

**INSTRUCTIONS FOR COMPLETING  
PINYON-JUNIPER (P-J) SITE INVENTORY WORKSHEET  
(NV-ECS-06)**

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The Pinyon-Juniper Site Inventory Worksheet is used for the inventory of singleleaf pinyon (*Pinus monophylla*) and Utah juniper (*Juniperus osteosperma*) stands in Nevada. This worksheet is also used for recording pinyon (*Pinus edulis*) and Rocky Mountain juniper (*Juniperus scopulorum*) inventory data. This worksheet is not used for western juniper (*Juniperus occidentalis*) data collection.

**STAND SELECTION**

Plots are generally selected on the basis of how well the soil supporting a stand of trees represents the particular soil series (and phase) being investigated. Landscaped features, aspect and micro-topography

of the plot must be defined for the soil series ( and phase) being considered. Locate plots in stands free of insect or disease damage. Pinyon or mixed pinyon-juniper stands may have a very light infection of dwarf mistletoe. The "mature" successional stage is the preferred condition for soil-woodland site correlation plots in pinyon-juniper. Plots may be located in the "young", "immature", or "climax" stages, however, the variability in site indexes is usually much greater within these successional stages.

**SUCCESSIONAL STAGES FOR PINYON-JUNIPER WOODLAND COMMUNITIES**  
See Figure 3 (Page 17)

**YOUNG:** This stage is experienced following major disturbance to the woodland community or as pinyon, and especially juniper, trees move out of original woodland sites and begin to colonize adjacent, non-woodland, plant communities. The visual vegetal structure of the site are dominated by pinyon and juniper saplings (to 4.5 feet in height) in association with herbaceous vegetation and woody shrubs. Stem diameter at the one-foot stump height of pinyon and juniper trees averages less than three inches. Plant species diversity is usually at a maximum for a woodland site. Pinyon and juniper seedlings are common in the community.

**IMMATURE:** The visual and vegetal structure of the site are dominated by juniper and/or pinyon trees greater than 4.5 feet in height. Average stem diameter of pinyon and juniper trees is less than five inches at the one-foot stump height. Individual trees typically have full, dense, crowns. The upper crowns of dominant and codominant trees are cone, or pyramidal-shaped. Understory vegetation consists of grasses forbs, and shrubs, in association with seedlings and saplings of overstory trees.

**MATURE:** The visual aspect and vegetal structure are dominated by juniper and/or pinyon trees that have reached or are near maximal heights for the site. Dominant trees typically average greater than five inches in diameter at the one-foot stump height. Dominant and codominant trees have full crowns. The upper crowns are normally irregularly or smoothly flat-topped or rounded. Understory vegetation is strongly influenced by overstory tree shading, duff accumulation, etc.

**CLIMAX:** This stage is dominated by juniper and/or pinyon trees that have reached maximal heights for the site. Dominant and codominant trees average greater than eight inches at the one-foot stump height. Dominant piñon and juniper trees typically have open, fragmented, crowns. The upper crowns of dominant and codominant trees are normally flat-topped or rounded. Understory vegetation is sparse due to overstory tree competition.

**INSTRUCTIONS FOR COMPLETING  
P-J SITE INVENTORY WORKSHEET**

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**SITE INFORMATION**

Data entry labels listed in *italic* print denote data elements not included in the Nevada NRCS Pinyon-Juniper inventory database program.

**DATE:** Enter date of inventory.

**DATA BY:** Enter names of all specialists collecting plot data.

**LOCATION:** Enter coordinates of Longitude and Latitude or Section, Township, and Range. (Locate plot in section map provided.) Space is provided for a brief description of how to get to plot with any identifying features, landmarks, roads, etc.

**PLOT NUMBER:** Enter identification number for inventory plot.

**MLRA NUMBER:** Enter the MLRA number for the inventory location.

**SITE NUMBER:** Enter the Nevada NRCS woodland suitability group description number for the woodland site being sampled or the range site number for which a pinyon/juniper overstory is being inventoried.

**FIELD OFFICE/PHOTO NO:** Enter NRCS Field Office responsible for conservation planning activities at inventory location or soil survey photograph number (field sheet) that covers inventory site.

