

Production Rates

When planning an attack on a fire, the length and width of the line must be estimated, along with the capabilities of the hand crew(s), to determine how many crews will be needed. Generally, a 15-person crew should be able to construct a 3-foot fireline around a 1-acre grass fire in 1 hour. Below are some average ideal rates for hand crew production rates in various vegetation.

| Hand Crew Production Rates | | | | |
|--|--------|--------------|-------------|------------------|
| | Grass | Medium Brush | Heavy Brush | Very Heavy Brush |
| Line width | 3 ft | 6 ft | 9 ft | 12 ft |
| Length of line per crew member | 60 ft | 30 ft | 20 ft | 15 ft |
| Length of line per hour for a 15-person crew | 900 ft | 450 ft | 300 ft | 225 ft |

Example 1 - Patricia spots a fire burning in open prairie. She determines that the fire has a perimeter of 1,800 feet. How many hand crews should she assign to construct a 3-foot line around the fire in 1 hour?

Step 1. Look under the column for grass vegetation of the hand crew production rates chart above. Follow the column down vertically.

Step 2. Look for the row that tells how much line a crew can cut per hour. Follow the row across horizontally. Where the two lines intersect is the number of lines per hour an average crew can cut in those conditions.

One 15-person can cut 900 ft of line per hour

Step 3. Use this information to calculate the number of hours it will take one crew to construct 1,800 feet of line.

$$\frac{1,800 \text{ feet}}{900 \text{ feet}} \times 1 \text{ hour} = 2 \text{ hours for one 15-person crew}$$

It will take 1 crew 2 hours to cut 1,800 feet of line.

Step 4. Determine how many crews it will take to construct the line in 1 hour.

$$\left| \frac{2 \text{ hours}}{1 \text{ crew}} \right| \left| \frac{1 \text{ crew}}{1 \text{ hour}} \right| = 2 \text{ crews of 15 people}$$

To cut 1,800 feet of line in 1 hour, Patricia needs to assign two crews of 15 people each.

When arriving at a fire scene, always assess the entire situation to determine the best way to suppress the fire.

Practice

Exercise 1 - Gabe has three crews with him. He stands on a high point to survey the fire and form a complete picture. The fire is in medium brush. He estimates the length of line needed to flank the fire as 1,350 feet.

How long will it take Gabe's crew to construct the line?

- 1 hr
- 1.5 hrs
- 2 hrs
- 3 hrs

Select the correct answer.