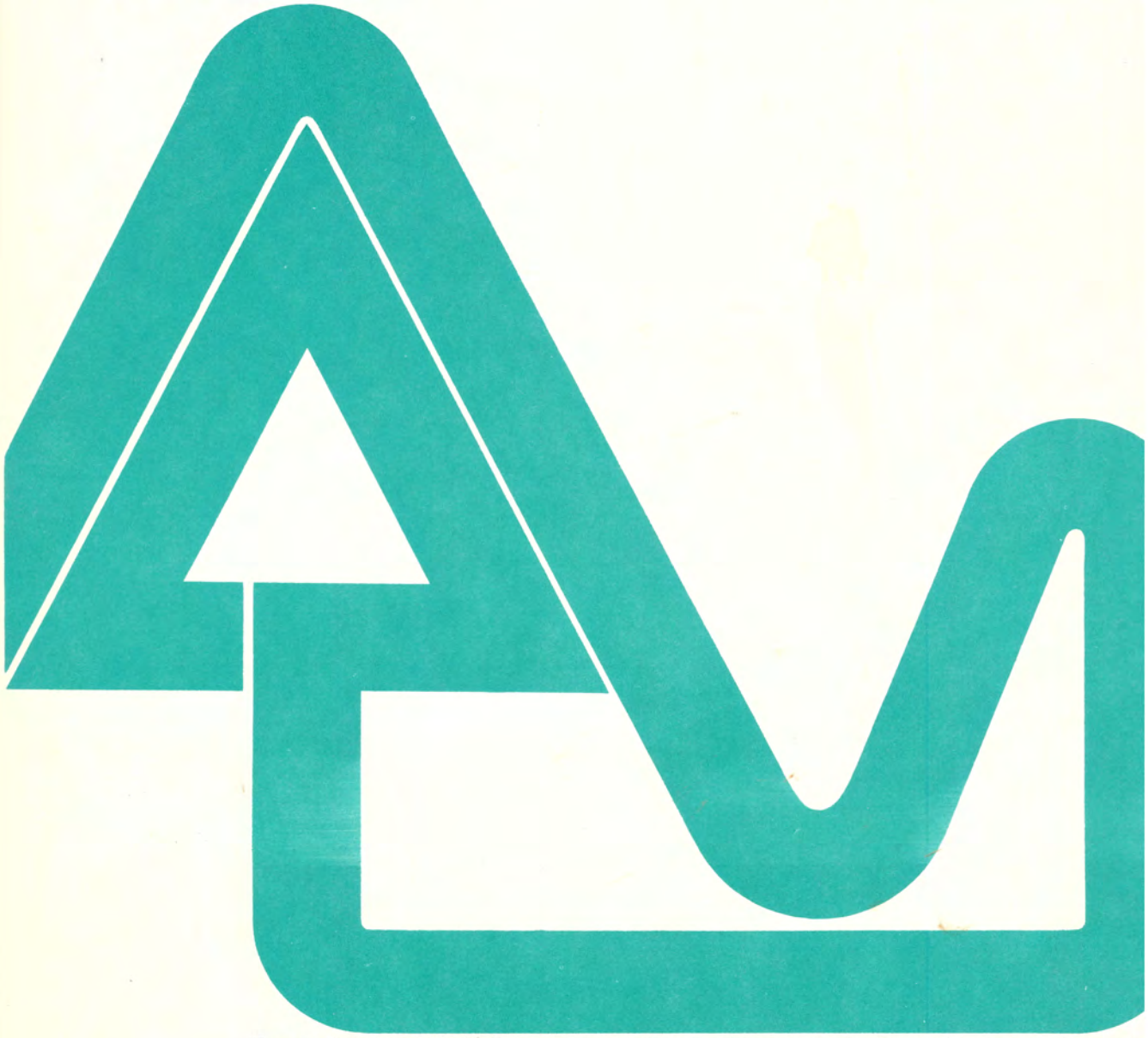
Clark Ostergaa

NATIONAL FOREST LANDSCAPE MANAGEMENT VOLUME 1



Forest Service · U. S. Department of Agriculture · Agriculture Handbook Number

NATIONAL FOREST LANDSCAPE MANAGEMENT VOLUME 1

87% of man's perception is based on sight.

Forest Service • U.S. Department of Agriculture • February 197

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This landscape offers a desirable combination of variety, natural beauty, and resource use.

. . . plan in full awareness of nature's forces, forms, and features—the sweep of the sun, the air currents, the peaks and hollows of the earth, rock and soil strata, vegetation, lakes and streams, watersheds and natural drainage ways—and this awareness should obviously entail planning in harmony with the elements of nature. If we disregard them we will engender countless unnecessary frictions and preclude those experiences of fitness and compatibility that can bring so much pleasure and satisfaction to our lives.

John O. Simonds
Landscape Architecture

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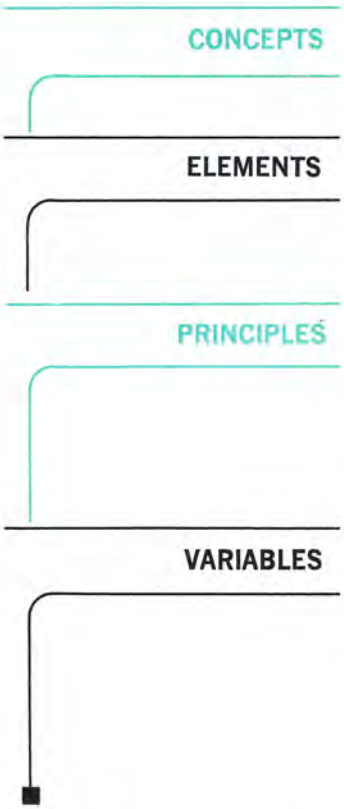


OBJECTIVES

The objectives of Volume I of *National Forest Landscape Management* are to:

1. Provide a Servicewide approach to landscape management from which guidelines can be developed for designing the visual aspects of resource management.

2. Provide illustrations and terminology that describe basic landscape management concepts.

3. Foster an awareness of ways in which man reacts to the visual aspects of his nonurban environment.

4. Encourage and assist universities, conservation organizations, resource-based industries, government agencies, and others to adequately consider the scenic resource during the various phases of land use planning and development.

A second volume is planned which will describe the practical application of basic landscape management concepts in the administration of the timber, water, forage, wildlife, and recreation resources of National Forest lands.

A F—521615

B F—521644

C F—494729

D F—521616

E F—521645

F F—521646

G F—521617

Definition—National Forest landscape management is the art and science of planning and administering the use of forest lands in such ways that the visual effects maintain or upgrade man's psychological welfare. It is the planning and design of the visual aspects of multiple-use land management.

A. Carefully planned powerline at midslope.
B. Timber harvest in background blends with natural openings.
C. Roadway lying gently on landform.
D. Pipeline construction—alpine tundra carefully replaced.
E. Range revegetation—natural and man-made patterns.
F. Microwave equipment building—designed to complement site and adjacent ski resort structures.
G. Ski slopes closely emulate character of landscape.

Three basic concepts

Forest Service land managers, while providing resources for the Nation, can and often do significantly change the character of the landscape. These management practices, though scientifically correct, do not always produce visually acceptable landscapes. Skilled landscape management is required to apply such practices in forms which complement the land—forms that achieve beauty as well as utility.

Landscape management in the National Forests deals with the visual harmony or disharmony among all of its parts—landforms, vegetation, structures, air, and water. To properly evaluate potential visual impacts on these parts, the land manager should consider three basic concepts involved with man's visual reaction to his environment:

1. **Characteristic Landscape**—Regardless of the size or segment of the landscape being viewed, it has an identifiable character.

2. **Variety**—Visual variety is desirable. Landscapes rich in variety are likely to be more appealing than ones tending toward monotony.

3. **Deviations**—Deviations from a characteristic landscape vary in their degree of contrast and can usually be designed to achieve visually acceptable variety.

F—521647

This characteristic landscape has a variety of landforms and vegetative patterns with no obvious deviations from its inherent harmony.

Every landscape has its own character and patterns, its own scale and its own range of tone and colour. This character is based on the facts of geology and climate and developed through the history of land-use. It is only when this individuality is appreciated, that forestry can be developed into a good landscape attuned to its locality.

Sylvia Crowe
Forestry in the Landscape

1. CHARACTERISTIC LANDSCAPE

The character of a landscape is the overall impression created by its unique combination of visual features (such as land, vegetation, water, and structures) as seen in terms of form, line, color, and texture.

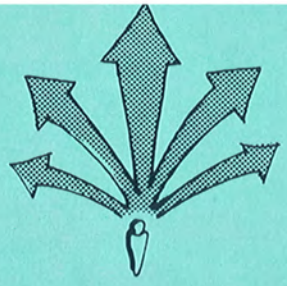
UT 1448

A "macro" (large) landscape: *In this relatively unified lan scape, similar or complementary features extend far into the distance. Mo of its features can b seen at a glance from any one of a number of vantage points.*

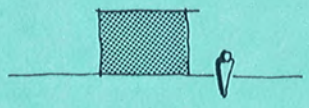
F—498556

A "micro" (small) landscape: *Here similar or complementary features may also extend far into the distance, bu visibility is restricte to a matter of yards at any one time fro any one vantage point.*

Panorama



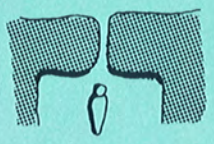
Feature



Enclosed

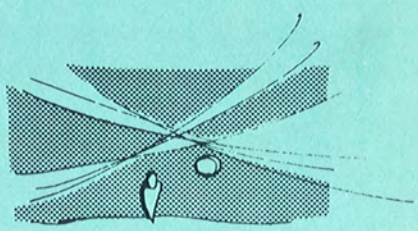
Focal

Canopied



Detail

Ephemeral



Landscape Terms

The overall impression created by a landscape cannot be rigidly classified. However, Litton[1] has developed a number of terms that are useful in describing the character of a particular landscape, or, as is more often the case, segments within the landscape:

- Panoramic
- Feature
- Enclosed
- Focal
- Canopied
- Detail
- Ephemeral

F—502579

Panoramic Landscape

Here there is little or no sense of boundar restriction. Foreground or middleground ob jects do not substantially block viewing o background objects. Flat, horizontal plane such as seas, rolling prairies, or far-of mountains are typical forms of the panc ramic landscape.

[1] R. Burton Litton, Jr., *Forest Landscape Descri tion and Inventories.*

'eature Landscape

This landscape is dominated by a feature bject or a group of feature objects. What onstitutes a feature object is relative; it ıay be a great mountain or a tree on an therwise treeless plain. If the mountain or ıe tree is to qualify as a feature, the obects which surround it must be visually subrdinate to it. Landscape features are somemes called "landmarks" and given local ames such as "Three Sisters," "Lone Pine," Twin Lakes," etc. Thus a feature landscape lways contains a visually important landıark which serves to orient visitors within :.

F—521648

'nclosed Landscape

Spaces, large or small, are here surrounded y continuous groupings of objects. Exmples include meadows or small lakes surounded by "walls" of trees or earth forms. 'he grass of the meadow or the surface of he lake, for instance, constitutes a "floor." 'nclosed landscapes are normally defined by hese wall and floor characteristics. When vall definition is lost because of distance, the anoramic classification is more appropriate.

F—521649

'ocal Landscape

Focal landscapes, such as river gorges or oadways through forests, tend to converge pon themselves as distance increases or as ıey curve horizontally. Focal landscapes can ccur anywhere that landforms, vegetative atterns, or waterways lead the observer's ye to a point of convergence. A feature erminus at this point of convergence tends ɔ emphasize a focal landscape.

F—385166

F—372981

Canopied Landscape

A canopied landscape is characterized b an immediate overhead plane such as the tre crown cover within a forest. Best compre hended on foot or at low speed, this land scape type is small in scale (relation o observer size to seen-object size). The mo toring public normally sees the canopie landscape as a tree-enclosed roadway wit rapidly changing patterns of light an shadow.

F—521650

Detail Landscape

A detail landscape is tied to the immediat foreground. It demands a pedestrian pac and an eye for special amenities to be full comprehended. Minute segments of forest o prairie ground planes, individual objects o parts of objects, and their visual relatior ships to each other typify this landscap type. To the knowledgeable observer, deta landscapes consistently reflect the gener landscapes within which they exist.

F—507929

Ephemeral Landscape

Five groups of influences produce ephem eral effects in the landscape—or for brie periods cause the ephemeral landscape t exist. These groups and examples of eac follow:

1. Atmospheric and weather condition (clouds, hoarfrost, fog, sunrises, sunsets)
2. Projected and reflected image (shadows, mirror images of objects by stil water)
3. Displacements (fallen leaves, floods windblown objects)
4. Signs (animal and bird tracks, spide webs)
5. Animal occupancy (animal sight ings).

F—458508

F—425313

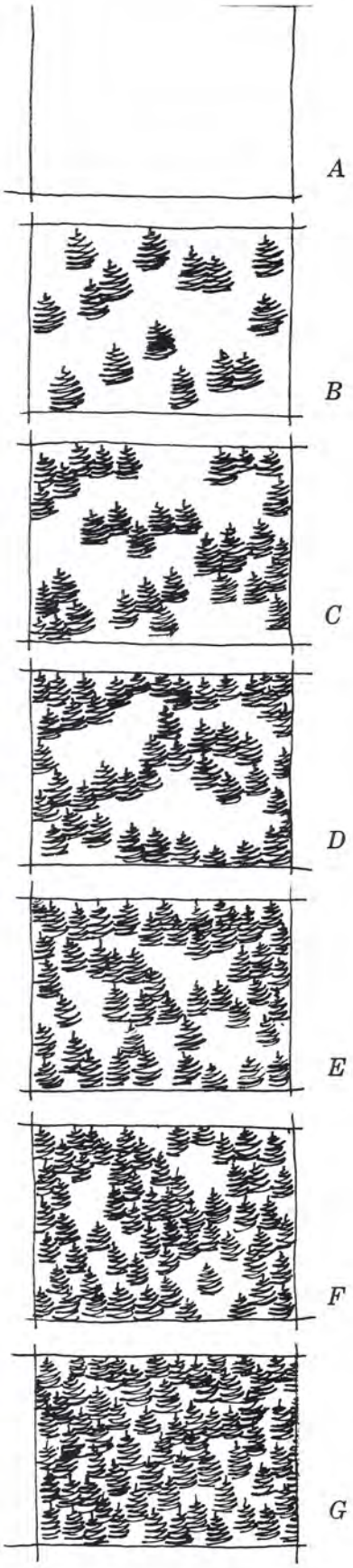
The large number of specific arguments for maintaining the diversity of particular sets of plants, animals, or other items, all fall into four categories: (1) diversity promotes stability; (2) it insures against risks; (3) it utilizes more completely the sun's energy; and (4) it promotes the mental well-being of humans.

Kenneth Watt
Natural History, February 1972

2. VARIETY

The second basic concept concerns landscapes which are object-rich; landscapes of interesting variety . . .

F—521619



Variety in the landscape is desirable. But how much variety is enough? There is no pat answer. There are, however, significant guidelines.

