

## 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：東北北海道整備局 昭和40年度契約地

(単位：千円)

| 年度       | 年  | 事業費       |        | 現在価値額      | 年度            | 年  | 事業費     |        | 現在価値額      |
|----------|----|-----------|--------|------------|---------------|----|---------|--------|------------|
| S40      | 1  | 6,499,147 | × 5.84 | 37,955,019 | H23           | 47 | 0       | × 0.96 | 0          |
| S41      | 2  | 1,626,719 | × 5.62 | 9,142,161  | H24           | 48 | 0       | × 0.92 | 0          |
| S42      | 3  | 1,308,262 | × 5.40 | 7,064,614  | H25           | 49 | 0       | × 0.89 | 0          |
| S43      | 4  | 995,618   | × 5.19 | 5,167,258  | H26           | 50 | 0       | × 0.85 | 0          |
| S44      | 5  | 699,190   | × 4.99 | 3,488,958  | H27           | 51 | 0       | × 0.82 | 0          |
| S45      | 6  | 646,199   | × 4.80 | 3,101,755  | H28           | 52 | 0       | × 0.79 | 0          |
| S46      | 7  | 0         | × 4.62 | 0          | H29           | 53 | 0       | × 0.76 | 0          |
| S47      | 8  | 279,210   | × 4.44 | 1,239,692  | H30           | 54 | 0       | × 0.73 | 0          |
| S48      | 9  | 0         | × 4.27 | 0          | H31           | 55 | 19,762  | × 0.70 | 13,833     |
| S49      | 10 | 240,538   | × 4.10 | 986,206    | H32           | 56 | 134,780 | × 0.68 | 91,650     |
| S50      | 11 | 31,166    | × 3.95 | 123,106    | H33           | 57 | 0       | × 0.65 | 0          |
| S51      | 12 | 759,351   | × 3.79 | 2,877,941  | H34           | 58 | 0       | × 0.62 | 0          |
| S52      | 13 | 0         | × 3.65 | 0          | H35           | 59 | 0       | × 0.60 | 0          |
| S53      | 14 | 1,102,289 | × 3.51 | 3,869,034  | H36           | 60 | 0       | × 0.58 | 0          |
| S54      | 15 | 0         | × 3.37 | 0          | H37           | 61 | 0       | × 0.56 | 0          |
| S55      | 16 | 158,558   | × 3.24 | 513,728    | H38           | 62 | 0       | × 0.53 | 0          |
| S56      | 17 | 0         | × 3.12 | 0          | H39           | 63 | 0       | × 0.51 | 0          |
| S57      | 18 | 291,528   | × 3.00 | 874,584    | H40           | 64 | 0       | × 0.49 | 0          |
| S58      | 19 | 0         | × 2.88 | 0          | H41           | 65 | 0       | × 0.47 | 0          |
| S59      | 20 | 554,311   | × 2.77 | 1,535,442  | H42           | 66 | 0       | × 0.46 | 0          |
| S60      | 21 | 404,936   | × 2.67 | 1,081,179  | H43           | 67 | 0       | × 0.44 | 0          |
| S61      | 22 | 0         | × 2.56 | 0          | H44           | 68 | 0       | × 0.42 | 0          |
| S62      | 23 | 0         | × 2.46 | 0          | H45           | 69 | 0       | × 0.41 | 0          |
| S63      | 24 | 0         | × 2.37 | 0          | H46           | 70 | 0       | × 0.39 | 0          |
| H 1      | 25 | 0         | × 2.28 | 0          | H47           | 71 | 0       | × 0.38 | 0          |
| H 2      | 26 | 789,674   | × 2.19 | 1,729,386  | H48           | 72 | 0       | × 0.36 | 0          |
| H 3      | 27 | 0         | × 2.11 | 0          | H49           | 73 | 0       | × 0.35 | 0          |
| H 4      | 28 | 0         | × 2.03 | 0          | H50           | 74 | 0       | × 0.33 | 0          |
| H 5      | 29 | 0         | × 1.95 | 0          | H51           | 75 | 0       | × 0.32 | 0          |
| H 6      | 30 | 0         | × 1.87 | 0          | H52           | 76 | 0       | × 0.31 | 0          |
| H 7      | 31 | 0         | × 1.80 | 0          | H53           | 77 | 0       | × 0.30 | 0          |
| H 8      | 32 | 0         | × 1.73 | 0          | H54           | 78 | 0       | × 0.29 | 0          |
| H 9      | 33 | 0         | × 1.67 | 0          | H55           | 79 | 0       | × 0.27 | 0          |
| H10      | 34 | 0         | × 1.60 | 0          | H56           | 80 | 0       | × 0.26 | 0          |
| H11      | 35 | 0         | × 1.54 | 0          |               |    |         |        |            |
| H12      | 36 | 0         | × 1.48 | 0          |               |    |         |        |            |
| H13      | 37 | 0         | × 1.42 | 0          |               |    |         |        |            |
| H14      | 38 | 0         | × 1.37 | 0          |               |    |         |        |            |
| H15      | 39 | 0         | × 1.32 | 0          |               |    |         |        |            |
| H16      | 40 | 0         | × 1.27 | 0          |               |    |         |        |            |
| H17      | 41 | 0         | × 1.22 | 0          |               |    |         |        |            |
| H18      | 42 | 0         | × 1.17 | 0          |               |    |         |        |            |
| H19      | 43 | 0         | × 1.12 | 0          |               |    |         |        |            |
| H20      | 44 | 0         | × 1.08 | 0          |               |    |         |        |            |
| H21      | 45 | 0         | × 1.04 | 0          |               |    |         |        |            |
| H22      | 46 | 0         | × 1.00 | 0          | 合 計           |    |         |        | 80,855,546 |
| 総費用(C) = |    |           |        |            | 80,855,546 千円 |    |         |        |            |





1 水源かん養便益  
 (3) 水質浄化便益

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

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

- Qx: 全貯留量のうち生活用水使用相当量 (m3/年) 157億
- Qy: 全貯留量 - Qx (m3/年) 1,707.25 億
- A: 事業対象区域面積 (ha) 4,184
- P: 年間平均降雨量 (mm/年) 1,312
- T: 事業実施後、貯留率が安定するのに必要な年数 (年) 15
- D1: 事業実施前の貯留率 0.51
- D2: 事業実施後、T年経過後の貯留率 0.56
- Ux: 単位当たりの上水道給水原価 (円/m3) 178.83
- Uy: 単位当たりの雨水浄化費 (円/m3) 68.57
- 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) (円/m3) 77.90
- Y: 評価期間 (年) 80
- 10: 単位合わせのための調整値

(単位: 千円)

| 評価期間    | 経過年 | 年度   | 割引係数<br>(1) | 事業対象区域面積 (ha) | 年効果額<br>(2) | 効果発生割合<br>(3) | 年発生効果額<br>(4) = (2) × (3) | 現在価値<br>(5) = (4) × (1) |
|---------|-----|------|-------------|---------------|-------------|---------------|---------------------------|-------------------------|
| 1       | -45 | S40  | 5.84        | 4,184         | 213,807     | 7%            | 14,254                    | 83,242                  |
| 2       | -44 | S41  | 5.62        | 4,184         | 213,807     | 13%           | 28,508                    | 160,213                 |
| 3       | -43 | S42  | 5.40        | 4,184         | 213,807     | 20%           | 42,761                    | 230,911                 |
| 4       | -42 | S43  | 5.19        | 4,184         | 213,807     | 27%           | 57,015                    | 295,909                 |
| 5       | -41 | S44  | 4.99        | 4,184         | 213,807     | 33%           | 71,269                    | 355,632                 |
| 6       | -40 | S45  | 4.80        | 4,184         | 213,807     | 40%           | 85,523                    | 410,509                 |
| 7       | -39 | S46  | 4.62        | 4,184         | 213,807     | 47%           | 99,777                    | 460,968                 |
| 8       | -38 | S47  | 4.44        | 4,184         | 213,807     | 53%           | 114,030                   | 506,295                 |
| 9       | -37 | S48  | 4.27        | 4,184         | 213,807     | 60%           | 128,284                   | 547,773                 |
| 10      | -36 | S49  | 4.10        | 4,184         | 213,807     | 67%           | 142,538                   | 584,405                 |
| 11      | -35 | S50  | 3.95        | 4,184         | 213,807     | 73%           | 156,792                   | 619,327                 |
| 12      | -34 | S51  | 3.79        | 4,184         | 213,807     | 80%           | 171,045                   | 648,262                 |
| 13      | -33 | S52  | 3.65        | 4,184         | 213,807     | 87%           | 185,299                   | 676,342                 |
| 14      | -32 | S53  | 3.51        | 4,184         | 213,807     | 93%           | 199,553                   | 700,431                 |
| 15      | -31 | S54  | 3.37        | 4,184         | 213,807     | 100%          | 213,807                   | 720,529                 |
| 16      | -30 | S55  | 3.24        | 4,184         | 213,807     | 100%          | 213,807                   | 692,734                 |
| 17      | -29 | S56  | 3.12        | 4,184         | 213,807     | 100%          | 213,807                   | 667,077                 |
| 18      | -28 | S57  | 3.00        | 4,184         | 213,807     | 100%          | 213,807                   | 641,420                 |
| 19      | -27 | S58  | 2.88        | 4,184         | 213,807     | 100%          | 213,807                   | 615,764                 |
| 20      | -26 | S59  | 2.77        | 4,184         | 213,807     | 100%          | 213,807                   | 592,245                 |
| 21      | -25 | S60  | 2.67        | 4,184         | 213,807     | 100%          | 213,807                   | 570,864                 |
| 22      | -24 | S61  | 2.56        | 4,184         | 213,807     | 100%          | 213,807                   | 547,345                 |
| 23      | -23 | S62  | 2.46        | 4,184         | 213,807     | 100%          | 213,807                   | 525,965                 |
| 24      | -22 | S63  | 2.37        | 4,184         | 213,807     | 100%          | 213,807                   | 506,722                 |
| 25      | -21 | H 1  | 2.28        | 4,184         | 213,807     | 100%          | 213,807                   | 487,480                 |
| 26      | -20 | H 2  | 2.19        | 4,184         | 213,807     | 100%          | 213,807                   | 468,237                 |
| 27      | -19 | H 3  | 2.11        | 4,184         | 213,807     | 100%          | 213,807                   | 451,132                 |
| 28      | -18 | H 4  | 2.03        | 4,184         | 213,807     | 100%          | 213,807                   | 434,028                 |
| 29      | -17 | H 5  | 1.95        | 4,184         | 213,807     | 100%          | 213,807                   | 416,923                 |
| 30      | -16 | H 6  | 1.87        | 4,184         | 213,807     | 100%          | 213,807                   | 399,819                 |
| 31      | -15 | H 7  | 1.80        | 4,184         | 213,807     | 100%          | 213,807                   | 384,852                 |
| 32      | -14 | H 8  | 1.73        | 4,184         | 213,807     | 100%          | 213,807                   | 369,886                 |
| 33      | -13 | H 9  | 1.67        | 4,184         | 213,807     | 100%          | 213,807                   | 357,057                 |
| 34      | -12 | H 10 | 1.60        | 4,184         | 213,807     | 100%          | 213,807                   | 342,091                 |
| 35      | -11 | H 11 | 1.54        | 4,184         | 213,807     | 100%          | 213,807                   | 329,263                 |
| 36      | -10 | H 12 | 1.48        | 4,184         | 213,807     | 100%          | 213,807                   | 316,434                 |
| 37      | -9  | H 13 | 1.42        | 4,184         | 213,807     | 100%          | 213,807                   | 303,606                 |
| 38      | -8  | H 14 | 1.37        | 4,184         | 213,807     | 100%          | 213,807                   | 292,915                 |
| 39      | -7  | H 15 | 1.32        | 4,184         | 213,807     | 100%          | 213,807                   | 282,225                 |
| 40      | -6  | H 16 | 1.27        | 4,184         | 213,807     | 100%          | 213,807                   | 271,535                 |
| 41      | -5  | H 17 | 1.22        | 4,184         | 213,807     | 100%          | 213,807                   | 260,844                 |
| 42      | -4  | H 18 | 1.17        | 4,184         | 213,807     | 100%          | 213,807                   | 250,154                 |
| 43      | -3  | H 19 | 1.12        | 4,184         | 213,807     | 100%          | 213,807                   | 239,464                 |
| 44      | -2  | H 20 | 1.08        | 4,184         | 213,807     | 100%          | 213,807                   | 230,911                 |
| 45      | -1  | H 21 | 1.04        | 4,184         | 213,807     | 100%          | 213,807                   | 222,359                 |
| 46      | 0   | H 22 | 1.00        | 4,184         | 213,807     | 100%          | 213,807                   | 213,807                 |
| 47      | 1   | H 23 | 0.96        | 4,184         | 213,807     | 100%          | 213,807                   | 205,255                 |
| 48      | 2   | H 24 | 0.92        | 4,184         | 213,807     | 100%          | 213,807                   | 196,702                 |
| 49      | 3   | H 25 | 0.89        | 4,184         | 213,807     | 100%          | 213,807                   | 190,288                 |
| 50      | 4   | H 26 | 0.85        | 4,184         | 213,807     | 100%          | 213,807                   | 181,736                 |
| 51      | 5   | H 27 | 0.82        | 4,184         | 213,807     | 100%          | 213,807                   | 175,322                 |
| 52      | 6   | H 28 | 0.79        | 4,184         | 213,807     | 100%          | 213,807                   | 168,907                 |
| 53      | 7   | H 29 | 0.76        | 4,184         | 213,807     | 100%          | 213,807                   | 162,493                 |
| 54      | 8   | H 30 | 0.73        | 4,184         | 213,807     | 100%          | 213,807                   | 156,079                 |
| 55      | 9   | H 31 | 0.70        | 4,184         | 213,807     | 100%          | 213,807                   | 149,665                 |
| 56      | 10  | H 32 | 0.68        | 4,184         | 213,807     | 100%          | 213,807                   | 145,389                 |
| 57      | 11  | H 33 | 0.65        | 4,184         | 213,807     | 100%          | 213,807                   | 138,974                 |
| 58      | 12  | H 34 | 0.62        | 4,184         | 213,807     | 100%          | 213,807                   | 132,560                 |
| 59      | 13  | H 35 | 0.60        | 4,184         | 213,807     | 100%          | 213,807                   | 128,284                 |
| 60      | 14  | H 36 | 0.58        | 4,184         | 213,807     | 100%          | 213,807                   | 124,008                 |
| 61      | 15  | H 37 | 0.56        | 4,184         | 213,807     | 100%          | 213,807                   | 119,732                 |
| 62      | 16  | H 38 | 0.53        | 4,184         | 213,807     | 100%          | 213,807                   | 113,318                 |
| 63      | 17  | H 39 | 0.51        | 4,184         | 213,807     | 100%          | 213,807                   | 109,041                 |
| 64      | 18  | H 40 | 0.49        | 4,184         | 213,807     | 100%          | 213,807                   | 104,765                 |
| 65      | 19  | H 41 | 0.47        | 4,184         | 213,807     | 100%          | 213,807                   | 100,489                 |
| 66      | 20  | H 42 | 0.46        | 4,184         | 213,807     | 100%          | 213,807                   | 98,351                  |
| 67      | 21  | H 43 | 0.44        | 4,184         | 213,807     | 100%          | 213,807                   | 94,075                  |
| 68      | 22  | H 44 | 0.42        | 4,184         | 213,807     | 100%          | 213,807                   | 89,799                  |
| 69      | 23  | H 45 | 0.41        | 4,184         | 213,807     | 100%          | 213,807                   | 87,661                  |
| 70      | 24  | H 46 | 0.39        | 4,184         | 213,807     | 100%          | 213,807                   | 83,385                  |
| 71      | 25  | H 47 | 0.38        | 4,184         | 213,807     | 100%          | 213,807                   | 81,247                  |
| 72      | 26  | H 48 | 0.36        | 4,184         | 213,807     | 100%          | 213,807                   | 76,970                  |
| 73      | 27  | H 49 | 0.35        | 4,184         | 213,807     | 100%          | 213,807                   | 74,832                  |
| 74      | 28  | H 50 | 0.33        | 4,184         | 213,807     | 100%          | 213,807                   | 70,556                  |
| 75      | 29  | H 51 | 0.32        | 4,184         | 213,807     | 100%          | 213,807                   | 68,418                  |
| 76      | 30  | H 52 | 0.31        | 4,184         | 213,807     | 100%          | 213,807                   | 66,280                  |
| 77      | 31  | H 53 | 0.30        | 4,184         | 213,807     | 100%          | 213,807                   | 64,142                  |
| 78      | 32  | H 54 | 0.29        | 4,184         | 213,807     | 100%          | 213,807                   | 62,004                  |
| 79      | 33  | H 55 | 0.27        | 4,184         | 213,807     | 100%          | 213,807                   | 57,728                  |
| 80      | 34  | H 56 | 0.26        | 4,184         | 213,807     | 100%          | 213,807                   | 55,590                  |
| 合計(便益額) |     |      |             |               |             |               |                           | 23,619,952              |





