

Gap Intercept Measurements

Materials:

- Metric measuring tape the length of the transect or slightly longer
- Steel candy cane shaped pins for anchoring tape
- Wooden Dowel
- Clip board and Gap Intercept data sheet

Method:

Set up 35m transect line between the designated start and end of the transect using candy cane pins. Pin the "0" end of the transect at the start point and walk with the tape reel out to the desired end point distance. Transect line should be as straight and as low to the ground as possible, by threading the tape at the base of trees and shrubs. When setting up the tape, always walk on the down slope side of the transect and avoid disturbing the soil underneath the transect. When you have reached the desired transect distance, pull tape taut and pin tape reel to the ground.

Taking Measurements:

1. For all Gap measurements, begin at the "0" end of the line and working on the downslope edge of the tape, move the dowel along the edge of the tape. Always stay on the same side of the line.
2. Look directly down on the tape and use a meter stick or wooden dowel to project a line vertically to the ground.
3. Assume that there is a wall at each end of the tape and do not consider gaps that occur off the end of the tape.
4. For all gap measurements, the standard minimum gap size is 20cm. For long term monitoring projects, the minimum gap sized can be increased at a later point in the project. Minimum gap size cannot be decreased though. Make sure to record the minimum gap size on the data sheet. Don't spend a lot of time worrying about whether or not you have a 20cm gap, gaps that are two small can be omitted later.

For Gap measurements it is less important that you have the exact location of the start and stop of gaps, but rather that you are correctly identifying the gap stops.

5. Record the start and end of gaps to the nearest centimeter.

Canopy Gap:

1. For both Canopy Gap and Basal Gap, ignore both annual forbs and grasses as potential gap stops. This is due to the ephemeral and variable nature of annuals in arid and semiarid ecosystems.
2. Canopy gap stops occur any time that 50% of a 3cm moving window along the transect tape is intercepted by live or dead plant canopy. In order to be considered "plant canopy" the base of the plant must be rooted in the ground.
3. Record the beginning and end of each gap greater than 20cm.

Basal Gap:

1. Ignore annual forbs and grasses. In order for a plant to be a basal gap stopper, the plant base must be rooted in the soil and is an obstruction that an ant walking along the line on the soil

would have to step off the line to get around. For basal gap, the minimum diameter of a gap stop is 1mm.

2. Record the beginning and end of each gap greater than 20cm. For this measurement it is important to get the dowel up against the actual base of the plant for the measurements.
3. Basal gap stops can be either alive or dead, but they must be anchored in the ground. Litter is not considered to be a plant base, but embedded litter could be if it is vertically projecting from the soil surface.

Wood Gap:

1. In order for woody debris to be considered a gap stop, it must be embedded in the soil surface at the point of intersection with the transect line. Embedded means that if removed from the soil surface, there would be an imprint of the debris left behind. Debris indicates that the wood is detached from the plant base and is not rooted in the soil surface.
2. Wood gap stops occur any time that 50% of a 3cm moving window along the transect tape is covered by woody debris. In addition woody litter must be at least 5cm in diameter.
3. Record the beginning and end of each gap greater than 20cm.

Percent Gap Calculations:

1. Enter data into the appropriate Gap data template. Template information should be filled out to reflect the conditions and timing of the data taken. File should be saved as CGap_YYYY.MM.DD_Site (ex. CGap_2009.07.21_SM).

Basal Gap: BGap
Wood Gap: WGap
Canopy Gap: CGap