MAINTENANCE GUIDEBOOK IV
LANDSCAPE AND GENERAL GROUNDS MAINTENANCE

CHAPTER THREE - SHRUB CARE

SECTION A GENERAL

1. INTRODUCTION

This chapter concerns effective and economical maintenance of shrubs. It is not intended to limit or restrict HAs' initiatives in programming or developing practices compatible with their own environments, but to serve as a guideline. HAs are encouraged to obtain additional information from such local resources as the County or State Cooperative Extension Agents, agronomists and horticulturists, and local university or college environmental and agricultural extensions.

2. RESIDENT COOPERATION

Successful upkeep of shrubs requires attention from both residents and grounds personnel, and demands continued maintenance by staff on a year-round basis. See Chapter One, Section A-3 for information on the importance of resident cooperation.

3. EQUIPMENT AND MATERIALS

The following is a list of common maintenance tools usually required in the maintenance of shrubs:

- Wheelbarrows
- Backpack leaf blower
- Lopping Shears, for removing large, lower branches
- Pruning Shears, for removing small, lower branches
- Garden Tools
- Round Shovel, Square Shovel
- Nursery Spade
- Leaf Rake, Level-Headed Rake
- Pitch Fork
- Push Broom
- Drag Tarp
- Deep Root Feeder

Materials commonly required for routine maintenance include:

- Fertilizer: slow-release type recommended. See Chapter One, Section C-9.
- Mulch: shredded hardwood bark, pine nuggets, or needles. See Chapter Two, Section E.
- Lime: ground dolomitic limestone. See Chapter One, Section C-2.
- Water: available from individual development or city source; should be tested once a year for chlorine, fluoride, and salt.

SECTION B SHRUB LIST

LARGE SHRUBS 8' AND UP

Botanical Name COMMON NAME	Zone	Form	Height	Growth Rate	Expo-sure	Group	Remarks
Aesculus parviflora BOTTLEBRUSH BUCKEYE	5-8	Irreg	8-10'	M	S-SS	D	Specimen, naturalistic
Callistemon species BOTTLEBRUSH	9-10	Rounded	10-15	M	S	BLE	Drought tolerant, red flowers
Camellia japonica CAMELLIA	8-10	Rounded to oval	8-10'	S to M	SS	BLE	Specimen, white fly problem
Camellia sasanqua SASANQUA CAMELLIA	7-10	Irreg to upright	8-10'	S to M	S-SS	BLE	Good foliage and flowers, hedges, borders
Cleyera japonica CLEYERA	7-10	Upright	8-10'	S to M	S-SS	BLE	Glossy foliage, no tolerance heavy clay
Cornus mas CORNELIAN CHERRY+	5-8	Irregular	10-20	M	S-SS	D	Yellow flowers, pest resistant
Elaeagnus pungens fruitlandi FRUITLAND ELAEAGNUS	7-10	Irreg	8-10'	F	S-SS	BLE	Screening, borders, any soil, needs room
Eleagnus umbellata AUTUMN OLIVE	2-6	Irreg	15-18	M	S	D	Vigorous, low maintenance
Hamamelis virginiana COMMON WITCH HAZEL	5-9	Irreg	12-5'	M	SS	DD	Naturalistic
Hydrangea quercifolia OAKLEAF HYDRANGEA	5-9	Rounded	8-10'	M	SS	D	Naturalistic white flowers
Ilex aquifolium x I. cornuta 'Nellie R. Stevens' NELLIE STEVENS HOLLY	7-10	Upright	10-20'	M to F	S-SS	BLE	Dark glossy foliage, large red berries
Ilex x attenuata 'Fosteri' FOSTER #2 HOLLY	7-10	Pyramidal upright	10-15'	M	S-SS	BLE	Specimen, red berries, hedges
Ilex cassine CASSINE/DAHOON HOLLY	7-10	Upright	10-12'	M	S-SS	BLE	Hedges, berries
Ilex cornuta CHINESE HOLLY	7-10	Rounded	8-10'	M	S-SS	BLE	Specimen, red berries, thorny
Ilex cornuta 'Burfordi' BURFORD HOLLY	7-10	Oval	8-12'	M to F	S-SS	BLE	Specimen, hedges
Ilex latifolia LUSTERLEAF HOLLY	7-10	Upright	10-20'	M to F	S-SS	BLE	Specimen, espalier
Ilex vomitoria YAUPON HOLLY	7-10	Upright	10-15'	F	S-SS	BLE	Hedges, borders, clipped, many soils
Illicium anisatum JAPANESE ANISETREE	7-10	Upright	8-12'	M	S-SS	BLE	Light-colored foliage, fragrant
Juniperous chinensis 'Torulosa' HOLLYWOOD JUNIPER	4-10	Upright	8-10'	M	S	C	Specimen
Ligustrum japonicum JAPANESE LIGUSTRUM	7-10	Upright	8-12'	VF	S-SS	BLE	High screening, very adaptable, trainable as small tree