事業名： 水源林造成事業  
 施行箇所： 東北北海道整備局 昭和40年度契約地

3,427,280 千円

3 環境保全便益  
 (1) 炭素固定便益  
 ① 樹木固定分

スギ

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

|        |                                    |                   |                          |
|--------|------------------------------------|-------------------|--------------------------|
| U:     | 二酸化炭素に関する原単位(円/t-CO2)              |                   | 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)    | スギ                | 304,822                  |
| 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)     | スギ                | 609,645                  |
| Y:     | 評価期間(年)                            |                   | 80                       |
| D:     | 容積密度(t/m3)                         | スギ                | 0.314                    |
| 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)       | 樹齢20年以下<br>樹齢20年超 | スギ<br>スギ<br>1.57<br>1.23 |
| 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) | スギ                | 0.25                     |
| 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                    |                   |                          |

便益算出表 (単位:千円)

| 評価期間    | 経過年 | 年度   | 割引係数<br>① | V2-V1(m3)<br>樹種名 スギ | 年効果額<br>② | 効果発生割合<br>③ | 年発生効果額<br>④=(2)×③ | 現在価値<br>⑤=(4)×① |
|---------|-----|------|-----------|---------------------|-----------|-------------|-------------------|-----------------|
| 1       | -45 | S40  | 5.84      | 304,822             | 26,026    | 100%        | 26,026            | 151,991         |
| 2       | -44 | S41  | 5.62      | 304,822             | 26,026    | 100%        | 26,026            | 146,266         |
| 3       | -43 | S42  | 5.40      | 304,822             | 26,026    | 100%        | 26,026            | 140,540         |
| 4       | -42 | S43  | 5.19      | 304,822             | 26,026    | 100%        | 26,026            | 135,074         |
| 5       | -41 | S44  | 4.99      | 304,822             | 26,026    | 100%        | 26,026            | 129,869         |
| 6       | -40 | S45  | 4.80      | 304,822             | 26,026    | 100%        | 26,026            | 124,924         |
| 7       | -39 | S46  | 4.62      | 304,822             | 26,026    | 100%        | 26,026            | 120,240         |
| 8       | -38 | S47  | 4.44      | 304,822             | 26,026    | 100%        | 26,026            | 115,555         |
| 9       | -37 | S48  | 4.27      | 304,822             | 26,026    | 100%        | 26,026            | 111,131         |
| 10      | -36 | S49  | 4.10      | 304,822             | 26,026    | 100%        | 26,026            | 106,706         |
| 11      | -35 | S50  | 3.95      | 304,822             | 26,026    | 100%        | 26,026            | 102,802         |
| 12      | -34 | S51  | 3.79      | 304,822             | 26,026    | 100%        | 26,026            | 98,638          |
| 13      | -33 | S52  | 3.65      | 304,822             | 26,026    | 100%        | 26,026            | 94,995          |
| 14      | -32 | S53  | 3.51      | 304,822             | 26,026    | 100%        | 26,026            | 91,351          |
| 15      | -31 | S54  | 3.37      | 304,822             | 26,026    | 100%        | 26,026            | 87,707          |
| 16      | -30 | S55  | 3.24      | 304,822             | 26,026    | 100%        | 26,026            | 84,324          |
| 17      | -29 | S56  | 3.12      | 304,822             | 26,026    | 100%        | 26,026            | 81,201          |
| 18      | -28 | S57  | 3.00      | 304,822             | 26,026    | 100%        | 26,026            | 78,078          |
| 19      | -27 | S58  | 2.88      | 304,822             | 26,026    | 100%        | 26,026            | 74,955          |
| 20      | -26 | S59  | 2.77      | 304,822             | 26,026    | 100%        | 26,026            | 72,092          |
| 21      | -25 | S60  | 2.67      | 304,822             | 20,390    | 100%        | 20,390            | 54,441          |
| 22      | -24 | S61  | 2.56      | 304,822             | 20,390    | 100%        | 20,390            | 52,198          |
| 23      | -23 | S62  | 2.46      | 304,822             | 20,390    | 100%        | 20,390            | 50,159          |
| 24      | -22 | S63  | 2.37      | 304,822             | 20,390    | 100%        | 20,390            | 48,324          |
| 25      | -21 | H 1  | 2.28      | 304,822             | 20,390    | 100%        | 20,390            | 46,489          |
| 26      | -20 | H 2  | 2.19      | 304,822             | 20,390    | 100%        | 20,390            | 44,653          |
| 27      | -19 | H 3  | 2.11      | 304,822             | 20,390    | 100%        | 20,390            | 43,022          |
| 28      | -18 | H 4  | 2.03      | 304,822             | 20,390    | 100%        | 20,390            | 41,391          |
| 29      | -17 | H 5  | 1.95      | 304,822             | 20,390    | 100%        | 20,390            | 39,760          |
| 30      | -16 | H 6  | 1.87      | 304,822             | 20,390    | 100%        | 20,390            | 38,129          |
| 31      | -15 | H 7  | 1.80      | 304,822             | 20,390    | 100%        | 20,390            | 36,701          |
| 32      | -14 | H 8  | 1.73      | 304,822             | 20,390    | 100%        | 20,390            | 35,274          |
| 33      | -13 | H 9  | 1.67      | 304,822             | 20,390    | 100%        | 20,390            | 34,051          |
| 34      | -12 | H 10 | 1.60      | 304,822             | 20,390    | 100%        | 20,390            | 32,624          |
| 35      | -11 | H 11 | 1.54      | 304,822             | 20,390    | 100%        | 20,390            | 31,400          |
| 36      | -10 | H 12 | 1.48      | 304,822             | 20,390    | 100%        | 20,390            | 30,177          |
| 37      | -9  | H 13 | 1.42      | 304,822             | 20,390    | 100%        | 20,390            | 28,953          |
| 38      | -8  | H 14 | 1.37      | 304,822             | 20,390    | 100%        | 20,390            | 27,934          |
| 39      | -7  | H 15 | 1.32      | 304,822             | 20,390    | 100%        | 20,390            | 26,914          |
| 40      | -6  | H 16 | 1.27      | 304,822             | 20,390    | 100%        | 20,390            | 25,895          |
| 41      | -5  | H 17 | 1.22      | 304,822             | 20,390    | 100%        | 20,390            | 24,875          |
| 42      | -4  | H 18 | 1.17      | 304,822             | 20,390    | 100%        | 20,390            | 23,856          |
| 43      | -3  | H 19 | 1.12      | 304,822             | 20,390    | 100%        | 20,390            | 22,836          |
| 44      | -2  | H 20 | 1.08      | 304,822             | 20,390    | 100%        | 20,390            | 22,021          |
| 45      | -1  | H 21 | 1.04      | 304,822             | 20,390    | 100%        | 20,390            | 21,205          |
| 46      | 0   | H 22 | 1.00      | 304,822             | 20,390    | 100%        | 20,390            | 20,390          |
| 47      | 1   | H 23 | 0.96      | 304,822             | 20,390    | 100%        | 20,390            | 19,574          |
| 48      | 2   | H 24 | 0.92      | 304,822             | 20,390    | 100%        | 20,390            | 18,759          |
| 49      | 3   | H 25 | 0.89      | 304,822             | 20,390    | 100%        | 20,390            | 18,147          |
| 50      | 4   | H 26 | 0.85      | 304,822             | 20,390    | 100%        | 20,390            | 17,331          |
| 51      | 5   | H 27 | 0.82      | 304,822             | 20,390    | 100%        | 20,390            | 16,720          |
| 52      | 6   | H 28 | 0.79      | 304,822             | 20,390    | 100%        | 20,390            | 16,108          |
| 53      | 7   | H 29 | 0.76      | 304,822             | 20,390    | 100%        | 20,390            | 15,496          |
| 54      | 8   | H 30 | 0.73      | 304,822             | 20,390    | 100%        | 20,390            | 14,884          |
| 55      | 9   | H 31 | 0.70      | 304,822             | 20,390    | 100%        | 20,390            | 14,273          |
| 56      | 10  | H 32 | 0.68      | 304,822             | 20,390    | 100%        | 20,390            | 13,865          |
| 57      | 11  | H 33 | 0.65      | 304,822             | 20,390    | 100%        | 20,390            | 13,253          |
| 58      | 12  | H 34 | 0.62      | 304,822             | 20,390    | 100%        | 20,390            | 12,642          |
| 59      | 13  | H 35 | 0.60      | 304,822             | 20,390    | 100%        | 20,390            | 12,234          |
| 60      | 14  | H 36 | 0.58      | 304,822             | 20,390    | 100%        | 20,390            | 11,826          |
| 61      | 15  | H 37 | 0.56      | 304,822             | 20,390    | 100%        | 20,390            | 11,418          |
| 62      | 16  | H 38 | 0.53      | 304,822             | 20,390    | 100%        | 20,390            | 10,807          |
| 63      | 17  | H 39 | 0.51      | 304,822             | 20,390    | 100%        | 20,390            | 10,399          |
| 64      | 18  | H 40 | 0.49      | 304,822             | 20,390    | 100%        | 20,390            | 9,991           |
| 65      | 19  | H 41 | 0.47      | 304,822             | 20,390    | 100%        | 20,390            | 9,583           |
| 66      | 20  | H 42 | 0.46      | 304,822             | 20,390    | 100%        | 20,390            | 9,379           |
| 67      | 21  | H 43 | 0.44      | 304,822             | 20,390    | 100%        | 20,390            | 8,971           |
| 68      | 22  | H 44 | 0.42      | 304,822             | 20,390    | 100%        | 20,390            | 8,564           |
| 69      | 23  | H 45 | 0.41      | 304,822             | 20,390    | 100%        | 20,390            | 8,360           |
| 70      | 24  | H 46 | 0.39      | 304,822             | 20,390    | 100%        | 20,390            | 7,952           |
| 71      | 25  | H 47 | 0.38      | 304,822             | 20,390    | 100%        | 20,390            | 7,748           |
| 72      | 26  | H 48 | 0.36      | 304,822             | 20,390    | 100%        | 20,390            | 7,340           |
| 73      | 27  | H 49 | 0.35      | 304,822             | 20,390    | 100%        | 20,390            | 7,136           |
| 74      | 28  | H 50 | 0.33      | 304,822             | 20,390    | 100%        | 20,390            | 6,729           |
| 75      | 29  | H 51 | 0.32      | 304,822             | 20,390    | 100%        | 20,390            | 6,525           |
| 76      | 30  | H 52 | 0.31      | 304,822             | 20,390    | 100%        | 20,390            | 6,321           |
| 77      | 31  | H 53 | 0.30      | 304,822             | 20,390    | 100%        | 20,390            | 6,117           |
| 78      | 32  | H 54 | 0.29      | 304,822             | 20,390    | 100%        | 20,390            | 5,913           |
| 79      | 33  | H 55 | 0.27      | 304,822             | 20,390    | 100%        | 20,390            | 5,505           |
| 80      | 34  | H 56 | 0.26      | 304,822             | 20,390    | 100%        | 20,390            | 5,301           |
| 合計(便益額) |     |      |           |                     |           |             |                   | 3,427,280       |

