Name:

# Tree Density**Measuring Fire Resilience**

Date:

Science Period:

|  |  |
| --- | --- |
| Study area 1.  | Notes:  |
| 1. Area size | 2. Most common type of tree | 3. # of trees | 4. Resilience rank |
|  |  |  |  |
| Study area 2.  | Notes: |
| 1. Area size | 2. Most common type of tree | 3. # of trees | 4. Resilience rank |
|  |  |  |  |
| Study area 3.  | Notes: |
| 1. Area size | 2. Most common type of tree | 3. # of trees | 4. Resilience rank |
|  |  |  |  |
| Describe the health of the areas you measured. What differences did you observe between different locations? |
|  |

Use the table below to determine the health of an area.

|  |  |
| --- | --- |
| Tree type | Number of trees per plot and resilience rank |
| **Healthy** | **Less resilient** | **Least resilient** |
| **20 x 20** | **30 x 30** | **40 x 40** | **20 x 20** | **30 x 30** | **40 x 40** | **20 x 20** | **30 x 30** | **40 x 40** |
| Jeffrey pine | 0-6 | 0-13 | 0-24 | 6-13 | 13-29 | 24-51 | >13 | >29 | >51 |
| White fir and mixed conifer | 0-5 | 0-12 | 0-22 | 5-100 | 12-22 | 22-40 | >10 | >22 | >40 |
| Red fir | 0-8 | 0-18 | 0-32 | 8-25 | 18-55 | 32-98 | >25 | >55 | >98 |
| Source: <http://www.nationalforests.org/assets/files/Lake-Tahoe-West-Landscape-Resilience-Assessment-V1-FINAL-11Dec2017.pdf> |

## Counting Tree Density

Tree density of a forest helps us understand what could happen if a wildfire burned there. Use the recommendations of what is healthy or unhealthy in the tables above to complete your survey.

1. Depending on the area you have and the number of trees in that area choose either a 20 x 20, 30 x 30, or 40 x 40 meter sample square. Pick an area size where you have between 5 and 15 trees in most study areas.
2. Use a tape measure or paces (one large by a average sized adult is roughly 1 meter) to mark your sample square.
3. Count the number of trees in that square. For this activity, only count trees that are 10 inches in diameter or larger when measured 4.5 feet or 1.4 meter off the ground.
4. Choose another sample area or areas and repeat steps one through three.

## Suggestion

Use a backpack, rock, or friend to mark each corner of your square before counting trees.