果面積	効果額	現在価値化
1961	7.3910				
1962	7.1067	1,048.35	69.89	5,333	37,900
1963	6.8333	1,048.35	139.78	10,666	72,884
1964	6.5705	1,048.35	209.67	15,999	105,121
1965	6.3178	1,048.35	279.56	21,332	134,771
1966	6.0748	1,048.35	349.45	26,665	161,985
1967	5.8412	1,048.35	419.34	31,998	186,907
1968	5.6165	1,048.35	489.23	37,331	209,670
1969	5.4005	1,048.35	559.12	42,664	230,407
1970	5.1928	1,048.35	629.01	47,997	249,239
1971	4.9931	1,048.35	698.90	53,330	266,282
1972	4.8010	1,048.35	768.79	58,663	281,641
1973	4.6164	1,048.35	838.68	63,996	295,431
1974	4.4388	1,048.35	908.57	69,329	307,738
1975	4.2681	1,048.35	978.46	74,662	318,665
1976	4.1039	1,048.35	1,048.35	79,995	328,291
1977	3.9461	1,048.35	1,048.35	79,995	315,668
1978	3.7943	1,048.35	1,048.35	79,995	303,525
1979	3.6484	1,048.35	1,048.35	79,995	291,854
1980	3.5081	1,048.35	1,048.35	79,995	280,630
1981	3.3731	1,048.35	1,048.35	79,995	269,831
1982	3.2434	1,048.35	1,048.35	79,995	259,456
1983	3.1187	1,048.35	1,048.35	79,995	249,480
1984	2.9987	1,048.35	1,048.35	79,995	239,881
1985	2.8834	1,048.35	1,048.35	79,995	230,658
1986	2.7725	1,048.35	1,048.35	79,995	221,786
1987	2.6658	1,048.35	1,048.35	79,995	213,251
1988	2.5633	1,048.35	1,048.35	79,995	205,051
1989	2.4647	1,048.35	1,048.35	79,995	197,164
1990	2.3699	1,048.35	1,048.35	79,995	189,580
1991	2.2788	1,048.35	1,048.35	79,995	182,293
1992	2.1911	1,048.35	1,048.35	79,995	175,277
1993	2.1068	1,048.35	1,048.35	79,995	168,533
1994	2.0258	1,048.35	1,048.35	79,995	162,054
1995	1.9479	1,048.35	1,048.35	79,995	155,822
1996	1.8730	1,048.35	1,048.35	79,995	149,831
1997	1.8009	1,048.35	1,048.35	79,995	144,063
1998	1.7317	1,048.35	1,048.35	79,995	138,527
1999	1.6651	1,048.35	1,048.35	79,995	133,200
2000	1.6010	1,048.35	1,048.35	79,995	128,072
2001	1.5395	1,048.35	1,048.35	79,995	123,152
2002	1.4802	1,048.35	1,048.35	79,995	118,409
2003	1.4233	1,048.35	1,048.35	79,995	113,857
2004	1.3686	1,048.35	1,048.35	79,995	109,481
2005	1.3159	1,048.35	1,048.35	79,995	105,265
2006	1.2653	1,048.35	1,048.35	79,995	101,218
2007	1.2167	1,048.35	1,048.35	79,995	97,330
2008	1.1699	1,048.35	1,048.35	79,995	93,586
2009	1.1249	1,048.35	1,048.35	79,995	89,986
2010	1.0816	1,048.35	1,048.35	79,995	86,523
2011	1.0400	1,048.35	1,048.35	79,995	83,195
2012	1.0000	1,048.35	1,048.35	79,995	79,995
2013	0.9615	1,048.35	1,048.35	79,995	76,915
2014	0.9246	1,048.35	1,048.35	79,995	73,963
2015	0.8890	1,048.35	1,048.35	79,995	71,116
2016	0.8548	1,048.35	1,048.35	79,995	68,380
2017	0.8219	1,048.35	1,048.35	79,995	65,748
2018	0.7903	1,048.35	1,048.35	79,995	63,220
2019	0.7599	1,048.35	1,048.35	79,995	60,788
2020	0.7307	1,048.35	1,048.35	79,995	58,452
2021	0.7026	1,048.35	1,048.35	79,995	56,204
2022	0.6756	1,048.35	1,048.35	79,995	54,045
2023	0.6496	1,048.35	1,048.35	79,995	51,965

2024	0.6246	1,048.35	1,048.35	79,995	49,965
2025	0.6006	1,048.35	1,048.35	79,995	48,045
2026	0.5775	1,048.35	1,048.35	79,995	46,197
2027	0.5553	1,048.35	1,048.35	79,995	44,421
2028	0.5339	1,048.35	1,048.35	79,995	42,709
2029	0.5134	1,048.35	1,048.35	79,995	41,069
2030	0.4936	1,048.35	1,048.35	79,995	39,486
2031	0.4746	1,048.35	1,048.35	79,995	37,966
2032	0.4564	1,048.35	1,048.35	79,995	36,510
2033	0.4388	1,048.35	1,048.35	79,995	35,102
2034	0.4220	1,048.35	1,048.35	79,995	33,758
2035	0.4057	1,048.35	1,048.35	79,995	32,454
2036	0.3901	1,048.35	1,048.35	79,995	31,206
2037	0.3751	1,048.35	1,048.35	79,995	30,006
2038	0.3607	1,048.35	1,048.35	79,995	28,854
2039	0.3468	1,048.35	1,048.35	79,995	27,742
2040	0.3335	1,048.35	1,048.35	79,995	26,678
2041	0.3207	1,048.35	1,048.35	79,995	25,654
合計					10,753,034

$$B = \sum_{t=1}^{T-1} \frac{t}{T \times (1+i)^t} + \sum_{t=T}^Y \frac{1}{(1+i)^t} \times \frac{(D2-D1) \times A \times P \times U \times 10}{365 \times 86400}$$

- A: 事業対象区域面積 (ha) 1,048.35 ~ 1,048.35
- P: 年間平均降雨量 (mm/年) 2,258  
出典: 気象統計情報 (気象庁)
- D1: 事業実施前の貯留率 0.51  
出典: 「森林の間伐と水収支」(近嵐ら, 1987)
- D2: 事業実施後、T年経過後の貯留率 0.56  
出典: 「森林の間伐と水収支」(近嵐ら, 1987)
- T: 事業実施後、流出係数が安定するのに必要な年数 15
- U: 開発流量当りの利水ダム年間減価償却費 (円/m<sup>3</sup>/S) 1,022,000,000  
出典: 「ダム年鑑2011」
- Y: 評価期間 80
- 10: 単位合わせのための調整値
- 365: 1年間の日数
- 86400: 1日の秒数