**LANDOWNER NAME OR SOIL SURVEY AREA:** Enter landowner and/or ranch name(s) or soil survey name and/or number.

**SOIL CLASSIFICATION:** Enter taxonomic classification of soil at inventory location.

**SOIL SERIES AND PHASE:** Enter name and phase of soil series at the inventory location.

**SOIL MAP UNIT NO.:** Enter soil map unit number or symbol for soil at inventory location.

**SCS-SOILS-232 NO.:** Enter when a form NRCS(SCS)-SOILS-232 is completed for soil at inventory location.

**RANGE-417 NO.:** Enter when a form NRCS(SCS)-RANGE-417 is completed for understory vegetation.

**ELEVATION:** Enter elevation at plot location.

**PRECIPITATION ZONE:** Enter estimate of average annual precipitation at inventory location.

**SLOPE GRADIENT:** Enter the percent of gradient.

**AZIMUTH:** Enter in degrees.

**LANDFORM:** Briefly describe major or component landform and check appropriate boxes for slope component and shape. (See F. Peterson, 1981, Landforms of the Basin and Range Province, Technical Bulletin Number 28, University of Nevada, Reno, Nevada).

**SURFACE ROCK COVER:** Estimate percentages of surface rock by size: Boulders - >24" in diameter; Stones - >10" and < 24" in diameter; Cobbles - > 3" and <10" in diameter; Gravels - >1/16" and <3" in diameter.

**GRAZING HISTORY:** Show past grazing history of the area:

**KIND OF ANIMAL:** Enter kind and class of livestock grazing in the area.

**SEASON OF USE:** Show season(s) of use where area is grazed:

**WILDLIFE SPECIES:** Enter wildlife species found in the area.

**BURNING HISTORY:** Enter best estimate of burning history on site.

**HARVEST HISTORY:** : Enter best estimate of tree harvest history on site.

**PLOT DATA**

**SAMPLING METHOD:** Check appropriate box for sampling method used. If fixed plot method is used, enter plot size, i.e., 1/10th acre. (See page 9 of 17 for discussion of fixed plot configuration and selection.)

**PLOT CONFIGURATION:** Enter plot shape.

**SUCCESSIONAL STAGE:** Check appropriate successional stage represented by the plot. The "mature" stage is the preferred condition for soil-forest site correlation plots. (See page 7 of 17 for descriptions of successional stages for pinyon and/or juniper communities. (Also see Figure 3, page 17 of 17.)

**OCULAR ESTIMATE OF OVERSTORY CANOPY COVER:** Estimate total overstory tree canopy cover using vertical projection method. List overstory canopy cover by tree species as a percent of the total canopy cover.

**ESTIMATED AVERAGE DRC:** Enter ocular estimate of DRC, in inches, for stand.

**ESTIMATED AVERAGE SPACING:** Enter ocular estimate of average tree spacing, in feet, for stand.

**ESTIMATED D + X SPACING:** Enter estimate of D+X spacing (Average DRC - Average Spacing = Estimated D+X Spacing).

**ESTIMATED SITE INDEX:** Using D+X spacing and average DRC, find basal area from BASAL AREA TABLE on page 13 of 17. Using this "derived" basal area value, determine site index from Figure 1 on page 15 of 17.

**UNDERSTORY PLANTS:**

List the common understory species and estimate the percent cover (basal or crown) of each species. Basal cover is estimated for perennial herbaceous vegetation only. Crown cover is estimated only for woody vegetation. Enter an estimate of the annual production, in pounds per acre (air dry weight), for each species listed.

**INSTRUCTIONS FOR COMPLETING  
P-J SITE INVENTORY WORKSHEET**

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**FIXED PLOT TRANSECT: TREE DATA LINES**

Fixed-area sampling units are called plots or strips depending on their dimensions. The term *plot* is loosely applied to sampling units of small area that are square, rectangular, circular, or triangular in shape. A *strip* is a rectangular plot whose length is many times its width. Any fixed-area plot configuration may be used within a selected tree stand. The guiding principle in the choice of plot size should be to have a plot large enough to include a representative number of trees, but small enough that the time required for measurement is not excessive. For more sparse tree stands, use a one-tenth acre plot; for more dense stands, use a one-twentieth acre plot size. Once a plot size is chosen for soil series (and phase), the selected plot size should be used consistently for additional woodland inventories conducted on the soil. If plot data collection is to include the completion of a form NRCS(SCS)-ECS-417, choose a plot configuration compatible with this sampling of the understory plant community.