Botanical Name COMMON NAME	Zone	Form	Height	Growth Rate	Expo-sure	Group	Remarks
Ligustrum lucidum GLOSSY LIGUSTRUM	4-7	Rounded	8-10'	M to F	S-SS	BLE	Hedges, screening
Lonicera fragantissima WINTER HONEYSUCKLE	6-0	Rounded	8-10'	M	S	SE	Winter flowering
Myrica cerifera SOUTHERN WAX MYRTLE	7-10	Upright	8-10'	M	S-SS	BLE	Borders, hedges, drought-tolerant, very adaptable
Osmanthus fragrans SWEET OSMANTHUS OR TEA OLIVE	7-10	Upright	10-12'	M to F	S-SS	BLE	Fragrant, specimen
Photinia glabra JAPANESE OR RED-TIP PHOTINIA	7-10	Upright	8-10'	F	S-SS	BLE	New foliage is red
Photinia X 'Fraseri' FRASER PHOTINIA	7-10	Upright rounded	15-18'	VF	S-SS	BLE	Red foliage, borders, hedges
Pittosporum tobira JAPANESE PITTOSPORUM	8-10	Rounded	10-12	M	S-SS	BLE	Pest resistant
Pyracantha coccinea 'Lalandei' LALAND FIRETHORN	6-10	Irregular	10-12'	F	S	BLE	Small orange berries, tolerates many soils
Syrinbga species COMMON LILAC	4-8	Irregular	10-16	M	S	D	Fragrant flowers, many varieties
Taxus cuspidata JAPANESE YEW	5-7	Irregular	10-15	M	S-SS	E	Ideal foundation plant
Viburnum opulus 'Roseum' SNOWBALL EUROPEAN VIBURNUM	3-10	Irregular	8-10'	M	SS	D	Borders, tolerates many soils
Viburnum rhytidophyllum LEATHERLEAF VIBURNUM	6-10	Irregular	8-10'	M	SS	BLE	Dark green foliage, borders
Viburnum tomentosum 'Sterile' JAPANESE SNOWBALL	5-9	Irregular	8-10'	M	SS	BLE	Borders
Viburnum trilobum AMERICAN CRANBERRY BUSH	3-9	Irregular	8-10'	M to F	S-SS	BLE	Hardy, white flowers

Growth Rate	Exposure	Group
S - Slow	S - Sun	BLE - Broad-leaved Evergreen
M - Medium	SS - Semi-Shade	C - Coniferous
F - Fast	SH - Shade	D - Deciduous
VF - Very Fast		SE - Semi-Evergreen

MEDIUM SHRUBS - 5' TO 8'