年度	社会的割引率	事業対象区域面積	事業効果面積	効果額	現在価値化
1,961	7.3910				
1,962	7.1067	1,048.35	69.89	2,557	18,172
1,963	6.8333	1,048.35	139.78	5,115	34,952
1,964	6.5705	1,048.35	209.67	7,672	50,409
1,965	6.3178	1,048.35	279.56	10,229	64,625
1,966	6.0748	1,048.35	349.45	12,787	77,678
1,967	5.8412	1,048.35	419.34	15,344	89,627
1,968	5.6165	1,048.35	489.23	17,901	100,541
1,969	5.4005	1,048.35	559.12	20,459	110,489
1,970	5.1928	1,048.35	629.01	23,016	119,517
1,971	4.9931	1,048.35	698.90	25,573	127,689
1,972	4.8010	1,048.35	768.79	28,131	135,057
1,973	4.6164	1,048.35	838.68	30,688	141,668
1,974	4.4388	1,048.35	908.57	33,245	147,568
1,975	4.2681	1,048.35	978.46	35,803	152,811
1,976	4.1039	1,048.35	1,048.35	38,360	157,426
1,977	3.9461	1,048.35	1,048.35	38,360	151,372
1,978	3.7943	1,048.35	1,048.35	38,360	145,549
1,979	3.6484	1,048.35	1,048.35	38,360	139,953
1,980	3.5081	1,048.35	1,048.35	38,360	134,571
1,981	3.3731	1,048.35	1,048.35	38,360	129,392
1,982	3.2434	1,048.35	1,048.35	38,360	124,417
1,983	3.1187	1,048.35	1,048.35	38,360	119,633
1,984	2.9987	1,048.35	1,048.35	38,360	115,030
1,985	2.8834	1,048.35	1,048.35	38,360	110,607
1,986	2.7725	1,048.35	1,048.35	38,360	106,353
1,987	2.6658	1,048.35	1,048.35	38,360	102,260
1,988	2.5633	1,048.35	1,048.35	38,360	98,328
1,989	2.4647	1,048.35	1,048.35	38,360	94,546
1,990	2.3699	1,048.35	1,048.35	38,360	90,909
1,991	2.2788	1,048.35	1,048.35	38,360	87,415
1,992	2.1911	1,048.35	1,048.35	38,360	84,051
1,993	2.1068	1,048.35	1,048.35	38,360	80,817
1,994	2.0258	1,048.35	1,048.35	38,360	77,710
1,995	1.9479	1,048.35	1,048.35	38,360	74,721
1,996	1.8730	1,048.35	1,048.35	38,360	71,848
1,997	1.8009	1,048.35	1,048.35	38,360	69,083
1,998	1.7317	1,048.35	1,048.35	38,360	66,428
1,999	1.6651	1,048.35	1,048.35	38,360	63,873
2,000	1.6010	1,048.35	1,048.35	38,360	61,414
2,001	1.5395	1,048.35	1,048.35	38,360	59,055
2,002	1.4802	1,048.35	1,048.35	38,360	56,780
2,003	1.4233	1,048.35	1,048.35	38,360	54,598
2,004	1.3686	1,048.35	1,048.35	38,360	52,499
2,005	1.3159	1,048.35	1,048.35	38,360	50,478
2,006	1.2653	1,048.35	1,048.35	38,360	48,537
2,007	1.2167	1,048.35	1,048.35	38,360	46,673
2,008	1.1699	1,048.35	1,048.35	38,360	44,877
2,009	1.1249	1,048.35	1,048.35	38,360	43,151
2,010	1.0816	1,048.35	1,048.35	38,360	41,490
2,011	1.0400	1,048.35	1,048.35	38,360	39,894
2,012	1.0000	1,048.35	1,048.35	38,360	38,360
2,013	0.9615	1,048.35	1,048.35	38,360	36,883
2,014	0.9246	1,048.35	1,048.35	38,360	35,468
2,015	0.8890	1,048.35	1,048.35	38,360	34,102
2,016	0.8548	1,048.35	1,048.35	38,360	32,790
2,017	0.8219	1,048.35	1,048.35	38,360	31,528
2,018	0.7903	1,048.35	1,048.35	38,360	30,316
2,019	0.7599	1,048.35	1,048.35	38,360	29,150

2.020	0.7307	1,048.35	1,048.35	38,360	28,030
2.021	0.7026	1,048.35	1,048.35	38,360	26,952
2.022	0.6756	1,048.35	1,048.35	38,360	25,916
2.023	0.6496	1,048.35	1,048.35	38,360	24,919
2.024	0.6246	1,048.35	1,048.35	38,360	23,960
2.025	0.6006	1,048.35	1,048.35	38,360	23,039
2.026	0.5775	1,048.35	1,048.35	38,360	22,153
2.027	0.5553	1,048.35	1,048.35	38,360	21,301
2.028	0.5339	1,048.35	1,048.35	38,360	20,480
2.029	0.5134	1,048.35	1,048.35	38,360	19,694
2.030	0.4936	1,048.35	1,048.35	38,360	18,934
2.031	0.4746	1,048.35	1,048.35	38,360	18,206
2.032	0.4564	1,048.35	1,048.35	38,360	17,508
2.033	0.4388	1,048.35	1,048.35	38,360	16,832
2.034	0.4220	1,048.35	1,048.35	38,360	16,188
2.035	0.4057	1,048.35	1,048.35	38,360	15,563
2.036	0.3901	1,048.35	1,048.35	38,360	14,964
2.037	0.3751	1,048.35	1,048.35	38,360	14,389
2.038	0.3607	1,048.35	1,048.35	38,360	13,836
2.039	0.3468	1,048.35	1,048.35	38,360	13,303
2.040	0.3335	1,048.35	1,048.35	38,360	12,793
2.041	0.3207	1,048.35	1,048.35	38,360	12,302
合計					5,156,400

$$B = \sum_{t=1}^{T-1} \frac{t}{T \times (1+i)^t} + \sum_{t=T}^Y \frac{1}{(1+i)^t} \times (D2-D1) \times A \times P \times u \times 10$$

$$u = \frac{U_x \times Q_x + U_y \times Q_y}{Q_x + Q_y}$$

Qx:	全貯留量のうち生活用水使用相当量	155.00 億
Qy:	全貯留量 - Qx	1,707.30 億
A:	事業対象区域面積 (ha)	1,048.35 ~ 1,048.35
P:	年間平均降雨量 (mm/年) 出典: 気象統計情報 (気象庁)	2,258
T:	事業実施後、貯留率が安定するのに必要な年数	15
D1:	事業実施前の貯留率 出典: 「森林の間伐と水収支」(近嵐ら, 1987)	0.51
D2:	事業実施後、T年経過後の貯留率 出典: 「森林の間伐と水収支」(近嵐ら, 1987)	0.56
Ux:	単位当たりの上水道給水原価 (円/m <sup>3</sup> ) 出典: 「日本の水資源」	176.35
Uy:	単位当たりの雨水浄化費 (円/m <sup>3</sup> ) 出典: 「地球環境・人間生活にかかる農業及び森林の多面的な機能の評価に関する調査研究報告書」(三菱総合研究所, H13.11)「雨水利用ハンドブック」	68.60
u:	単位当たりの水質浄化費 (Ux と Uy を用いて Qx と Qy で比例按分して算出)	77.57
Y:	評価期間	80
10:	単位合わせのための調整値	