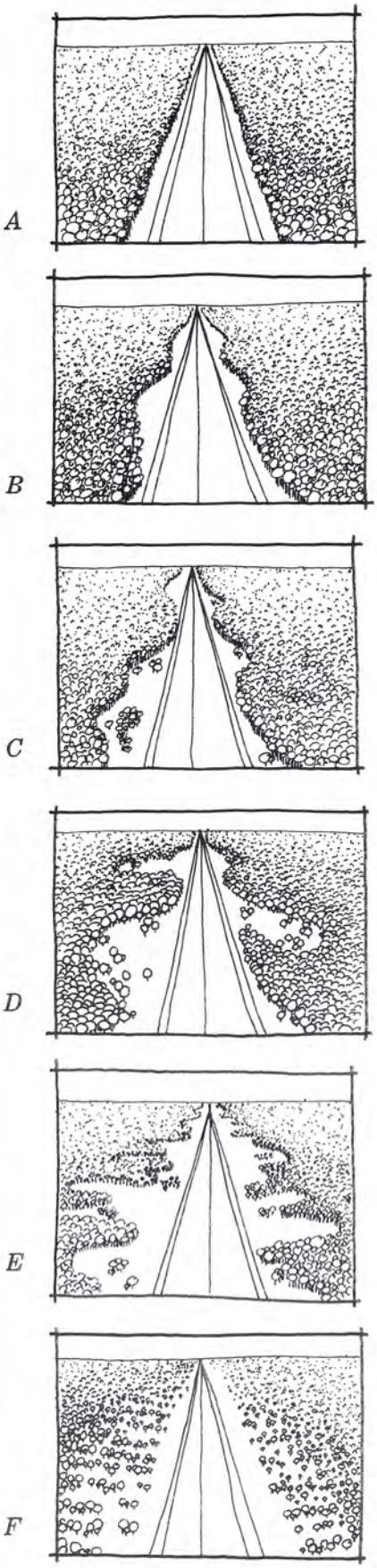
Given any area viewed—small, large, or moving—there is a point where variety increases from zero until it becomes visually pleasant or acceptable. As it continues to increase, it approaches the point where it is no longer pleasant (it is zero again). In the sketches, A and G (the extremes) tend to be the least interesting. The intermediate stages tend to be the most enjoyable.

Not everyone would rate each sketch the same; however, most would pick the sketches in the middle range as the most interesting but usually would not pick the middle sketch where the proportions are equal. They would normally choose C or E or both where the ratio of one element to the other is roughly 40 to 60 percent. The point is not that we can determine a precise percentage, but that we can approximate the area toward the center of the variety scale at which visual acceptability is reached.[2]

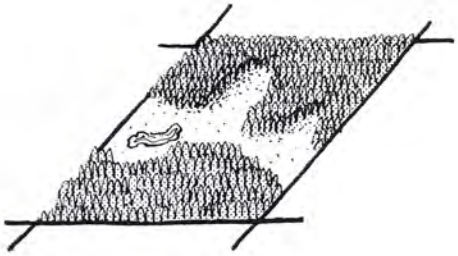
[2] This is only a base from which to start. Other factors, such as light, distance, and scale, also affect how the proportion is seen.

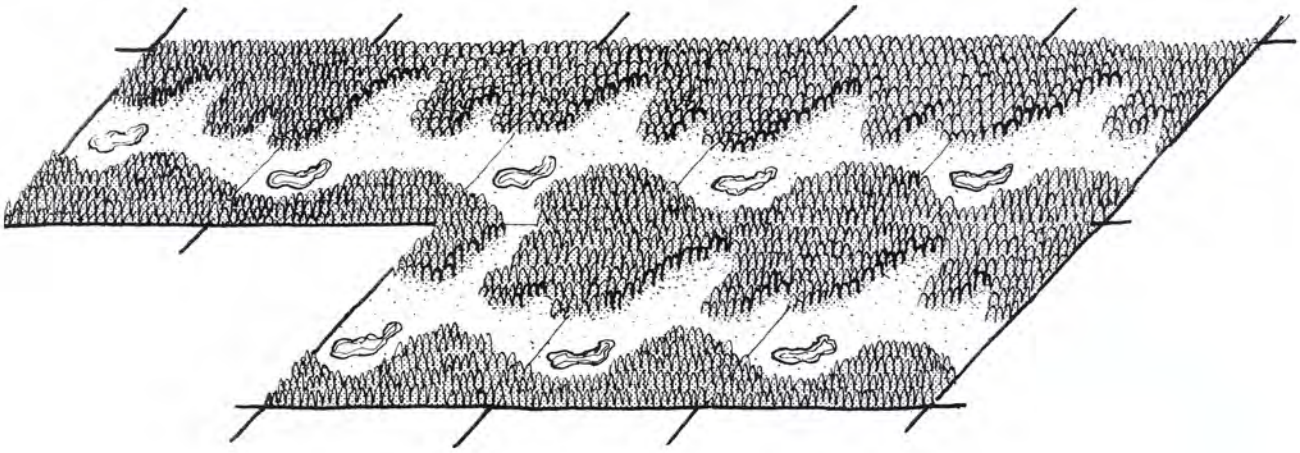
Here again the intermediate sketches and the photo illustrate some of the more desirable degrees of variety.

F—515651



Harmonious landscapes are *not* produced by finding a desirable degree of variety for one land area and then repeating it *ad infinitum* over vastly larger areas or distances.





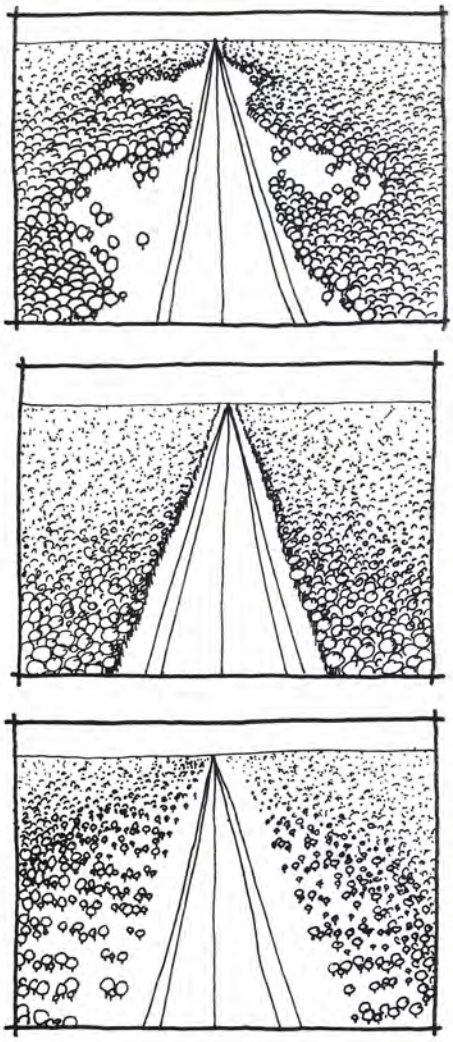
Harmony results from the inclusion of neither too few nor too many parts, ideas, qualities, or materials. This proportioning of the parts is based on the size of the whole.

Garrett Eckbo
The Landscape We See

F—507793

When "the size of the whole" is as vast as the scene shown in the photograph, a pleasant degree of variety (such as sketch D) becomes inappropriate if repeated continuously from foreground to horizon. In this case, a sprinkling of characteristics (such as A and F) should also be added if our variety is to be in proportion to the scale of the landscape.

The land manager will quickly recognize the need to also consider variety in color and size of vegetation, road alignment, and many other items not mentioned in this simplified example.



Surface mining deviations from the landscape can be visually harmful or beneficial . . .

521651

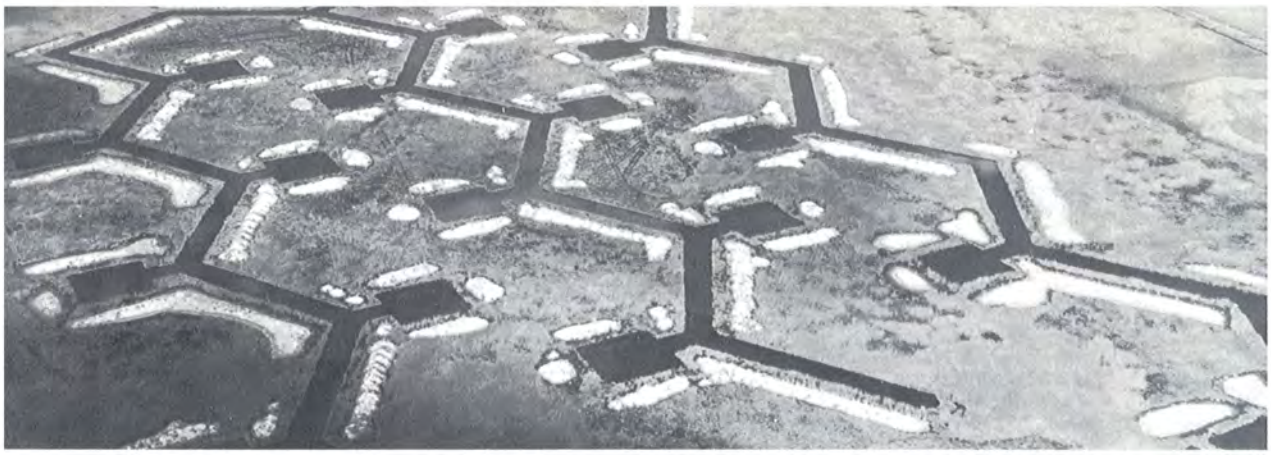
521652

3. DEVIATIONS FROM THE CHARACTERISTIC LANDSCAPE

In providing necessary resources for the Nation's economy, land managers often have no choice but to create deviations from the surrounding landscape. The test of skill is in devising ways of doing so which borrow form, line, color, and texture from the characteristic landscape.

The type conversion of some rangelands from scrub pinyon-juniper to grass is an example. The rectangular opening-with-parallel-windrows pattern of the past (arrow) was a deviation whose form and line were dissimilar to the surroundings. The more recent work (in addition to breaking up the straight line edges of the geometric areas) was designed by following soil types. These deviations thus borrow form from the characteristic landscape and emulate similar natural openings.

F—5216



SD 706

521621 *B*

623 *C*

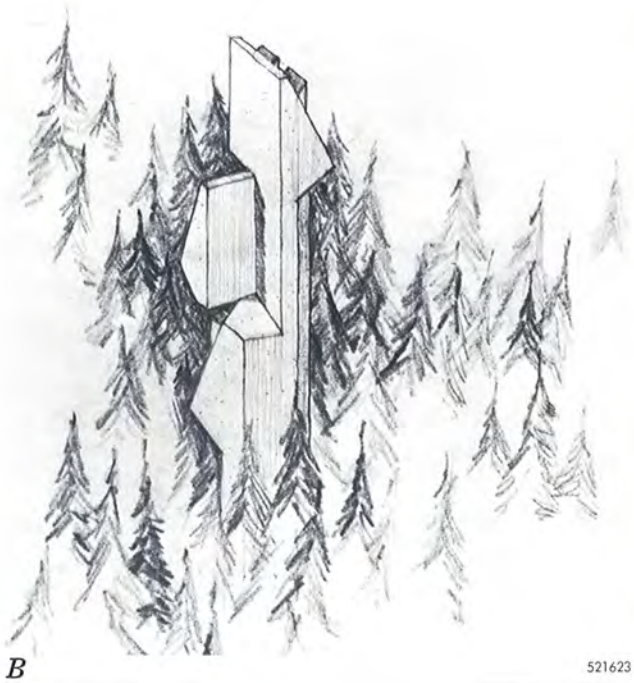
521622 *E*

D F—482126

A. Waterfowl nesting ponds
B. Structures
C. Roads
D. Timber harvesting
E. Surface mining

These deviations *do not* borrow their form, line, color, and texture from the characteristic landscape.

These deviations *do* borrow form, line, color, and texture from the characteristic landscape.



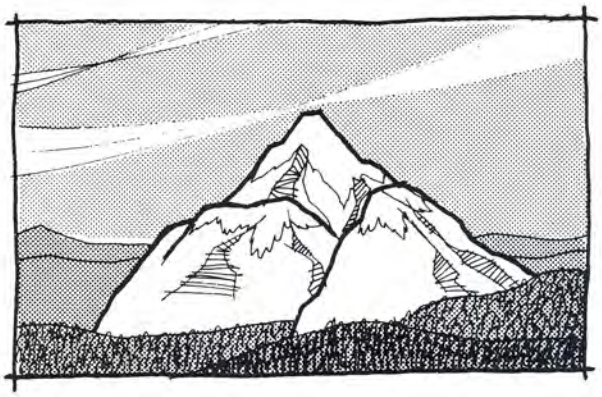
B 521623

A F—621357

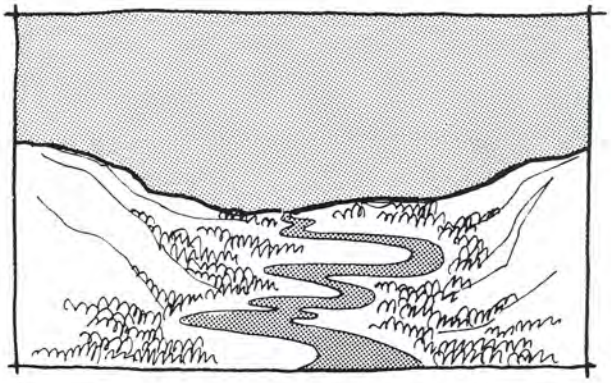
C F—497452

D F—521624

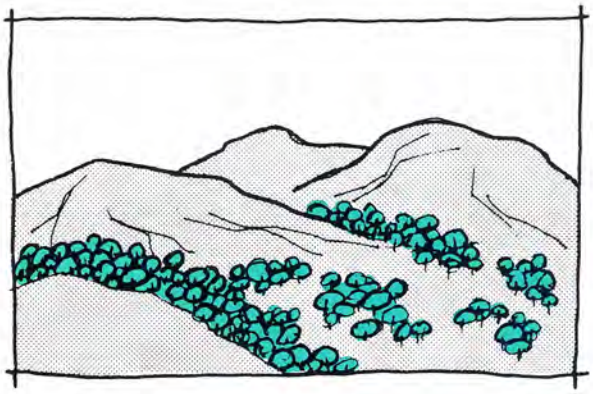
Form



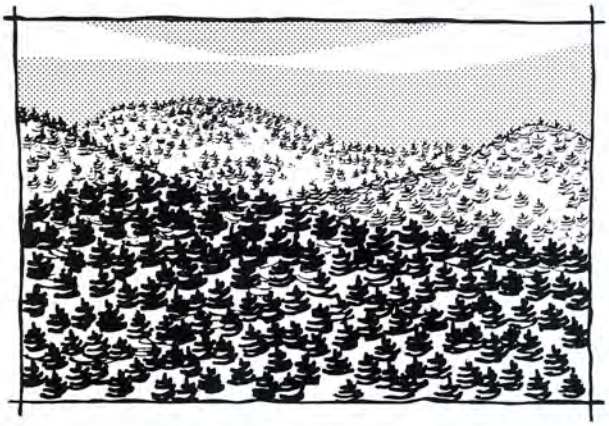
Line



Color



Texture



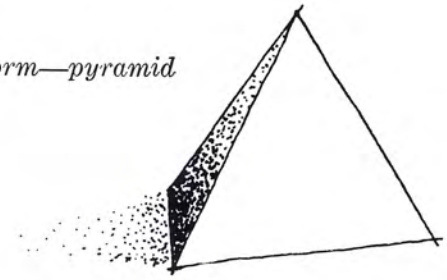
Dominance elements

Four elements compete for dominance in any landscape:

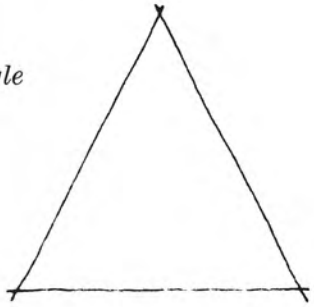
- Form
- Line
- Color
- Texture

All four elements are usually present but exert differing degrees of visual influence, power, or dominance. These elements are described as *dominance* elements to emphasize the importance of looking at both the landscape and the proposed management practice in two ways: (1) their basic visual ingredients and (2) the relative strengths of each.

Form—pyramid



Shape—triangle



FORM

Form is the mass of an object or of a combination of objects that appears unified. If seen in only two dimensions, we call it "shape." Since most landscape objects are three-dimensional, we tend more often to use the term "form."