3 環境保全便益  
 (1) 炭素固定便益  
 ① 樹木固定分

マツ類

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

|        |                                    |                                 |              |
|--------|------------------------------------|---------------------------------|--------------|
| U:     | 二酸化炭素に関する原単位(円/t-CO2)              |                                 | 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)    | マツ類                             | 153,252      |
| 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)     | マツ類                             | 305,534      |
| Y:     | 評価期間(年)                            |                                 | 80           |
| D:     | 容積密度(t/m <sup>3</sup> )            | マツ類                             | 0,458        |
| 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)       | 樹齢20年以下<br>マツ類<br>樹齢20年超<br>マツ類 | 1.51<br>1.30 |
| 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) | マツ類                             | 0.30         |
| 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                    |                                 |              |

便益算出表

(単位:千円)

| 評価期間    | 経過年 | 年度   | 割引係数<br>① | V2-V1(m3)<br>樹種名 マツ類 | 年効果額<br>② | 効果発生割合<br>③ | 年発生効果額<br>④=②×③ | 現在価値<br>⑤=④×① |
|---------|-----|------|-----------|----------------------|-----------|-------------|-----------------|---------------|
| 1       | -45 | S40  | 5.84      | 152,282              | 18,949    | 100%        | 18,949          | 110,661       |
| 2       | -44 | S41  | 5.62      | 152,282              | 18,949    | 100%        | 18,949          | 106,492       |
| 3       | -43 | S42  | 5.40      | 152,282              | 18,949    | 100%        | 18,949          | 102,323       |
| 4       | -42 | S43  | 5.19      | 152,282              | 18,949    | 100%        | 18,949          | 98,344        |
| 5       | -41 | S44  | 4.99      | 152,282              | 18,949    | 100%        | 18,949          | 94,554        |
| 6       | -40 | S45  | 4.80      | 152,282              | 18,949    | 100%        | 18,949          | 90,954        |
| 7       | -39 | S46  | 4.62      | 152,282              | 18,949    | 100%        | 18,949          | 87,543        |
| 8       | -38 | S47  | 4.44      | 152,282              | 18,949    | 100%        | 18,949          | 84,132        |
| 9       | -37 | S48  | 4.27      | 152,282              | 18,949    | 100%        | 18,949          | 80,911        |
| 10      | -36 | S49  | 4.10      | 152,282              | 18,949    | 100%        | 18,949          | 77,690        |
| 11      | -35 | S50  | 3.95      | 152,282              | 18,949    | 100%        | 18,949          | 74,847        |
| 12      | -34 | S51  | 3.79      | 152,282              | 18,949    | 100%        | 18,949          | 71,816        |
| 13      | -33 | S52  | 3.65      | 152,282              | 18,949    | 100%        | 18,949          | 69,163        |
| 14      | -32 | S53  | 3.51      | 152,282              | 18,949    | 100%        | 18,949          | 66,510        |
| 15      | -31 | S54  | 3.37      | 152,282              | 18,949    | 100%        | 18,949          | 63,857        |
| 16      | -30 | S55  | 3.24      | 152,282              | 18,949    | 100%        | 18,949          | 61,394        |
| 17      | -29 | S56  | 3.12      | 152,282              | 18,949    | 100%        | 18,949          | 59,120        |
| 18      | -28 | S57  | 3.00      | 152,282              | 18,949    | 100%        | 18,949          | 56,846        |
| 19      | -27 | S58  | 2.88      | 152,282              | 18,949    | 100%        | 18,949          | 54,572        |
| 20      | -26 | S59  | 2.77      | 152,282              | 18,949    | 100%        | 18,949          | 52,488        |
| 21      | -25 | S60  | 2.67      | 152,282              | 16,251    | 100%        | 16,251          | 43,389        |
| 22      | -24 | S61  | 2.56      | 152,282              | 16,251    | 100%        | 16,251          | 41,602        |
| 23      | -23 | S62  | 2.46      | 152,282              | 16,251    | 100%        | 16,251          | 39,977        |
| 24      | -22 | S63  | 2.37      | 152,282              | 16,251    | 100%        | 16,251          | 38,514        |
| 25      | -21 | H 1  | 2.28      | 152,282              | 16,251    | 100%        | 16,251          | 37,052        |
| 26      | -20 | H 2  | 2.19      | 152,282              | 16,251    | 100%        | 16,251          | 35,589        |
| 27      | -19 | H 3  | 2.11      | 152,282              | 16,251    | 100%        | 16,251          | 34,289        |
| 28      | -18 | H 4  | 2.03      | 152,282              | 16,251    | 100%        | 16,251          | 32,989        |
| 29      | -17 | H 5  | 1.95      | 152,282              | 16,251    | 100%        | 16,251          | 31,689        |
| 30      | -16 | H 6  | 1.87      | 152,282              | 16,251    | 100%        | 16,251          | 30,389        |
| 31      | -15 | H 7  | 1.80      | 152,282              | 16,251    | 100%        | 16,251          | 29,251        |
| 32      | -14 | H 8  | 1.73      | 152,282              | 16,251    | 100%        | 16,251          | 28,114        |
| 33      | -13 | H 9  | 1.67      | 152,282              | 16,251    | 100%        | 16,251          | 27,139        |
| 34      | -12 | H 10 | 1.60      | 152,282              | 16,251    | 100%        | 16,251          | 26,001        |
| 35      | -11 | H 11 | 1.54      | 152,282              | 16,251    | 100%        | 16,251          | 25,026        |
| 36      | -10 | H 12 | 1.48      | 152,282              | 16,251    | 100%        | 16,251          | 24,051        |
| 37      | -9  | H 13 | 1.42      | 152,282              | 16,251    | 100%        | 16,251          | 23,076        |
| 38      | -8  | H 14 | 1.37      | 152,282              | 16,251    | 100%        | 16,251          | 22,263        |
| 39      | -7  | H 15 | 1.32      | 152,282              | 16,251    | 100%        | 16,251          | 21,451        |
| 40      | -6  | H 16 | 1.27      | 152,282              | 16,251    | 100%        | 16,251          | 20,638        |
| 41      | -5  | H 17 | 1.22      | 152,282              | 16,251    | 100%        | 16,251          | 19,826        |
| 42      | -4  | H 18 | 1.17      | 152,282              | 16,251    | 100%        | 16,251          | 19,013        |
| 43      | -3  | H 19 | 1.12      | 152,282              | 16,251    | 100%        | 16,251          | 18,201        |
| 44      | -2  | H 20 | 1.08      | 152,282              | 16,251    | 100%        | 16,251          | 17,551        |
| 45      | -1  | H 21 | 1.04      | 152,282              | 16,251    | 100%        | 16,251          | 16,901        |
| 46      | 0   | H 22 | 1.00      | 152,282              | 16,251    | 100%        | 16,251          | 16,251        |
| 47      | 1   | H 23 | 0.96      | 152,282              | 16,251    | 100%        | 16,251          | 15,601        |
| 48      | 2   | H 24 | 0.92      | 152,282              | 16,251    | 100%        | 16,251          | 14,951        |
| 49      | 3   | H 25 | 0.89      | 152,282              | 16,251    | 100%        | 16,251          | 14,463        |
| 50      | 4   | H 26 | 0.85      | 152,282              | 16,251    | 100%        | 16,251          | 13,813        |
| 51      | 5   | H 27 | 0.82      | 152,282              | 16,251    | 100%        | 16,251          | 13,326        |
| 52      | 6   | H 28 | 0.79      | 152,282              | 16,251    | 100%        | 16,251          | 12,838        |
| 53      | 7   | H 29 | 0.76      | 152,282              | 16,251    | 100%        | 16,251          | 12,351        |
| 54      | 8   | H 30 | 0.73      | 152,282              | 16,251    | 100%        | 16,251          | 11,863        |
| 55      | 9   | H 31 | 0.70      | 152,282              | 16,251    | 100%        | 16,251          | 11,376        |
| 56      | 10  | H 32 | 0.68      | 152,282              | 16,251    | 100%        | 16,251          | 11,050        |
| 57      | 11  | H 33 | 0.65      | 152,282              | 16,251    | 100%        | 16,251          | 10,563        |
| 58      | 12  | H 34 | 0.62      | 152,282              | 16,251    | 100%        | 16,251          | 10,075        |
| 59      | 13  | H 35 | 0.60      | 152,282              | 16,251    | 100%        | 16,251          | 9,750         |
| 60      | 14  | H 36 | 0.58      | 152,282              | 16,251    | 100%        | 16,251          | 9,425         |
| 61      | 15  | H 37 | 0.56      | 152,282              | 16,251    | 100%        | 16,251          | 9,100         |
| 62      | 16  | H 38 | 0.53      | 152,282              | 16,251    | 100%        | 16,251          | 8,613         |
| 63      | 17  | H 39 | 0.51      | 152,282              | 16,251    | 100%        | 16,251          | 8,288         |
| 64      | 18  | H 40 | 0.49      | 152,282              | 16,251    | 100%        | 16,251          | 7,963         |
| 65      | 19  | H 41 | 0.47      | 152,282              | 16,251    | 100%        | 16,251          | 7,638         |
| 66      | 20  | H 42 | 0.46      | 152,282              | 16,251    | 100%        | 16,251          | 7,475         |
| 67      | 21  | H 43 | 0.44      | 152,282              | 16,251    | 100%        | 16,251          | 7,150         |
| 68      | 22  | H 44 | 0.42      | 152,282              | 16,251    | 100%        | 16,251          | 6,825         |
| 69      | 23  | H 45 | 0.41      | 152,282              | 16,251    | 100%        | 16,251          | 6,663         |
| 70      | 24  | H 46 | 0.39      | 152,282              | 16,251    | 100%        | 16,251          | 6,338         |
| 71      | 25  | H 47 | 0.38      | 152,282              | 16,251    | 100%        | 16,251          | 6,175         |
| 72      | 26  | H 48 | 0.36      | 152,282              | 16,251    | 100%        | 16,251          | 5,850         |
| 73      | 27  | H 49 | 0.35      | 152,282              | 16,251    | 100%        | 16,251          | 5,688         |
| 74      | 28  | H 50 | 0.33      | 152,282              | 16,251    | 100%        | 16,251          | 5,363         |
| 75      | 29  | H 51 | 0.32      | 152,282              | 16,251    | 100%        | 16,251          | 5,200         |
| 76      | 30  | H 52 | 0.31      | 152,282              | 16,251    | 100%        | 16,251          | 5,038         |
| 77      | 31  | H 53 | 0.30      | 152,282              | 16,251    | 100%        | 16,251          | 4,875         |
| 78      | 32  | H 54 | 0.29      | 152,282              | 16,251    | 100%        | 16,251          | 4,713         |
| 79      | 33  | H 55 | 0.27      | 152,282              | 16,251    | 100%        | 16,251          | 4,388         |
| 80      | 34  | H 56 | 0.26      | 152,282              | 16,251    | 100%        | 16,251          | 4,225         |
| 合計(便益額) |     |      |           |                      |           |             |                 | 2,583,463     |



