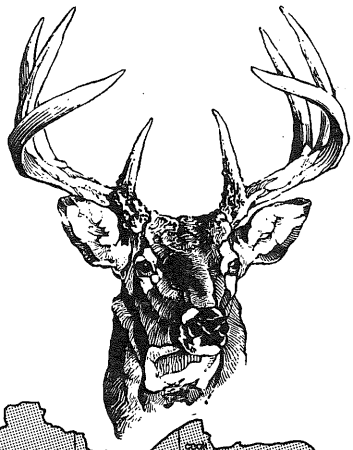
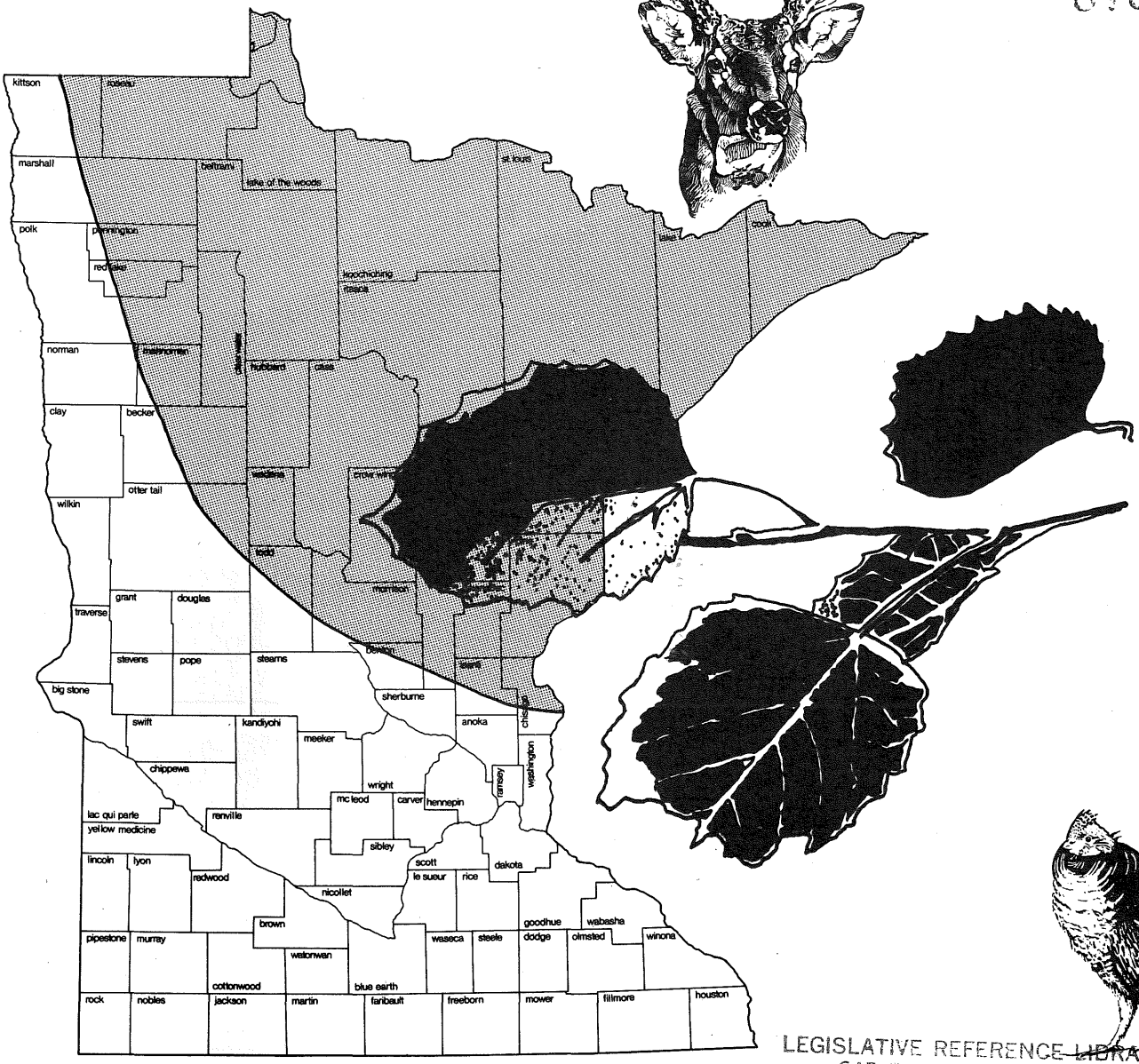
Department of Natural Resources
Division of Forestry
St. Paul, MN 55155-4044