年度	社会的割引率	事業対象区域面積	事業効果面積	効果額	現在価値化
1961	7.3910				
1962	7.1067	1,048.35	69.89	6,121	43,500
1963	6.8333	1,048.35	139.78	12,242	83,653
1964	6.5705	1,048.35	209.67	18,364	120,661
1965	6.3178	1,048.35	279.56	24,485	154,691
1966	6.0748	1,048.35	349.45	30,606	185,925
1967	5.8412	1,048.35	419.34	36,727	214,530
1968	5.6165	1,048.35	489.23	42,849	240,661
1969	5.4005	1,048.35	559.12	48,970	264,462
1970	5.1928	1,048.35	629.01	55,091	286,077
1971	4.9931	1,048.35	698.90	61,212	305,638
1972	4.8010	1,048.35	768.79	67,334	323,271
1973	4.6164	1,048.35	838.68	73,455	339,098
1974	4.4388	1,048.35	908.57	79,576	353,222
1975	4.2681	1,048.35	978.46	85,697	365,763
1976	4.1039	1,048.35	1,048.35	91,819	376,816
1977	3.9461	1,048.35	1,048.35	91,819	362,327
1978	3.7943	1,048.35	1,048.35	91,819	348,389
1979	3.6484	1,048.35	1,048.35	91,819	334,992
1980	3.5081	1,048.35	1,048.35	91,819	322,110
1981	3.3731	1,048.35	1,048.35	91,819	309,715
1982	3.2434	1,048.35	1,048.35	91,819	297,806
1983	3.1187	1,048.35	1,048.35	91,819	286,356
1984	2.9987	1,048.35	1,048.35	91,819	275,338
1985	2.8834	1,048.35	1,048.35	91,819	264,751
1986	2.7725	1,048.35	1,048.35	91,819	254,568
1987	2.6658	1,048.35	1,048.35	91,819	244,771
1988	2.5633	1,048.35	1,048.35	91,819	235,360
1989	2.4647	1,048.35	1,048.35	91,819	226,306
1990	2.3699	1,048.35	1,048.35	91,819	217,602
1991	2.2788	1,048.35	1,048.35	91,819	209,237
1992	2.1911	1,048.35	1,048.35	91,819	201,185
1993	2.1068	1,048.35	1,048.35	91,819	193,444
1994	2.0258	1,048.35	1,048.35	91,819	186,007
1995	1.9479	1,048.35	1,048.35	91,819	178,854
1996	1.8730	1,048.35	1,048.35	91,819	171,977
1997	1.8009	1,048.35	1,048.35	91,819	165,357
1998	1.7317	1,048.35	1,048.35	91,819	159,003
1999	1.6651	1,048.35	1,048.35	91,819	152,888
2000	1.6010	1,048.35	1,048.35	91,819	147,002
2001	1.5395	1,048.35	1,048.35	91,819	141,355
2002	1.4802	1,048.35	1,048.35	91,819	135,910
2003	1.4233	1,048.35	1,048.35	91,819	130,686
2004	1.3686	1,048.35	1,048.35	91,819	125,663
2005	1.3159	1,048.35	1,048.35	91,819	120,825
2006	1.2653	1,048.35	1,048.35	91,819	116,179
2007	1.2167	1,048.35	1,048.35	91,819	111,716
2008	1.1699	1,048.35	1,048.35	91,819	107,419
2009	1.1249	1,048.35	1,048.35	91,819	103,287
2010	1.0816	1,048.35	1,048.35	91,819	99,311
2011	1.0400	1,048.35	1,048.35	91,819	95,492

2012	1.0000	1,048.35	1,048.35	91,819	91,819
2013	0.9615	1,048.35	1,048.35	91,819	88,284
2014	0.9246	1,048.35	1,048.35	91,819	84,896
2015	0.8890	1,048.35	1,048.35	91,819	81,627
2016	0.8548	1,048.35	1,048.35	91,819	78,487
2017	0.8219	1,048.35	1,048.35	91,819	75,466
2018	0.7903	1,048.35	1,048.35	91,819	72,565
2019	0.7599	1,048.35	1,048.35	91,819	69,773
2020	0.7307	1,048.35	1,048.35	91,819	67,092
2021	0.7026	1,048.35	1,048.35	91,819	64,512
2022	0.6756	1,048.35	1,048.35	91,819	62,033
2023	0.6496	1,048.35	1,048.35	91,819	59,646
2024	0.6246	1,048.35	1,048.35	91,819	57,350
2025	0.6006	1,048.35	1,048.35	91,819	55,146
2026	0.5775	1,048.35	1,048.35	91,819	53,025
2027	0.5553	1,048.35	1,048.35	91,819	50,987
2028	0.5339	1,048.35	1,048.35	91,819	49,022
2029	0.5134	1,048.35	1,048.35	91,819	47,140
2030	0.4936	1,048.35	1,048.35	91,819	45,322
2031	0.4746	1,048.35	1,048.35	91,819	43,577
2032	0.4564	1,048.35	1,048.35	91,819	41,906
2033	0.4388	1,048.35	1,048.35	91,819	40,290
2034	0.4220	1,048.35	1,048.35	91,819	38,748
2035	0.4057	1,048.35	1,048.35	91,819	37,251
2036	0.3901	1,048.35	1,048.35	91,819	35,819
2037	0.3751	1,048.35	1,048.35	91,819	34,441
2038	0.3607	1,048.35	1,048.35	91,819	33,119
2039	0.3468	1,048.35	1,048.35	91,819	31,843
2040	0.3335	1,048.35	1,048.35	91,819	30,622
2041	0.3207	1,048.35	1,048.35	91,819	29,446
合計					12,342,410

$$B = \sum_{t=1}^{T-1} \frac{t}{T \times (1+i)^t} + \sum_{t=T}^Y \frac{1}{(1+i)^t} \times \frac{(V1-V2) \times A \times U}{1.0}$$

- U: 1m3の土砂を保全するために要する単位当たりの砂防ダム建設コスト(円/m3) 5,600
- 出典:「砂防便覧」平成20年版
- V1: 事業実施前における1ha当りの年間浸食土砂量(m3) 20.00
- 出典:「治山全体調査の考え方進め方」森林の公的機能に関する文献要約集「森林水文」
- V2: 事業実施後における1ha当りの年間浸食土砂量(m3) 1.30
- 出典:「治山全体調査の考え方進め方」森林の公的機能に関する文献要約集「森林水文」
- A: 事業対象区域面積(ha) 1,048.35 ~ 1,048.35
- T: 事業実施後、流出係数が安定するのに必要な年数 15
- Y: 評価期間 80