Botanical Name COMMON NAME	Zone	Form	Height	Growth Rate	Expo-sure	Group	Remarks
Abelia grandiflora GLOSSY ABELIA	6-10	Rounded	5-6'	M	S-SS	BLE	Hedge plant, tolerates many soils
Acuba japonica	7-10	Upright	6-8'	M to F	SS-SH	BLE	Green and variegated
Berberis sargentiana SARGENT BARBERRY	5-8	Oval	6-8'	M	S	BLE	Yellow flowers, thorns
Calycanthus floridus SWEET SHRUB	5-9	Rounded	5-6'	S to M	SS	D	Fragrant
Clethra alnifolia SUMMERSWEET	3-9	Rounded	6-8	S	SH	D	White flowers, likes moist soils
Cornus sericea RED-OSIER DOGWOOD	2-7	Rounded	6-8	M	S-SS	D	Hedge or screen, vigerous, hardy
Euonymus alatus WINGED EUONYMUS	4-7	Upright	5-8'	M	S	D	Brilliant red fall color, any soil
Forsythia intermedia hybrids BORDER FORSYTHIA	5-9	Irregular	5-7'	F	S	D	Yellow spring flowers, any soil
Hydrangea macrophylla BIGLEAF HYDRANGEA	7-9	Rounded	5-6'	M	SS	D	White, blue flowers
Ilex cornuta burfordii 'Nana' - DWARF BURFORD HOLLY	7-10	Rounded	5-8'	S	S-SS	BLE	Foundations; glossy foliage
Ilex glabra GALLBERRY or INKBERRY	3-10	Rounded	5-8'	M	S-SS	BLE	Borders, naturalistic
Juniper chinensis 'Pfitzerana' PFITZER JUNIPER	4-10	Spreading	5-6'	M	S	C	Mass planting, sunny slopes
Kalmia latifolia MOUNTAIN LAUREL	5-8	Upright	5-8'	S to M	SS	BLE	Naturalistic gardens, moist well-drained soil
Ligustrum sinense variegata VARIEGATED PRIVET	6-9	Rounded	6-8'	VF	S-SS	BLE	White variegation requires frequent pruning
Mahonia bealei LEATHERLEAF MAHONIA	6-10	Upright	6-7'	M	SS-SH	BLE	Yellow flowers, blue fruit, accent plant
Nandina domestica NANDINA OR CHINESE BAMBOO	7-10	Upright	5-6'	M to F	S-SS	BLE	Masses, red berries, tolerates many soils
Osmanthus heterophyllus 'Variegatus' (ilicifolius) VARIEGATED FALSE HOLLY	7-10	Rounded	6-8	S	S-SS	BLE	Specimen, tolerates many soils
Philadelphus virginalis MOCK ORANGE	4-6	Irregular	6-8'	M	S	D	White, fragrant flowers
Pieris japonica JAPANESE PIERIS		Irregular	5-6	M	SS	BLE	Naturalistic, moist, acid soil
Rhododendron calendulaceum FLAME AZALEA	5-8	Upright to irregular	5-6'	S to M	SS	D	Red to orange flowers, naturalistic effect

Botanical Name COMMON NAME	Zone	Form	Height	Growth Rate	Expo-sure	Group	Remarks
Rhododendron canescens PIEDMONT AZALEA	5-7	Upright to irregular	5-6'	S to M	SS	D	White, pink flowers, naturalistic effect
Rhododendron arborescens SWEET AZALEA	5-7	Upright to irregular	5-6'	S to M	SS	D	White pink flowers, naturalistic effect
SOUTHERN INDIAN AZALEA	7-9	Rounded to irregular	5-8'	M to F	SS	BLE	Mass plantings, borders
Spiraea prunifolia plena BRIDAL WREATH SPIREA	5-10	Rounded	5-7'	M to F	S	D	Double white flowers
Spiraea vanhouttei VANHOUTTE SPIREA	5-10	Rounded	5-7'	M to F	S	D	White flowers, borders
Symphoricarpos albus SNOWBERRY	3-6	Rounded	6-8	M	S-SS	D	Tolerates most soils
Viburnum burkwoodi BURKWOOD VIBURNUM	6-10	Rounded	6-8'	M	S	SE	Fragrant white flowers
Viburnum japonicum (macrophyllum) JAPANESE VIBURNUM	7-10	Upright	6-8'	S to M	S-SS	BLE	Large, shiny foliage, hedge or specimen
Weigela florida WEIGELA	5-8	Irregular	5-8'	M to F	S	D	Borders

Growth Rate	Exposure	Group
S - Slow	S - Sun	BLE - Broad-leaved Evergreen
M - Medium	SS - Semi-shade	D - Deciduous
F - Fast	SH - Shade	C - Conifer
VF - Very Fast		SE - Semi-Evergreen

SMALL SHRUBS - 1' TO 5'