REINVEST IN MINNESOTA (RIM)

ASPEN RECYCLING

A Report To The Minnesota Legislature, January 1987

REINVEST IN MINNESOTA
ASPEN RECYCLING

Prepared Pursuant to the Reinvest in Minnesota
Resources Act of 1986
1986 Minnesota Session Laws,
Chapter 383, Section 11

December 31, 1986

Minnesota Department of Natural Resources
Division of Forestry
St. Paul, Minnesota

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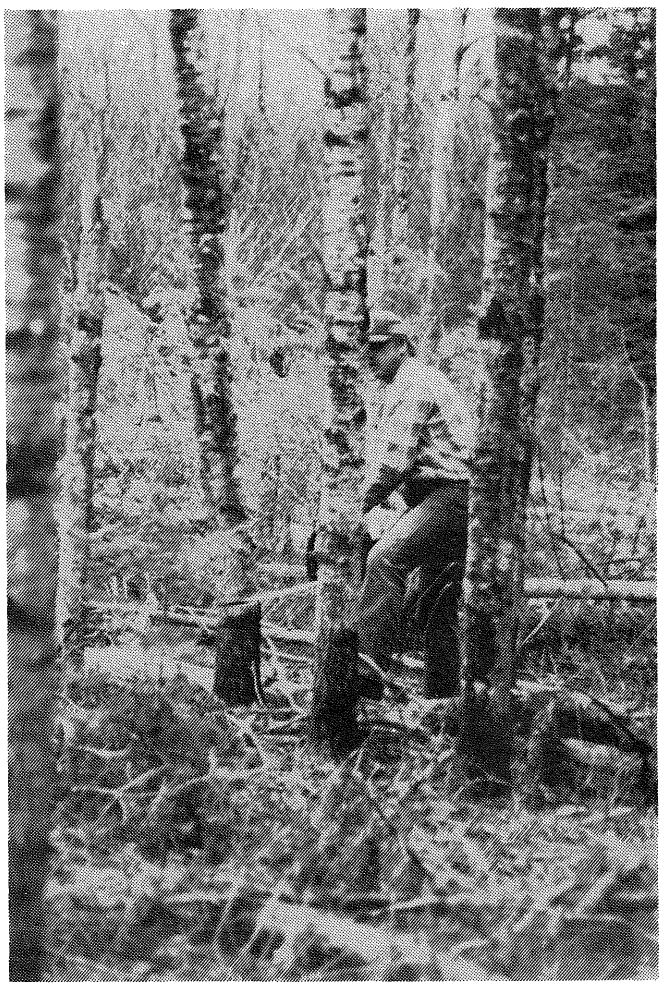

Aspen recycling will provide jobs.

INTRODUCTION

The 1985 Minnesota Legislature authorized an aspen recycling pilot program for northern Minnesota. The program was completed by the spring of 1986. A report was prepared and submitted to the Minnesota Legislature on July 1, 1986. (For more information on the need for aspen recycling in northern Minnesota, refer to the June 1986 report to the Legislature titled, "Aspen Recycling, A Pilot Program".)

Preliminary studies of the forest management and wildlife benefits of the pilot program appear to be very good. Aspen usually sprouts profusely after cutting. However, most studies on aspen regeneration have been done after commercial harvesting when full sunlight has had a chance to heat the soil and cause regeneration.

During the aspen recycling pilot program, the majority of felled trees were left on site. The success of regeneration without full sunlight on the soil was an unanswered question. To remedy this, the contractor removed all trees from some sites and partially removed them from others. To study regeneration results, a combination of 35MM photography, both color and infrared, and field visits to do actual stem counts was used. Since most of the aspen sites scheduled for recycling are quite inaccessible, 35MM photography is being used experimentally to determine regeneration success. (Further information on regeneration results of sites recycled during the pilot program are found on page 3.)