**COMMONLY USED CIRCULAR AND SQUARE PLOT DIMENSIONS**

AREA		RADIUS OF CIRCULAR PLOT	SQUARE PLOT - ONE SIDE	SQUARE PLOT - DIAGONAL
Acres	Square Feet	Feet	Feet	Feet
1.00	43,560.00	117.75	208.71	295.16
0.50	21,780.00	83.26	147.58	208.71
0.25	10,890.00	58.88	104.36	147.58
0.20	8,712.00	52.66	93.34	132.00
0.10	4,356.00	37.24	66.00	93.34
0.05	2,178.00	26.33	46.67	66.00
0.01	435.60	11.78	20.87	29.52
0.001	43.56	3.72	6.60	9.33

**GENERAL:** Page 2 of 17 provides enough lines for entering data from 36 single-stemmed trees or a lesser number of single and multiple-stemmed trees. Flag each tree when measurements are completed so it is not inadvertently measured again. Use additional pages as needed to complete inventory.

**TREE NUMBER:** Enter "1" for the first tree measured, "2" for the second, and so on. A multiple-stemmed tree is considered a single tree; number the first stem encountered and run an arrow down the "Tree No." column until all the stems of that tree are accounted for. Only those stems greater than 3 inches in diameter are recorded. For practical purposes (and for compliance with the "Howell" site index procedure), only trees greater than 4.5 feet in height will be assigned a number and entered in the tree data line section. Trees less than 4.5 feet in height are accounted for as "Seedlings" or "Saplings" and in measures of understory vegetation.

**SPECIES:** Enter the appropriate scientific symbol for each tree measured: singleleaf pinyon = PIMO; Utah juniper = JUOS; Rocky Mountain juniper = JUSC2; pinyon = PIED.

**DISTANCE:** Distance is not recorded in a fixed-plot transect.

**DRC:** Enter the "Diameter Root Collar" (DRC) of the tree to the nearest 1/10th inch. Measure DRC at just above the root collar or average ground line (mineral soil, after duff layer removed). DRC is measured at the ground line for single-stemmed trees with uniform stem taper. For multiple-stemmed trees that fork near (within 6 inches) or below the average ground line, a DRC of each stem is measured and an equivalent DRC (EDRC) is then computed and recorded in place of DRC.

$$EDRC = \sqrt{\sum_{i=1}^n DRC_i^2}$$

where,  
n = number of stems  
DRC<sub>i</sub> = diameter of *i*th stem

For multiple-stemmed trees that fork above 6 inches from the average ground line, measure DRC at the tree base. This is done for all stems greater than 3 inches in diameter. Start with the largest stem and be careful not to measure the same stem twice.

**BASAL AREA:** Enter the appropriate basal area (in square feet to the nearest tenth) using the measured DRC or computed EDRC and the BASAL AREA TABLE (see page 13 of 17). An entry must be made for each single-stemmed tree (DRC) and for each multiple-stemmed tree (EDRC). *Complete this column after returning to the office.*

**CROWN DIAMETER:** Measure the live crown diameter of each tree within plot along the long axis in two directions. Add the first crown diameter measurement to the second crown diameter measurement and divide by 2 to obtain an average crown diameter for each tree. Crown diameter, in feet, is rounded to the nearest whole number.

**HEIGHT:** Enter the height of each tree from the average ground line to the tip of the tallest live stem. Tree height, in feet, is rounded to the nearest whole number.

**JUNIPER POSTS:** Record the number of posts in each juniper tree. A *post* is a solid, reasonably straight, stem, at least 7 feet long with a minimum small end diameter of 4 inches and a large end diameter of 7 to 9 inches. Record posts only for juniper species. Pinyon species are seldom used for fence posts as this wood has a short useful life span (4 to 6 years).

**NOTES:** Use this column to record any pertinent information, or to identify trees selected for aging. When tree age is desired, select 3 to 5 dominant or codominant trees within the plot. Selected trees must be in the best health or condition relative to other trees within the plot.

## INSTRUCTIONS FOR COMPLETING P-J SITE INVENTORY WORKSHEET

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### FIXED PLOT TRANSECT: - continued

An increment core will be taken from each selected tree at 12 inches above the average ground line (one-foot stump height). Increment cores are marked for easy identification and stored so that tree rings can be counted after returning to office. Record total tree ring count and the ring count from pith to 2.3 inches from increment core in this column. Make the following adjustments to correct tree ring count to total tree age: add 9 years for pinyon and singleleaf pinyon; add 12 years for Utah juniper; add 8 years for Rocky Mountain juniper. Ring counts from the pith outward to 2.3 inches are also adjusted using these factors in order to obtain total tree age when at a 5 inch outside-bark (O.B.) diameter (4.6" inside-bark diameter). Ring counts made from pith to 2.3 inches will be used to validate site productivity.