事業名: 水源林造成事業  
 施行箇所: 東北北海道整備局 昭和40年度契約地

2,403,456 千円

3 環境保全便益  
 (1) 炭素固定便益  
 ① 樹木固定分

カラマツ

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

|        |                                    |                   |              |
|--------|------------------------------------|-------------------|--------------|
| U:     | 二酸化炭素に関する原単位(円/t-CO2)              |                   | 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)    | カラマツ              | 169,861      |
| 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)     | カラマツ              | 339,722      |
| Y:     | 評価期間(年)                            |                   | 80           |
| D:     | 容積密度(t/m <sup>3</sup> )            | カラマツ              | 0.404        |
| 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)       | 樹齢20年以下<br>樹齢20年超 | カラマツ<br>カラマツ |
|        |                                    |                   | 1.50<br>1.15 |
| 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) | カラマツ              | 0.29         |
| 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                    |                   |              |

便益算出表 (単位:千円)

| 評価期間    | 経過年 | 年度   | 割引係数<br>① | V2-V1(m3) |         | 年効果額<br>② | 効果発生割合<br>③ | 年発生効果額<br>④=②×③ | 現在価値<br>⑤=④×① |
|---------|-----|------|-----------|-----------|---------|-----------|-------------|-----------------|---------------|
|         |     |      |           | 樹種名       | カラマツ    |           |             |                 |               |
| 1       | -45 | S40  | 5.84      |           | 169,861 | 18,398    | 100%        | 18,398          | 107,446       |
| 2       | -44 | S41  | 5.62      |           | 169,861 | 18,398    | 100%        | 18,398          | 103,398       |
| 3       | -43 | S42  | 5.40      |           | 169,861 | 18,398    | 100%        | 18,398          | 99,350        |
| 4       | -42 | S43  | 5.19      |           | 169,861 | 18,398    | 100%        | 18,398          | 95,487        |
| 5       | -41 | S44  | 4.99      |           | 169,861 | 18,398    | 100%        | 18,398          | 91,807        |
| 6       | -40 | S45  | 4.80      |           | 169,861 | 18,398    | 100%        | 18,398          | 88,311        |
| 7       | -39 | S46  | 4.62      |           | 169,861 | 18,398    | 100%        | 18,398          | 85,000        |
| 8       | -38 | S47  | 4.44      |           | 169,861 | 18,398    | 100%        | 18,398          | 81,688        |
| 9       | -37 | S48  | 4.27      |           | 169,861 | 18,398    | 100%        | 18,398          | 78,560        |
| 10      | -36 | S49  | 4.10      |           | 169,861 | 18,398    | 100%        | 18,398          | 75,433        |
| 11      | -35 | S50  | 3.95      |           | 169,861 | 18,398    | 100%        | 18,398          | 72,673        |
| 12      | -34 | S51  | 3.79      |           | 169,861 | 18,398    | 100%        | 18,398          | 69,729        |
| 13      | -33 | S52  | 3.65      |           | 169,861 | 18,398    | 100%        | 18,398          | 67,153        |
| 14      | -32 | S53  | 3.51      |           | 169,861 | 18,398    | 100%        | 18,398          | 64,578        |
| 15      | -31 | S54  | 3.37      |           | 169,861 | 18,398    | 100%        | 18,398          | 62,002        |
| 16      | -30 | S55  | 3.24      |           | 169,861 | 18,398    | 100%        | 18,398          | 59,610        |
| 17      | -29 | S56  | 3.12      |           | 169,861 | 18,398    | 100%        | 18,398          | 57,402        |
| 18      | -28 | S57  | 3.00      |           | 169,861 | 18,398    | 100%        | 18,398          | 55,195        |
| 19      | -27 | S58  | 2.88      |           | 169,861 | 18,398    | 100%        | 18,398          | 52,987        |
| 20      | -26 | S59  | 2.77      |           | 169,861 | 18,398    | 100%        | 18,398          | 50,963        |
| 21      | -25 | S60  | 2.67      |           | 169,861 | 14,105    | 100%        | 14,105          | 37,661        |
| 22      | -24 | S61  | 2.56      |           | 169,861 | 14,105    | 100%        | 14,105          | 36,110        |
| 23      | -23 | S62  | 2.46      |           | 169,861 | 14,105    | 100%        | 14,105          | 34,699        |
| 24      | -22 | S63  | 2.37      |           | 169,861 | 14,105    | 100%        | 14,105          | 33,430        |
| 25      | -21 | H 1  | 2.28      |           | 169,861 | 14,105    | 100%        | 14,105          | 32,160        |
| 26      | -20 | H 2  | 2.19      |           | 169,861 | 14,105    | 100%        | 14,105          | 30,891        |
| 27      | -19 | H 3  | 2.11      |           | 169,861 | 14,105    | 100%        | 14,105          | 29,762        |
| 28      | -18 | H 4  | 2.03      |           | 169,861 | 14,105    | 100%        | 14,105          | 28,634        |
| 29      | -17 | H 5  | 1.95      |           | 169,861 | 14,105    | 100%        | 14,105          | 27,505        |
| 30      | -16 | H 6  | 1.87      |           | 169,861 | 14,105    | 100%        | 14,105          | 26,377        |
| 31      | -15 | H 7  | 1.80      |           | 169,861 | 14,105    | 100%        | 14,105          | 25,390        |
| 32      | -14 | H 8  | 1.73      |           | 169,861 | 14,105    | 100%        | 14,105          | 24,402        |
| 33      | -13 | H 9  | 1.67      |           | 169,861 | 14,105    | 100%        | 14,105          | 23,556        |
| 34      | -12 | H 10 | 1.60      |           | 169,861 | 14,105    | 100%        | 14,105          | 22,568        |
| 35      | -11 | H 11 | 1.54      |           | 169,861 | 14,105    | 100%        | 14,105          | 21,722        |
| 36      | -10 | H 12 | 1.48      |           | 169,861 | 14,105    | 100%        | 14,105          | 20,876        |
| 37      | -9  | H 13 | 1.42      |           | 169,861 | 14,105    | 100%        | 14,105          | 20,030        |
| 38      | -8  | H 14 | 1.37      |           | 169,861 | 14,105    | 100%        | 14,105          | 19,324        |
| 39      | -7  | H 15 | 1.32      |           | 169,861 | 14,105    | 100%        | 14,105          | 18,619        |
| 40      | -6  | H 16 | 1.27      |           | 169,861 | 14,105    | 100%        | 14,105          | 17,914        |
| 41      | -5  | H 17 | 1.22      |           | 169,861 | 14,105    | 100%        | 14,105          | 17,208        |
| 42      | -4  | H 18 | 1.17      |           | 169,861 | 14,105    | 100%        | 14,105          | 16,503        |
| 43      | -3  | H 19 | 1.12      |           | 169,861 | 14,105    | 100%        | 14,105          | 15,798        |
| 44      | -2  | H 20 | 1.08      |           | 169,861 | 14,105    | 100%        | 14,105          | 15,234        |
| 45      | -1  | H 21 | 1.04      |           | 169,861 | 14,105    | 100%        | 14,105          | 14,670        |
| 46      | 0   | H 22 | 1.00      |           | 169,861 | 14,105    | 100%        | 14,105          | 14,105        |
| 47      | 1   | H 23 | 0.96      |           | 169,861 | 14,105    | 100%        | 14,105          | 13,541        |
| 48      | 2   | H 24 | 0.92      |           | 169,861 | 14,105    | 100%        | 14,105          | 12,977        |
| 49      | 3   | H 25 | 0.89      |           | 169,861 | 14,105    | 100%        | 14,105          | 12,554        |
| 50      | 4   | H 26 | 0.85      |           | 169,861 | 14,105    | 100%        | 14,105          | 11,989        |
| 51      | 5   | H 27 | 0.82      |           | 169,861 | 14,105    | 100%        | 14,105          | 11,566        |
| 52      | 6   | H 28 | 0.79      |           | 169,861 | 14,105    | 100%        | 14,105          | 11,143        |
| 53      | 7   | H 29 | 0.76      |           | 169,861 | 14,105    | 100%        | 14,105          | 10,720        |
| 54      | 8   | H 30 | 0.73      |           | 169,861 | 14,105    | 100%        | 14,105          | 10,297        |
| 55      | 9   | H 31 | 0.70      |           | 169,861 | 14,105    | 100%        | 14,105          | 9,874         |
| 56      | 10  | H 32 | 0.68      |           | 169,861 | 14,105    | 100%        | 14,105          | 9,592         |
| 57      | 11  | H 33 | 0.65      |           | 169,861 | 14,105    | 100%        | 14,105          | 9,168         |
| 58      | 12  | H 34 | 0.62      |           | 169,861 | 14,105    | 100%        | 14,105          | 8,745         |
| 59      | 13  | H 35 | 0.60      |           | 169,861 | 14,105    | 100%        | 14,105          | 8,463         |
| 60      | 14  | H 36 | 0.58      |           | 169,861 | 14,105    | 100%        | 14,105          | 8,181         |
| 61      | 15  | H 37 | 0.56      |           | 169,861 | 14,105    | 100%        | 14,105          | 7,899         |
| 62      | 16  | H 38 | 0.53      |           | 169,861 | 14,105    | 100%        | 14,105          | 7,476         |
| 63      | 17  | H 39 | 0.51      |           | 169,861 | 14,105    | 100%        | 14,105          | 7,194         |
| 64      | 18  | H 40 | 0.49      |           | 169,861 | 14,105    | 100%        | 14,105          | 6,912         |
| 65      | 19  | H 41 | 0.47      |           | 169,861 | 14,105    | 100%        | 14,105          | 6,629         |
| 66      | 20  | H 42 | 0.46      |           | 169,861 | 14,105    | 100%        | 14,105          | 6,488         |
| 67      | 21  | H 43 | 0.44      |           | 169,861 | 14,105    | 100%        | 14,105          | 6,206         |
| 68      | 22  | H 44 | 0.42      |           | 169,861 | 14,105    | 100%        | 14,105          | 5,924         |
| 69      | 23  | H 45 | 0.41      |           | 169,861 | 14,105    | 100%        | 14,105          | 5,783         |
| 70      | 24  | H 46 | 0.39      |           | 169,861 | 14,105    | 100%        | 14,105          | 5,501         |
| 71      | 25  | H 47 | 0.38      |           | 169,861 | 14,105    | 100%        | 14,105          | 5,360         |
| 72      | 26  | H 48 | 0.36      |           | 169,861 | 14,105    | 100%        | 14,105          | 5,078         |
| 73      | 27  | H 49 | 0.35      |           | 169,861 | 14,105    | 100%        | 14,105          | 4,937         |
| 74      | 28  | H 50 | 0.33      |           | 169,861 | 14,105    | 100%        | 14,105          | 4,655         |
| 75      | 29  | H 51 | 0.32      |           | 169,861 | 14,105    | 100%        | 14,105          | 4,514         |
| 76      | 30  | H 52 | 0.31      |           | 169,861 | 14,105    | 100%        | 14,105          | 4,373         |
| 77      | 31  | H 53 | 0.30      |           | 169,861 | 14,105    | 100%        | 14,105          | 4,232         |
| 78      | 32  | H 54 | 0.29      |           | 169,861 | 14,105    | 100%        | 14,105          | 4,091         |
| 79      | 33  | H 55 | 0.27      |           | 169,861 | 14,105    | 100%        | 14,105          | 3,808         |
| 80      | 34  | H 56 | 0.26      |           | 169,861 | 14,105    | 100%        | 14,105          | 3,667         |
| 合計(便益額) |     |      |           |           |         |           |             |                 | 2,403,456     |