Botanical Name and COMMON NAME	Zone	Form	Height	Growth Rate	Expo -sure	Group	Remarks
Abelia x grandiflora 'Edward Gaucher' GAUCHER or PINK ABELIA	6-10	Irreg.	3-4'	S	S-SS	SE	Lilac-pink flowers
Abelia x grandiflora 'Choroid' CHOROID DWARF ABELIA	6-10	Irreg.	2-3'	S	S-SS	SE	Lilac-pink flowers
Acuba japonica 'Nana' DWARF ACUBA	7-10	Oval	3-4'	S	SS-SH	BLE	Attractive foliage & berries
Berberis thunbergi 'Atropurpurea' RED JAPANESE BARBERRY	5-9	Rounded	3-5'	M	S-SS	D	Leaves red all season in full sun
Berberis t. 'Atropurpurea Nana' CRIMSON PYGMY BARBERRY	5-8	Spread'g	2-3'	VS	S-SS	D	Red foliage, extremely dwarf
Camellia hiemalis DWARF SASANQUA CAMELLIA	8-10	Spread'g-compact	3-5'	VS	S-SS	BLE	Foliage very similar to sasanqua
Cotoneaster dammeri BEARBERRY COTONEASTER	6-9	Spread'g	6-12'	M	S	BLE	Erosion control, bright red fruit
Cotoneaster horizontalis ROCK COTONEASTER	5-9	Spread'g	2-3'	M	S	SE-E	Fishbone branching pattern, erosion control
Cotoneaster salicifolius 'Repens' GROUNDCOVER COTONEASTER	5-9	Spread'g	1-2'	M	S	BLE	White flowers, red fruit, erosion control
Cryptomeria japonica CRYPTOMERIA	5-7	Mound	3-4	S	S-SH	E	Foundation
Deutzia gracillis SLENDER DEUTZIA	5-8	Rounded	3-4'	S	S-SS	D	Very adaptable, pale green foliage
Ilex crenata COMPACTA HOLLY	6-10	Rounded	3-4'	M	S-SS	BLE	Compact, hardy
Ilex c. 'Convexa' CONVEX-LEAF HOLLY		Rounded	3-4'	M	S-SS	BLE	Tolerates many soils
Ilex c. 'Helleri' HELLER JAPANESE HOLLY	6-9	Spread'g	2-3'	S	SS	BLE	Planters, mass planting, won't tolerate wet soil
Ilex c. 'Hetzii' HETZ HOLLY	6-9	Rounded	4-5'	M	S-SS	BLE	Dark green foliage
Ilex c. 'Repandens' REPANDENS HOLLY	6-9	Spread'g	2-3'	M	S-SS	BLE	Good for mass plantings
Ilex c. 'Rotundifoila' BOXLEAF HOLLY	6-9	Rounded	4-5'	M	S-SS	BLE	Dark green foliage
Ilex comuta 'Carissa' CARISSA HOLLY	7-10	Rounded-Spread'g	3-4'	S	S-SS	BLE	Low mass plantings, planters
Ilex comuta 'Rotunda' ROTUNDA or DWARF CHINESE HOLLY	7-10	Rounded-Spread'g	3-4'	S	S-SS	BLE	Compact, attractive thorny foliage
Ilex vomitoria 'Nana' DWARF YAUPON HOLLY	7-10	Rounded-Spread'g	3-4'	S	S-SS	BLE	New growth green, very adaptable
Juniperus species SPREADING JUNIPERS	4-10	See Gr'nd Covers					

SMALL SHRUBS - 1' TO 5'

Botanical Name and COMMON NAME	Zone	Form	Height	Growth Rate	Expo -sure	Group	Remarks
Ligustrum japonicum 'Rotundifolium' CURLY-LEAF LIGUSTRUM	7-10	Upright-Irreg.	3-5'	S	S-SS	BLE	Specimen, suitable for narrow spaces
Mahonia aquifolium OREGON GRAPE	5-9	Upright	3-4'	S to M	SS	BLE	Yellow flowers
Nandina domestica 'Purpurea' DWARF NANDINA	7-10	Rounded	1-2'	S	S-SS	BLE	Red fall color, mass plantings
Nandina domestica 'Harbour Dwarf' HARBOUR DWARF NANDINA	7-10	Spread'g	1-2'	M	S-SS	BLE	Spreads by rhizomes, red fall color
Osmanthus heterophyllus 'Rotundifolius' LITTLE LEAF TEA OLIVE	7-10	Rounded	4-5'	VS	S-SS	BLE	Specimen, restricted spaces
Prunus laurocerasus 'Otto Luyken' OTTO LUYKEN LAUREL	7-10	Spread'g	3-4'	S to M	SH	BLE	Mass planting or specimen
Prunus laurocerasus 'Schipkaensis' SCHIP LAUREL	7-10	Irreg.	4-5'	S to M	S to SS	BLE	Naturalistic or mass
GLEN DALE HYBRID AZALEAS	7	Upright-Spread'g	3-5'	S to M	SS	BLE	Mass flowering effects
GUMPO AZALEAS	7	Spread'g	10-12'	S to M	SS	BLE	Late season, large, white or pink flowers
KURUME AZALEAS	8-9	Rounded	3-5'	S to M	SS	BLE	Mass flowering effects
Raphiolepsis indica INDIAN HAWTHORN	8-10	Rounded	3-4	S	S-SH	BLE	Tolerates most soils
Rosa Floribunda FLORIBUNDA ROSE	7	Rounded	2-4'	S to M	S	D	Mass flowering effects
Spiraea bumalda 'Anthony Waterer' ANTHONY WATERER SPIREA	5-10	Irreg.	3-4'	S to M	S	D	Reddish flowers in summer, shrub borders
Spiraea thunbergil THUNBERG SPIREA	5-8	Irreg.	3-4'	M	S	D	Masses, borders