年度	社会的割引率	事業対象区域面積	事業効果面積	効果額	現在価値化
1961	7.3910				
1962	7.1067	1,048.35	69.89	7,319	52,014
1963	6.8333	1,048.35	139.78	14,638	100,026
1964	6.5705	1,048.35	209.67	21,957	144,268
1965	6.3178	1,048.35	279.56	29,276	184,960
1966	6.0748	1,048.35	349.45	36,594	222,301
1967	5.8412	1,048.35	419.34	43,913	256,505
1968	5.6165	1,048.35	489.23	51,232	287,745
1969	5.4005	1,048.35	559.12	58,551	316,205
1970	5.1928	1,048.35	629.01	65,870	342,050
1971	4.9931	1,048.35	698.90	73,189	365,440
1972	4.8010	1,048.35	768.79	80,508	386,519
1973	4.6164	1,048.35	838.68	87,827	405,445
1974	4.4388	1,048.35	908.57	95,145	422,330
1975	4.2681	1,048.35	978.46	102,464	437,327
1976	4.1039	1,048.35	1,048.35	109,783	450,538
1977	3.9461	1,048.35	1,048.35	109,783	433,215
1978	3.7943	1,048.35	1,048.35	109,783	416,550
1979	3.6484	1,048.35	1,048.35	109,783	400,532
1980	3.5081	1,048.35	1,048.35	109,783	385,130
1981	3.3731	1,048.35	1,048.35	109,783	370,309
1982	3.2434	1,048.35	1,048.35	109,783	356,070
1983	3.1187	1,048.35	1,048.35	109,783	342,380
1984	2.9987	1,048.35	1,048.35	109,783	329,206
1985	2.8834	1,048.35	1,048.35	109,783	316,548
1986	2.7725	1,048.35	1,048.35	109,783	304,373
1987	2.6658	1,048.35	1,048.35	109,783	292,660
1988	2.5633	1,048.35	1,048.35	109,783	281,407
1989	2.4647	1,048.35	1,048.35	109,783	270,582
1990	2.3699	1,048.35	1,048.35	109,783	260,175
1991	2.2788	1,048.35	1,048.35	109,783	250,174
1992	2.1911	1,048.35	1,048.35	109,783	240,546
1993	2.1068	1,048.35	1,048.35	109,783	231,291
1994	2.0258	1,048.35	1,048.35	109,783	222,398
1995	1.9479	1,048.35	1,048.35	109,783	213,846
1996	1.8730	1,048.35	1,048.35	109,783	205,624
1997	1.8009	1,048.35	1,048.35	109,783	197,708
1998	1.7317	1,048.35	1,048.35	109,783	190,111
1999	1.6651	1,048.35	1,048.35	109,783	182,800
2000	1.6010	1,048.35	1,048.35	109,783	175,763
2001	1.5395	1,048.35	1,048.35	109,783	169,011
2002	1.4802	1,048.35	1,048.35	109,783	162,501
2003	1.4233	1,048.35	1,048.35	109,783	156,254
2004	1.3686	1,048.35	1,048.35	109,783	150,249
2005	1.3159	1,048.35	1,048.35	109,783	144,463
2006	1.2653	1,048.35	1,048.35	109,783	138,908
2007	1.2167	1,048.35	1,048.35	109,783	133,573
2008	1.1699	1,048.35	1,048.35	109,783	128,435
2009	1.1249	1,048.35	1,048.35	109,783	123,495
2010	1.0816	1,048.35	1,048.35	109,783	118,741
2011	1.0400	1,048.35	1,048.35	109,783	114,174
2012	1.0000	1,048.35	1,048.35	109,783	109,783
2013	0.9615	1,048.35	1,048.35	109,783	105,556
2014	0.9246	1,048.35	1,048.35	109,783	101,505
2015	0.8890	1,048.35	1,048.35	109,783	97,597
2016	0.8548	1,048.35	1,048.35	109,783	93,843
2017	0.8219	1,048.35	1,048.35	109,783	90,231
2018	0.7903	1,048.35	1,048.35	109,783	86,762
2019	0.7599	1,048.35	1,048.35	109,783	83,424
2020	0.7307	1,048.35	1,048.35	109,783	80,218
2021	0.7026	1,048.35	1,048.35	109,783	77,134
2022	0.6756	1,048.35	1,048.35	109,783	74,169
2023	0.6496	1,048.35	1,048.35	109,783	71,315
2024	0.6246	1,048.35	1,048.35	109,783	68,570
2025	0.6006	1,048.35	1,048.35	109,783	65,936
2026	0.5775	1,048.35	1,048.35	109,783	63,400
2027	0.5553	1,048.35	1,048.35	109,783	60,962



2028	0.5339	1,048.35	1,048.35	109,783	58,613
2029	0.5134	1,048.35	1,048.35	109,783	56,363
2030	0.4936	1,048.35	1,048.35	109,783	54,189
2031	0.4746	1,048.35	1,048.35	109,783	52,103
2032	0.4564	1,048.35	1,048.35	109,783	50,105
2033	0.4388	1,048.35	1,048.35	109,783	48,173
2034	0.4220	1,048.35	1,048.35	109,783	46,328
2035	0.4057	1,048.35	1,048.35	109,783	44,539
2036	0.3901	1,048.35	1,048.35	109,783	42,826
2037	0.3751	1,048.35	1,048.35	109,783	41,180
2038	0.3607	1,048.35	1,048.35	109,783	39,599
2039	0.3468	1,048.35	1,048.35	109,783	38,073
2040	0.3335	1,048.35	1,048.35	109,783	36,613
2041	0.3207	1,048.35	1,048.35	109,783	35,207
合計					14,757,191

$$B = \sum_{t=11}^Y \frac{V \times U}{(1+i)^t}$$

$$V = 0.01 \times A \times R \times N \times H \times 10,000$$

U:	1m3の土砂を保全するために要する単位当たりの砂防ダム建設コスト(円/m3) 出典:「砂防便覧」平成20年版	5,600
V:	崩壊見込み量(m3/年)	0.00 ~ 3,324.38
A:	事業対象区域面積(ha)	1,048.35 ~ 1,048.35
R:	流域内崩壊率 出典:「治山全体調査」S42からS46	0.0237
N:	雨量比=50年確率日雨量/既往最大日雨量 出典:気象統計情報(気象庁)	0.8920
H:	平均崩壊深(m) 出典:都道府県等への聞き取り	1.5
Y:	評価期間	80
10,000:	単位合わせのための調整値	