F—484192

LINE

Line is a point that has been extended. It is anything that is arranged in a row or sequence. Line can make up the silhouette of form or it can be considered separately. It is also defined as the intersection of two planes. It is obviously found in ridgelines, timberlines, shorelines, and powerlines. It is also evident in tree trunks, avalanche paths, and vegetative boundaries.

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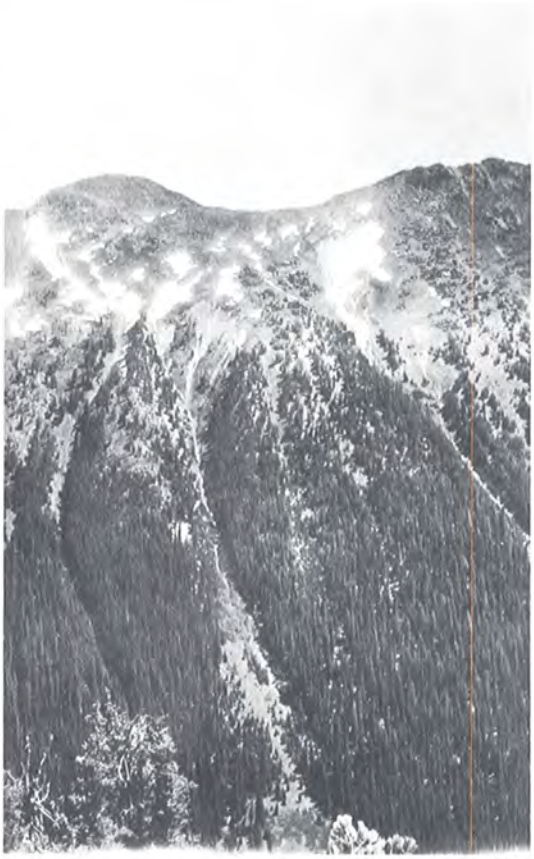

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F—521782

COLOR

Color enables us to differentiate objects even though they have identical form, line, and texture. Color dominance often depends on the observer's position. Distant colors are usually muted by a bluish haze caused by dust and moisture. Foreground colors are stronger and more dominant. This is especially true when speaking of the same color from various viewing distances.

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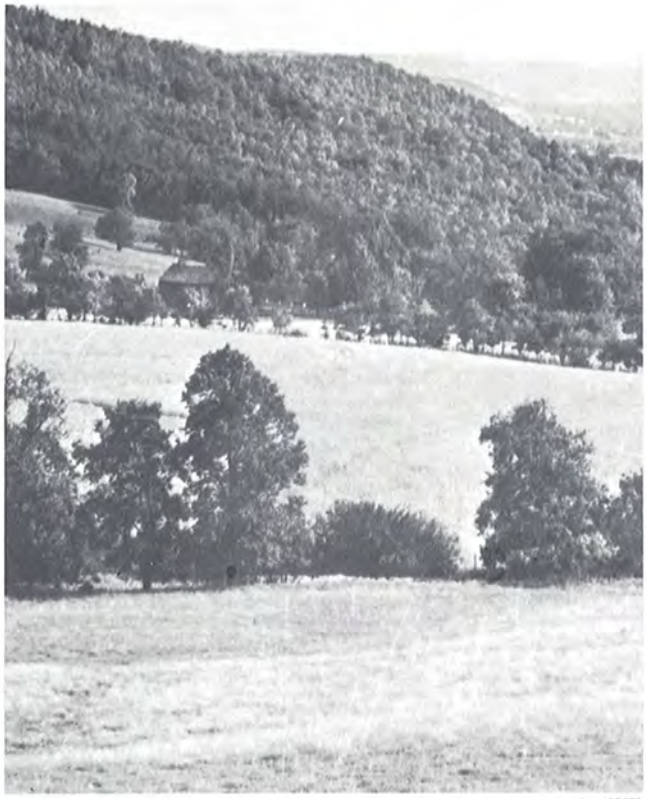

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TEXTURE

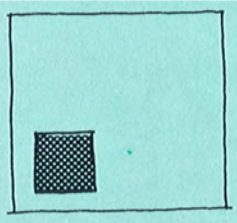
Texture dominance varies with distance:

Looking at a sample tree from a few feet, we note that the texture of the leaf patterns is dominant.

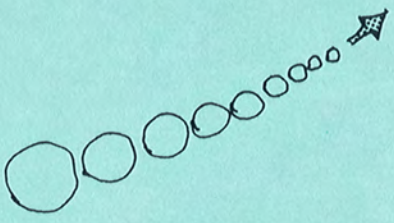
From a few hundred feet, major boughs form the dominant texture.

From a few miles, entire groups or stands of trees become the dominant texture.

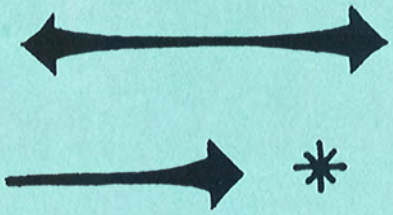
Contrast



Sequence



Axis



Convergence

Codominance

Enframement

Dominance principles

Six basic principles affect the visual dominance of form, line, color, and texture in a landscape:

- Contrast
- Sequence
- Axis
- Convergence
- Codominance
- Enframement

Understanding and use of these principles help the land manager analyze (1) the characteristic landscape and (2) the visual impact of his proposed management practices.

CONTRAST

Practices that create *no* visual contrast are simply not perceived; those that create *great* contrast are immediately apparent to all viewers.

Form perception is the result of differences in the visual field. If the field is the same all over, what we see is fog: that is, no thing; just sensation of light in space. . . . When we perceive form, it means that there must be differences in the field. When there are differences, there must be contrast. That is the basis of form perception.

R. G. Scott
Design Fundamentals

The object is obviously a circle.

No contrast ("fog"): *Viewer cannot tell whether there is an object here or not.*

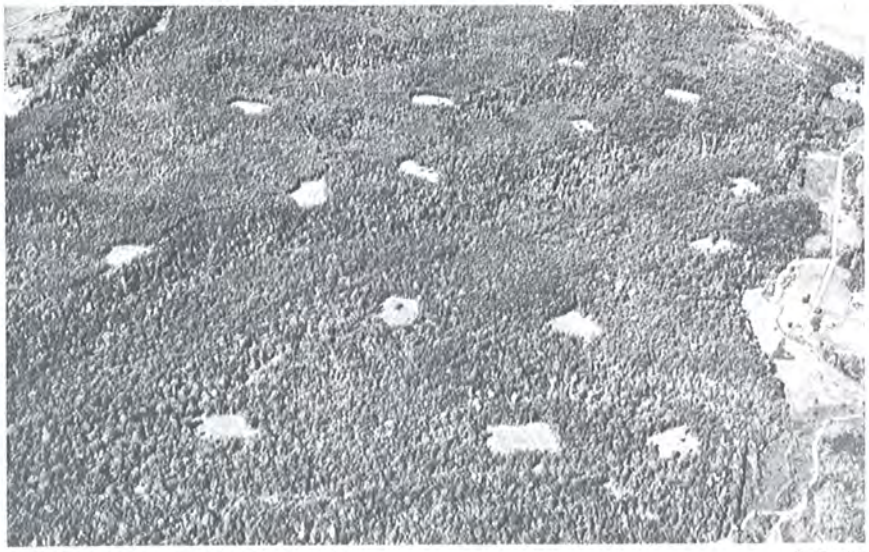
As the value of each circle differs more and more from the value of its field (or surroundings), contrast increases and its form is more easily and accurately perceived.

The purposeful creation of sharp contrasts in the natural environment can be beneficial at times. The introduced object, however, must be so well conceived that it can withstand or even thrive on the close scrutiny that its prominence will invite.

Maillart . . . by sharply contrasting his elegantly dynamic bridges and the rugged mountain forest . . . has dramatized the strongest qualities of each. The gorges seem more wild, the bridges more precise, more eloquent.

John O. Simonds
Landscape Architecture

52



F—521657

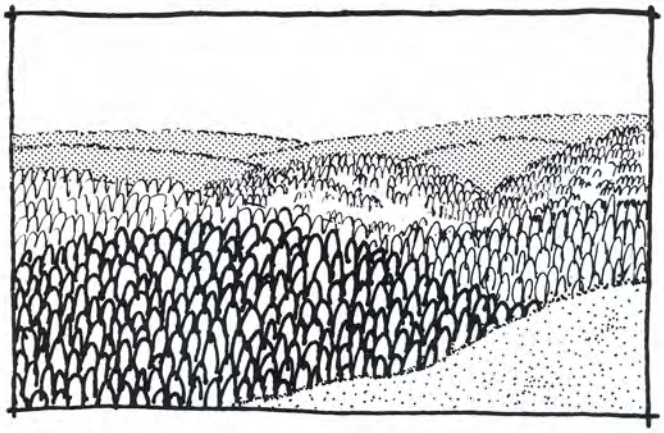
These openings in the forest canopy were created to provide an optimum habitat for deer and wild turkey. The sharp differences between the natural form, color, and texture of the landscape and of the openings ***create contrast*** *and emphasize the activity to aerial observers.*

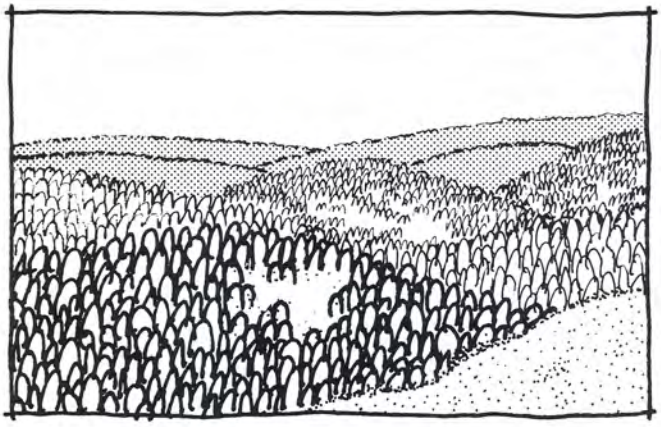
F—721658

Here man-made openings for timber harvest and forage production blend with natural openings. The continuity of the form, line, color, and texture of the natural landscape and of the openings ***reduce contrast*** *to a minimum.*

F—500037

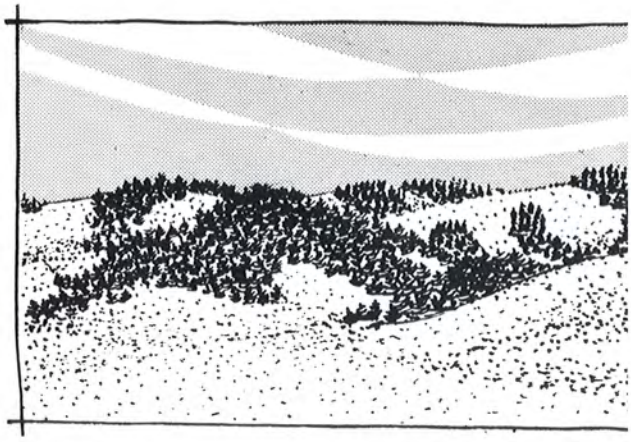
In his planning, the land manager should ıalyze both the characteristic landscape ıd the proposed management practice to ·termine whether he is dealing with like or ılike elements. If, for example, the pro- ›sed practice is predominantly one of form :reating openings) and the landscape is ›minated by texture (unbroken canopy), he n expect great contrast and quick recogni- ›n by the viewer.

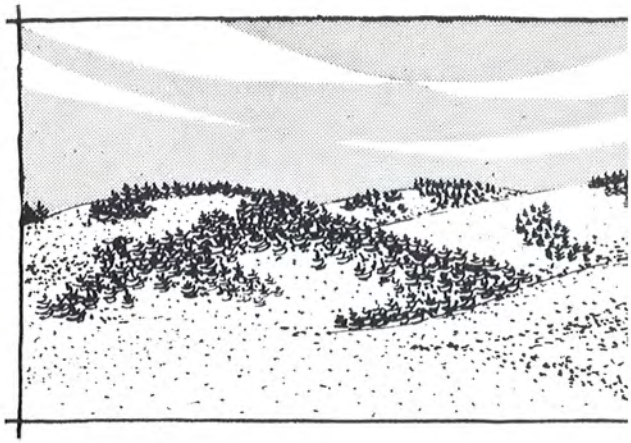




F—52

If, on the other hand, a form-dominant practice is applied to a form-dominant landscape and the forms are compatible, the character of the landscape is retained. In so doing, the degree of contrast is greatly reduced because the image of the management practice blends with the natural patterns.





Man in motion takes great pleasure in the sensation of change—change of texture, light, quality, temperature, scent, visual patterns, expanding or contracting vistas, and the fluid design modulations of objects, spaces, and views. We have learned also that man's pleasure is increased when the area is further developed into a volume or series of volumes that, by degrees and type of enclosure, further articulate the planned uses or use. Man enjoys moving to and through a space and around or past an object. Man also enjoys moving from one space to another, the experience of sequential space-to-space transition.

John O. Simonds
Landscape Architecture

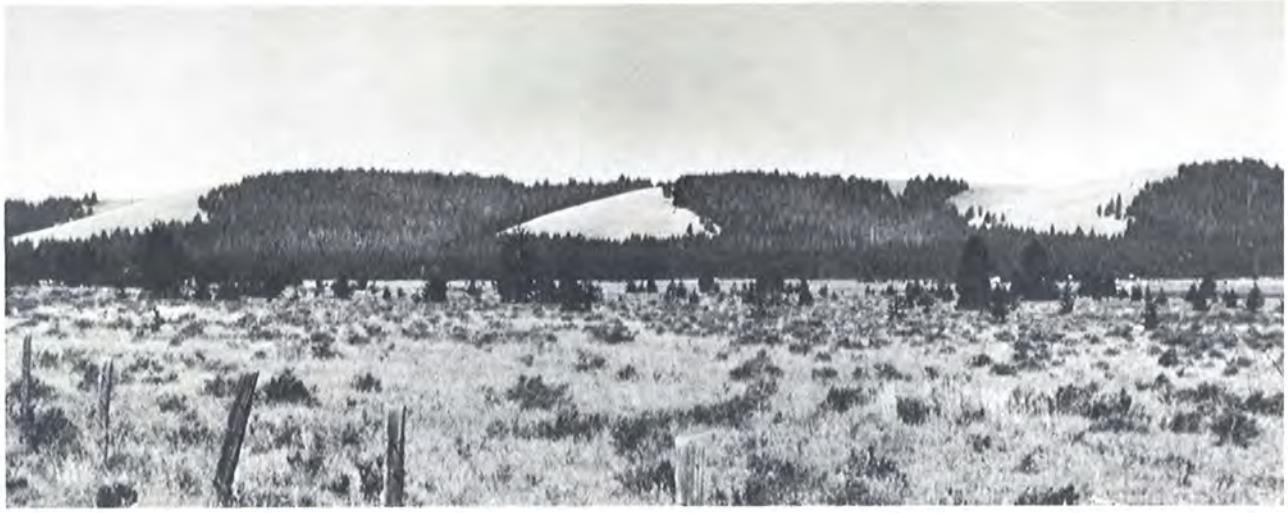
SEQUENCE

Sequence, as it relates to landscape management, has two aspects:

- Sequential landscapes
- Sequential experiences

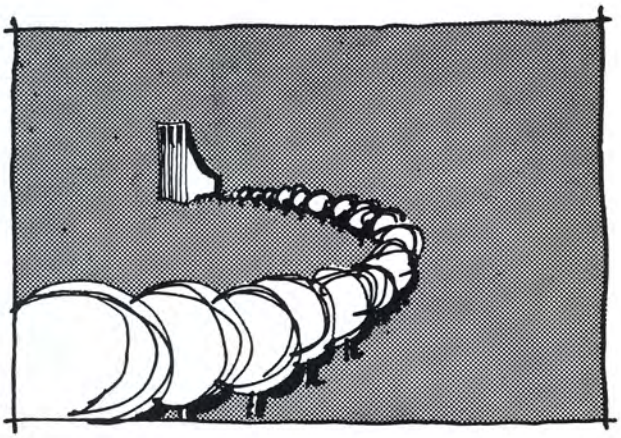
Sequential Landscapes

The land manager needs to identify areas of repetitious dominance of form, line, color, or texture that create visual sequence. Once identified, the strength of visual continuity created by sequence can be assessed. Potential and existing contrasts created by various land management activities can then be evaluated in terms of their effect on the continuity created by sequence.