事業名: 水源林造成事業  
 施行箇所: 東北北海道整備局 昭和40年度契約地

1,071,324 千円

3 環境保全便益  
 (1) 炭素固定便益  
 ① 樹木固定分

トドマツ

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

|        |                                    |                                   |              |
|--------|------------------------------------|-----------------------------------|--------------|
| U:     | 二酸化炭素に関する原単位(円/t-CO2)              |                                   | 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)    | トドマツ                              | 83,124       |
| 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)     | トドマツ                              | 166,248      |
| Y:     | 評価期間(年)                            |                                   | 80           |
| D:     | 容積密度(t/m <sup>3</sup> )            | トドマツ                              | 0,318        |
| 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)       | 樹齢20年以下<br>トドマツ<br>樹齢20年超<br>トドマツ | 1.88<br>1.38 |
| 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) | トドマツ                              | 0.21         |
| 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                    |                                   |              |

便益算出表 (単位:千円)

| 評価期間    | 経過年 | 年度   | 割引係数<br>① | V2-V1(m3) |        | 年効果額<br>② | 効果発生割合<br>③ | 年発生効果額<br>④=②×③ | 現在価値<br>⑤=④×① |
|---------|-----|------|-----------|-----------|--------|-----------|-------------|-----------------|---------------|
|         |     |      |           | 樹種名       | トドマツ   |           |             |                 |               |
| 1       | -45 | S40  | 5.84      |           | 83,124 | 8,331     | 100%        | 8,331           | 48,655        |
| 2       | -44 | S41  | 5.62      |           | 83,124 | 8,331     | 100%        | 8,331           | 46,822        |
| 3       | -43 | S42  | 5.40      |           | 83,124 | 8,331     | 100%        | 8,331           | 44,989        |
| 4       | -42 | S43  | 5.19      |           | 83,124 | 8,331     | 100%        | 8,331           | 43,240        |
| 5       | -41 | S44  | 4.99      |           | 83,124 | 8,331     | 100%        | 8,331           | 41,574        |
| 6       | -40 | S45  | 4.80      |           | 83,124 | 8,331     | 100%        | 8,331           | 39,991        |
| 7       | -39 | S46  | 4.62      |           | 83,124 | 8,331     | 100%        | 8,331           | 38,491        |
| 8       | -38 | S47  | 4.44      |           | 83,124 | 8,331     | 100%        | 8,331           | 36,991        |
| 9       | -37 | S48  | 4.27      |           | 83,124 | 8,331     | 100%        | 8,331           | 35,575        |
| 10      | -36 | S49  | 4.10      |           | 83,124 | 8,331     | 100%        | 8,331           | 34,159        |
| 11      | -35 | S50  | 3.95      |           | 83,124 | 8,331     | 100%        | 8,331           | 32,909        |
| 12      | -34 | S51  | 3.79      |           | 83,124 | 8,331     | 100%        | 8,331           | 31,576        |
| 13      | -33 | S52  | 3.65      |           | 83,124 | 8,331     | 100%        | 8,331           | 30,410        |
| 14      | -32 | S53  | 3.51      |           | 83,124 | 8,331     | 100%        | 8,331           | 29,243        |
| 15      | -31 | S54  | 3.37      |           | 83,124 | 8,331     | 100%        | 8,331           | 28,077        |
| 16      | -30 | S55  | 3.24      |           | 83,124 | 8,331     | 100%        | 8,331           | 26,994        |
| 17      | -29 | S56  | 3.12      |           | 83,124 | 8,331     | 100%        | 8,331           | 25,994        |
| 18      | -28 | S57  | 3.00      |           | 83,124 | 8,331     | 100%        | 8,331           | 24,994        |
| 19      | -27 | S58  | 2.88      |           | 83,124 | 8,331     | 100%        | 8,331           | 23,994        |
| 20      | -26 | S59  | 2.77      |           | 83,124 | 8,331     | 100%        | 8,331           | 23,078        |
| 21      | -25 | S60  | 2.67      |           | 83,124 | 6,116     | 100%        | 6,116           | 16,329        |
| 22      | -24 | S61  | 2.56      |           | 83,124 | 6,116     | 100%        | 6,116           | 15,656        |
| 23      | -23 | S62  | 2.46      |           | 83,124 | 6,116     | 100%        | 6,116           | 15,044        |
| 24      | -22 | S63  | 2.37      |           | 83,124 | 6,116     | 100%        | 6,116           | 14,494        |
| 25      | -21 | H 1  | 2.28      |           | 83,124 | 6,116     | 100%        | 6,116           | 13,944        |
| 26      | -20 | H 2  | 2.19      |           | 83,124 | 6,116     | 100%        | 6,116           | 13,393        |
| 27      | -19 | H 3  | 2.11      |           | 83,124 | 6,116     | 100%        | 6,116           | 12,904        |
| 28      | -18 | H 4  | 2.03      |           | 83,124 | 6,116     | 100%        | 6,116           | 12,415        |
| 29      | -17 | H 5  | 1.95      |           | 83,124 | 6,116     | 100%        | 6,116           | 11,925        |
| 30      | -16 | H 6  | 1.87      |           | 83,124 | 6,116     | 100%        | 6,116           | 11,436        |
| 31      | -15 | H 7  | 1.80      |           | 83,124 | 6,116     | 100%        | 6,116           | 11,008        |
| 32      | -14 | H 8  | 1.73      |           | 83,124 | 6,116     | 100%        | 6,116           | 10,580        |
| 33      | -13 | H 9  | 1.67      |           | 83,124 | 6,116     | 100%        | 6,116           | 10,213        |
| 34      | -12 | H 10 | 1.60      |           | 83,124 | 6,116     | 100%        | 6,116           | 9,785         |
| 35      | -11 | H 11 | 1.54      |           | 83,124 | 6,116     | 100%        | 6,116           | 9,418         |
| 36      | -10 | H 12 | 1.48      |           | 83,124 | 6,116     | 100%        | 6,116           | 9,051         |
| 37      | -9  | H 13 | 1.42      |           | 83,124 | 6,116     | 100%        | 6,116           | 8,684         |
| 38      | -8  | H 14 | 1.37      |           | 83,124 | 6,116     | 100%        | 6,116           | 8,378         |
| 39      | -7  | H 15 | 1.32      |           | 83,124 | 6,116     | 100%        | 6,116           | 8,073         |
| 40      | -6  | H 16 | 1.27      |           | 83,124 | 6,116     | 100%        | 6,116           | 7,767         |
| 41      | -5  | H 17 | 1.22      |           | 83,124 | 6,116     | 100%        | 6,116           | 7,461         |
| 42      | -4  | H 18 | 1.17      |           | 83,124 | 6,116     | 100%        | 6,116           | 7,155         |
| 43      | -3  | H 19 | 1.12      |           | 83,124 | 6,116     | 100%        | 6,116           | 6,849         |
| 44      | -2  | H 20 | 1.08      |           | 83,124 | 6,116     | 100%        | 6,116           | 6,605         |
| 45      | -1  | H 21 | 1.04      |           | 83,124 | 6,116     | 100%        | 6,116           | 6,360         |
| 46      | 0   | H 22 | 1.00      |           | 83,124 | 6,116     | 100%        | 6,116           | 6,116         |
| 47      | 1   | H 23 | 0.96      |           | 83,124 | 6,116     | 100%        | 6,116           | 5,871         |
| 48      | 2   | H 24 | 0.92      |           | 83,124 | 6,116     | 100%        | 6,116           | 5,626         |
| 49      | 3   | H 25 | 0.89      |           | 83,124 | 6,116     | 100%        | 6,116           | 5,443         |
| 50      | 4   | H 26 | 0.85      |           | 83,124 | 6,116     | 100%        | 6,116           | 5,198         |
| 51      | 5   | H 27 | 0.82      |           | 83,124 | 6,116     | 100%        | 6,116           | 5,015         |
| 52      | 6   | H 28 | 0.79      |           | 83,124 | 6,116     | 100%        | 6,116           | 4,831         |
| 53      | 7   | H 29 | 0.76      |           | 83,124 | 6,116     | 100%        | 6,116           | 4,648         |
| 54      | 8   | H 30 | 0.73      |           | 83,124 | 6,116     | 100%        | 6,116           | 4,464         |
| 55      | 9   | H 31 | 0.70      |           | 83,124 | 6,116     | 100%        | 6,116           | 4,281         |
| 56      | 10  | H 32 | 0.68      |           | 83,124 | 6,116     | 100%        | 6,116           | 4,159         |
| 57      | 11  | H 33 | 0.65      |           | 83,124 | 6,116     | 100%        | 6,116           | 3,975         |
| 58      | 12  | H 34 | 0.62      |           | 83,124 | 6,116     | 100%        | 6,116           | 3,792         |
| 59      | 13  | H 35 | 0.60      |           | 83,124 | 6,116     | 100%        | 6,116           | 3,669         |
| 60      | 14  | H 36 | 0.58      |           | 83,124 | 6,116     | 100%        | 6,116           | 3,547         |
| 61      | 15  | H 37 | 0.56      |           | 83,124 | 6,116     | 100%        | 6,116           | 3,425         |
| 62      | 16  | H 38 | 0.53      |           | 83,124 | 6,116     | 100%        | 6,116           | 3,241         |
| 63      | 17  | H 39 | 0.51      |           | 83,124 | 6,116     | 100%        | 6,116           | 3,119         |
| 64      | 18  | H 40 | 0.49      |           | 83,124 | 6,116     | 100%        | 6,116           | 2,997         |
| 65      | 19  | H 41 | 0.47      |           | 83,124 | 6,116     | 100%        | 6,116           | 2,874         |
| 66      | 20  | H 42 | 0.46      |           | 83,124 | 6,116     | 100%        | 6,116           | 2,813         |
| 67      | 21  | H 43 | 0.44      |           | 83,124 | 6,116     | 100%        | 6,116           | 2,691         |
| 68      | 22  | H 44 | 0.42      |           | 83,124 | 6,116     | 100%        | 6,116           | 2,569         |
| 69      | 23  | H 45 | 0.41      |           | 83,124 | 6,116     | 100%        | 6,116           | 2,507         |
| 70      | 24  | H 46 | 0.39      |           | 83,124 | 6,116     | 100%        | 6,116           | 2,385         |
| 71      | 25  | H 47 | 0.38      |           | 83,124 | 6,116     | 100%        | 6,116           | 2,324         |
| 72      | 26  | H 48 | 0.36      |           | 83,124 | 6,116     | 100%        | 6,116           | 2,202         |
| 73      | 27  | H 49 | 0.35      |           | 83,124 | 6,116     | 100%        | 6,116           | 2,140         |
| 74      | 28  | H 50 | 0.33      |           | 83,124 | 6,116     | 100%        | 6,116           | 2,018         |
| 75      | 29  | H 51 | 0.32      |           | 83,124 | 6,116     | 100%        | 6,116           | 1,957         |
| 76      | 30  | H 52 | 0.31      |           | 83,124 | 6,116     | 100%        | 6,116           | 1,896         |
| 77      | 31  | H 53 | 0.30      |           | 83,124 | 6,116     | 100%        | 6,116           | 1,835         |
| 78      | 32  | H 54 | 0.29      |           | 83,124 | 6,116     | 100%        | 6,116           | 1,774         |
| 79      | 33  | H 55 | 0.27      |           | 83,124 | 6,116     | 100%        | 6,116           | 1,651         |
| 80      | 34  | H 56 | 0.26      |           | 83,124 | 6,116     | 100%        | 6,116           | 1,590         |
| 合計(便益額) |     |      |           |           |        |           |             |                 | 1,071,324     |

3 環境保全便益  
 (1) 炭素固定便益  
 ① 樹木固定分

アカゾマツ

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

|        |                                    |                                     |              |
|--------|------------------------------------|-------------------------------------|--------------|
| U:     | 二酸化炭素に関する原単位(円/t-CO2)              |                                     | 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)    | アカゾマツ                               | 30,073       |
| 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)     | アカゾマツ                               | 60,146       |
| Y:     | 評価期間(年)                            |                                     | 80           |
| D:     | 容積密度(t/m3)                         | アカゾマツ                               | 0.362        |
| 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)       | 樹齢20年以下<br>アカゾマツ<br>樹齢20年超<br>アカゾマツ | 2.17<br>1.67 |
| 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) | アカゾマツ                               | 0.21         |
| 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                    |                                     |              |