年度	社会的割引率	事業対象区域面積	崩壊見込み量	効果額	現在価値化
1961	7.3910				
1962	7.1067	1,048.35	0.00	0	0
1963	6.8333	1,048.35	0.00	0	0
1964	6.5705	1,048.35	0.00	0	0
1965	6.3178	1,048.35	0.00	0	0
1966	6.0748	1,048.35	0.00	0	0
1967	5.8412	1,048.35	0.00	0	0
1968	5.6165	1,048.35	0.00	0	0
1969	5.4005	1,048.35	0.00	0	0
1970	5.1928	1,048.35	0.00	0	0
1971	4.9931	1,048.35	0.00	0	0
1972	4.8010	1,048.35	3,324.38	18,617	89,380
1973	4.6164	1,048.35	3,324.38	18,617	85,944
1974	4.4388	1,048.35	3,324.38	18,617	82,637
1975	4.2681	1,048.35	3,324.38	18,617	79,459
1976	4.1039	1,048.35	3,324.38	18,617	76,402
1977	3.9461	1,048.35	3,324.38	18,617	73,465
1978	3.7943	1,048.35	3,324.38	18,617	70,638
1979	3.6484	1,048.35	3,324.38	18,617	67,922
1980	3.5081	1,048.35	3,324.38	18,617	65,310
1981	3.3731	1,048.35	3,324.38	18,617	62,797
1982	3.2434	1,048.35	3,324.38	18,617	60,382
1983	3.1187	1,048.35	3,324.38	18,617	58,061
1984	2.9987	1,048.35	3,324.38	18,617	55,827
1985	2.8834	1,048.35	3,324.38	18,617	53,680
1986	2.7725	1,048.35	3,324.38	18,617	51,616
1987	2.6658	1,048.35	3,324.38	18,617	49,629
1988	2.5633	1,048.35	3,324.38	18,617	47,721
1989	2.4647	1,048.35	3,324.38	18,617	45,885
1990	2.3699	1,048.35	3,324.38	18,617	44,120
1991	2.2788	1,048.35	3,324.38	18,617	42,424
1992	2.1911	1,048.35	3,324.38	18,617	40,792
1993	2.1068	1,048.35	3,324.38	18,617	39,222
1994	2.0258	1,048.35	3,324.38	18,617	37,714
1995	1.9479	1,048.35	3,324.38	18,617	36,264
1996	1.8730	1,048.35	3,324.38	18,617	34,870
1997	1.8009	1,048.35	3,324.38	18,617	33,527
1998	1.7317	1,048.35	3,324.38	18,617	32,239
1999	1.6651	1,048.35	3,324.38	18,617	30,999
2000	1.6010	1,048.35	3,324.38	18,617	29,806
2001	1.5395	1,048.35	3,324.38	18,617	28,661
2002	1.4802	1,048.35	3,324.38	18,617	27,557
2003	1.4233	1,048.35	3,324.38	18,617	26,498
2004	1.3686	1,048.35	3,324.38	18,617	25,479
2005	1.3159	1,048.35	3,324.38	18,617	24,498
2006	1.2653	1,048.35	3,324.38	18,617	23,556
2007	1.2167	1,048.35	3,324.38	18,617	22,651
2008	1.1699	1,048.35	3,324.38	18,617	21,780
2009	1.1249	1,048.35	3,324.38	18,617	20,942
2010	1.0816	1,048.35	3,324.38	18,617	20,136
2011	1.0400	1,048.35	3,324.38	18,617	19,362
2012	1.0000	1,048.35	3,324.38	18,617	18,617
2013	0.9615	1,048.35	3,324.38	18,617	17,900
2014	0.9246	1,048.35	3,324.38	18,617	17,213
2015	0.8890	1,048.35	3,324.38	18,617	16,551
2016	0.8548	1,048.35	3,324.38	18,617	15,914
2017	0.8219	1,048.35	3,324.38	18,617	15,301
2018	0.7903	1,048.35	3,324.38	18,617	14,713
2019	0.7599	1,048.35	3,324.38	18,617	14,147

2020	0.7307	1,048.35	3,324.38	18,617	13,603
2021	0.7026	1,048.35	3,324.38	18,617	13,080
2022	0.6756	1,048.35	3,324.38	18,617	12,578
2023	0.6496	1,048.35	3,324.38	18,617	12,094
2024	0.6246	1,048.35	3,324.38	18,617	11,628
2025	0.6006	1,048.35	3,324.38	18,617	11,181
2026	0.5775	1,048.35	3,324.38	18,617	10,751
2027	0.5553	1,048.35	3,324.38	18,617	10,338
2028	0.5339	1,048.35	3,324.38	18,617	9,940
2029	0.5134	1,048.35	3,324.38	18,617	9,558
2030	0.4936	1,048.35	3,324.38	18,617	9,189
2031	0.4746	1,048.35	3,324.38	18,617	8,836
2032	0.4564	1,048.35	3,324.38	18,617	8,497
2033	0.4388	1,048.35	3,324.38	18,617	8,169
2034	0.4220	1,048.35	3,324.38	18,617	7,856
2035	0.4057	1,048.35	3,324.38	18,617	7,553
2036	0.3901	1,048.35	3,324.38	18,617	7,262
2037	0.3751	1,048.35	3,324.38	18,617	6,983
2038	0.3607	1,048.35	3,324.38	18,617	6,715
2039	0.3468	1,048.35	3,324.38	18,617	6,456
2040	0.3335	1,048.35	3,324.38	18,617	6,209
2041	0.3207	1,048.35	3,324.38	18,617	5,970
合計					2,174,654

$$B = \sum_{t=1}^Y \frac{V2 - V1}{Y \times (1+i)^t} \times D \times BEF \times (1 + R) \times 0.5 \times \frac{44}{12} \times U$$

U:	二酸化炭素に関する原単位(円/CO2-ton) 出典:「二酸化炭素地中貯留技術研究開発成果報告書」(財)地球環境産業技術研究機構(平成18年3月)		6,046	
V1:	事業を実施しない場合の評価最終年の当該森林の見込蓄積量(m3) (事業を実施する場合の評価最終年の当該森林の見込蓄積量の1/2を想定)	スギ ヒノキ マツ カラマツ 広葉樹 前生広葉樹等	112,840 1,069 8,705 2,459 17,755 92	
V2:	事業を実施する場合の評価最終年の当該森林の見込蓄積量(m3) 出典:人工林分密度管理図((一社)日本森林技術協会)、 森林農地整備センター収穫予測表((独)森林総合研究所)等	スギ ヒノキ マツ カラマツ 広葉樹 前生広葉樹等	225,680 2,138 17,410 4,918 35,510 183	
Y:	評価期間		80	
D:	容積密度(t/m3) 出典:「日本国温室効果ガスインベントリ報告書」(2011年4月)(国立環境研究所温室効果ガスインベントリオフィス編)	スギ ヒノキ マツ カラマツ 広葉樹 前生広葉樹等	0.314 0.407 0.458 0.404 0.624 0.624	
BEF:	バイオマス拡大係数(地上部バイオマス量/幹バイオマス量) 出典:「日本国温室効果ガスインベントリ報告書」(2011年4月)(国立環境研究所温室効果ガスインベントリオフィス編)	樹齢20年越 樹齢20年越 樹齢20年越 樹齢20年越 樹齢20年越	スギ ヒノキ マツ カラマツ 広葉樹 前生広葉樹等	1.23 1.24 1.23 1.15 1.26 1.26
R:	地上部に対する地下部の比率(地下部バイオマス量/地上部バイオマス量) 出典:「日本国温室効果ガスインベントリ報告書」(2011年4月)(国立環境研究所温室効果ガスインベントリオフィス編)	スギ ヒノキ マツ カラマツ 広葉樹 前生広葉樹等	0.25 0.26 0.26 0.29 0.26 0.26	
0.5:	植物中の炭素含有率			
44/12:	炭素から二酸化炭素への換算係数			