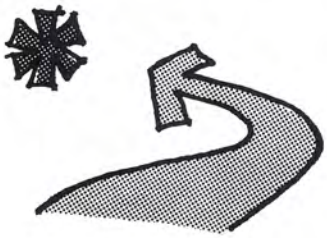


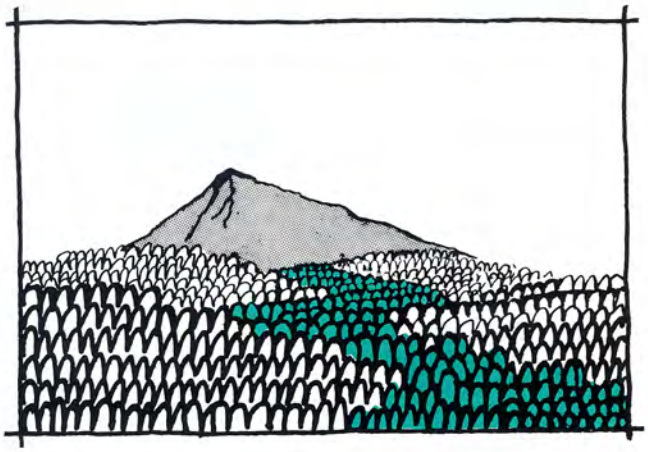
F—52

Form sequence—An interesting sequent landscape—one of systematic repetition landform and vegetative pattern. Activit which unsympathetically interrupt this quence can easily create a "missing toot appearance.



Line sequence—The line of trees leads t eye to the structure and intensifies its vis dominance. Removal of one of these tr would break the line and be visually disr tive.



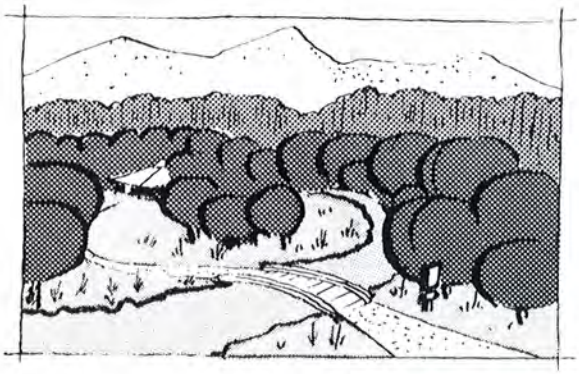


Color sequence—The introduction of co in a sequential pattern can also lead the e to, and emphasize, a distant object.

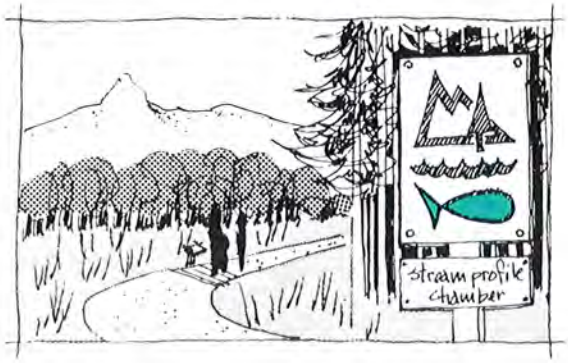
Sequential Experiences

How the observer is exposed to objects is important. A well planned sequence of visual experiences can enrich the viewer's appreciation.

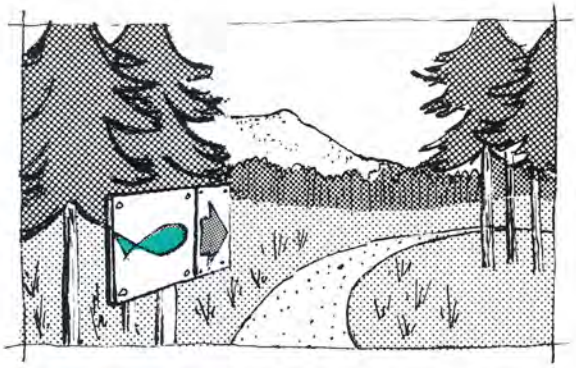
The sequence of visual experiences may be as random and free as that of a hiker who chooses his own route. Or it may be as controlled and limited as that of a train passenger whose personal options for directional changes are virtually nil. In the random sequence, the variety of "seen" objects is limited only by the number of existing objects and the observer's inclination to see them. In the controlled sequence, the variety of "seen" objects is limited to those occurring in the visual corridor of the travel route. We must try to optimize the visual variety in the semi-controlled travel sequence of our roads and trails.



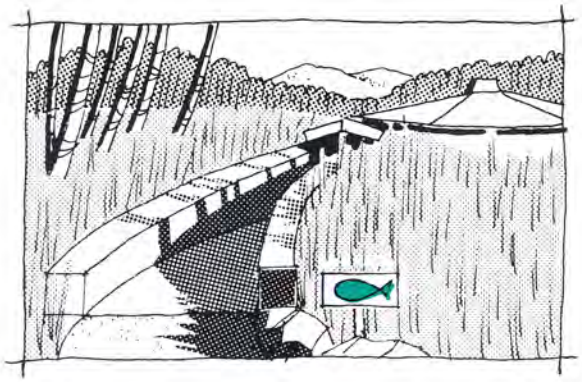
If, for example, the destination of a foot trail is a stream profile chamber (where one can, through glass, watch fish in their native habitat), should we opt for the shortest, most direct, least costly route? Or should we bend the trail to include the meadow, the spawning bed, and the spring that can enrich the total experience of walking to the chamber? This is not to suggest that we force the visitor to climb a mountain en route to the chamber simply because we feel he should be exposed to the mountaintop. Rather, we should search for a variety-rich sequence of visual experiences that leads in a more or less forthright manner to our destination.



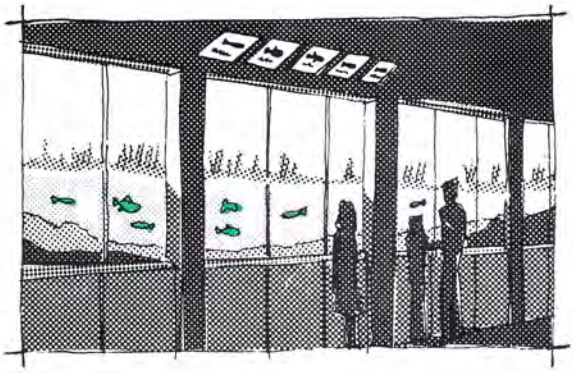
Entrance—The entrance creates moods and expectations of what is to come. The created moods and expectations must be satisfied in reality.



Direction—Directional cues leading toward the desired goal should be evident. These may be landmarks, natural guides (such as streams or drainageways), directional markers, or the travelway itself.



Continuity—The sequence of events leading toward the goal should serve to heighten its climactic qualities. A continuity of lesser to greater, in terms of exposure to objects, can serve to accomplish this.



Climax—The goal should reward the visitor with more than he expected. Initial exposures to the goal should be subtle and inconclusive; final exposure should be pronounced and conclusive.

With planning, we may maximize the quality of the visual experience through sequence. Without planning, our travelways represent lost opportunities for pleasurable experiences, because the sequences that occur may be haphazard, illogical, or visually disturbing.

AXIS

Axis is a main line of direction, motion, growth, or extension.

. . . there is little of polite gentility to the axis. It is forceful; it is demanding; and as a result, things usually go its way.

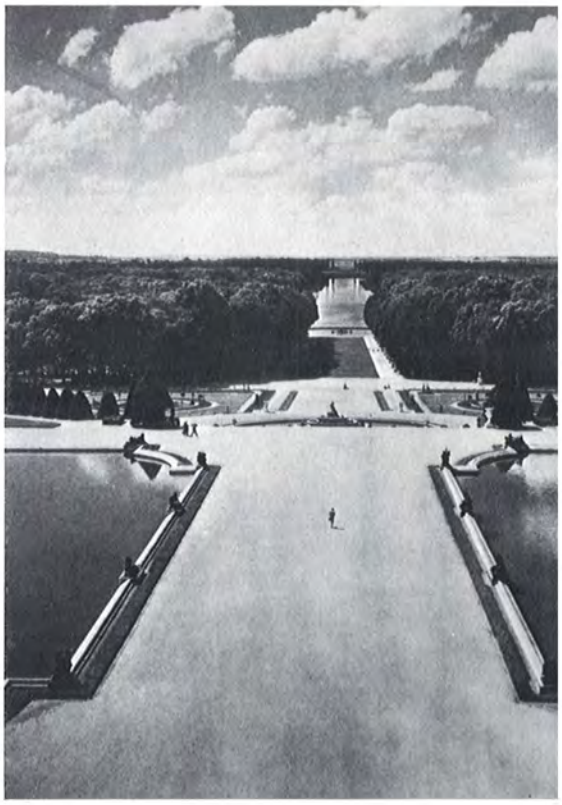
An axis is directional.
An axis is orderly.
An axis is dominating.
An axis is often monotonous.

This is not to say that the axis is always best avoided. It is only to suggest that none of these attributes are conducive to relaxation, pleasant confusion, appreciation of nature, freedom of choice, or any other such experiences that we humans tend to enjoy.

John O. Simonds
Landscape Architecture

In this photo, a newly cleared (axial) line for a chairlift cuts across natural openings and well designed ski slopes.

F—521631



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The axis has always been a design tool of great forcefulness. Many of the world's greatest manmade land- and cityscapes, such as the Palace of Versailles, have utilized the axis to direct and impress the visitor.

F—521635

The vista created by an axis focuses viewer attention primarily on the terminus and its background. Secondary attention is focused on the avenue of vision approaching the terminus.

People who have purposefully created an axial composition to focus attention on a favorite feature (such as a church) can be expected to react strongly to management practices which produce undue contrast. Focal areas of this kind (the mountainside beyond the church) should be identified on management plans. Then steps should be taken to provide visual continuity as resource uses are planned.

The sequence and enframement provided by the row of conifers to the right will increase in dominance as the trees mature. Thus the axial composition will be reinforced and the focus on the church will be strengthened.

A natural axis.

F-

This road axis visually bisects and dominates the meadow. The disruption is one of ecology, too; notice the encouraged growth of pines on the north slope of the road fill. These, in time, will be a "long green line," further strengthening the visual (axial) "split" of this characteristic landscape.

F-

CONVERGENCE

As related to landscape management, convergence generally occurs when major landforms, lines, colors, and/or textures tend to focus attention on one point or a small area.

The point of meeting, or convergence, and its adjacent area generally become dominant focal points within the landscape.

Any land management activity affecting the immediate area should be carefully analyzed and designed to: (1) Blend with the character of the landscape, or (2) contrast with its surroundings tastefully and with purpose.

This rancher's cabin is at the focal point of a landscape of convergence. From the standpoint of esthetics,[3] sites such as this are ideal for historical monuments, memorials, visitor centers, or other objects the land manager wishes to bring to the attention of viewers. It is one of the worst possible locations for a visually distasteful object.

[3] It may, of course, be most inappropriate when other resource management or social needs are considered.

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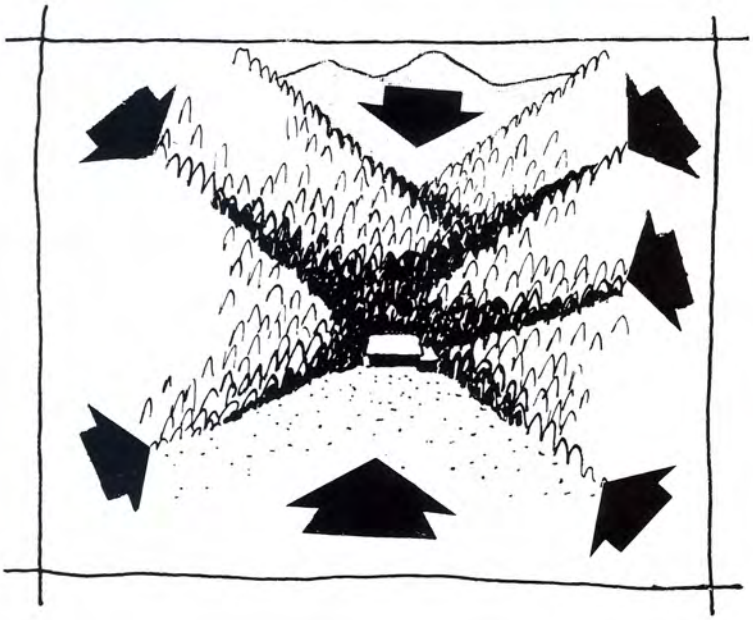
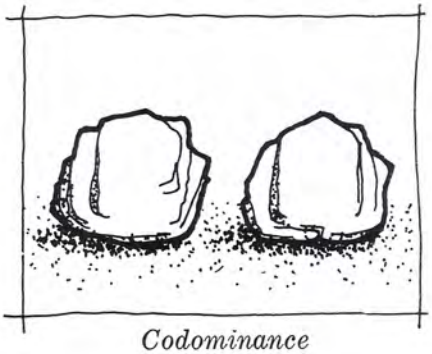


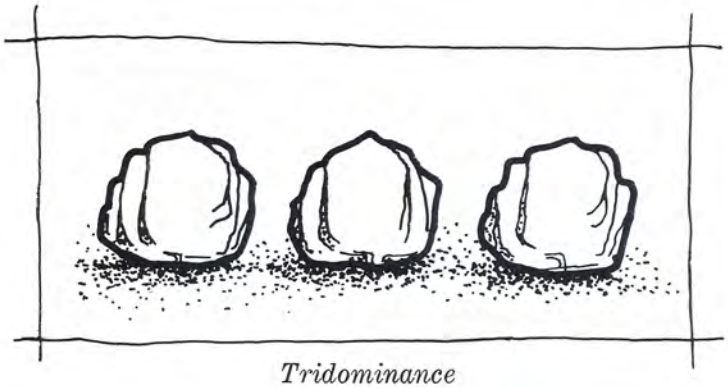
)DOMINANCE

Codominance is created when two major tures are nearly identical. Tridominance the result of three nearly identical fea- es, and multidominance occurs with nu- rous features. Codominant, tridominant, multidominant features often produce a ımetrical composition that does not blend h the characteristic landscape. Visual ıpetition between like features distracts viewer and provides a landscape inferior one of single dominance. The Japanese ve studied these relationships for centu- s—some of their gardens are incompara- examples of very simple but very carefully igned patterns of dominance.

Single dominance



Codominance



Tridominance

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521638

F—478286

A multidominant, repetitious pattern is seldom as visually pleasing as one obviously dominated by one of its parts. This is illustrated by these two examples of openings in a forest canopy.

F—521639

ENFRAMEMENT

Like the frame of a picture, features in the landscape sometimes direct the viewer's attention inwards. "Walls" of trees or rock (cliffs) on the sides, reflecting waters at the base, and tree canopies overhead serve as forces of enframement. These often reinforce other dominance principles to establish strong focal points.

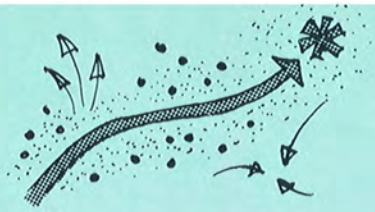
erson traveling this road s himself in a massive lscape of enframement. towering rock walls on canyon sides enframe the v and direct his attention ard the far end.