便益算出表 (単位:千円)

| 評価期間    | 経過年 | 年度   | 割引係数<br>① | V2-V1(m3) |        | 年効果額<br>② | 効果発生割合<br>③ | 年発生効果額<br>④=②×③ | 現在価値<br>⑤=④×① |
|---------|-----|------|-----------|-----------|--------|-----------|-------------|-----------------|---------------|
|         |     |      |           | 樹種名       | アカゾマツ  |           |             |                 |               |
| 1       | -45 | S40  | 5.84      |           | 30,073 | 3,960     | 100%        | 3,960           | 23,129        |
| 2       | -44 | S41  | 5.62      |           | 30,073 | 3,960     | 100%        | 3,960           | 22,258        |
| 3       | -43 | S42  | 5.40      |           | 30,073 | 3,960     | 100%        | 3,960           | 21,387        |
| 4       | -42 | S43  | 5.19      |           | 30,073 | 3,960     | 100%        | 3,960           | 20,555        |
| 5       | -41 | S44  | 4.99      |           | 30,073 | 3,960     | 100%        | 3,960           | 19,763        |
| 6       | -40 | S45  | 4.80      |           | 30,073 | 3,960     | 100%        | 3,960           | 19,010        |
| 7       | -39 | S46  | 4.62      |           | 30,073 | 3,960     | 100%        | 3,960           | 18,297        |
| 8       | -38 | S47  | 4.44      |           | 30,073 | 3,960     | 100%        | 3,960           | 17,585        |
| 9       | -37 | S48  | 4.27      |           | 30,073 | 3,960     | 100%        | 3,960           | 16,911        |
| 10      | -36 | S49  | 4.10      |           | 30,073 | 3,960     | 100%        | 3,960           | 16,238        |
| 11      | -35 | S50  | 3.95      |           | 30,073 | 3,960     | 100%        | 3,960           | 15,644        |
| 12      | -34 | S51  | 3.79      |           | 30,073 | 3,960     | 100%        | 3,960           | 15,010        |
| 13      | -33 | S52  | 3.65      |           | 30,073 | 3,960     | 100%        | 3,960           | 14,456        |
| 14      | -32 | S53  | 3.51      |           | 30,073 | 3,960     | 100%        | 3,960           | 13,901        |
| 15      | -31 | S54  | 3.37      |           | 30,073 | 3,960     | 100%        | 3,960           | 13,347        |
| 16      | -30 | S55  | 3.24      |           | 30,073 | 3,960     | 100%        | 3,960           | 12,832        |
| 17      | -29 | S56  | 3.12      |           | 30,073 | 3,960     | 100%        | 3,960           | 12,357        |
| 18      | -28 | S57  | 3.00      |           | 30,073 | 3,960     | 100%        | 3,960           | 11,881        |
| 19      | -27 | S58  | 2.88      |           | 30,073 | 3,960     | 100%        | 3,960           | 11,406        |
| 20      | -26 | S59  | 2.77      |           | 30,073 | 3,960     | 100%        | 3,960           | 10,971        |
| 21      | -25 | S60  | 2.67      |           | 30,073 | 3,048     | 100%        | 3,048           | 8,138         |
| 22      | -24 | S61  | 2.56      |           | 30,073 | 3,048     | 100%        | 3,048           | 7,803         |
| 23      | -23 | S62  | 2.46      |           | 30,073 | 3,048     | 100%        | 3,048           | 7,498         |
| 24      | -22 | S63  | 2.37      |           | 30,073 | 3,048     | 100%        | 3,048           | 7,224         |
| 25      | -21 | H 1  | 2.28      |           | 30,073 | 3,048     | 100%        | 3,048           | 6,949         |
| 26      | -20 | H 2  | 2.19      |           | 30,073 | 3,048     | 100%        | 3,048           | 6,675         |
| 27      | -19 | H 3  | 2.11      |           | 30,073 | 3,048     | 100%        | 3,048           | 6,431         |
| 28      | -18 | H 4  | 2.03      |           | 30,073 | 3,048     | 100%        | 3,048           | 6,187         |
| 29      | -17 | H 5  | 1.95      |           | 30,073 | 3,048     | 100%        | 3,048           | 5,943         |
| 30      | -16 | H 6  | 1.87      |           | 30,073 | 3,048     | 100%        | 3,048           | 5,700         |
| 31      | -15 | H 7  | 1.80      |           | 30,073 | 3,048     | 100%        | 3,048           | 5,486         |
| 32      | -14 | H 8  | 1.73      |           | 30,073 | 3,048     | 100%        | 3,048           | 5,273         |
| 33      | -13 | H 9  | 1.67      |           | 30,073 | 3,048     | 100%        | 3,048           | 5,090         |
| 34      | -12 | H 10 | 1.60      |           | 30,073 | 3,048     | 100%        | 3,048           | 4,877         |
| 35      | -11 | H 11 | 1.54      |           | 30,073 | 3,048     | 100%        | 3,048           | 4,694         |
| 36      | -10 | H 12 | 1.48      |           | 30,073 | 3,048     | 100%        | 3,048           | 4,511         |
| 37      | -9  | H 13 | 1.42      |           | 30,073 | 3,048     | 100%        | 3,048           | 4,328         |
| 38      | -8  | H 14 | 1.37      |           | 30,073 | 3,048     | 100%        | 3,048           | 4,176         |
| 39      | -7  | H 15 | 1.32      |           | 30,073 | 3,048     | 100%        | 3,048           | 4,023         |
| 40      | -6  | H 16 | 1.27      |           | 30,073 | 3,048     | 100%        | 3,048           | 3,871         |
| 41      | -5  | H 17 | 1.22      |           | 30,073 | 3,048     | 100%        | 3,048           | 3,718         |
| 42      | -4  | H 18 | 1.17      |           | 30,073 | 3,048     | 100%        | 3,048           | 3,566         |
| 43      | -3  | H 19 | 1.12      |           | 30,073 | 3,048     | 100%        | 3,048           | 3,414         |
| 44      | -2  | H 20 | 1.08      |           | 30,073 | 3,048     | 100%        | 3,048           | 3,292         |
| 45      | -1  | H 21 | 1.04      |           | 30,073 | 3,048     | 100%        | 3,048           | 3,170         |
| 46      | 0   | H 22 | 1.00      |           | 30,073 | 3,048     | 100%        | 3,048           | 3,048         |
| 47      | 1   | H 23 | 0.96      |           | 30,073 | 3,048     | 100%        | 3,048           | 2,926         |
| 48      | 2   | H 24 | 0.92      |           | 30,073 | 3,048     | 100%        | 3,048           | 2,804         |
| 49      | 3   | H 25 | 0.89      |           | 30,073 | 3,048     | 100%        | 3,048           | 2,713         |
| 50      | 4   | H 26 | 0.85      |           | 30,073 | 3,048     | 100%        | 3,048           | 2,591         |
| 51      | 5   | H 27 | 0.82      |           | 30,073 | 3,048     | 100%        | 3,048           | 2,499         |
| 52      | 6   | H 28 | 0.79      |           | 30,073 | 3,048     | 100%        | 3,048           | 2,408         |
| 53      | 7   | H 29 | 0.76      |           | 30,073 | 3,048     | 100%        | 3,048           | 2,316         |
| 54      | 8   | H 30 | 0.73      |           | 30,073 | 3,048     | 100%        | 3,048           | 2,225         |
| 55      | 9   | H 31 | 0.70      |           | 30,073 | 3,048     | 100%        | 3,048           | 2,134         |
| 56      | 10  | H 32 | 0.68      |           | 30,073 | 3,048     | 100%        | 3,048           | 2,073         |
| 57      | 11  | H 33 | 0.65      |           | 30,073 | 3,048     | 100%        | 3,048           | 1,981         |
| 58      | 12  | H 34 | 0.62      |           | 30,073 | 3,048     | 100%        | 3,048           | 1,890         |
| 59      | 13  | H 35 | 0.60      |           | 30,073 | 3,048     | 100%        | 3,048           | 1,829         |
| 60      | 14  | H 36 | 0.58      |           | 30,073 | 3,048     | 100%        | 3,048           | 1,768         |
| 61      | 15  | H 37 | 0.56      |           | 30,073 | 3,048     | 100%        | 3,048           | 1,707         |
| 62      | 16  | H 38 | 0.53      |           | 30,073 | 3,048     | 100%        | 3,048           | 1,615         |
| 63      | 17  | H 39 | 0.51      |           | 30,073 | 3,048     | 100%        | 3,048           | 1,554         |
| 64      | 18  | H 40 | 0.49      |           | 30,073 | 3,048     | 100%        | 3,048           | 1,493         |
| 65      | 19  | H 41 | 0.47      |           | 30,073 | 3,048     | 100%        | 3,048           | 1,433         |
| 66      | 20  | H 42 | 0.46      |           | 30,073 | 3,048     | 100%        | 3,048           | 1,402         |
| 67      | 21  | H 43 | 0.44      |           | 30,073 | 3,048     | 100%        | 3,048           | 1,341         |
| 68      | 22  | H 44 | 0.42      |           | 30,073 | 3,048     | 100%        | 3,048           | 1,280         |
| 69      | 23  | H 45 | 0.41      |           | 30,073 | 3,048     | 100%        | 3,048           | 1,250         |
| 70      | 24  | H 46 | 0.39      |           | 30,073 | 3,048     | 100%        | 3,048           | 1,189         |
| 71      | 25  | H 47 | 0.38      |           | 30,073 | 3,048     | 100%        | 3,048           | 1,158         |
| 72      | 26  | H 48 | 0.36      |           | 30,073 | 3,048     | 100%        | 3,048           | 1,097         |
| 73      | 27  | H 49 | 0.35      |           | 30,073 | 3,048     | 100%        | 3,048           | 1,067         |
| 74      | 28  | H 50 | 0.33      |           | 30,073 | 3,048     | 100%        | 3,048           | 1,006         |
| 75      | 29  | H 51 | 0.32      |           | 30,073 | 3,048     | 100%        | 3,048           | 975           |
| 76      | 30  | H 52 | 0.31      |           | 30,073 | 3,048     | 100%        | 3,048           | 945           |
| 77      | 31  | H 53 | 0.30      |           | 30,073 | 3,048     | 100%        | 3,048           | 914           |
| 78      | 32  | H 54 | 0.29      |           | 30,073 | 3,048     | 100%        | 3,048           | 884           |
| 79      | 33  | H 55 | 0.27      |           | 30,073 | 3,048     | 100%        | 3,048           | 823           |
| 80      | 34  | H 56 | 0.26      |           | 30,073 | 3,048     | 100%        | 3,048           | 792           |
| 合計(便益額) |     |      |           |           |        |           |             |                 | 518,104       |

事業名: 水源林造成事業  
 施行箇所: 東北北海道整備局 昭和40年度契約地

815,204 千円

3 環境保全便益  
 (1) 炭素固定便益  
 ① 樹木固定分

広葉樹

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

|        |                                    |                   |            |              |
|--------|------------------------------------|-------------------|------------|--------------|
| U:     | 二酸化炭素に関する原単位(円/t-CO2)              |                   | 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)    | 広葉樹               | 38,882     |              |
| 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)     | 広葉樹               | 77,338     |              |
| Y:     | 評価期間(年)                            |                   | 80         |              |
| D:     | 容積密度(t/m3)                         | 広葉樹               | 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)       | 樹齢20年以下<br>樹齢20年超 | 広葉樹<br>広葉樹 | 1.40<br>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) | 広葉樹               | 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                    |                   |            |              |

便益算出表

(単位:千円)

