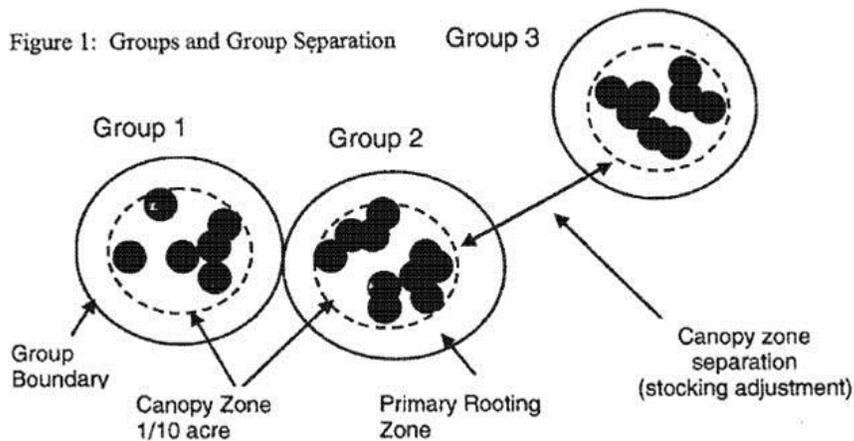


FACT SHEET: SPATIAL PATTERN TERMS COMPARISON

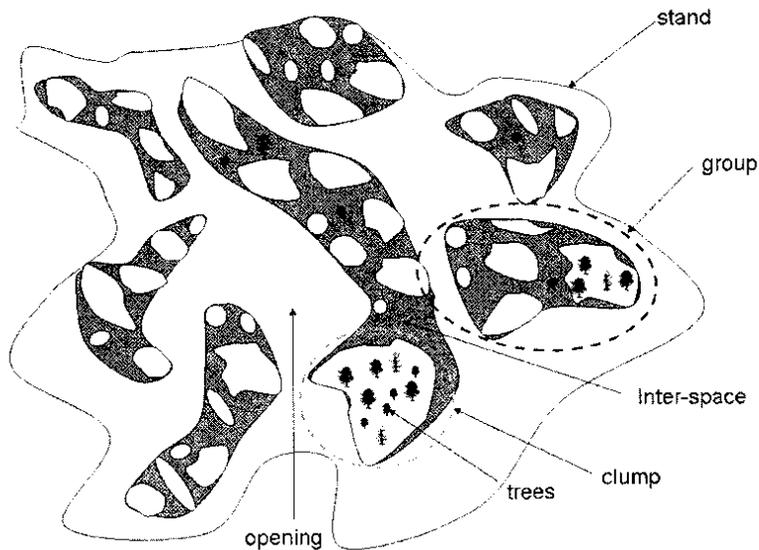
Terms	Goshawk Guidelines	AZGFD
Clump	Clumps are viewed as similar to groups (i.e., clumps/groups) and are otherwise not defined .	A small cluster of trees with inter-spaces, typically of similar age and size, sometimes variable ages; interlocking crowns; 0.05-0.74 acres in size ; more or less isolated from adjacent clumps.
Group	A group is comprised of a tree canopy zone and a primary rooting zone (which is 0.5 the radius of the canopy zone). Variable density tree groups comprised of 2-40 trees depending on VSS class (i.e., VSS2 has more trees than VSS6) occupying up to 0.1 to 4 acres, but tree groups are generally less than 0.75 acres . "...groups should generally be sized from 0.1 to 0.3 acre of various shapes." VSS4-6 groups each have 40+% canopy cover. There are no canopy cover guidelines for other VSS classes.	A non-uniform arrangement of clumps and interspaces surrounding by openings; size varies, but typically 0.75 acres or much more ; contains two or more clumps and some individual trees; includes uneven-aged trees of various size classes; interlocking crowns in clumps but not across the group. At least three age classes are desirable, create a mosaic of groups.
Inter-spaces	No definition , although there may be open canopy within a group.	A break in the canopy between clumps; relatively small in size (0.03 acre or less) ; little to no tree regeneration due to frequent fire and shade intolerance of ponderosa pine; no interlocking crowns.
Canopy zone separation, inter-group space or matrix	Additional "inter-group" space or matrix can also be created between the rooting zones "to achieve a desired average distance between tree canopy zones in adjacent groups." This space has few or no trees. "Create a matrix between tree groups if less than full stocking is desired, based upon project-level objectives." No defined size .	See definition of Opening
Opening	The original Goshawk Guidelines (GTR RM-217) used the term "openings," but the R3 2007 Implementation Guide: Northern Goshawk Standards and Guidelines as well as Youtz (2008)) do not and instead refer to spaces in between groups as canopy zone separation, inter-group space or the matrix.	A spatial break between groups of trees; varies but roughly 0.25-0.5 acres ; covered with herbaceous vegetation; largely treeless except for snags and young seedlings or saplings; some large, coarse woody debris; kept open by frequent, surface fires. Create a mosaic of openings with larger openings surrounding and upwind of larger groups; can be larger than 10% of the stand.
Meadow	No definition	An opening that is always treeless ; not the same as openings or inter-spaces; typically has a high level of herbaceous biodiversity; may have different soil type or soil moisture.

FACT SHEET: SPATIAL PATTERN TERMS COMPARISON

Goshawk Guidelines diagram of three groups with canopy zone, primary rooting zone, group boundary, and canopy zone separation (i.e., inter-group space or matrix).



AZGFD diagram of trees, clumps, groups, inter-spaces, and openings within a stand.



Goshawk Guideline terms from: Youtz, J.A., R.T. Graham, R.T. Reynolds, and J. Simon. 2008. Implementing northern goshawk habitat management in southwestern forests: A template for restoring fire-adapted forest ecosystems. Pages 173-191 in R.L. Deal, tech. ed., Integrated restoration of forested ecosystems to achieve multiresource benefits: Proceedings of the 2007 national silviculture workshop. General Technical Report PNW-GTR-733. Portland, OR: USDA Forest Service, Pacific Northwest Research Station; and Implementation Guide R3: Northern Goshawk Standards and Guidelines 2007.

AZGFD terms from: Desired Forest Conditions for Wildlife. 2007. Lantz, S., C. Wrightman, R. Miller, A. Rodgers, R. Sieg, S. Rosenstock, and S. Hedwell. Flagstaff, AZ: Arizona Game and Fish Department.