年度	社会的割引率	スギ		ヒノキ		マツ		カラマツ		広葉樹		前生広葉樹等	
		事業効果蓄積	効果額	事業効果蓄積	効果額	事業効果蓄積	効果額	事業効果蓄積	効果額	事業効果蓄積	効果額	事業効果蓄積	効果額
1961	7.3910												
1962	7.1067	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1963	6.8333	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1964	6.5705	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1965	6.3178	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1966	6.0748	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1967	5.8412	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1968	5.6165	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1969	5.4005	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1970	5.1928	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1971	4.9931	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1972	4.8010	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1973	4.6164	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1974	4.4388	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1975	4.2681	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1976	4.1039	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1977	3.9461	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1978	3.7943	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1979	3.6484	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1980	3.5081	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1981	3.3731	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1982	3.2434	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1983	3.1187	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1984	2.9987	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1985	2.8834	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1986	2.7725	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1987	2.6658	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1988	2.5633	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1989	2.4647	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1990	2.3699	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1991	2.2788	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1992	2.1911	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1993	2.1068	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1994	2.0258	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0

1995	1.9479	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1996	1.8730	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1997	1.8009	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1998	1.7317	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
1999	1.6651	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2000	1.6010	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2001	1.5395	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2002	1.4802	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2003	1.4233	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2004	1.3686	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2005	1.3159	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2006	1.2653	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2007	1.2167	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2008	1.1699	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2009	1.1249	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2010	1.0816	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2011	1.0400	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2012	1.0000	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2013	0.9615	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2014	0.9246	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2015	0.8890	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2016	0.8548	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2017	0.8219	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2018	0.7903	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2019	0.7599	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2020	0.7307	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2021	0.7026	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2022	0.6756	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2023	0.6496	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2024	0.6246	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2025	0.6006	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2026	0.5775	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2027	0.5553	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2028	0.5339	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2029	0.5134	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2030	0.4936	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2031	0.4746	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2032	0.4564	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2033	0.4388	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2034	0.4220	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2035	0.4057	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2036	0.3901	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2037	0.3751	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2038	0.3607	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2039	0.3468	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2040	0.3335	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
2041	0.3207	1,410.50	7,546	13.36	94	108.81	856	30.74	204	221.94	2,437	1	0
合計													

年度	社会の割引率	合計	
		効果額	現在価値化
1961	7.3910		
1962	7.1067	11,137	79,147
1963	6.8333	11,137	76,102
1964	6.5705	11,137	73,176
1965	6.3178	11,137	70,361
1966	6.0748	11,137	67,655
1967	5.8412	11,137	65,053
1968	5.6165	11,137	62,551
1969	5.4005	11,137	60,145
1970	5.1928	11,137	57,832
1971	4.9931	11,137	55,608
1972	4.8010	11,137	53,469
1973	4.6164	11,137	51,413
1974	4.4388	11,137	49,435
1975	4.2681	11,137	47,534
1976	4.1039	11,137	45,705
1977	3.9461	11,137	43,948
1978	3.7943	11,137	42,257
1979	3.6484	11,137	40,632
1980	3.5081	11,137	39,070
1981	3.3731	11,137	37,566
1982	3.2434	11,137	36,122
1983	3.1187	11,137	34,733
1984	2.9987	11,137	33,397
1985	2.8834	11,137	32,112
1986	2.7725	11,137	30,877
1987	2.6658	11,137	29,689
1988	2.5633	11,137	28,547
1989	2.4647	11,137	27,449
1990	2.3699	11,137	26,394
1991	2.2788	11,137	25,379
1992	2.1911	11,137	24,402
1993	2.1068	11,137	23,463
1994	2.0258	11,137	22,561
1995	1.9479	11,137	21,694
1996	1.8730	11,137	20,860
1997	1.8009	11,137	20,057
1998	1.7317	11,137	19,286
1999	1.6651	11,137	18,544

2000	1.6010	11,137	17,830
2001	1.5395	11,137	17,145
2002	1.4802	11,137	16,485
2003	1.4233	11,137	15,851
2004	1.3686	11,137	15,242
2005	1.3159	11,137	14,655
2006	1.2653	11,137	14,092
2007	1.2167	11,137	13,550
2008	1.1699	11,137	13,029
2009	1.1249	11,137	12,528
2010	1.0816	11,137	12,046
2011	1.0400	11,137	11,582
2012	1.0000	11,137	11,137
2013	0.9615	11,137	10,708
2014	0.9246	11,137	10,297
2015	0.8890	11,137	9,901
2016	0.8548	11,137	9,520
2017	0.8219	11,137	9,154
2018	0.7903	11,137	8,802
2019	0.7599	11,137	8,463
2020	0.7307	11,137	8,138
2021	0.7026	11,137	7,825
2022	0.6756	11,137	7,524
2023	0.6496	11,137	7,235
2024	0.6246	11,137	6,956
2025	0.6006	11,137	6,689
2026	0.5775	11,137	6,432
2027	0.5553	11,137	6,184
2028	0.5339	11,137	5,946
2029	0.5134	11,137	5,718
2030	0.4936	11,137	5,497
2031	0.4746	11,137	5,286
2032	0.4564	11,137	5,083
2033	0.4388	11,137	4,887
2034	0.4220	11,137	4,700
2035	0.4057	11,137	4,518
2036	0.3901	11,137	4,345
2037	0.3751	11,137	4,177
2038	0.3607	11,137	4,017
2039	0.3468	11,137	3,862
2040	0.3335	11,137	3,714
2041	0.3207	11,137	3,572
合計			1,968,547

$$B = \sum_{t=1}^{T-1} \frac{t}{T \times (1+i)^t} + \sum_{t=T}^Y \frac{1}{(1+i)^t} \times (C1 - C2) \times A \times 0.3 \times \frac{44}{12} \times U$$