The 1986 Legislature passed the "Reinvest in Minnesota Resources Act of 1986" (RIM). This act relates to enhancement of fish and wildlife; planning and implementation of wildlife management; conservation of marginal agricultural lands; and, habitat management and aspen recycling. Aspen recycling provides for the betterment of state-owned lands by clearing aspen that is unmarketable because of age, disease, inaccessibility, or other causes. Recycling creates young, thrifty stands that provide badly needed habitat for whitetail deer and ruffed grouse. (See portion of RIM bill pertaining to aspen recycling on page 6.)

The Division of Forestry works very closely with the Section of Wildlife in selecting stands to be recycled. The need for aspen recycling for forest management is well-known and documented. The need for aspen in all the age classes for wildlife, primarily ruffed grouse and whitetail deer is also known.

Wildlife managers are currently working on habitat analysis based on four square-mile compartments. This assessment provides wildlife managers and foresters with the number of acres of aspen in each 10 year age class. From this assessment, wildlife managers identify the number of acres in each age class needed to improve wildlife habitat. This information guides the foresters in selecting sites for aspen recycling, thus benefiting both forest and game management. (Sample habitat analysis data is included in the Appendix, page 12.)

After recycling, four-foot-high aspen sprouts in the first year.

ASPEN RECYCLING - PROGRAM RESULTS

The pilot program of aspen recycling during the 1985-86 winter was designed to answer four questions that would determine the desirability of continued aspen recycling on state lands. These were:

1. What is the ability of the DNR to identify and set up individual recycling projects?
2. Are contractors interested in doing the work?
3. Will aspen regenerate satisfactorily?
4. Will wildlife habitat be improved and will wildlife use recycled sites?

Ability to identify and set up projects

Once the stand selection criteria was established (explained in the June 1986 report to the Legislature), considerable field time was spent selecting and mapping stands. The restrictive criteria on selecting low-volume stands was a problem. After field checking, it was determined that many of the low-volume stands were not in need of recycling. Recycling is more often needed in high-volume, overmature stands in rapidly deteriorating condition.

During the pilot program, considerable effort was required to identify and set up projects. However, the program was given high priority and the Division of Forestry was able to offer 98 individual tracts for recycling. However, it should be easier for the Division to choose and offer tracts in 1986-87 because more realistic criteria will be used for stand selection.

Contractor interest

In the pilot program, 55 contractors bid on various projects. As projects were offered and completed, interest increased greatly as the contractors gained experience in doing the work. Continued interest in bidding on the projects is expected. During December 1986, 38 contractors bid on 38 projects offered under the RIM Program.

Aspen regeneration results

Foresters anticipated good regeneration of recycled sites since aspen normally regenerates well after clearcutting. Recycling is, afterall, clearcutting

as all trees are felled to promote sprouting from the parent root systems. To evaluate the regeneration of the pilot project sites, field checks were made during the summer of 1986. As anticipated, the treated sites have re-sprouted to establish a new stand. (Specific results are discussed in the next part of the report.)

Wildlife use

Aspen is a key species in deer and grouse management. The old-age aspen stands are a detriment to quality habitat. Both deer and grouse need about 25 percent of the aspen stands in their home range in the 0-10 year age class. The recycling projects create this age diversity.

Stands recycled in the pilot program were immediately used by deer. Foresters collecting regeneration data during the summer and fall of 1986 observed deer browse activity on virtually all sites and deer beds on many.

Wildlife managers reported that the size and distribution of the projects on the first year's site selection were excellent.

FIRST-YEAR REGENERATION RESULTS

Thirty-one tracts were specifically checked for first-year regeneration success. Twenty-eight of these had on-site plots taken and three were visually checked. Others were checked by plane and with aerial photos. All appeared satisfactory.

Some specific results of the checks are as follows:

	# Tracts	Acres	Average % Stocked*
No skid sites	14	261	96
Partial skid sites	5	115	99
Full skid sites	12	288	92

* % Stocked: The percentage of the treated area that contained sufficient aspen sprouts to create a new stand.