| 評価期間    | 経過年 | 年度   | 割引係数 |         | 年効果額  | 効果発生割合 | 年発生効果額 | 現在価値    |
|---------|-----|------|------|---------|-------|--------|--------|---------|
|         |     |      | ①    | 樹種名 広葉樹 |       |        |        |         |
| 1       | -45 | S40  | 5.84 | 38,455  | 5,865 | 100%   | 5,865  | 34,251  |
| 2       | -44 | S41  | 5.62 | 38,455  | 5,865 | 100%   | 5,865  | 32,961  |
| 3       | -43 | S42  | 5.40 | 38,455  | 5,865 | 100%   | 5,865  | 31,670  |
| 4       | -42 | S43  | 5.19 | 38,455  | 5,865 | 100%   | 5,865  | 30,439  |
| 5       | -41 | S44  | 4.99 | 38,455  | 5,865 | 100%   | 5,865  | 29,266  |
| 6       | -40 | S45  | 4.80 | 38,455  | 5,865 | 100%   | 5,865  | 28,151  |
| 7       | -39 | S46  | 4.62 | 38,455  | 5,865 | 100%   | 5,865  | 27,096  |
| 8       | -38 | S47  | 4.44 | 38,455  | 5,865 | 100%   | 5,865  | 26,040  |
| 9       | -37 | S48  | 4.27 | 38,455  | 5,865 | 100%   | 5,865  | 25,043  |
| 10      | -36 | S49  | 4.10 | 38,455  | 5,865 | 100%   | 5,865  | 24,046  |
| 11      | -35 | S50  | 3.95 | 38,455  | 5,865 | 100%   | 5,865  | 23,166  |
| 12      | -34 | S51  | 3.79 | 38,455  | 5,865 | 100%   | 5,865  | 22,228  |
| 13      | -33 | S52  | 3.65 | 38,455  | 5,865 | 100%   | 5,865  | 21,407  |
| 14      | -32 | S53  | 3.51 | 38,455  | 5,865 | 100%   | 5,865  | 20,586  |
| 15      | -31 | S54  | 3.37 | 38,455  | 5,865 | 100%   | 5,865  | 19,765  |
| 16      | -30 | S55  | 3.24 | 38,455  | 5,865 | 100%   | 5,865  | 19,002  |
| 17      | -29 | S56  | 3.12 | 38,455  | 5,865 | 100%   | 5,865  | 18,298  |
| 18      | -28 | S57  | 3.00 | 38,455  | 5,865 | 100%   | 5,865  | 17,595  |
| 19      | -27 | S58  | 2.88 | 38,455  | 5,865 | 100%   | 5,865  | 16,891  |
| 20      | -26 | S59  | 2.77 | 38,455  | 5,865 | 100%   | 5,865  | 16,246  |
| 21      | -25 | S60  | 2.67 | 38,455  | 5,278 | 100%   | 5,278  | 14,093  |
| 22      | -24 | S61  | 2.56 | 38,455  | 5,278 | 100%   | 5,278  | 13,513  |
| 23      | -23 | S62  | 2.46 | 38,455  | 5,278 | 100%   | 5,278  | 12,985  |
| 24      | -22 | S63  | 2.37 | 38,455  | 5,278 | 100%   | 5,278  | 12,510  |
| 25      | -21 | H 1  | 2.28 | 38,455  | 5,278 | 100%   | 5,278  | 12,035  |
| 26      | -20 | H 2  | 2.19 | 38,455  | 5,278 | 100%   | 5,278  | 11,560  |
| 27      | -19 | H 3  | 2.11 | 38,455  | 5,278 | 100%   | 5,278  | 11,137  |
| 28      | -18 | H 4  | 2.03 | 38,455  | 5,278 | 100%   | 5,278  | 10,715  |
| 29      | -17 | H 5  | 1.95 | 38,455  | 5,278 | 100%   | 5,278  | 10,293  |
| 30      | -16 | H 6  | 1.87 | 38,455  | 5,278 | 100%   | 5,278  | 9,871   |
| 31      | -15 | H 7  | 1.80 | 38,455  | 5,278 | 100%   | 5,278  | 9,501   |
| 32      | -14 | H 8  | 1.73 | 38,455  | 5,278 | 100%   | 5,278  | 9,132   |
| 33      | -13 | H 9  | 1.67 | 38,455  | 5,278 | 100%   | 5,278  | 8,815   |
| 34      | -12 | H 10 | 1.60 | 38,455  | 5,278 | 100%   | 5,278  | 8,445   |
| 35      | -11 | H 11 | 1.54 | 38,455  | 5,278 | 100%   | 5,278  | 8,129   |
| 36      | -10 | H 12 | 1.48 | 38,455  | 5,278 | 100%   | 5,278  | 7,812   |
| 37      | -9  | H 13 | 1.42 | 38,455  | 5,278 | 100%   | 5,278  | 7,495   |
| 38      | -8  | H 14 | 1.37 | 38,455  | 5,278 | 100%   | 5,278  | 7,231   |
| 39      | -7  | H 15 | 1.32 | 38,455  | 5,278 | 100%   | 5,278  | 6,967   |
| 40      | -6  | H 16 | 1.27 | 38,455  | 5,278 | 100%   | 5,278  | 6,704   |
| 41      | -5  | H 17 | 1.22 | 38,455  | 5,278 | 100%   | 5,278  | 6,440   |
| 42      | -4  | H 18 | 1.17 | 38,455  | 5,278 | 100%   | 5,278  | 6,176   |
| 43      | -3  | H 19 | 1.12 | 38,455  | 5,278 | 100%   | 5,278  | 5,912   |
| 44      | -2  | H 20 | 1.08 | 38,455  | 5,278 | 100%   | 5,278  | 5,701   |
| 45      | -1  | H 21 | 1.04 | 38,455  | 5,278 | 100%   | 5,278  | 5,490   |
| 46      | 0   | H 22 | 1.00 | 38,455  | 5,278 | 100%   | 5,278  | 5,278   |
| 47      | 1   | H 23 | 0.96 | 38,455  | 5,278 | 100%   | 5,278  | 5,067   |
| 48      | 2   | H 24 | 0.92 | 38,455  | 5,278 | 100%   | 5,278  | 4,856   |
| 49      | 3   | H 25 | 0.89 | 38,455  | 5,278 | 100%   | 5,278  | 4,698   |
| 50      | 4   | H 26 | 0.85 | 38,455  | 5,278 | 100%   | 5,278  | 4,487   |
| 51      | 5   | H 27 | 0.82 | 38,455  | 5,278 | 100%   | 5,278  | 4,328   |
| 52      | 6   | H 28 | 0.79 | 38,455  | 5,278 | 100%   | 5,278  | 4,170   |
| 53      | 7   | H 29 | 0.76 | 38,455  | 5,278 | 100%   | 5,278  | 4,012   |
| 54      | 8   | H 30 | 0.73 | 38,455  | 5,278 | 100%   | 5,278  | 3,853   |
| 55      | 9   | H 31 | 0.70 | 38,455  | 5,278 | 100%   | 5,278  | 3,695   |
| 56      | 10  | H 32 | 0.68 | 38,455  | 5,278 | 100%   | 5,278  | 3,589   |
| 57      | 11  | H 33 | 0.65 | 38,455  | 5,278 | 100%   | 5,278  | 3,431   |
| 58      | 12  | H 34 | 0.62 | 38,455  | 5,278 | 100%   | 5,278  | 3,273   |
| 59      | 13  | H 35 | 0.60 | 38,455  | 5,278 | 100%   | 5,278  | 3,167   |
| 60      | 14  | H 36 | 0.58 | 38,455  | 5,278 | 100%   | 5,278  | 3,061   |
| 61      | 15  | H 37 | 0.56 | 38,455  | 5,278 | 100%   | 5,278  | 2,956   |
| 62      | 16  | H 38 | 0.53 | 38,455  | 5,278 | 100%   | 5,278  | 2,798   |
| 63      | 17  | H 39 | 0.51 | 38,455  | 5,278 | 100%   | 5,278  | 2,692   |
| 64      | 18  | H 40 | 0.49 | 38,455  | 5,278 | 100%   | 5,278  | 2,586   |
| 65      | 19  | H 41 | 0.47 | 38,455  | 5,278 | 100%   | 5,278  | 2,481   |
| 66      | 20  | H 42 | 0.46 | 38,455  | 5,278 | 100%   | 5,278  | 2,428   |
| 67      | 21  | H 43 | 0.44 | 38,455  | 5,278 | 100%   | 5,278  | 2,322   |
| 68      | 22  | H 44 | 0.42 | 38,455  | 5,278 | 100%   | 5,278  | 2,217   |
| 69      | 23  | H 45 | 0.41 | 38,455  | 5,278 | 100%   | 5,278  | 2,164   |
| 70      | 24  | H 46 | 0.39 | 38,455  | 5,278 | 100%   | 5,278  | 2,059   |
| 71      | 25  | H 47 | 0.38 | 38,455  | 5,278 | 100%   | 5,278  | 2,006   |
| 72      | 26  | H 48 | 0.36 | 38,455  | 5,278 | 100%   | 5,278  | 1,900   |
| 73      | 27  | H 49 | 0.35 | 38,455  | 5,278 | 100%   | 5,278  | 1,847   |
| 74      | 28  | H 50 | 0.33 | 38,455  | 5,278 | 100%   | 5,278  | 1,742   |
| 75      | 29  | H 51 | 0.32 | 38,455  | 5,278 | 100%   | 5,278  | 1,689   |
| 76      | 30  | H 52 | 0.31 | 38,455  | 5,278 | 100%   | 5,278  | 1,636   |
| 77      | 31  | H 53 | 0.30 | 38,455  | 5,278 | 100%   | 5,278  | 1,584   |
| 78      | 32  | H 54 | 0.29 | 38,455  | 5,278 | 100%   | 5,278  | 1,531   |
| 79      | 33  | H 55 | 0.27 | 38,455  | 5,278 | 100%   | 5,278  | 1,425   |
| 80      | 34  | H 56 | 0.26 | 38,455  | 5,278 | 100%   | 5,278  | 1,372   |
| 合計(便益額) |     |      |      |         |       |        |        | 815,204 |

3 環境保全便益  
 (1) 炭素固定便益  
 ① 樹木固定分

前生樹

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

|        |                                    |                   |                      |
|--------|------------------------------------|-------------------|----------------------|
| U:     | 二酸化炭素に関する原単位(円/t-CO2)              |                   | 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)    | 前生樹               | 1,862                |
| 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)     | 前生樹               | 3,723                |
| Y:     | 評価期間(年)                            |                   | 80                   |
| D:     | 容積密度(t/m <sup>3</sup> )            | 前生樹               | 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)       | 樹齢20年以下<br>樹齢20年超 | 前生樹 1.40<br>前生樹 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) | 前生樹               | 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                    |                   |                      |

便益算出表 (単位:千円)