**TREE SEEDLING AND/OR SAPLING COUNT:** Estimates of tree seedlings and saplings are not made for fixed plot sampling. If desirable, a zig-zag transect may also be completed adjacent to the fixed plot location to record seedlings and/or saplings at site. A tree seedling is less than 20 inches in height; a tree sapling is 20 inches to 4.5 feet in height. Enter the species, height, and distance between plants, for 20 seedlings and/or saplings in the space provided in right-hand margin of page 2 of 17. Distances can be summed after returning to office and the number of juniper and/or pinyon seedlings/saplings per acre calculated. (Refer to NRCS National Forestry Manual, Part 536, Section 536.10 through 536.27 for procedures to complete a Zig-Zag transect.)

**FIXED PLOT COUNT:** count tree seedlings and saplings found within fixed plot area and record, by species, in the space provided in lower-right corner of page 2 of 17. A seedling tree is less than 20 inches in height, a tree sapling is 20 inches to 4.5 feet in height.

### ZIG ZAG TRANSECT: TREE DATA LINES

Refer to NRCS National Forestry Manual, Part 536, Section 536.10 through 536.27 for procedures to complete a zig-zag transect.

**GENERAL:** Page 2 of 17 contains enough lines for entering data from 36 single-stemmed trees or a lesser number of single and multiple-stemmed trees. Use additional pages as needed to complete transect.

**TREE NUMBER:** Starting in the upper left corner of the tree data lines section, enter "1" for the first tree measured, "2" for the second and so on. A multiple-stemmed tree is considered a single tree; number the first stem encountered and run an arrow down the "Tree No." column until all the stems of that tree are accounted for. *Only those stems greater than 3 inches in diameter are recorded.*

For practical purposes (and for compliance with the "Howell" site index procedure), only trees greater than 4.5 feet in height will be assigned a number and entered in the tree data line section. Trees less than 4.5 feet in height are considered either seedlings or saplings.

**SPECIES:** Enter the appropriate scientific symbol for each tree measured: singleleaf pinyon = PIMO; Utah juniper = JUOS; Rocky Mountain juniper = JUSC2; pinyon = PIED.

**DISTANCE:** Enter distance (measured in feet) between each tree included in transect.

**DRC:** Enter the "Diameter Root Collar" (DRC) of the tree to the nearest 1/10th inch. Measure DRC at just above the root collar or average ground line (mineral soil, after duff layer removed). DRC is measured at the ground line for single-stemmed trees with uniform stem taper. For multiple-stemmed trees that fork near (within 6 inches) or below the average ground line, a DRC of each stem is measured and an equivalent DRC (EDRC) is then computed and recorded in place of DRC.

$$EDRC = \sqrt{\sum_{i=1}^n DRC_i^2}$$

where,

n = number of stems

DRC<sub>i</sub> = diameter of ith stem

For multiple-stemmed trees that fork above 6 inches from the average ground line, measure DRC at the tree base. This is done for all stems greater than 3 inches in diameter. Start with the largest stem and be careful not to measure the same stem twice.

**BASAL AREA:** *Complete this column after returning to the office.* Enter the appropriate basal area (in square feet to the nearest tenth) using the measured DRC or computed EDRC and the BASAL AREA TABLE (see page 13 of 17). An entry must be made for each single-stemmed tree (DRC) and for each multiple-stemmed tree (EDRC).

**CROWN DIAMETER:** Measure the live crown diameter of each tree within plot along the long axis in two directions. Add the first crown diameter measurement to the second crown diameter measurement and divide by 2 to obtain an average crown diameter for each tree. Crown diameter, in feet, is rounded to the nearest whole number.

**HEIGHT:** Enter the height of each tree from the average ground line to the tip of the tallest live stem. Tree height, in feet, is rounded to the nearest whole number.

**JUNIPER POSTS:** Record the number of posts in each juniper tree. A *post* is a solid, reasonably straight, stem, at least 7 feet long with a minimum small end diameter of 4 inches and a large end diameter of 7 to 9 inches. Record posts only for juniper species. Pinyon species are seldom used for fence posts, as this wood has a short useful life span (4 to 6 years).