F—442163

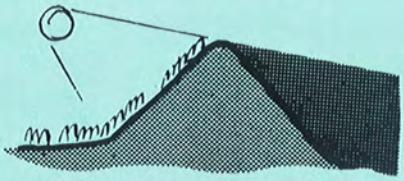
F—521640

Enframement here adds dominance to an axial landscape, further focusing attention upon the mountain peak. Land management practices between the peak and the viewer will come under unusually close scrutiny and should be designed carefully.

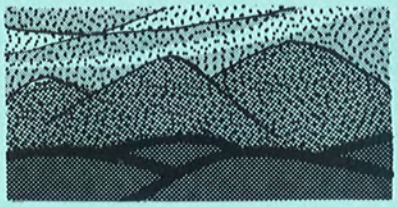
Motion



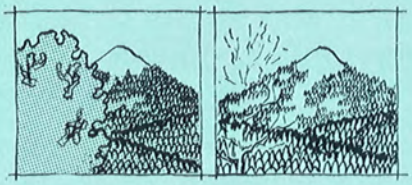
Light



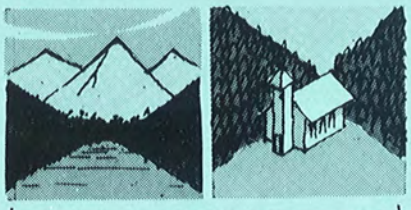
Atmospheric Conditions



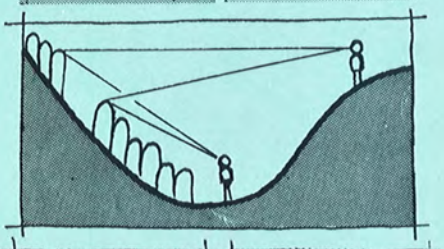
Season



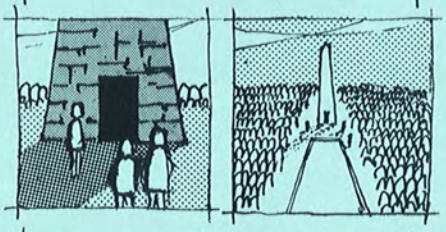
Distance



Observer Position



Scale



Time

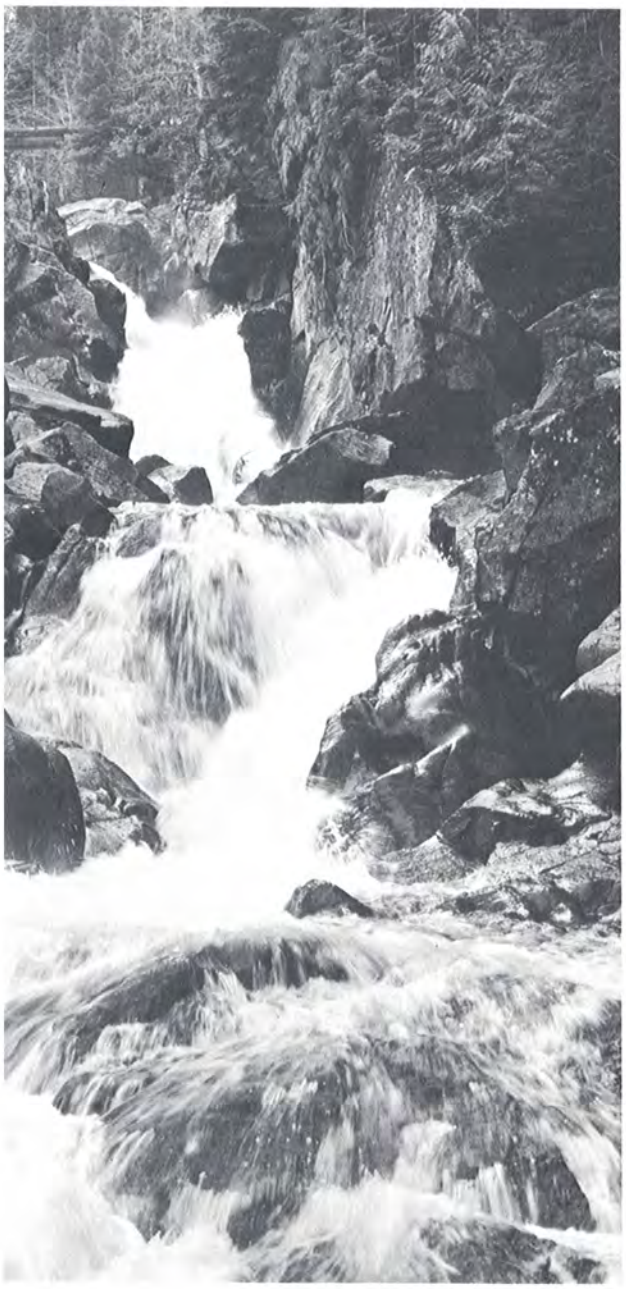
Variable factors

- Motion
- Light
- Atmospheric Conditions
- Season
- Distance
- Observer Position
- Scale
- Time

Eight factors affect how the dominance elements (form, line, color, or texture) are seen. These factors help to identify the most critical location or time to judge a management activity's degree of visual impact.

In analyzing the influence of variable factors on visual dominance, it is most important to choose the conditions which give the activity the greatest contrast with the characteristic landscape.

In other words, we want to judge the potential visual impacts under the most severe, most sensitive conditions possible.



WN 90229

MOTION

Motion can be the most powerful source of visual dominance. The tumbling waters of a cascade or the dancing flames of a campfire offer a fascinating variety of natural motion. Clouds, rain, snow, an avalanche, a tornado, and lightning add motion to the outdoor scene. The human eye can detect motion at astonishing distances or off to the side where little else is noticed.

Motion in a landscape attracts and holds the observer's attention. It can attract such attention to or from management activities.

LIGHT

All objects in the landscape reflect sunlight either directly or indirectly. Their forms, lines, colors, and textures are revealed through the light contrasts their reflective surfaces produce.

An understanding of light and its effects is essential in predicting the visual consequences of our land-use decisions. The visual impact of alterations to the landscape depends on how they reflect light.

Light sources vary constantly because of the earth's relation to the sun and climatic factors. The effects of light change radically in the course of a day and from season to season. We need to understand the role played by these light changes in masking or emphasizing elements of a landscape.

F—521641

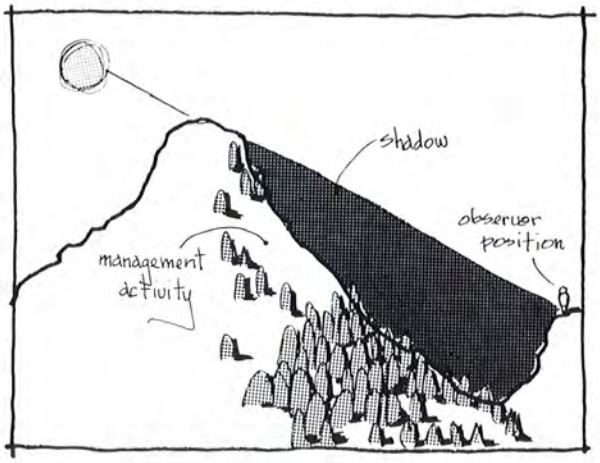
F—186668

F—154818

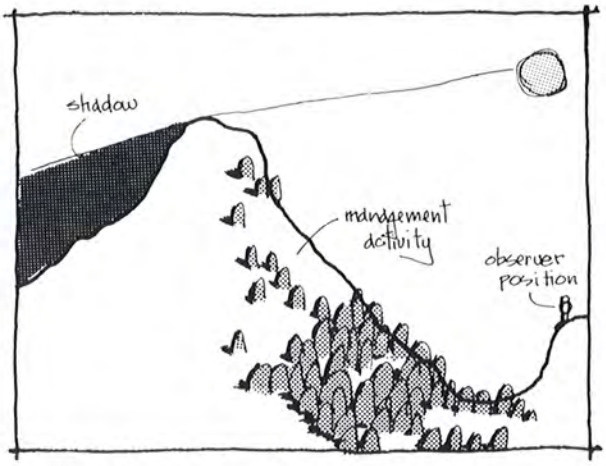
F—506122

The *direction* from which light strikes a surface determines the degree of visual impact and dominance. The three basic categories of light direction are (1) backlighting, (2) frontlighting, and (3) sidelighting.

Backlighting is usually associated with early or late daylight; frontlighting and sidelighting, with midday.



Backlighting



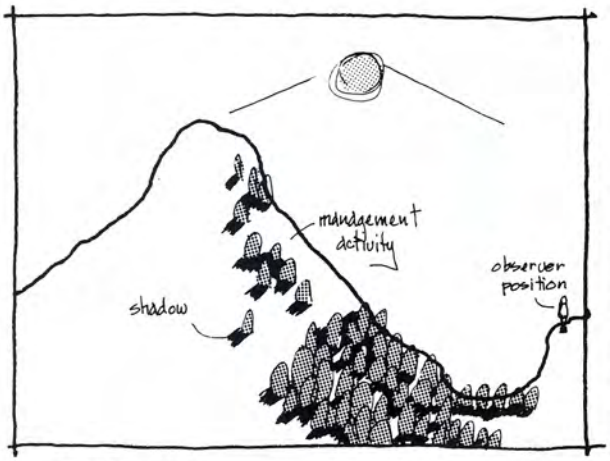
Frontlighting

F—514428

Backlighting—Do not try to evaluate dominance elements by backlight. The sun is in your eyes, details are obscure, and top and outside edges are emphasized. The seeming lack of contrast between the characteristic landscape and the proposed activity is misleading.

F—509314

Frontlighting—Sunlight from the observer's back puts most of the landscape in full sunlight. Objects are flattened by lack of shadow, minimizing their third-dimensional effect. It is difficult in this light to judge full visual impact.



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Sidelighting

Sidelighting—Light from the observer's side causes shadows, which can make the size of the management activity appear smaller. However, shadows create a line dominance not apparent before. This gives the activity depth and added strength. Sidelighting is usually the best situation for evaluating visual impacts.

Lighting can create dominance. Foreground objects are more visible with the sun at the viewer's back (frontlighting). The rock in the foreground stands out against a background of moss and fern.

Reverse to backlighting and the foreground loses its dominance, thus accentuating the waterfall. Dominance within a composition changes often during the day as sunlight changes its focus. Evaluations should be made at the time of day that the activity will most often be viewed.

F—385166

F—354929

ATMOSPHERIC CONDITIONS

Atmospheric and weather conditions greatly affect how the dominance elements are seen. The impact of form, line, color, and texture is reduced by (1) clouds, (2) fog or smog, (3) precipitation, and (4) wind motion. Evaluations made under such conditions distort the contrast of a proposed activity.

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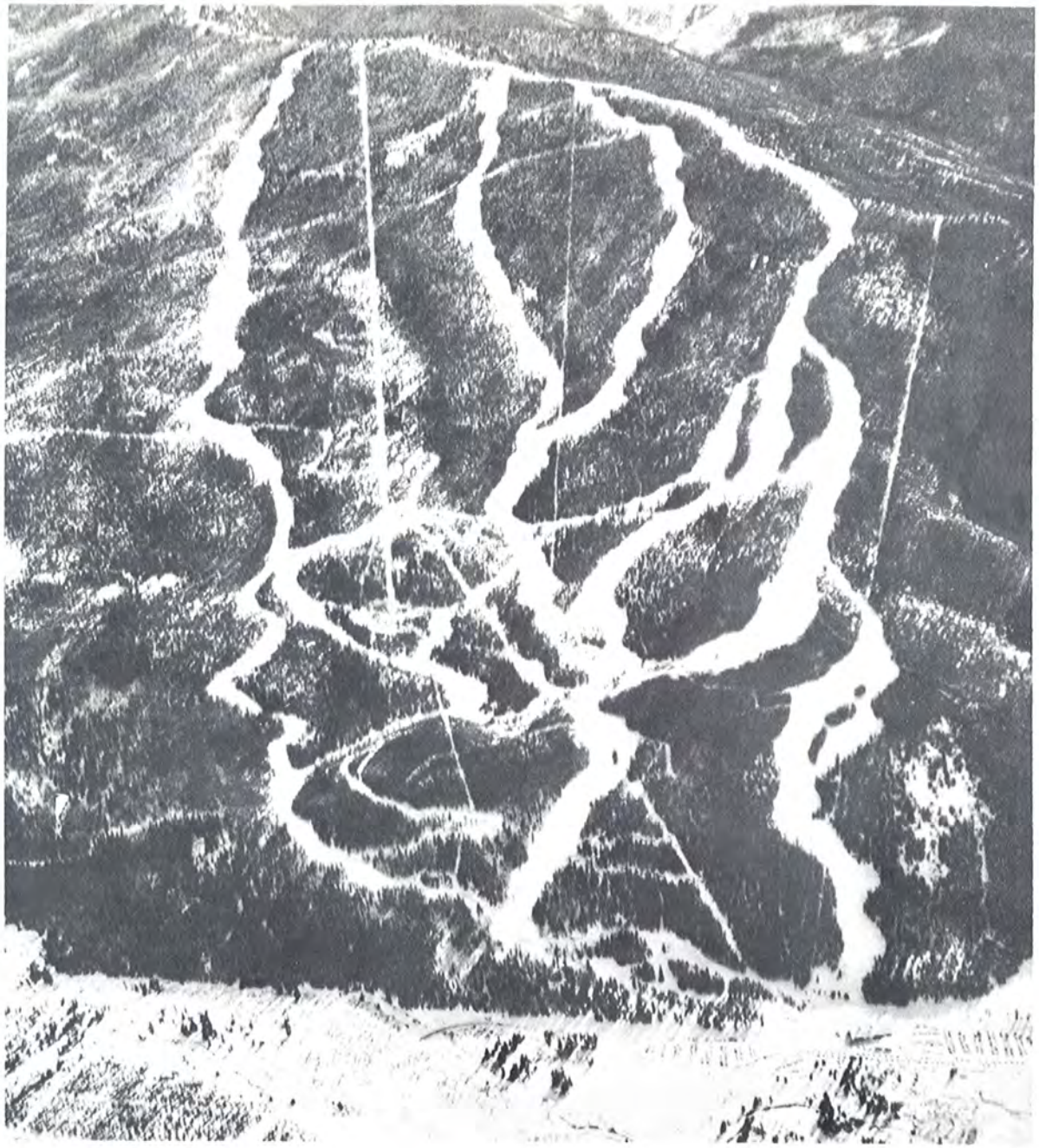
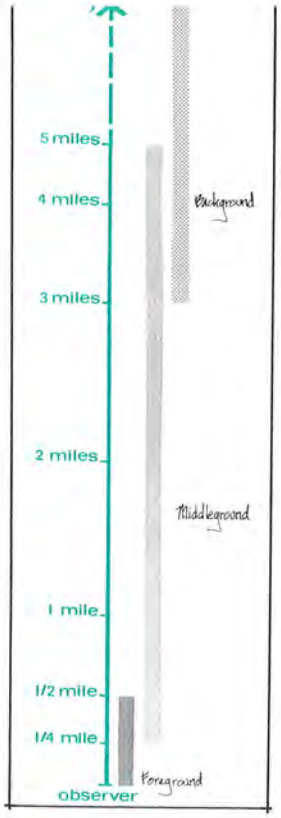


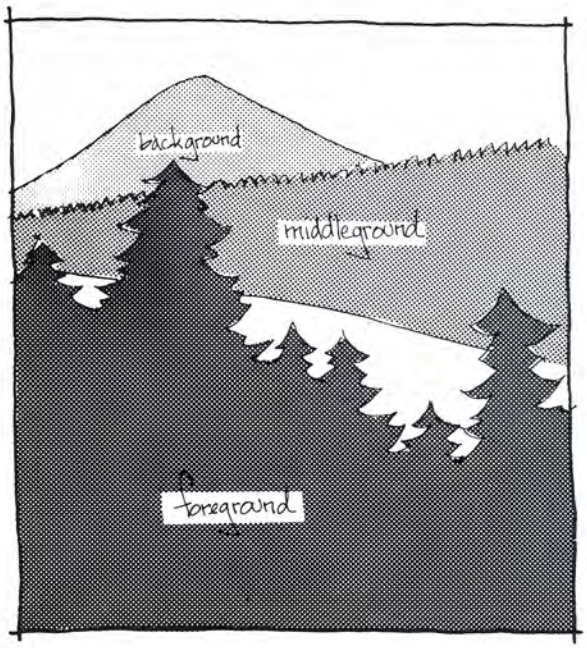
F—521643

SEASONS

The seasons of the year can provide unusual effects for evaluating management practices. For example, fall and spring colors can increase or decrease the visual impact of forms in the landscape.