The stocking percent average is good; only five tracts are not in the 90+ percentile. Young aspen sprouts per acre ranged from a low of 4,700 to an extreme of 29,500. Overall, the first-year regeneration results are excellent.

Deer browse is evident on recycled areas in the first fall.

REINVEST IN MINNESOTA (RIM)

To provide brevity to this report, we are only including the portion of the RIM bill that pertains to aspen recycling.

Section 11. Minnesota Statutes 1985 Supplement, section 88.80, is amended to read: 88.80 (ASPEN RECYCLING PROGRAM).

Subdivision 1: (ESTABLISHMENT)

The commissioner must establish and accelerate an aspen recycling program providing for the betterment of public lands owned by the state by clearing trees which because of age, disease, pests, or other cause are unmarketable or increase the hazard of forest fires or infestation, permitting the regeneration of stands of healthy aspen capable of economic management, harvesting, and marketing, etc. The financing of this program is determined to be a necessary and proper public purpose for the issuance of state bonds under the provisions of Article XI, Section 5 of the constitution relating the betterment of public land, the promotion of reforestation, and prevention and abatement of forest fires and the clearing and improving of wild lands. The program shall designate priority areas on state lands for aspen recycling.

Subdivision 2: (PILOT PROJECT)

The commissioner shall establish an aspen recycling program pilot project in the highest priority area on state lands in order to develop effective program procedures and practices. With respect to the pilot project, the commissioner may restrict bidding on contracts for the cutting, removal, and disposal of aspen, and for related activities, to loggers and others residing in the pilot project area designated under the program that are financially distressed. The commissioner may establish standards and procedures for awarding logging contracts under section 86.35, relating to eligibility for employment conservation work projects.

Subdivision 3: (REPORT)

The commissioner shall report to the legislature by January 1, 1987, the results of the pilot project and a plan to recycle the overmature aspen stands of the state.

Section 17. (APPROPRIATIONS)

Subdivision 1: (APPROPRIATION TO RESOURCES FUND)

There is appropriated to the reinvest in Minnesota resources fund, other than the bond proceeds account within that fund, any money appropriated by law.

Subdivision 2: (BOND PROCEEDS APPROPRIATION)

$16,000,000 is appropriated form the bond proceeds account of the reinvest in Minnesota resources fund to the agencies and account for the purposes specified in this section.

(b) from the bond proceeds account of the reinvest in Minnesota resources fund for aspen recycling under section 12, to be available until expended, $1,000,000.

RIM RECYCLING PROCEDURES

The procedures and criteria used for aspen recycling under the RIM legislation will be somewhat different than those used in the pilot program. Stand selection will not be limited to low-volume stands. Higher volume, overmature stands may be selected. These are usually the better aspen sites and those with the most production potential for the future. This will create greater flexibility in distributing the recycling activity where it is needed for wildlife habitat.

Contractor's eligibility will also be modified. In the pilot program, only loggers significantly affected by the closing of the Boise Cascade insulation board and siding plant were eligible. Under RIM, any resident in DNR Regions I, II, and III is eligible to bid. This will provide more potential contractors and should lower the price per acre due to competitive bidding. It is anticipated that most bidders will only be interested in working on projects in their home area and that the majority of work will be done by loggers and forest development contractors with the proper expertise and equipment.

REINVEST IN MINNESOTA RESOURCES
ASPEN RECYCLING PROGRAM

PURPOSE:

Minnesota's abundance of aspen timber has been a key ingredient in the expansion of its forest industries. This abundance is misleading, however, since nearly one-half the aspen resource is mature and in danger of not replacing itself unless harvested. Aspen left undisturbed slowly dies, enabling other species to take over sites through natural succession. If cut, however, aspen has the unique ability to sprout back vigorously.

The large amount of aspen that needs to be harvested exceeds the forest industry's capability at this time to utilize it before it deteriorates. On the other hand, there is a shortage of younger aged trees for future harvests. This age class imbalance can have a negative impact on wildlife. A well-balanced mixture of young and old aspen is necessary to provide quality habitat for white-tailed deer, ruffed grouse, and a variety of other wildlife species.