**INSTRUCTIONS FOR COMPLETING  
P-J SITE INVENTORY WORKSHEET**

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**ZIG ZAG TRANSECT:** - continued

**NOTES:** Use this column to record any pertinent information, or to identify trees selected for aging. When tree age is desired, select 3 to 5 dominant or codominant trees within the plot. Selected trees must be in the best health or condition relative to other trees within the plot. An increment core will be taken from each selected tree at 12 inches above the average ground line (one-foot stump height). Increment cores are marked for easy identification and stored to that tree rings can be counted after returning to office. Record total tree ring count and the ring count from pith to 2.3 inches from increment core in this column. Make the following adjustments to correct tree ring count to total tree age: add 9 years for pinyon and singleleaf pinyon; add 12 years for Utah juniper; add 8 years for Rocky Mountain juniper. Ring counts from the pith outward to 2.3 inches are also adjusted using these factors in order to obtain total tree age when at a 5 inch outside-bark (O.B.) diameter (4.6" inside-bark diameter). Ring counts made from pith to 2.3 inches will be used to validate site productivity.

**TREE SEEDLING AND/OR SAPLING COUNT:** Space is provided to enter estimates of pinyon and/or juniper seedlings and saplings for the stand being inventoried. A tree seedling is less than 20 inches in height, a tree sapling is 20 inches to 4.5 feet in height. If desirable, a zig-zag transect may be completed at each study site location to record seedlings and/or saplings. Enter the species, height, and distance between plants, for 20 seedlings and/or saplings. Distances can be summed after returning to office and the number of juniper and/or pinyon seedlings/saplings per acre calculated.

**INSTRUCTIONS FOR COMPLETING  
FIXED PLOT SUMMARY WORKSHEET**

**A.** "CF" refers to the conversion factor for the plot. Enter 10 for a 1/10th acre plot, 20 for a 1/20th acre plot. (see "Sampling Method" and "Plot Configuration" - Page 8 of 17).

**Lines B through J** are summations of tree data lines entries recorded on "Pinyon-Juniper Site Inventory Worksheet" (NV-ECS-06, page 2 of 17).

**B.** The "Total Number of Trees in Plot" equals the total number of trees, greater than 4.5 feet in height, recorded within plot.

**C.** The "Total No. of Trees in a Plot - by Species" equals the total number of each tree species recorded within the plot.

**D., E.** The "Total Number of Seedlings or Saplings in Plot - by Species" equals the total number encountered within the plot and entered in "Fixed Plot Count" (page 2 of 17).

**F.** The "Summation of DRC" refers to the total sum of DRCs and EDRCs of all trees in plot. The DRC of a single-stemmed tree (and a multiple-stemmed tree that forks at or above 6 inches) equals the measured DRC. The equivalent DRC, or EDRC, of a multiple-stemmed tree that forks below 6 inches equals the square root of the summation of the squares of each individual stem.

$$EDRC = \sqrt{D_1^2 + D_2^2 + D_3^2 + \dots + D_N^2}$$

where,

EDRC = equivalent diameter at root collar

D = diameter of an individual stem

n = number of stems (>3 inch diameter)

For example, tree number 1 is multiple-stemmed and has 3 stems measuring 5, 6, and 7 inches. Each stem is squared (5x5, 6x6, 7x7), the products added (25 + 36 + 49 = 110), and the square root taken (=10.5). Continuing, the EDRC of tree number 1 is added to the DRC or EDRC of tree number 2, and so on for all trees in the plot. The resulting sum (to the nearest 1/10th inch) is entered on line F.

**G.** The "Summation of Basal Area" equals the total of all entries in the "Basal Area" column.

**H.** The "Summation of Individual Tree Crown Diameters" equals the total of all entries in the "Crown Diameter" column. Also enter the sum of tree crown diameters for each tree species in plot.

**I.** The "Summation of Tree Heights" equals the total of all entries in the "Height" column.

**J.** The "Summation of Juniper Posts" equals the total of all entries in the "Juniper Posts" column.

Complete **Lines 1 through 10** as instructed using the "Summations" entered in **Lines A through J**.

Complete **Line 11** as instructed using the "Summations" entered in **Lines K through N**.