| 評価期間    | 経過年 | 年度   | 割引係数 |         | 年効果額 | 効果発生割合 | 年発生効果額 | 現在価値   |
|---------|-----|------|------|---------|------|--------|--------|--------|
|         |     |      | ①    | 樹種名 前生樹 |      |        |        |        |
| 1       | -45 | S40  | 5.84 | 1,862   | 284  | 100%   | 284    | 1,658  |
| 2       | -44 | S41  | 5.62 | 1,862   | 284  | 100%   | 284    | 1,596  |
| 3       | -43 | S42  | 5.40 | 1,862   | 284  | 100%   | 284    | 1,533  |
| 4       | -42 | S43  | 5.19 | 1,862   | 284  | 100%   | 284    | 1,473  |
| 5       | -41 | S44  | 4.99 | 1,862   | 284  | 100%   | 284    | 1,417  |
| 6       | -40 | S45  | 4.80 | 1,862   | 284  | 100%   | 284    | 1,363  |
| 7       | -39 | S46  | 4.62 | 1,862   | 284  | 100%   | 284    | 1,312  |
| 8       | -38 | S47  | 4.44 | 1,862   | 284  | 100%   | 284    | 1,261  |
| 9       | -37 | S48  | 4.27 | 1,862   | 284  | 100%   | 284    | 1,212  |
| 10      | -36 | S49  | 4.10 | 1,862   | 284  | 100%   | 284    | 1,164  |
| 11      | -35 | S50  | 3.95 | 1,862   | 284  | 100%   | 284    | 1,121  |
| 12      | -34 | S51  | 3.79 | 1,862   | 284  | 100%   | 284    | 1,076  |
| 13      | -33 | S52  | 3.65 | 1,862   | 284  | 100%   | 284    | 1,036  |
| 14      | -32 | S53  | 3.51 | 1,862   | 284  | 100%   | 284    | 996    |
| 15      | -31 | S54  | 3.37 | 1,862   | 284  | 100%   | 284    | 957    |
| 16      | -30 | S55  | 3.24 | 1,862   | 284  | 100%   | 284    | 920    |
| 17      | -29 | S56  | 3.12 | 1,862   | 284  | 100%   | 284    | 886    |
| 18      | -28 | S57  | 3.00 | 1,862   | 284  | 100%   | 284    | 852    |
| 19      | -27 | S58  | 2.88 | 1,862   | 284  | 100%   | 284    | 818    |
| 20      | -26 | S59  | 2.77 | 1,862   | 284  | 100%   | 284    | 786    |
| 21      | -25 | S60  | 2.67 | 1,862   | 256  | 100%   | 256    | 682    |
| 22      | -24 | S61  | 2.56 | 1,862   | 256  | 100%   | 256    | 654    |
| 23      | -23 | S62  | 2.46 | 1,862   | 256  | 100%   | 256    | 629    |
| 24      | -22 | S63  | 2.37 | 1,862   | 256  | 100%   | 256    | 606    |
| 25      | -21 | H 1  | 2.28 | 1,862   | 256  | 100%   | 256    | 583    |
| 26      | -20 | H 2  | 2.19 | 1,862   | 256  | 100%   | 256    | 560    |
| 27      | -19 | H 3  | 2.11 | 1,862   | 256  | 100%   | 256    | 539    |
| 28      | -18 | H 4  | 2.03 | 1,862   | 256  | 100%   | 256    | 519    |
| 29      | -17 | H 5  | 1.95 | 1,862   | 256  | 100%   | 256    | 498    |
| 30      | -16 | H 6  | 1.87 | 1,862   | 256  | 100%   | 256    | 478    |
| 31      | -15 | H 7  | 1.80 | 1,862   | 256  | 100%   | 256    | 460    |
| 32      | -14 | H 8  | 1.73 | 1,862   | 256  | 100%   | 256    | 442    |
| 33      | -13 | H 9  | 1.67 | 1,862   | 256  | 100%   | 256    | 427    |
| 34      | -12 | H 10 | 1.60 | 1,862   | 256  | 100%   | 256    | 409    |
| 35      | -11 | H 11 | 1.54 | 1,862   | 256  | 100%   | 256    | 393    |
| 36      | -10 | H 12 | 1.48 | 1,862   | 256  | 100%   | 256    | 378    |
| 37      | -9  | H 13 | 1.42 | 1,862   | 256  | 100%   | 256    | 363    |
| 38      | -8  | H 14 | 1.37 | 1,862   | 256  | 100%   | 256    | 350    |
| 39      | -7  | H 15 | 1.32 | 1,862   | 256  | 100%   | 256    | 337    |
| 40      | -6  | H 16 | 1.27 | 1,862   | 256  | 100%   | 256    | 324    |
| 41      | -5  | H 17 | 1.22 | 1,862   | 256  | 100%   | 256    | 312    |
| 42      | -4  | H 18 | 1.17 | 1,862   | 256  | 100%   | 256    | 299    |
| 43      | -3  | H 19 | 1.12 | 1,862   | 256  | 100%   | 256    | 286    |
| 44      | -2  | H 20 | 1.08 | 1,862   | 256  | 100%   | 256    | 276    |
| 45      | -1  | H 21 | 1.04 | 1,862   | 256  | 100%   | 256    | 266    |
| 46      | 0   | H 22 | 1.00 | 1,862   | 256  | 100%   | 256    | 256    |
| 47      | 1   | H 23 | 0.96 | 1,862   | 256  | 100%   | 256    | 245    |
| 48      | 2   | H 24 | 0.92 | 1,862   | 256  | 100%   | 256    | 235    |
| 49      | 3   | H 25 | 0.89 | 1,862   | 256  | 100%   | 256    | 227    |
| 50      | 4   | H 26 | 0.85 | 1,862   | 256  | 100%   | 256    | 217    |
| 51      | 5   | H 27 | 0.82 | 1,862   | 256  | 100%   | 256    | 210    |
| 52      | 6   | H 28 | 0.79 | 1,862   | 256  | 100%   | 256    | 202    |
| 53      | 7   | H 29 | 0.76 | 1,862   | 256  | 100%   | 256    | 194    |
| 54      | 8   | H 30 | 0.73 | 1,862   | 256  | 100%   | 256    | 187    |
| 55      | 9   | H 31 | 0.70 | 1,862   | 256  | 100%   | 256    | 179    |
| 56      | 10  | H 32 | 0.68 | 1,862   | 256  | 100%   | 256    | 174    |
| 57      | 11  | H 33 | 0.65 | 1,862   | 256  | 100%   | 256    | 166    |
| 58      | 12  | H 34 | 0.62 | 1,862   | 256  | 100%   | 256    | 158    |
| 59      | 13  | H 35 | 0.60 | 1,862   | 256  | 100%   | 256    | 153    |
| 60      | 14  | H 36 | 0.58 | 1,862   | 256  | 100%   | 256    | 148    |
| 61      | 15  | H 37 | 0.56 | 1,862   | 256  | 100%   | 256    | 143    |
| 62      | 16  | H 38 | 0.53 | 1,862   | 256  | 100%   | 256    | 135    |
| 63      | 17  | H 39 | 0.51 | 1,862   | 256  | 100%   | 256    | 130    |
| 64      | 18  | H 40 | 0.49 | 1,862   | 256  | 100%   | 256    | 125    |
| 65      | 19  | H 41 | 0.47 | 1,862   | 256  | 100%   | 256    | 120    |
| 66      | 20  | H 42 | 0.46 | 1,862   | 256  | 100%   | 256    | 118    |
| 67      | 21  | H 43 | 0.44 | 1,862   | 256  | 100%   | 256    | 112    |
| 68      | 22  | H 44 | 0.42 | 1,862   | 256  | 100%   | 256    | 107    |
| 69      | 23  | H 45 | 0.41 | 1,862   | 256  | 100%   | 256    | 105    |
| 70      | 24  | H 46 | 0.39 | 1,862   | 256  | 100%   | 256    | 100    |
| 71      | 25  | H 47 | 0.38 | 1,862   | 256  | 100%   | 256    | 97     |
| 72      | 26  | H 48 | 0.36 | 1,862   | 256  | 100%   | 256    | 92     |
| 73      | 27  | H 49 | 0.35 | 1,862   | 256  | 100%   | 256    | 89     |
| 74      | 28  | H 50 | 0.33 | 1,862   | 256  | 100%   | 256    | 84     |
| 75      | 29  | H 51 | 0.32 | 1,862   | 256  | 100%   | 256    | 82     |
| 76      | 30  | H 52 | 0.31 | 1,862   | 256  | 100%   | 256    | 79     |
| 77      | 31  | H 53 | 0.30 | 1,862   | 256  | 100%   | 256    | 77     |
| 78      | 32  | H 54 | 0.29 | 1,862   | 256  | 100%   | 256    | 74     |
| 79      | 33  | H 55 | 0.27 | 1,862   | 256  | 100%   | 256    | 69     |
| 80      | 34  | H 56 | 0.26 | 1,862   | 256  | 100%   | 256    | 66     |
| 合計(便益額) |     |      |      |         |      |        |        | 39,462 |













事業名： 水源林造成事業  
 施行箇所： 東北北海道整備局 昭和40年度契約地

39,584 千円

4 木材生産等便益  
 (3) 木材生産確保・増進便益

① 森林整備分 アカゾノマツ

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

Y: 評価期間(年) 80  
 Vt: t年後における伐採材積(m3) 43,611  
 @: 山元立木価格(円/m3) 3,491

便益算出表 (単位:千円)

| 評価期間    | 経過年 | 年度   | 割引係数<br>① | 伐採材積(m3) | 年効果額<br>② | 効果発生割合<br>③ | 年発生効果額<br>④=②×③ | 現在価値<br>⑤=④×① |
|---------|-----|------|-----------|----------|-----------|-------------|-----------------|---------------|
| 1       | -45 | S40  | 5.84      |          |           |             | 0               | 0             |
| 2       | -44 | S41  | 5.62      |          |           |             | 0               | 0             |
| 3       | -43 | S42  | 5.40      |          |           |             | 0               | 0             |
| 4       | -42 | S43  | 5.19      |          |           |             | 0               | 0             |
| 5       | -41 | S44  | 4.99      |          |           |             | 0               | 0             |
| 6       | -40 | S45  | 4.80      |          |           |             | 0               | 0             |
| 7       | -39 | S46  | 4.62      |          |           |             | 0               | 0             |
| 8       | -38 | S47  | 4.44      |          |           |             | 0               | 0             |
| 9       | -37 | S48  | 4.27      |          |           |             | 0               | 0             |
| 10      | -36 | S49  | 4.10      |          |           |             | 0               | 0             |
| 11      | -35 | S50  | 3.95      |          |           |             | 0               | 0             |
| 12      | -34 | S51  | 3.79      |          |           |             | 0               | 0             |
| 13      | -33 | S52  | 3.65      |          |           |             | 0               | 0             |
| 14      | -32 | S53  | 3.51      |          |           |             | 0               | 0             |
| 15      | -31 | S54  | 3.37      |          |           |             | 0               | 0             |
| 16      | -30 | S55  | 3.24      |          |           |             | 0               | 0             |
| 17      | -29 | S56  | 3.12      |          |           |             | 0               | 0             |
| 18      | -28 | S57  | 3.00      |          |           |             | 0               | 0             |
| 19      | -27 | S58  | 2.88      |          |           |             | 0               | 0             |
| 20      | -26 | S59  | 2.77      |          |           |             | 0               | 0             |
| 21      | -25 | S60  | 2.67      |          |           |             | 0               | 0             |
| 22      | -24 | S61  | 2.56      |          |           |             | 0               | 0             |
| 23      | -23 | S62  | 2.46      |          |           |             | 0               | 0             |
| 24      | -22 | S63  | 2.37      |          |           |             | 0               | 0             |
| 25      | -21 | H 1  | 2.28      |          |           |             | 0               | 0             |
| 26      | -20 | H 2  | 2.19      |          |           |             | 0               | 0             |
| 27      | -19 | H 3  | 2.11      |          |           |             | 0               | 0             |
| 28      | -18 | H 4  | 2.03      |          |           |             | 0               | 0             |
| 29      | -17 | H 5  | 1.95      |          |           |             | 0               | 0             |
| 30      | -16 | H 6  | 1.87      |          |           |             | 0               | 0             |
| 31      | -15 | H 7  | 1.80      |          |           |             | 0               | 0             |
| 32      | -14 | H 8  | 1.73      |          |           |             | 0               | 0             |
| 33      | -13 | H 9  | 1.67      |          |           |             | 0               | 0             |
| 34      | -12 | H 10 | 1.60      |          |           |             | 0               | 0             |
| 35      | -11 | H 11 | 1.54      |          |           |             | 0               | 0             |
| 36      | -10 | H 12 | 1.48      |          |           |             | 0               | 0             |
| 37      | -9  | H 13 | 1.42      |          |           |             | 0               | 0             |
| 38      | -8  | H 14 | 1.37      |          |           |             | 0               | 0             |
| 39      | -7  | H 15 | 1.32      |          |           |             | 0               | 0             |
| 40      | -6  | H 16 | 1.27      |          |           |             | 0               | 0             |
| 41      | -5  | H 17 | 1.22      |          |           |             | 0               | 0             |
| 42      | -4  | H 18 | 1.17      |          |           |             | 0               | 0             |
| 43      | -3  | H 19 | 1.12      |          |           |             | 0               | 0             |
| 44      | -2  | H 20 | 1.08      |          |           |             | 0               | 0             |
| 45      | -1  | H 21 | 1.04      |          |           |             | 0               | 0             |
| 46      | 0   | H 22 | 1.00      |          |           |             | 0               | 0             |
| 47      | 1   | H 23 | 0.96      |          |           |             | 0               | 0             |
| 48      | 2   | H 24 | 0.92      |          |           |             | 0               | 0             |
| 49      | 3   | H 25 | 0.89      |          |           |             | 0               | 0             |
| 50      | 4   | H 26 | 0.85      |          |           |             | 0               | 0             |
| 51      | 5   | H 27 | 0.82      |          |           |             | 0               | 0             |
| 52      | 6   | H 28 | 0.79      |          |           |             | 0               | 0             |
| 53      | 7   | H 29 | 0.76      |          |           |             | 0               | 0             |
| 54      | 8   | H 30 | 0.73      |          |           |             | 0               | 0             |
| 55      | 9   | H 31 | 0.70      |          |           |             | 0               | 0             |
| 56      | 10  | H 32 | 0.68      |          |           |             | 0               | 0             |
| 57      | 11  | H 33 | 0.65      |          |           |             | 0               | 0             |
| 58      | 12  | H 34 | 0.62      |          |           |             | 0               | 0             |
| 59      | 13  | H 35 | 0.60      |          |           |             | 0               | 0             |
| 60      | 14  | H 36 | 0.58      |          |           |             | 0               | 0             |
| 61      | 15  | H 37 | 0.56      |          |           |             | 0               | 0             |
| 62      | 16  | H 38 | 0.53      |          |           |             | 0               | 0             |
| 63      | 17  | H 39 | 0.51      |          |           |             | 0               | 0             |
| 64      | 18  | H 40 | 0.49      |          |           |             | 0               | 0             |
| 65      | 19  | H 41 | 0.47      |          |           |             | 0               | 0             |
| 66      | 20  | H 42 | 0.46      |          |           |             | 0               | 0             |
| 67      | 21  | H 43 | 0.44      |          |           |             | 0               | 0             |
| 68      | 22  | H 44 | 0.42      |          |           |             | 0               | 0             |
| 69      | 23  | H 45 | 0.41      |          |           |             | 0               | 0             |
| 70      | 24  | H 46 | 0.39      |          |           |             | 0               | 0             |
| 71      | 25  | H 47 | 0.38      |          |           |             | 0               | 0             |
| 72      | 26  | H 48 | 0.36      |          |           |             | 0               | 0             |
| 73      | 27  | H 49 | 0.35      |          |           |             | 0               | 0             |
| 74      | 28  | H 50 | 0.33      |          |           |             | 0               | 0             |
| 75      | 29  | H 51 | 0.32      |          |           |             | 0               | 0             |
| 76      | 30  | H 52 | 0.31      |          |           |             | 0               | 0             |
| 77      | 31  | H 53 | 0.30      |          |           |             | 0               | 0             |
| 78      | 32  | H 54 | 0.29      |          |           |             | 0               | 0             |
| 79      | 33  | H 55 | 0.27      |          |           |             | 0               | 0             |
| 80      | 34  | H 56 | 0.26      | 43,611   | 152,247   | 100%        | 152,247         | 39,584        |
| 合計(便益額) |     |      |           |          |           |             |                 | 39,584        |