DNR foresters recognize the problem of "here today, gone tomorrow". On state-owned lands, they have identified thousands of acres of aspen that will not be available for future commercial harvests and wildlife habitat unless it is recycled. The following procedures were developed and evaluated in an aspen recycling pilot project.

PROCEDURES:

1. Stand Selection Criteria

Stands of mature aspen should be selected according to forest/wildlife habitat management plans and where:

a. aspen regeneration is the preferred species;
b. at least 20 square feet of basal area (or 50 trees) of well-distributed aspen is at or beyond rotation age;
c. an adequate stocking of desirable reproduction is lacking; and,
d. the stand is not saleable (as determined by the Area Forest Supervisor) due to low volume, poor access, or stand deterioration because of age, insect, or disease problems.

2. Appraisals

Prepare an informal sale appraisal of the merchantable species or products (excluding aspen pulpwood) found on each site according to the following guidelines.

a. Determine in each stand the number of stems per acre by species and size class to be removed and estimate the volume of merchantable products.
b. Mark the stand boundaries during the inspection.
c. List the volume and value of each merchantable product as optional timber using base stumpage prices.
d. Specify that all aspen stems must be cut between August 15 and April 30 (shorter periods between those dates may be specified by the forester).
e. Require that felled material be skidded to a central location or windrowed when needed to avoid inhibiting aspen regeneration or permit the salvage of cut material (forester's option). If skidding or windrowing is necessary, it shall be done only during those periods when the soil will not be compacted.
f. Prices for wood sold for salvage on site or at a landing shall be average base price per cord plus $4.00 for felling and $5.00 for skidding.

3. Prospective Bidders

Eligibility to bid on aspen recycling projects shall be open to loggers or residents of DNR - Forestry Regions I, II, and III.

a. A bidder shall be limited to no more than three contracts at a time.
b. An individual shall be ineligible to bid on aspen recycling projects if that individual has been awarded more than $25,000 for project work to be completed during the current August 15 - April 30 period.

4. Bid Procedures

Sealed bid proposals should be prepared for each site (or number of sites where the total value of the optional timber does not exceed $3,000) and sent to the eligible bidders along with the following information at least two weeks before the date of the bid opening.

a. A copy of the F-121 appraisal (which also serves as the project map).
b. A provision in the bid that allows the successful bidder, by his/her choice, to purchase optional timber on the tract at appraised prices in the event there is an economic opportunity to market or utilize the optional timber.
c. Notification that bidding shall be done on the basis of a lump sum for the entire project if the project size is only estimated or on a per acre basis if the project size has been measured.
d. A schedule of bid openings. No more than one Area office should be awarding bids on a particular day. Before bids are awarded, the Area Forest Supervisor shall check with other Area Forest Supervisors to ensure that successful bidders and scheduled bid openings are in compliance with items 3.a. and 3.b. above.

5. Performance

Payment for completed work shall be approved only when every contract provision has been fulfilled.

a. In the event of a sale for optional timber, the permit shall not extend beyond the term of the recycling contract.
b. Failure to complete all contract provisions can result in an individual being eliminated from bidding on future work unless that individual agrees to accept a reduced payment for the project as negotiated with the Area Forest Supervisor.
c. Extensions may be granted by the Area Forest Supervisor as long as sound silvicultural practices are followed.

GOALS, ACCOMPLISHMENTS, AND EXPENDITURES

Allocation of dollars to each of the three northern DNR regions for Fiscal Year 87 was based on information provided by Forestry's phase II inventory.

Region	Budget	Goal (acres)
Region I (Bemidji)	$190,000	2,650
Region II (Grand Rapids)	$300,000	4,200
Region III (Brainerd)	$ 10,000	150
Total	$500,000	7,000

PROGRESS TO DATE UNDER RIM

The first RIM projects were scheduled for bidding during the '86-'87 winter season. RIM funds became available July 1, 1986. No projects were bid until late in the fall of 1986 since recycling is intended to be primarily winter work. There are two reasons for doing the work in winter; first, the best regeneration is achieved by cutting aspen during the non-growing season and second, most sites are usually accessible during the wintertime when the ground is frozen. On December 8, 1986, 347 acres on 18 tracts were offered in the Littlefork Area. These sites required no skidding. All the tracts were awarded at an average price of $52.63 per acre. This is a significant reduction in cost compared to the $76 per acre average for similar sites last year.