$$C1 = \frac{s \times e1}{30}$$

$$C2 = \frac{s \times e2}{30}$$

- U: 二酸化炭素に関する原単位(円/t-CO2) 6,046  
出典:「二酸化炭素地中貯留技術研究開発成果報告書」(財)地球環境産業技術研究機構(平成18年3月)
- C1: 事業を実施しない場合の年間流出土砂量に含まれる炭素量(t-C/ha) ①事業対象区域 0.57
- C2: 事業を実施した場合の年間流出土砂量に含まれる炭素量(t-C/ha) ①事業対象区域 0.04
- T: 事業実施後、流出係数が安定するのに必要な年数 15
- Y: ①侵食深が30cmに達するまでの年数(To) 又は ①事業対象区域 80  
②評価期間内に侵食深が30cmに達しない場合は評価期間
- A: ①事業対象区域面積(ha) 又は 1,048.35 ~ 1,048.35  
②保全効果区域面積(ha)
- s: 単位面積当たりの土壌平均炭素蓄積量(t-C/ha) 85.31  
出典:「日本国温室効果ガスインベントリ報告書」(2011年4月)(国立環境研究所温室効果ガスインベントリオフィス編)
- 44/12: 炭素から二酸化炭素への換算係数
- e1:: 事業を実施しない場合の侵食深(cm/年) 0.200  
出典:「治山全体調査の考え方進め方」  
「森林の公益的機能に関する文献要約集」  
「森林水文」 ①事業対象区域 荒廃地等
- e2:: 事業を実施した場合の侵食深(cm/年) 0.013  
出典:「治山全体調査の考え方進め方」  
「森林の公益的機能に関する文献要約集」  
「森林水文」 ①事業対象区域 整備済森林
- 30: 土壌炭素の測定深度(cm)
- 0.3: 流出土砂排出炭素係数

年度	社会的割引率	事業対象区域				現在価値化	効果対象面積	効果額	現在価値化
		事業対象区域面積	効果対象面積	効果額	現在価値化				
1961	7.3910								
1962	7.1067	1,048.35	69.89	246	1,748				
1963	6.8333	1,048.35	139.78	493	3,369				
1964	6.5705	1,048.35	209.67	739	4,856				
1965	6.3178	1,048.35	279.56	985	6,223				
1966	6.0748	1,048.35	349.45	1,232	7,484				
1967	5.8412	1,048.35	419.34	1,478	8,633				
1968	5.6165	1,048.35	489.23	1,725	9,688				
1969	5.4005	1,048.35	559.12	1,971	10,644				
1970	5.1928	1,048.35	629.01	2,217	11,512				
1971	4.9931	1,048.35	698.90	2,464	12,303				
1972	4.8010	1,048.35	768.79	2,710	13,011				
1973	4.6164	1,048.35	838.68	2,956	13,646				
1974	4.4388	1,048.35	908.57	3,203	14,217				
1975	4.2681	1,048.35	978.46	3,449	14,721				
1976	4.1039	1,048.35	1,048.35	3,695	15,164				
1977	3.9461	1,048.35	1,048.35	3,695	14,581				
1978	3.7943	1,048.35	1,048.35	3,695	14,020				
1979	3.6484	1,048.35	1,048.35	3,695	13,481				
1980	3.5081	1,048.35	1,048.35	3,695	12,962				
1981	3.3731	1,048.35	1,048.35	3,695	12,464				
1982	3.2434	1,048.35	1,048.35	3,695	11,984				
1983	3.1187	1,048.35	1,048.35	3,695	11,524				
1984	2.9987	1,048.35	1,048.35	3,695	11,080				
1985	2.8834	1,048.35	1,048.35	3,695	10,654				
1986	2.7725	1,048.35	1,048.35	3,695	10,244				
1987	2.6658	1,048.35	1,048.35	3,695	9,850				
1988	2.5633	1,048.35	1,048.35	3,695	9,471				
1989	2.4647	1,048.35	1,048.35	3,695	9,107				
1990	2.3699	1,048.35	1,048.35	3,695	8,757				
1991	2.2788	1,048.35	1,048.35	3,695	8,420				
1992	2.1911	1,048.35	1,048.35	3,695	8,096				
1993	2.1068	1,048.35	1,048.35	3,695	7,785				
1994	2.0258	1,048.35	1,048.35	3,695	7,485				
1995	1.9479	1,048.35	1,048.35	3,695	7,197				
1996	1.8730	1,048.35	1,048.35	3,695	6,921				
1997	1.8009	1,048.35	1,048.35	3,695	6,654				
1998	1.7317	1,048.35	1,048.35	3,695	6,399				
1999	1.6651	1,048.35	1,048.35	3,695	6,153				
2000	1.6010	1,048.35	1,048.35	3,695	5,916				

2001	1.5395	1,048.35	1,048.35	3,695	5,688			
2002	1.4802	1,048.35	1,048.35	3,695	5,469			
2003	1.4233	1,048.35	1,048.35	3,695	5,259			
2004	1.3686	1,048.35	1,048.35	3,695	5,057			
2005	1.3159	1,048.35	1,048.35	3,695	4,862			
2006	1.2653	1,048.35	1,048.35	3,695	4,675			
2007	1.2167	1,048.35	1,048.35	3,695	4,496			
2008	1.1699	1,048.35	1,048.35	3,695	4,323			
2009	1.1249	1,048.35	1,048.35	3,695	4,157			
2010	1.0816	1,048.35	1,048.35	3,695	3,997			
2011	1.0400	1,048.35	1,048.35	3,695	3,843			
2012	1.0000	1,048.35	1,048.35	3,695	3,695			
2013	0.9615	1,048.35	1,048.35	3,695	3,553			
2014	0.9246	1,048.35	1,048.35	3,695	3,416			
2015	0.8890	1,048.35	1,048.35	3,695	3,285			
2016	0.8548	1,048.35	1,048.35	3,695	3,158			
2017	0.8219	1,048.35	1,048.35	3,695	3,037			
2018	0.7903	1,048.35	1,048.35	3,695	2,920			
2019	0.7599	1,048.35	1,048.35	3,695	2,808			
2020	0.7307	1,048.35	1,048.35	3,695	2,700			
2021	0.7026	1,048.35	1,048.35	3,695	2,596			
2022	0.6756	1,048.35	1,048.35	3,695	2,496			
2023	0.6496	1,048.35	1,048.35	3,695	2,400			
2024	0.6246	1,048.35	1,048.35	3,695	2,308			
2025	0.6006	1,048.35	1,048.35	3,695	2,219			
2026	0.5775	1,048.35	1,048.35	3,695	2,134			
2027	0.5553	1,048.35	1,048.35	3,695	2,052			
2028	0.5339	1,048.35	1,048.35	3,695	1,973			
2029	0.5134	1,048.35	1,048.35	3,695	1,897			
2030	0.4936	1,048.35	1,048.35	3,695	1,824			
2031	0.4746	1,048.35	1,048.35	3,695	1,754			
2032	0.4564	1,048.35	1,048.35	3,695	1,686			
2033	0.4388	1,048.35	1,048.35	3,695	1,621			
2034	0.4220	1,048.35	1,048.35	3,695	1,559			
2035	0.4057	1,048.35	1,048.35	3,695	1,499			
2036	0.3901	1,048.35	1,048.35	3,695	1,441			
2037	0.3751	1,048.35	1,048.35	3,695	1,386			
2038	0.3607	1,048.35	1,048.35	3,695	1,333			
2039	0.3468	1,048.35	1,048.35	3,695	1,281			
2040	0.3335	1,048.35	1,048.35	3,695	1,232			
2041	0.3207	1,048.35	1,048.35	3,695	1,185			
合計					496,698			0



$$B = \sum_{t=1}^Y \frac{V_t \times @}{(1+i)^t}$$

Y: 評価期間

80

Vt主: 人工林 主伐量 t年後における伐採材積(m3)  
出典:人工林林分密度管理図((一社)日本森林技術協会)、  
森林農地整備センター収穫予測表((独)森林総合研究所)等