Snow tends to strengthen form and line dominance. In many areas winter may be the best season for evaluation because it presents maximum visual contrasts.





DISTANCE

The contrast that lets us recognize objects is created by color-value effects. As distance increases, color value decreases toward uniformity. This holds true for objects as small as the letters on this page or as large as mountains. The distance at which an object can no longer be identified depends on two factors: its size and its degree of contrast with its surroundings.

Since a waterfall looks quite different viewed at 500 feet than viewed at 5 miles and identifying a highway cut is more difficult at 4 miles than at 400 feet, a classification system for what we can see from various distances is necessary.

The three distance zones are called foreground, middleground, and background.

A dilemma emerges in this system. As the observer travels, background may become middleground or foreground and vice versa. The concept of "grounds" is static while the observer is mobile. Transportation systems, too, are always subject to change in location. Nevertheless, the three grounds are helpful in land-use planning as terms of reference—as long as they are not overemphasized.

Changes in vegetative texture help define distance zones. *Foreground* ranges from the detail of leaf veination, through leaf patterns, to the point where major boughs form the texture. *Middleground* is usually defined by major groups of trees forming a strong textural layer over the landform. *Background* vegetation texture is generally weak and provides only color on the stronger landform. In the illustrations, the sharp contrasts of vegetative texture define the three major distance zones.

Foreground Characteristics

- Presence—the observer is in it.
- Maximum discernment of detail—in proportion to time and speed.
- Scale—observer can feel a size relationship with the elements.
- Discernment of color—intensity and value seen in maximum contrasts.
- Discernment of other sensory experiences—sound, smell, and touch are most acute here.
- Discernment of wind motion.
- Aerial perspective absent.

Middleground Characteristics

- Linkage between foreground and background parts of the landscape.
- Emergence of overall shapes and patterns.
- Visual simplification of vegetative surfaces into textures.
- Presence of aerial perspective—softens color contrasts.
- Discernment of relation between landscape units.

Background Characteristic

- Simplification—outline shapes, little texture or detail apparent, objects viewed mostly as patterns of light and dark.
- Strong discernment of aerial perspective—reduces color distinction, replaces them with values of blue and gray.
- Discernment of entire landscape units—drainage patterns, vegetative patterns, landforms.
- Individual visual impacts least apparent.

	Foreground	Middleground	Background
Distance	0-¼-½ mile	¼-½—3-5 miles	3-5 miles—infinity
Sight capacity	detail	detail & general	general—no detail
Object viewed	rock point	entire ridge	system of ridges
Visual characteristics	individual plants & species	textures (conifers & hardwoods)	patterns (light & dark

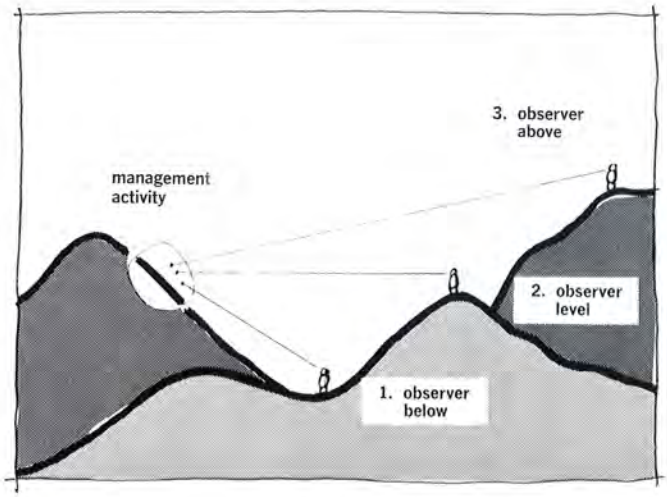
F—

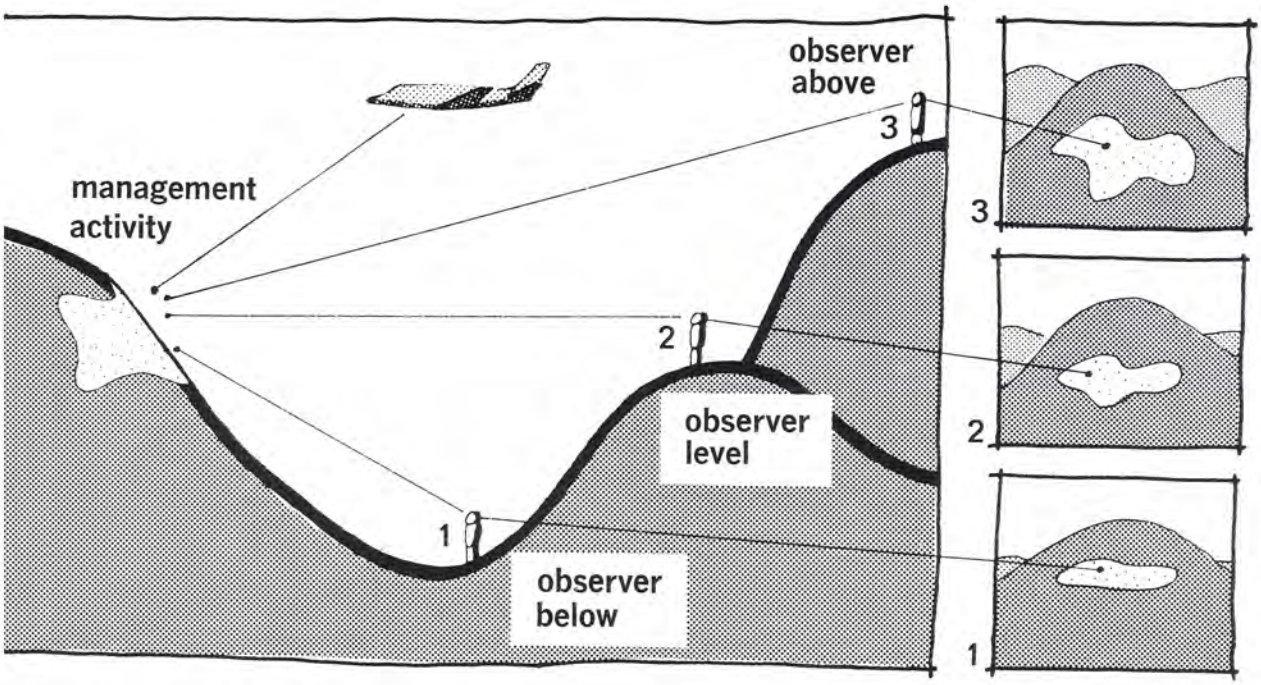
3SERVER POSITION

)bserver position is the elevation of the ;erver relative to the object he is viewing.

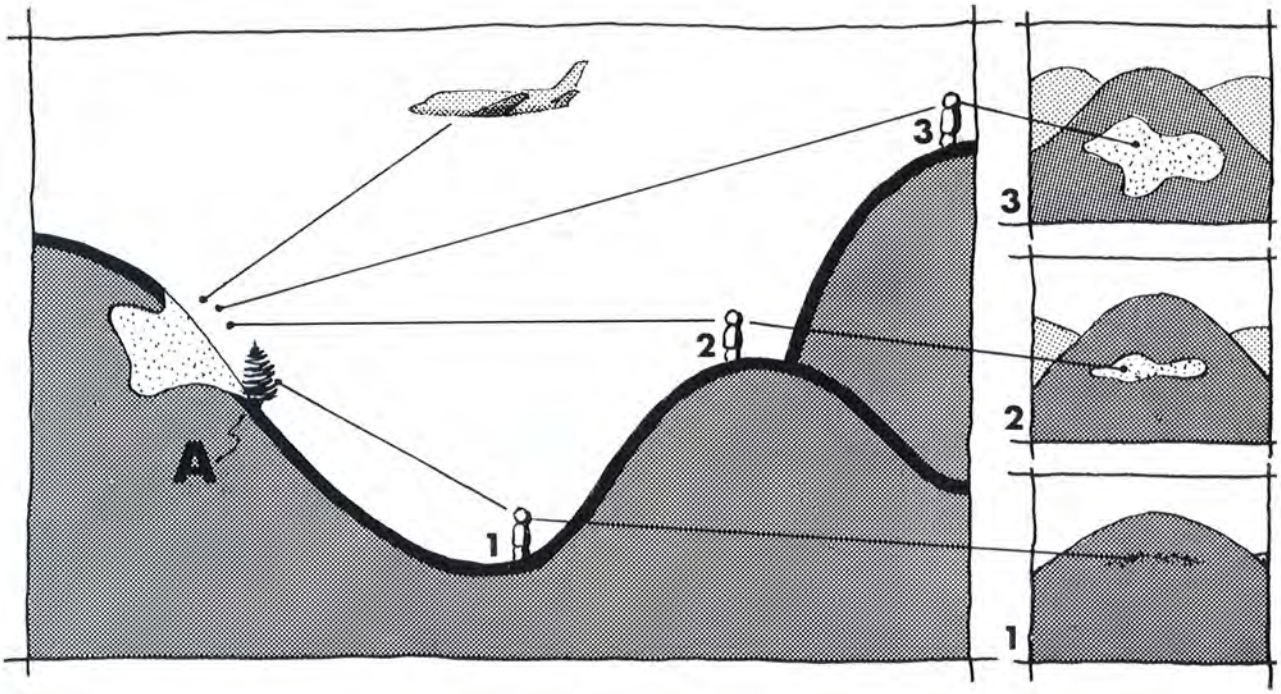
1. Observer below (sometimes called "inferior")
2. Observer level ("normal")
3. Observer above ("superior").

The apparent size of a management ac- ity is directly related to the angle between : viewer's line-of-sight and the slope being wed. As this angle nears 90° (as from an liner, for example), the situation reaches maximum contrast and becomes most tical.





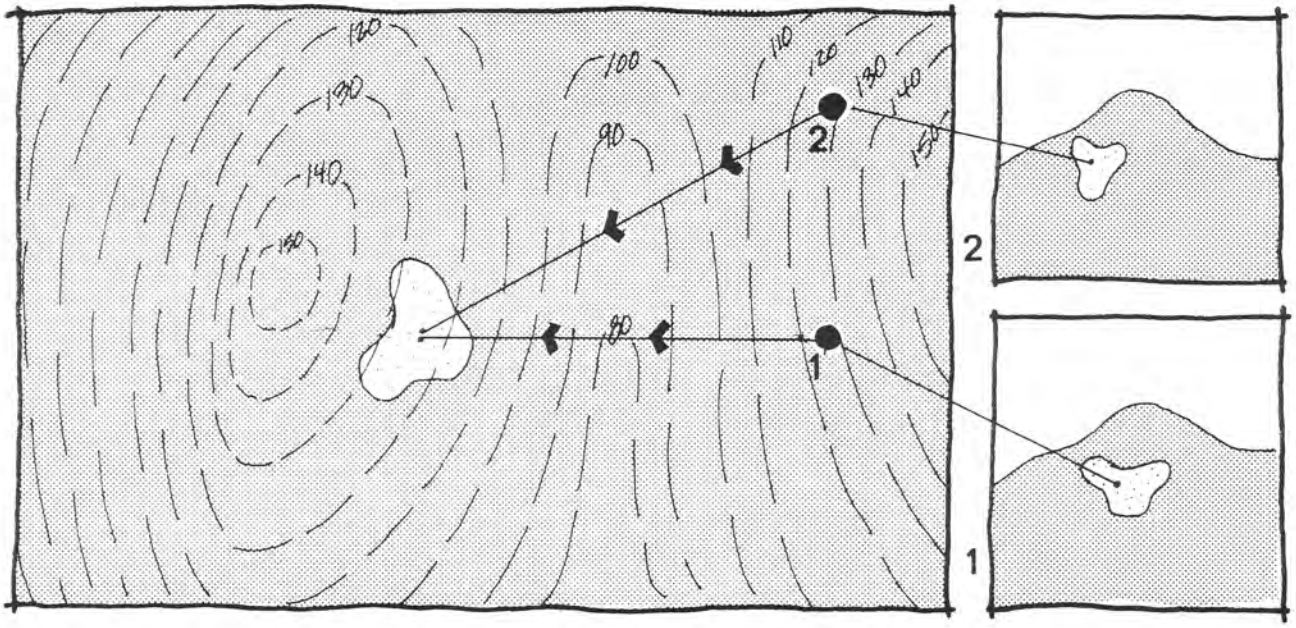
the observer position shifts m 3 down to 1, the apparent pe (or form) of the object the hillside may change even re than its apparent size.



We can easily see a screen or visual barrier at point A in the illustration will affect the view of the object on the hillside by:

1. Almost completely concealing it from position 1
2. Slightly altering its apparent size and shape from position 2
3. Producing little or no change from position 3.

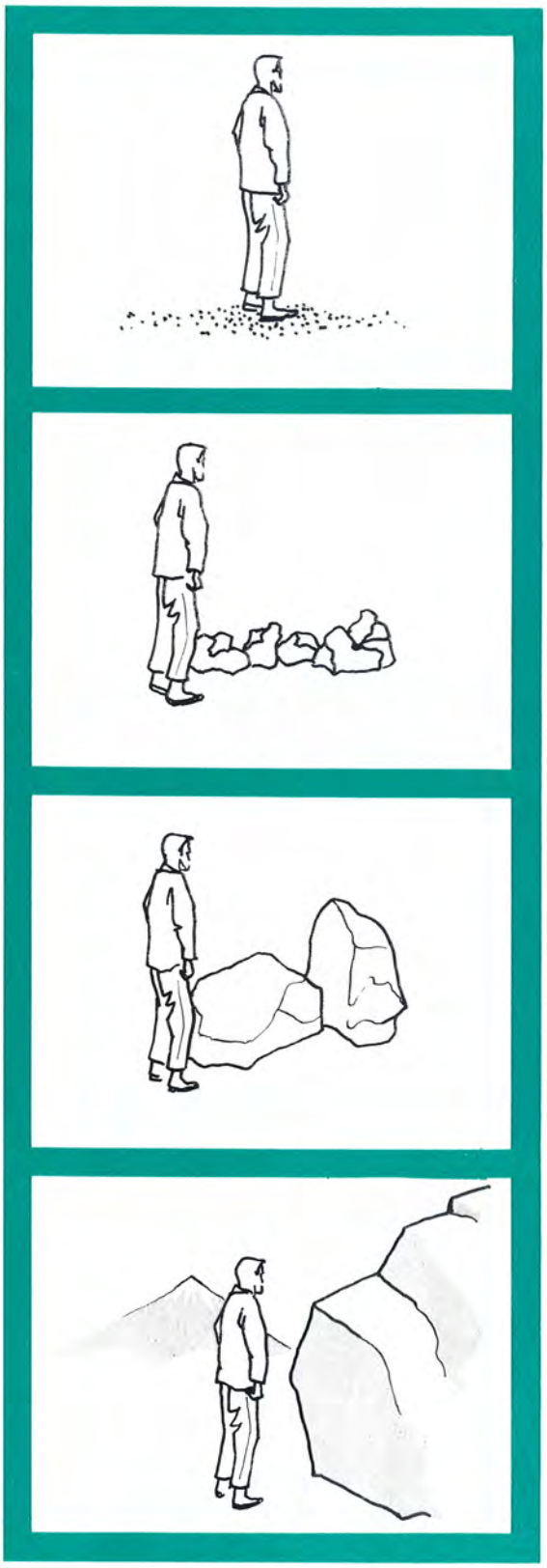
A change in apparent size and/or shape also occurs when a management activity is viewed from different horizontal angles (where the observer remains at the same elevation).



