AGRICULTURAL EXTENSION SERVICE UNIVERSITY OF CALIFORNIA

Santa Barbara County
BRUSHLAND CONVERSION

TYPICAL COSTS AND CONSIDERATIONS

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The main objectives of brush range improvement programs are increased feed supplies for livestock and game, improved watersheds, and the reduction of wildfire hazards and suppression costs. However, the degree of improvement, with respect to livestock carrying capacity, varies considerably with soil type, moisture conditions, and conversion methods used.

It is seldom that converted brush land is equal in carrying capacity to open grass land range. Within any improved area it is possible that the only improvement may be increased water yield, increased deer browse, or reduced wildfire hazard. These are important considerations even though they may add little to the income of the ranch involved.

Successful brush range improvement is a combination of good site selection followed by the best known methods of conversion and maintenance. Brush return is usually rapid unless there is some type of chemical or mechanical follow-up to the original conversion. While this adds to the conversion cost, it is an important protection to the original clearing investment.

It is often difficult to evaluate increase of carrying capacity on improved areas due to variations in the success of burning, reseeding, and follow-up chemical control.

Types of Conversion Programs

The three main types of conversion programs that might be used are controlled burning, mechanical clearing, and chemical treatment or a combination of them.

The Controlled Burn

This is the most common and usually the cheapest method of converting brushland to grass. The accompanying cost data sheet shows sample costs on

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an 800 acre conversion project, but topography and density of brush will affect the costs for any particular operation.

At the present time most ranchers burn and reseed. Chemical follow-up has not been widely accepted. Most operators feel that they would rather reburn after a five to seven year wait. The reburn will probably be cheaper per acre than the original burn due to the fact that the fire lines and control roads are already in.

Mechanical Clearing

This method of converting brushland is more expensive than the control burn. Here also we find a great variation in costs due to the lay of the land and brush density. In addition there are different methods of doing the job. Various mechanical tools such as heavy brush discs and cutters have been used as well as a bulldozer blade. When the brush is piled into windrows, costs may be as high as $45.00 per acre. When discing, a cost of about $25.00 per acre could be expected. In high risk areas it is quite possible that the mechanical method might be the only way of converting brushland. This method is obviously not suited to areas that are too steep for tractor work.

Chemical Control

This method of clearing full grown brush of mixed varieties is quite expensive and results have been variable. It is better to use this method in combination with one of the other methods of clearing.

Trials and experience in the county indicate that the use of chemicals is much more successful on 2nd or 3rd year regrowth than on fully matured brush species. Timing of the chemical follow-up is especially important. Two or more chemical retreatments will probably be necessary to maintain a conversion project.

The resultant production and utilization of the land from an improved brushland range is governed by the amount and distribution of seasonal rainfall, stock water availability, and topography. Range feed at today's prevailing prices is not cheap feed, therefore lands of greatest production potential should be selected for the clearing operation.

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COST DATA FOR SAMPLE BRUSHLAND CONVERSION PROJECT

Sample costs for a typical Santa Barbara County Brushland Conversion Project of 800 acres

Rangeland in the county varies greatly in topography and brush density which will affect the time and money required to prepare and carry out a conversion project. With this in mind, let us make the following assumption.

Assume:

1. Costs for track layer dozer on a contract basis
   80 HP @ $21.00 per hour
   70 HP @ $19.00 per hour (Depending upon working conditions, various size
   60 HP @ $17.50 per hour tractors may be most efficient.)
   40 HP @ $12.50 per hour
2. Making of fire lines with dozer equipment at the average rate of .25 miles per hour. Steeper and brushier areas will require most time while grassy and rolling areas can be done faster. Let us also assume that it requires 5.5 miles of fire line for our typical 800 acres.
3. Precrushing of brush on 25% of the acreage. The remainder being too steep for equipment or it would burn well without crushing.

ITEM	TOTAL COSTS		COST PER ACRE	
FIRE LINES & PREBURN PREPARATION				
Tractors, one 80 HP, one 40 HP	$ 737.00		$ .92	
2 men and chain saw	15.13		.02	
Brush crushing	1,100.00		1.38	
Sub-Total		$1,852.13		$2.32
CONTROL BURN				
Tractors - one 80 HP, one 40 HP	$ 804.00		$1.00	
Range Association charge	85.00		.11	
Barbecue (in lieu of labor)	200.00		.25	
Miscellaneous supplies to conduct burn	72.00		.09	
Sub-Total		$1,161.00		$1.45
SEEDING (Annual Mixture)				
500 acre seeded - 5# Annual Rye grass @ .12/lb.				
2# Blando Brome @ .85/lb.	$1,150.00		$1.44	
Application by air to 500 acre, $1.00/ac seeded	500.00		.62	
Sub-Total		$1,650.00		$2.06
TOTAL WITHOUT CHEMICAL CONTROL		$4,663.13		$5.83

ITEM	TOTAL COSTS		COST PER ACRE	
CHEMICAL FOLLOW-UP - First Year on 500 Acres				
2,4-D, 2,4,5-T Brush Killer @3#/ac				
$4.77/ac treated	$2,385.00		$2.98	
Helicopter @ $5.00/ac done	2,500.00		3.13	
Sub-Total		$4,885.00		$6.11
CHEMICAL FOLLOW-UP - Second Year on 500 Acres				
2,4-D, 2,4,5-T Brush Killer @2#/ac				
$3.18/ac treated	$1,590.00		$1.99	
Helicopter @ $5.00/ac done	2,500.00		3.12	
Sub Total		$4,090.00		$5.11
Total Cost of Chemical Control for 2 years		$8,975.00		$11.22
TOTAL OVERALL COSTS		$13,638.13		$17.05

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