スギ	0.00 ~ 180,544.21
ヒノキ	0.00 ~ 1,603.35
マツ	0.00 ~ 12,622.00
カラマツ	0.00 ~ 3,688.85
広葉樹	0.00 ~ 35,510.39
前生広葉樹等	0.00 ~ 0.00

@: 人工林 主伐材 木材市場価格(円/m3)  
出典:「山林素地及び山元立木価格調((一財)日本不動産研究所)」(平成24年3月末現

スギ	3,021
ヒノキ	7,550
マツ	1,375
カラマツ	3,578
広葉樹	0
前生広葉樹等	0

年度	社会的割引率	スギ		ヒノキ		マツ		カラマツ		広葉樹	
		事業効果材積	効果額	事業効果材積	効果額	事業効果材積	効果額	事業効果材積	効果額	事業効果材積	効果額
1961	7.3910										
1962	7.1067	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1963	6.8333	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1964	6.5705	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1965	6.3178	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1966	6.0748	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1967	5.8412	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1968	5.6165	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1969	5.4005	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1970	5.1928	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1971	4.9931	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1972	4.8010	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1973	4.6164	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1974	4.4388	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1975	4.2681	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1976	4.1039	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1977	3.9461	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1978	3.7943	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1979	3.6484	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1980	3.5081	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1981	3.3731	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1982	3.2434	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1983	3.1187	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1984	2.9987	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1985	2.8834	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1986	2.7725	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1987	2.6658	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1988	2.5633	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1989	2.4647	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1990	2.3699	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1991	2.2788	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1992	2.1911	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1993	2.1068	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1994	2.0258	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1995	1.9479	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1996	1.8730	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1997	1.8009	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1998	1.7317	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
1999	1.6651	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2000	1.6010	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2001	1.5395	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2002	1.4802	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2003	1.4233	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2004	1.3686	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2005	1.3159	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2006	1.2653	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2007	1.2167	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2008	1.1699	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2009	1.1249	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2010	1.0816	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2011	1.0400	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2012	1.0000	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2013	0.9615	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2014	0.9246	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2015	0.8890	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2016	0.8548	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2017	0.8219	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2018	0.7903	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2019	0.7599	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2020	0.7307	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0

2021	0.7026	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2022	0.6756	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2023	0.6496	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2024	0.6246	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2025	0.6006	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2026	0.5775	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2027	0.5553	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2028	0.5339	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2029	0.5134	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2030	0.4936	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2031	0.4746	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2032	0.4564	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2033	0.4388	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2034	0.4220	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2035	0.4057	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2036	0.3901	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2037	0.3751	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2038	0.3607	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2039	0.3468	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2040	0.3335	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0
2041	0.3207	180,544.21	545,424	1,603.35	12,105	12,622.00	17,355	3,688.85	13,199	35,510.39	0
合計											

年度	前生広葉樹等			合計	
	社会的割引率	事業効果材積	効果額	効果額	現在価値化
1961	7.3910				
1962	7.1067	0.00	0	0	0
1963	6.8333	0.00	0	0	0
1964	6.5705	0.00	0	0	0
1965	6.3178	0.00	0	0	0
1966	6.0748	0.00	0	0	0
1967	5.8412	0.00	0	0	0
1968	5.6165	0.00	0	0	0
1969	5.4005	0.00	0	0	0
1970	5.1928	0.00	0	0	0
1971	4.9931	0.00	0	0	0
1972	4.8010	0.00	0	0	0
1973	4.6164	0.00	0	0	0
1974	4.4388	0.00	0	0	0
1975	4.2681	0.00	0	0	0
1976	4.1039	0.00	0	0	0
1977	3.9461	0.00	0	0	0
1978	3.7943	0.00	0	0	0
1979	3.6484	0.00	0	0	0
1980	3.5081	0.00	0	0	0
1981	3.3731	0.00	0	0	0
1982	3.2434	0.00	0	0	0
1983	3.1187	0.00	0	0	0
1984	2.9987	0.00	0	0	0
1985	2.8834	0.00	0	0	0
1986	2.7725	0.00	0	0	0
1987	2.6658	0.00	0	0	0
1988	2.5633	0.00	0	0	0
1989	2.4647	0.00	0	0	0
1990	2.3699	0.00	0	0	0
1991	2.2788	0.00	0	0	0
1992	2.1911	0.00	0	0	0
1993	2.1068	0.00	0	0	0
1994	2.0258	0.00	0	0	0
1995	1.9479	0.00	0	0	0
1996	1.8730	0.00	0	0	0
1997	1.8009	0.00	0	0	0
1998	1.7317	0.00	0	0	0
1999	1.6651	0.00	0	0	0
2000	1.6010	0.00	0	0	0
2001	1.5395	0.00	0	0	0
2002	1.4802	0.00	0	0	0
2003	1.4233	0.00	0	0	0
2004	1.3686	0.00	0	0	0
2005	1.3159	0.00	0	0	0
2006	1.2653	0.00	0	0	0
2007	1.2167	0.00	0	0	0
2008	1.1699	0.00	0	0	0
2009	1.1249	0.00	0	0	0
2010	1.0816	0.00	0	0	0
2011	1.0400	0.00	0	0	0
2012	1.0000	0.00	0	0	0
2013	0.9615	0.00	0	0	0
2014	0.9246	0.00	0	0	0
2015	0.8890	0.00	0	0	0
2016	0.8548	0.00	0	0	0
2017	0.8219	0.00	0	0	0
2018	0.7903	0.00	0	0	0
2019	0.7599	0.00	0	0	0
2020	0.7307	0.00	0	0	0
2021	0.7026	0.00	0	0	0
2022	0.6756	0.00	0	0	0
2023	0.6496	0.00	0	0	0
2024	0.6246	0.00	0	0	0
2025	0.6006	0.00	0	0	0

2026	0.5775	0.00	0	0	0
2027	0.5553	0.00	0	0	0
2028	0.5339	0.00	0	0	0
2029	0.5134	0.00	0	0	0
2030	0.4936	0.00	0	0	0
2031	0.4746	0.00	0	0	0
2032	0.4564	0.00	0	0	0
2033	0.4388	0.00	0	0	0
2034	0.4220	0.00	0	0	0
2035	0.4057	0.00	0	0	0
2036	0.3901	0.00	0	0	0
2037	0.3751	0.00	0	0	0
2038	0.3607	0.00	0	0	0
2039	0.3468			0	0
2040	0.3335			0	0
2041	0.3207			588,083	188,598
合計					188,598