The following chart details the contract activity in each region as of December 30, 1986.

	Bemidji Region	Grand Rapids Region	Brainerd Region
Sites Offered	20	29	
Sites Awarded	20	29	No
Acres Awarded	589	580	Bids
Number of Bidders	14	36	to
Successful Bidders	6	13	Date
Average Bid Per Acre	$64.58	$65.99	

During the remaining months of this winter, additional tracts will be offered for work to be completed yet this season. As of December 30, 1986, the following bid openings are scheduled:

	Bemidji Region	Grand Rapids Region	Brainerd Region
Sites to be Offered	26	6	3
Acres to be Offered	1,481	681	212
Date(s) of Bid Opening	1-13-87	1-12-87 1-15-87 1-30-87	1-6-87

APPENDIX

WILDLIFE MANAGERS' PRIORITY LIST BY ACREAGE OF RECYCLING NEEDS BY FOUR SQUARE MILE COMPARTMENTS

INTERNATIONAL FALLS DISTRICT
ASPEN RECYCLING PRIORITY BASED ON ACRES NEEDED IN 1-10 YEAR AGE CLASS

TWP	COMPARTMENT	SECTIONS	ACRES NEEDED (1-10 yrs. old)
70-23	NC	3-4-9-10	121
69-24	C	15-16-21-22	105
69-23	EC	13-14-23-24	102
70-23	WC	17-18-19-20	98
69-22	WC	17-18-19-20	93
69-24	EC	13-14-23-24	86
69-24	SC	27-28-33-34	81
70-24	SE	25-26-35-36	78
69-23	NC	3-4-9-10	78
70-23	SE	25-26-35-36	76
70-24	SC	27-28-33-34	71
68-23	SE	25-26-35-36	66
69-24	SW	29-30-31-32	66
71-23	SE	25-26-35-36	58
69-23	SE	25-26-35-36	54
69-24	NC	3-4-9-10	53
69-23	WC	17-18-19-20	52
66-23	EC	13-14-23-24	49
68-23	C	15-16-21-22	40
70-23	NW	5-6-7-8	39
70-22	C	15-16-21-22	33
69-22	SC	27-28-33-34	31
70-22	WC	17-18-19-20	29
70-23	SW	29-30-31-32	26
66-23	SW	29-30-31-32	26
70-24	C	15-16-21-22	25
67-23	SW	29-30-31-32	23
70-22	NW	5-6-7-8	23

The rest of the compartments need from 0-20 acres of aspen in the 1-10 year age class to reach wildlife goals. Because of the small number of acres, prioritizing is difficult. If the opportunity for recycling exists in these compartments, the individual sheets for each township show the number of acres needed to reach the goal of 25 percent aspen in the 1-10 year age class. The total number of acres needed to achieve this goal for the International Falls District is 1,890. This is based on existing inventory data.

WILDLIFE MANAGERS' RECYCLING RECOMMENDATIONS BY COMPARTMENT FOR ONE TOWNSHIP

TWP 69-24

MPT	SECTIONS	TOTAL ASPEN	ACRES NEEDED FOR 25% IN 1-10 YEARS	COMMENTS
NE	1,2,11,12	54	14	Recycling stands #1 & #4, S11 okay because of aspen on other ownerships
NC	3,4,9,10	213	53	Recycling in qualifying stands would be positive for distribution of young aspen
NW	5,6,7,8	-	-	Less than 15% deer habitat, no evaluation
EC	13,14,23,24	410	86	All qualifying stands could be cut
C	15,16,21,22	422	105	Distribution of qualifying stands is poor. It would be preferable to only cut part of them
WC	17,18,19,20	-	-	Less than 15% of deer habitat - no evaluation
SE	25,26,35,36	324	0	
SC	27,28,33,34	350	81	
SW	29,30,31,32	265	66	