**Line 12. Overstory Canopy Cover - LINE INTERCEPT METHOD:** Where line intercept transects are used to supplement canopy cover measurements from within the fixed plot, enter results in space provided.

**Line 13. Tree Age Summary** - Enter number of trees, by species, for which age measurements have been made. Enter average DRC or EDRC for these trees, the average total age, and the average tree height.

**Line 14. Tree Age to 2.3 inch Radial Growth** - Enter tree age at 2.3 inch radial growth (pith to 2.3 inches) by tree species. Enter 1-foot height age correction factor for juniper species.

Complete entry of Site Index as directed on Fixed-plot Summary Worksheet.

**INSTRUCTIONS FOR COMPLETING  
ZIG-ZAG TRANSECT SUMMARY  
WORKSHEET**

**Lines A through G** are summations of tree data lines recorded on Pinyon-Juniper Site Inventory Worksheet (NV-ECS-06, page 2 of 17).

**A.** The "*Total Number of Trees in Transect - by Species*" equals the total number of each tree species, greater than 4.5 feet in height, recorded in the transect.

**B.** The "*Summation of DRC*" refers to the total sum of DRCs and EDRCs of all trees within the transect. The DRC of a single-stemmed tree (and a multiple-stemmed tree that forks at or above 6 inches) equals the measured DRC. The equivalent DRC, or EDRC, of a multiple-stemmed tree that forks below 6 inches equals the square root of the summation of the squares of each individual stem.

$$EDRC = \sqrt{D_1^2 + D_2^2 + D_3^2 + \dots + D_N^2}$$

where,

EDRC = equivalent diameter at root collar

D = diameter of an individual stem

n = number of stems (>3 inch diameter)

For example, tree number 1 is multiple-stemmed and has 3 stems measuring 5, 6, and 7 inches. Each stem is squared (5x5, 6x6, 7x7), the products added (25 + 36 + 49 = 110), and the square root taken (=10.5). Continuing, the EDRC of tree number 1 is added to the DRC or EDRC of tree number 2, and so on for all trees in the plot. The resulting sum (to the nearest 1/10th inch) is entered on line B.

**C.** The "*Summation of Basal Area*" equals the total of all entries in the "**Basal Area**" column.

**D.** The "*Summation of Distances*" equals the total of all entries in the "**Distance**" column.

**E.** The "*Summation of Individual Tree Crown Diameters*" equals the total of all entries in the "**Crown Diameter**" column. Also enter sum of tree crown diameters for each tree species in transect.

**F.** The "*Summation of Tree Heights*" equals the total of all entries in the "**Height**" column.

**G.** "*Summation of Juniper Posts*" equals total of all entries in the "**Juniper Posts**" column.

Complete **Lines 1 through 9** as instructed at each line number using the "**Summations**" entered in **Lines A through G**.

**Line 10** - Enter ocular estimates of seedlings and saplings per acre if recorded on Pinyon-Juniper Site Inventory Worksheet (page 2 of 17).

**Lines H through K** are summations of "Seedling" and "Sapling" counts recorded on Pinyon-Juniper Site Inventory Worksheet (NV-ECS-06, page 2 of 17).

**H.** The "*Summation of Distances*" is the sum of all entries made in the Distance column of the "Seedling/Sapling Count" Zig-Zag Transect.

**I.** The "*Total Number of Stems in Transect*" is the sum of all seedling and saplings encountered in the "Seedling/Sapling Count" Zig-Zag Transect.

**J.** and **K.** The "*Total number of Seedlings -by species*" and "*Total number of Saplings -by species*" are calculated and recorded from "Seedling/Sapling Count" Zig-Zag Transect entries on the P-J Site Inventory Worksheet.

Complete **Line 11** as instructed using the "**Summations**" entered in **Lines H through K**.

**Line 12 - Overstory Canopy Cover - LINE INTERCEPT METHOD:** Where line intercept transects are used to supplement canopy cover measurements made within the zig-zag transect, enter results in space provided.

**Line 13 - Tree Age Summary:** Enter number of trees, by species, for which age measurements have been made. Enter average DRC or EDRC for these trees, the average total age and average tree height.

**Line 14 - Tree Age to 2.3 inch Radial Growth:** Enter tree age at 2.3 inch radial growth (pith to 2.3 inches) by tree species. Enter 1-foot height age correction factor for juniper species.

Complete entry of Site Index as directed on Zig-Zag Summary Worksheet.

**REFERENCES**

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