SCALE

Scale is the size of a part relative to the whole or to the human figure.

This can be illustrated by various sized rocks related to the human figure. *Note how the dominance elements change as scale relationships change.*



Pebbles or small rocks are small and numerous enough to appear as texture.

As the rocks become larger, they appear as weak to moderate form.

As the rocks become even larger, they become strong form.

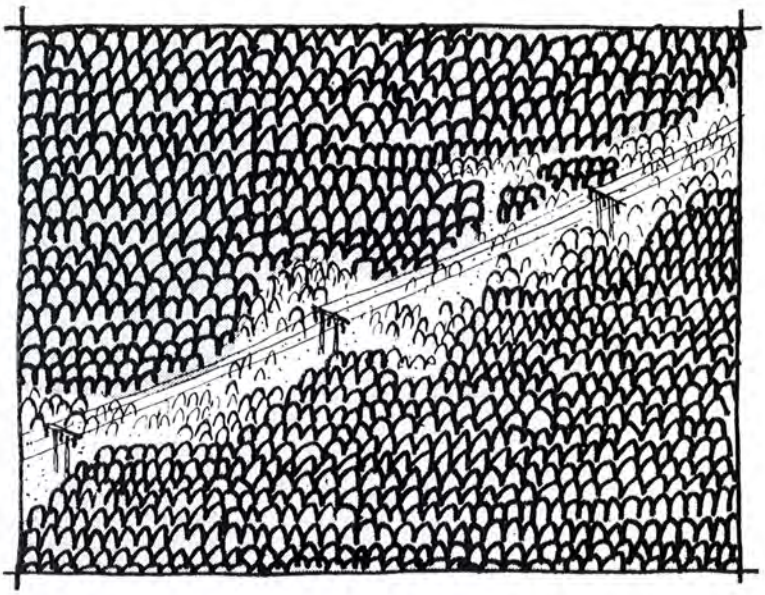
As the rock becomes so large that the man can no longer perceive it as form, its dominance changes back to texture and color.

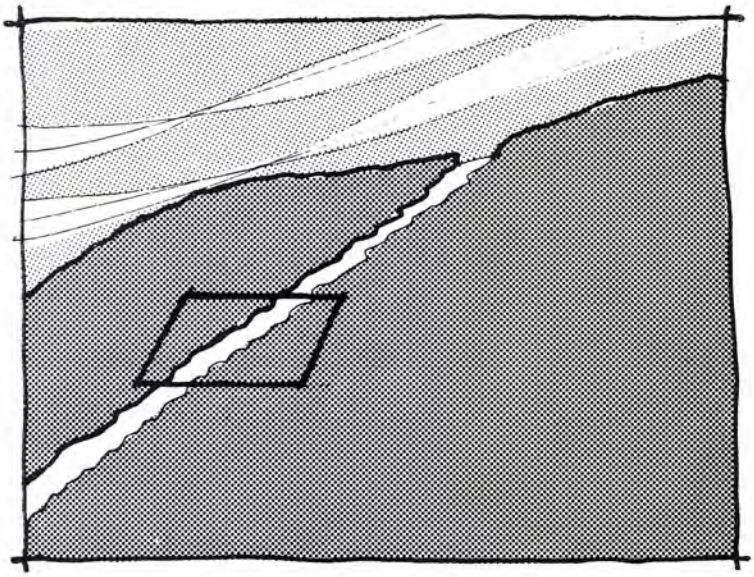
Viewing distance greatly affects scale relationships.

For example, when viewing a powerline corridor from a few hundred feet, the scale of the irregular clearing and "feathered" edge may provide visually acceptable variety.

When viewing the same corridor from several miles, however, the scale relationships are completely changed. What before was visually acceptable variety now becomes a monotonous contrast of form and line dominance against a landscape in which texture is dominant.

The point here is that *the scale of relationship between a management activity and the characteristic landscape must be evaluated from foreground, middleground, and background distances.*



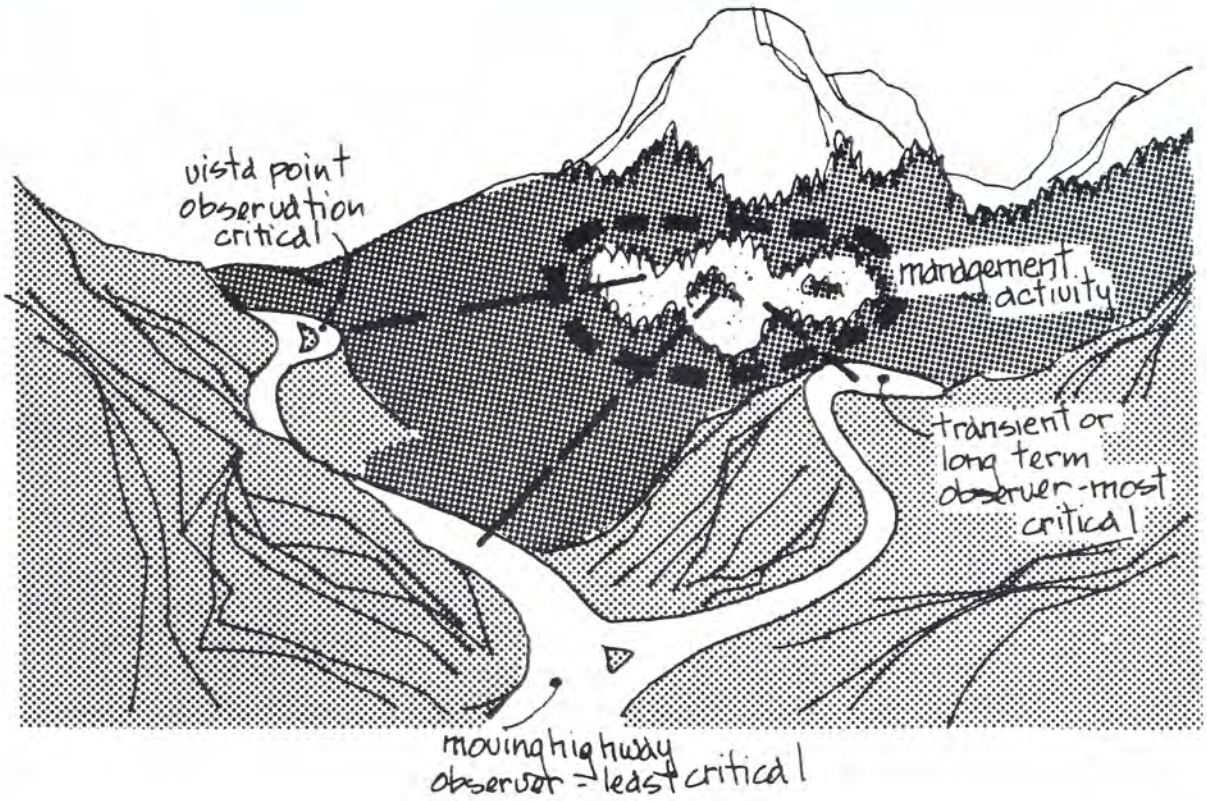


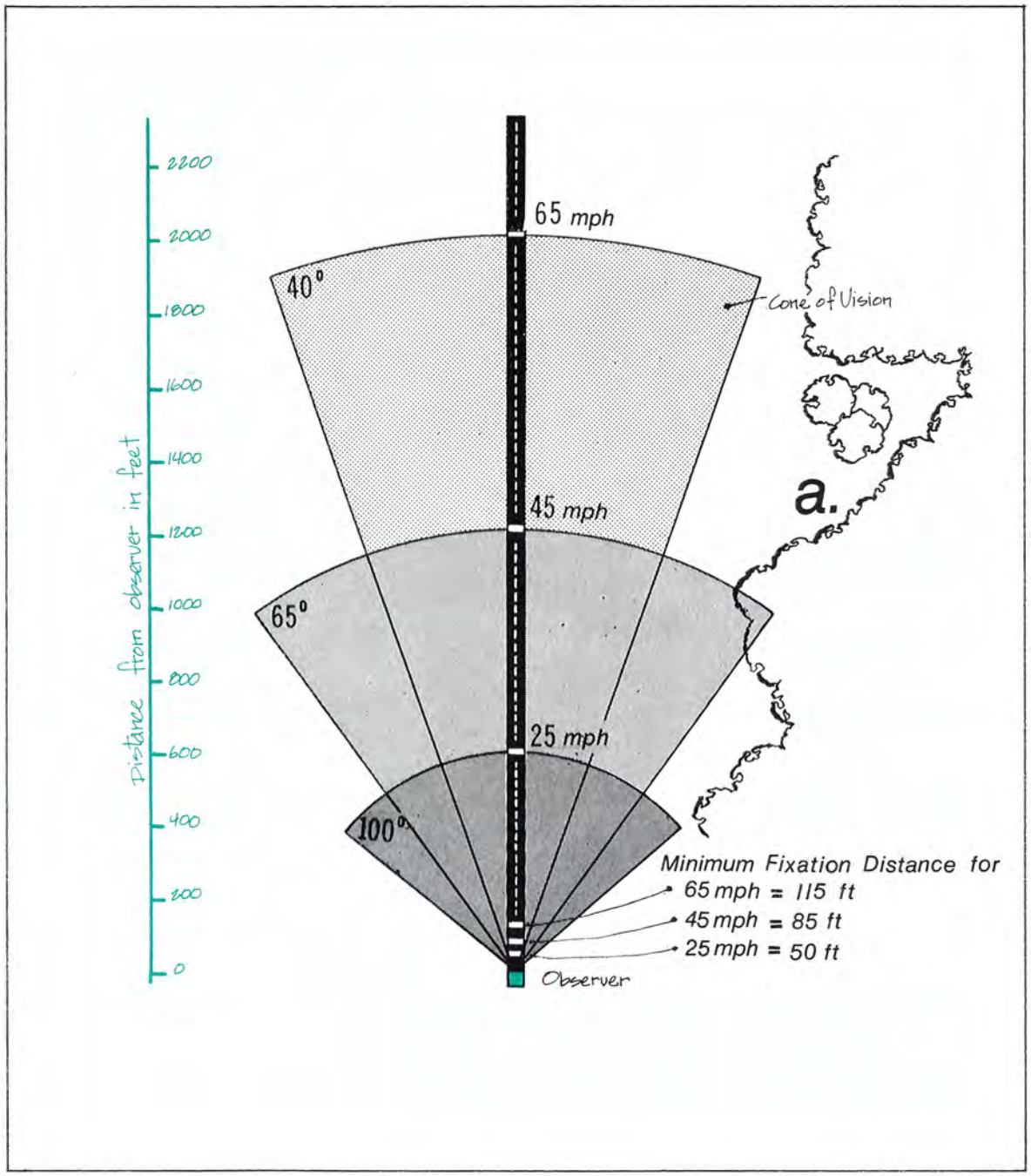
TIME

For our purposes, time or time span refers to the length of time an observer views a point of interest or management activity. Time relates directly to observer position in evaluating dominance elements.

If the observer spends 5 minutes or more at a stationary viewpoint, he recognizes not only major contrasts in the scene but also secondary or more subtle contrasts. As time increases, lighting and other variables may change.

When the viewing points are a sequence of visual experiences, such as those from a moving auto, the observer sees the dominance elements as an averaging of the different scenes greatly strengthened by the scene viewed at any one time.

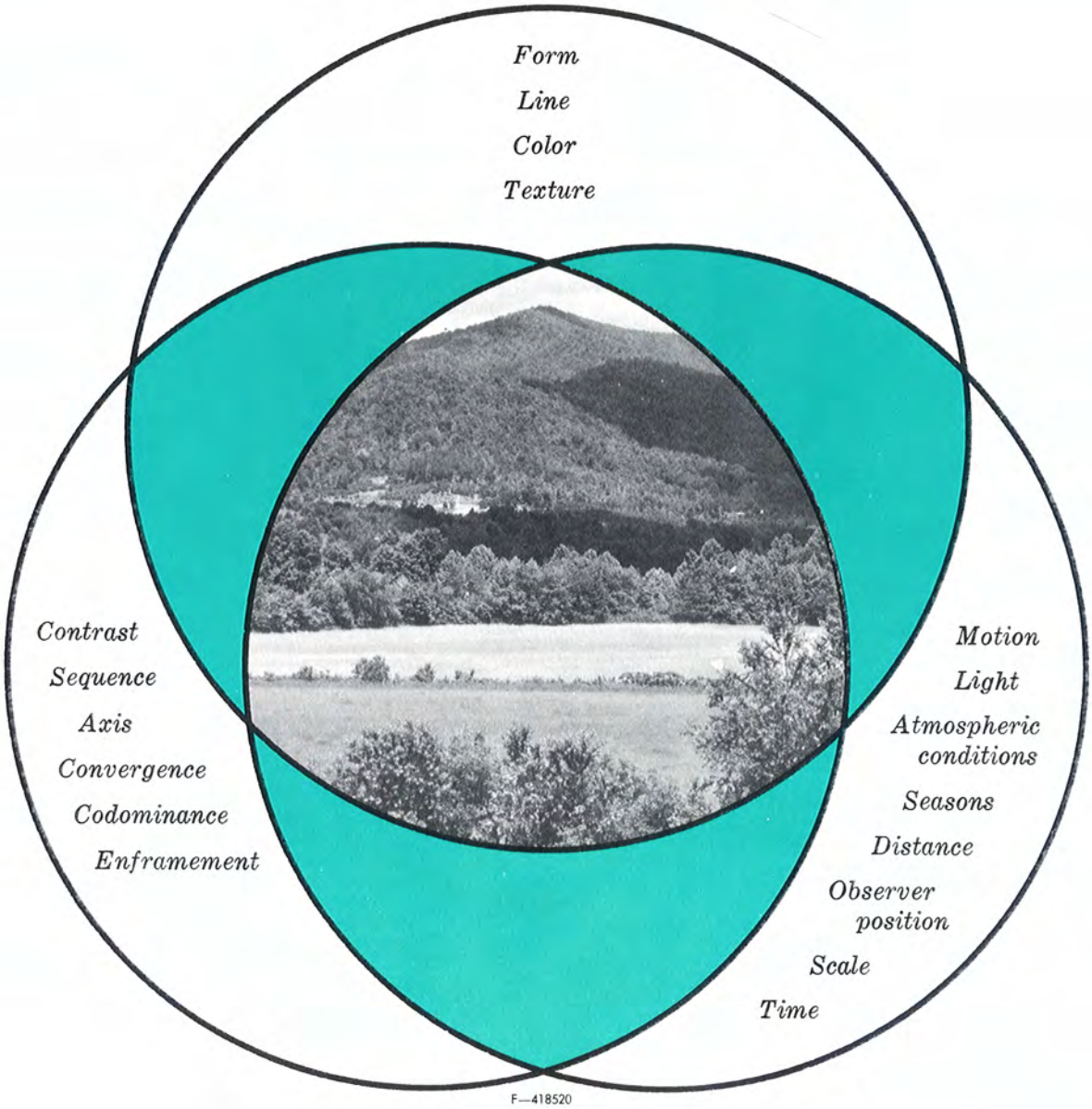




Seeing takes time—up to 3/10 of a second is needed for the eye to fixate. This requires a driver to concentrate his vision on less and less, further and further away, as he increases his speed. As he accelerates from 25 m.p.h. to 65 m.p.h., his cone of vision decreases from about 100° to less than 40° and the point on which he focuses his attention recedes from 600 feet to as far as 2,000 feet ahead.

As speed increases, therefore, foreground detail fades. Since objects cannot be perceived separately by a rapidly moving observer, the driver does not see clearly except at some distance.

Thus an object at point A in the illustration might be seen in some detail by a driver traveling at less than 45 m.p.h. but be barely recognized by one traveling at more than 60 m.p.h.


Form
Line
Color
Texture
Contrast
Sequence
Axis
Convergence
Codominance
Enframement
Motion
Light
Atmospheric conditions
Seasons
Distance
Observer position
Scale
Time
F—418520

Landscape character analysis

The following examples of landscape character analysis and its effect on land management alternatives are designed to demonstrate the relationships of the three basic concepts, the four dominance elements, the dominance principles, and the variable factors.

This brief analysis is not intended to document all the resource information required for sound land management decisions. Its purpose is to illustrate how the input of visual resource information can aid land-use planning.

F—507923

This landscape has strong form, line, and vegetative texture. A strong focal area is created by converging shorelines and the silhouetted edge of the steep slope. Any land use within the circled focal area should be very carefully designed.

Numerous avalanche paths and surface drainage patterns reinforce the dominance of vertical line. Land use which introduced a strong horizontal line across the slopes, such as a road, could be visually disruptive due to extreme contrast. Any vegetative manipulations should recognize the existing strong perpendicular-to-the-contour linear patterns.

Form and vegetative texture dominate the character of this landscape, providing relatively little variety in the mountainous portion. Landscapes like this are, from the visual standpoint, among the most difficult for the land manager to work with. There is a strong continuity established here by the similarity of landforms and the texture of the nearly complete canopy. Natural patterns tend to be relatively triangular, whether caused by ridgelines, cloud shadows, or perspective.

Land management practices applied to a landscape such as this seem to be most visually acceptable when:

(1) The canopy is thinned rather than broken.

(2) A "nibbling" technique is used which gradually enters the scene from its edges—such as the agricultural pattern at the center of the middleground.

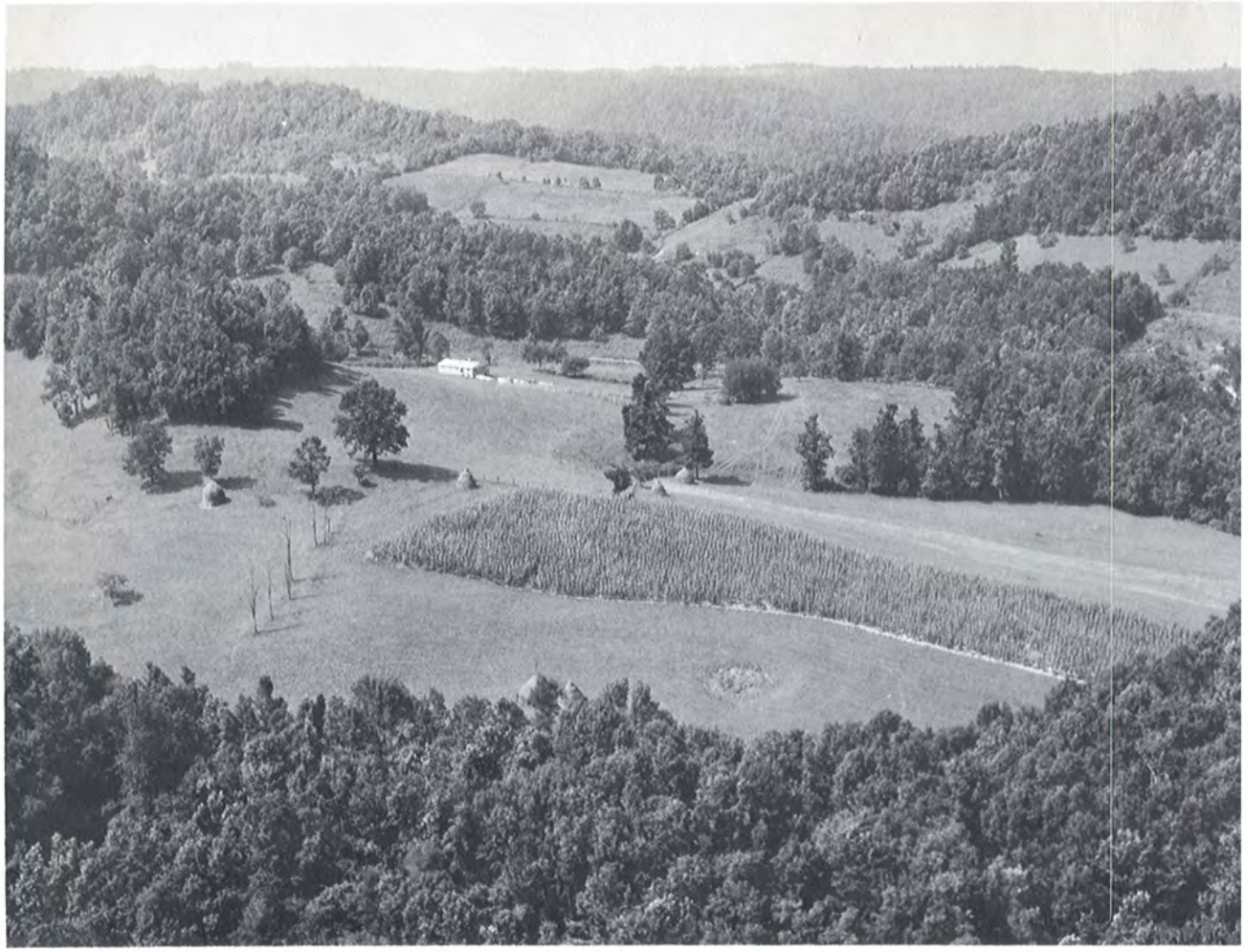
(3) The natural triangular patterns are emulated and carefully located.

The character of this landscape is established by the gently rolling landforms and the texture and color of its tree foliage, grasses, and crops. The geometric pattern of the cornfield and the ridgetop openings denotes obvious man-made modifications of the original deciduous forest.

This is a landscape of great variety of form, line, texture, and color—the result of a long history of agricultural use.

A similarly wide variety of forest management practices can be applied quite easily to adjacent lands. Visual patterns resulting from adjacent forest management practices could be designed to complement some of the many patterns already existing here. Landscapes with this much variety are, from the visual standpoint, among the easiest for the land manager to work with.

Among its other characteristics, this scene is a good example of convergence and enframement. The topography forms a "V" which focuses the viewer's attention on an otherwise uninspiring ridge in the middleground. The portion of the ridge to be seen at any one time depends, of course, upon the viewer's location on the lake. This "seen area" will usually be triangular and will amount to relatively little acreage. But it will be acreage which the land manager will want to identify for special consideration in his planning.



F—50

5

F—447973

This scene illustrates a line of sharpest contrast, running from upper left towards lower right, separating the brilliant yellow of the aspen from the deep green of the conifer. Such a line is usually a visual separation of forms as well as the demarcation between ecological zones.

A linear alteration, such as a road or powerline, sometimes has the least visual impact if it coincides with this "line of sharpest contrast" rather than crossing it at an arbitrary angle.

This line of sharpest contrast attracts the viewer's attention and is where change is most quickly noticed because of the uniformity immediately adjacent to it. In most of the remainder of the scene, vegetative and land patterns so subtly blend with each other that variety is rampant and the land manager's options are numerous.

This highway tangent provides an axial landscape whose focus on the far mountainside is strengthened by the enframement of the roadside forest. The openings in the middleground, on each side of the road, promise scenic variety to the traveler. Still, the primary visual thrust is toward the distant slope. If possible, the land manager should locate such highways so as to focus attention on the most scenic attributes of his region. In any case, he should identify focal areas of this kind and carefully design the practices that are to take place within them.

F—52

Plan not in terms of meaningless pattern or cold form; plan, rather, a human experience. The living, pulsing, vital experience, if conceived as a diagram of harmonious relationships, will develop its own expressive forms and the forms evolved will be as organic as the shell of the nautilus; and perhaps if the plan is successful, it may be as beautiful.

John O. Simonds
Landscape Architecture

Landscape management alternatives

There are seven basic landscape management alternatives which encompass the possible visual effects of all land use activities. These are:

- Deterioration
- Destruction
- Preservation
- Enhancement
- Retention
- Modification
- Rehabilitation [4]

Deterioration

Landscape deterioration occurs when man's activities lessen the visual qualities of the landscape. Alterations inappropriate in form, line, color, or texture clash with the characteristic landscape. Landscape deterioration is usually a long-term culmination of numerous major and minor physical effects, few of which visually complement one another.

Destruction

Landscape destruction occurs when the activities of man abruptly alter landscapes with little regard for landscape values or future land uses. The alterations often destroy parts of landforms (and consequently the landforms themselves) without provision for remedial measures. Landscape destruction normally occurs rapidly and totally. Landscape deterioration, on the other hand, usually proceeds slowly and fragmentarily.

Preservation

Landscape preservation is management of the visual resource to keep its parts intact and untrammeled by man. This type of management usually relates to the visually superlative parts of the resource: certain water bodies and their adjacent landscapes, wilderness, and other select areas and objects.

Enhancement

Landscape enhancement is management of the land so as to add visual interest through alterations that complement the characteristic landscape. Its intent is to enhance visual variety where little such variety exists.

Retention

Landscape retention is management of the land so as to subordinate management activities to the characteristic landscape. Activities are subtly integrated into the landscape so that they attract little attention to themselves.

Modification

Landscape modification occurs when the management activity is visually stronger than the surrounding characteristic landscape. Such activities are usually noticeable because they are of different scale or more numerous than natural occurrences of a similar kind. They are designed to complement the form, line, color and texture of their surroundings but cannot be completely unnoticeable because of their inherent characteristics or those of the landscape.

Rehabilitation

Landscape rehabilitation is management of the land so as to reverse or minimize the detrimental visual effects caused by landscape deterioration or destruction. Alterations minimize negative contrasts with the characteristic landscape.

[4] Adapted from a lecture on "Landscape Inventories—Some Relationships to Forest Management," R. Burton Litton, Jr., Associate Professor of Landscape Architecture, College of Environmental Design, University of California, Berkeley, March 1970.

Glossary of landscape management terms

Accent—(a) A detail or area emphasized. (b) Emphasis laid on a part of a design or composition. (c) A small detail or area emphasized. (d) An object used for emphasis.

Aesthetic(s)—(a) Generally, the study, science, or philosophy dealing with beauty and with judgements concerning beauty. (b) Giving visual pleasure. (c) The theory of perception or of susceptibility.

Amenity—(a) An area or location that provides comforts, conveniences, or attractive surroundings to residents or visitors. (b) A feature, trait, or characteristic that makes for pleasantness.

Association—The mental connection or bond existing between any sensations, perceptions, ideas, or feelings that to an observer have a relational significance with one another.

Asymmetry—(See Balance, asymmetrical.)

Axis—(a) A main line of direction, motion, growth, or extension. (b) A straight line with respect to which a body, figure, or system of points is symmetrical.

Background—The distant part of a landscape, picture, etc.; surroundings, especially those behind something and providing harmony or contrast; surrounding area or surface.

Backlight—Light coming from behind the object being viewed; condition whereby observer looks toward light source; solid objects are in shadow, with highlighted edge.

Balance—(a) Stability produced by even distribution of masses. (b) An aesthetically

Balance—symmetrical (or formal) — An imaginary line drawn vertically through the center of the arrangement will divide it into two equal parts, and each part will appear as the reverse of the other.

Balance—asymmetrical—Occult balance. Disposition of objects neither similar nor similarly placed but still so chosen and arranged that the sum of the attractions on one side of the vertical axis is equal to the sum of the attractions on the other side.

Beauty—(a) The evident harmonious relationship of all parts of a thing observed. (b) The quality or aggregate of qualities in a thing that gives pleasure to the senses or exalts the mind or spirit.

Canopied—Covered or bridged by the uppermost spreading branchy layer of a forest.

Characteristic—That which constitutes a character; that which characterizes; a distinguishing trait, feature, or quality; a peculiarity.

Codominance—Two dominating features of relatively equal visual importance in one scene.

Color—A phenomenon of light (as red, brown, pink, etc.) or visual perception that enables one to differentiate otherwise identical objects. A hue, as contrasted with black, white, or gray.

Compose—To form by uniting two or more things; to put together; to form, frame, or fashion; to create.

Composition—The putting together and organization of components in a work of art; the product of such organization.

Continuity—Uninterrupted connection, succession, or union.

Contrast—(a) Diversity of adjacent parts, as in color, tone, or emotions. (b) The closer the juxtaposition of two dissimilar perceptions, in time or space, the more powerful the appeal to the attention.

Design—A mental project or scheme in which means to an end are laid down. A good design may be defined as one that allots to each of the relationships a weight proper to the task at hand and combines them as agreeably and efficiently as possible.

Discontinuity—Lack of continuity or cohesion.

Discord—(a) Lack of harmony. (b) Disunity or conflict.

Dominance—Dominant position in an order of forcefulness.

Dominant—Ruling; governing; predominant; exercising great influence.

Edge—The line where an object or area begins or ends; serve as boundaries.

Emphasis—A forcefulness of expression that gives special impressiveness, calls to special attention, or gives special significance.

Emulate—(a) To strive to equal or excel. (b) Imitate.

Enclosed—Enveloped or surrounded; bounded or encompassed.

Ephemeral—Anything lasting but a brief time.

Feature—A distinct or outstanding part, quality, or characteristic of something.

Frontlight—Light coming from behind the observer and falling directly upon the object being viewed; places landscape in full light.

Light—(a) The sensation aroused by stimulation of the visual receptors. (b) Something which makes vision possible.

Line—(a) An intersection of two planes. A point that has been extended; silhouette of form. (b) Any of various things that are or may be considered as arranged in a row or sequence.

Mass—A quantity of matter cohering together so as to make one body, usually of indefinite shape.

Middle distance; middle ground—The space between the foreground and the background in a picture or landscape.

Monotony — Complete repetition; tedious sameness.

Order—(a) The manner in which one thing succeeds another; arrangement, sequence, or succession in space or time. (b) The totality of arrangements composing some sphere of action or being.

Panoramic—An unobstructed or complete view of a region in every direction; hence a complete and comprehensive view.

Pattern—An arrangement of parts, elements, or details that suggests a design or somewhat orderly distribution.

Perception—(a) Man's impression of an object or space as based on past and/or anticipated experiences. (b) Making oneself aware of all conditions and applicable factors; comprehension.

Proportion—The relation of one part to another or to the whole with respect to magnitude, quantity, or degree.

Quality—A degree of excellence; superior in kind; a distinguishing attribute.

Repetition—Units all the same in interest and ability to attract attention, or at least the same throughout in some characteristic.

Rhythm—Harmonious or orderly movement, fluctuation, or variation with recurrences of action or situation at fairly regular intervals.

Scale—Generally a size relationship between an object and its environment or surroundings.

Sequence—A continuous or connected series.

Shape—Spatial form, often two-dimensional.

Sidelight—A light coming from the side.

Silhouette—Any dark shape or outline seen against a light background.

Space—A limited extension in one, two, or three dimensions; a volume.

Subordinate—Inferior to or placed below another in size, brightness, etc.; secondary in visual impact.

Symmetry—Balanced proportions; the correspondence of parts in size, shape, and relative position, especially on opposite sides of a dividing line or about an axis (see Balance—symmetrical).

Texture—The visual or tactile surface characteristics of something.

Transition—A passing from one state, stage, place, or subject to another, especially without abruptness.

Unity—A definite quantity or aggregate of quantities taken as one.

Utility—Something designed primarily for use.

Value—Relative lightness or darkness of a color.

Variety—An intermixture or succession of different things, forms, or qualities.

View—Something, especially a broad landscape or panorama, that is looked toward or kept in sight; the act of looking toward this object or scene.

Vista—A confined view, especially one seen through a long passage, as between rows of houses or trees. A vista is often toward, or focuses upon, a specific feature in the landscape. Unlike a view, the vista is sometimes man-created and, if it is, is thereby subject to design.

Visual—A mental image attained by sight.

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