Growth Rate	Exposure	Group
S - Slow	S - Sun	BLE - Broad-leaved Evergreen
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VS - Very Slow		SE - Semi-Evergreen

SECTION C PLACEMENT AND SPACING

1. VARIABLES AFFECTING SHRUB PLACEMENT AND SPACING

Although this guidebook is related to maintenance, occasionally it is necessary to improve HA sites by planting of shrubs. Planting design principles such as unity, variety, balance, contrast, and rhythm should be considered when locating shrubs. The guidelines for selecting shrubs to be used in housing development are similar to those for trees described in Chapter Two, Section B.

a. Simplicity

Planting designs should be broad and simple in form to minimize maintenance requirements. The shape of shrub beds bordered by turf should allow easy mowing. Plants should not be used to edge sidewalks for traffic control, since this practice requires extensive maintenance. Isolated beds of shrubs or ground covers should be avoided, since large power-mowing equipment cannot operate efficiently in such areas. Ground covers or shrubs that require little maintenance should be substituted for small, hard-to-mow turf areas.

Flower beds and sheared hedges require a great deal of maintenance and should be used sparingly in selected locations. Simplicity in design is essential to the effectiveness and upkeep of these plantings.

b. Unity

Unity is another item of a good planting design, which is achieved by massing individual plants in groups of single species. Simple plantings of a few varieties are essential in providing a cohesive landscape. Specific guidelines include:

- Space individual plants closely to form an attractive mass and reduce maintenance requirements while avoiding safety hazards.
- Open areas with spotty plantings should be unified into outdoor "rooms" for uses such as recreation and play areas.
- Incompatible building features may be corrected by colors and textures of mature trees and shrubs which lessen the contrasts between buildings, and visually unify the area.

c. Long-Term Effect

In the choice of plants and their arrangement, the ultimate effect should be kept in mind. Short-lived plants should not be used because of their greater maintenance needs. Tall growing plants should not be planted under windows. It is better to choose trees and shrubs in smaller sizes and wait somewhat longer for the desired effects than it is to compromise by substituting inappropriate species. However, the use of a few large trees as accents will help create an early effect of permanence.

SECTION D SCREENING AND BUFFERING

Several varieties of screening techniques are available to block undesirable views, to separate incompatible uses, and to provide privacy. Vegetative screening should be the primary screening type throughout the housing development, although architectural screens may be used for immediate effect or where there is inadequate space for other screening methods.

A landscape screen is achieved by using plants with dense, abundant foliage. However, planting requires more room and maintenance than a fence or wall. Where area limitations prohibit the use of plants, a fence or wall softened by vines or shrubs may be a more effective and economical solution. Plant materials to be used as buffers may be shade trees planted in groups, or combinations of shade trees, flowering trees, and broad-leafed evergreen shrubs. Use of native plants is encouraged, since they require limited maintenance. A planting screen intended to function in a security role can be very effective if composed of rough, thorny plants.

SECTION E MULCHING

Mulching is the application of shredded bark or other appropriate materials over the soil around plants. See Chapter Two, Section E for types of mulch and application methods.

SECTION F PRUNING

Pruning has a variety of uses and benefits. See Chapter Two, Section F for guidelines on when to prune. When pruning with hand shears, prune 1/4-inch above a side bud at approximately a 45 degree angle. Figure 3-1 illustrates proper shrub-pruning techniques. Dispose of all trimmings, deadwood, windfalls, logs, and other pruning products on-site in order to recycle them for soil improvement. Diseased or infected clipping should be disposed off site.

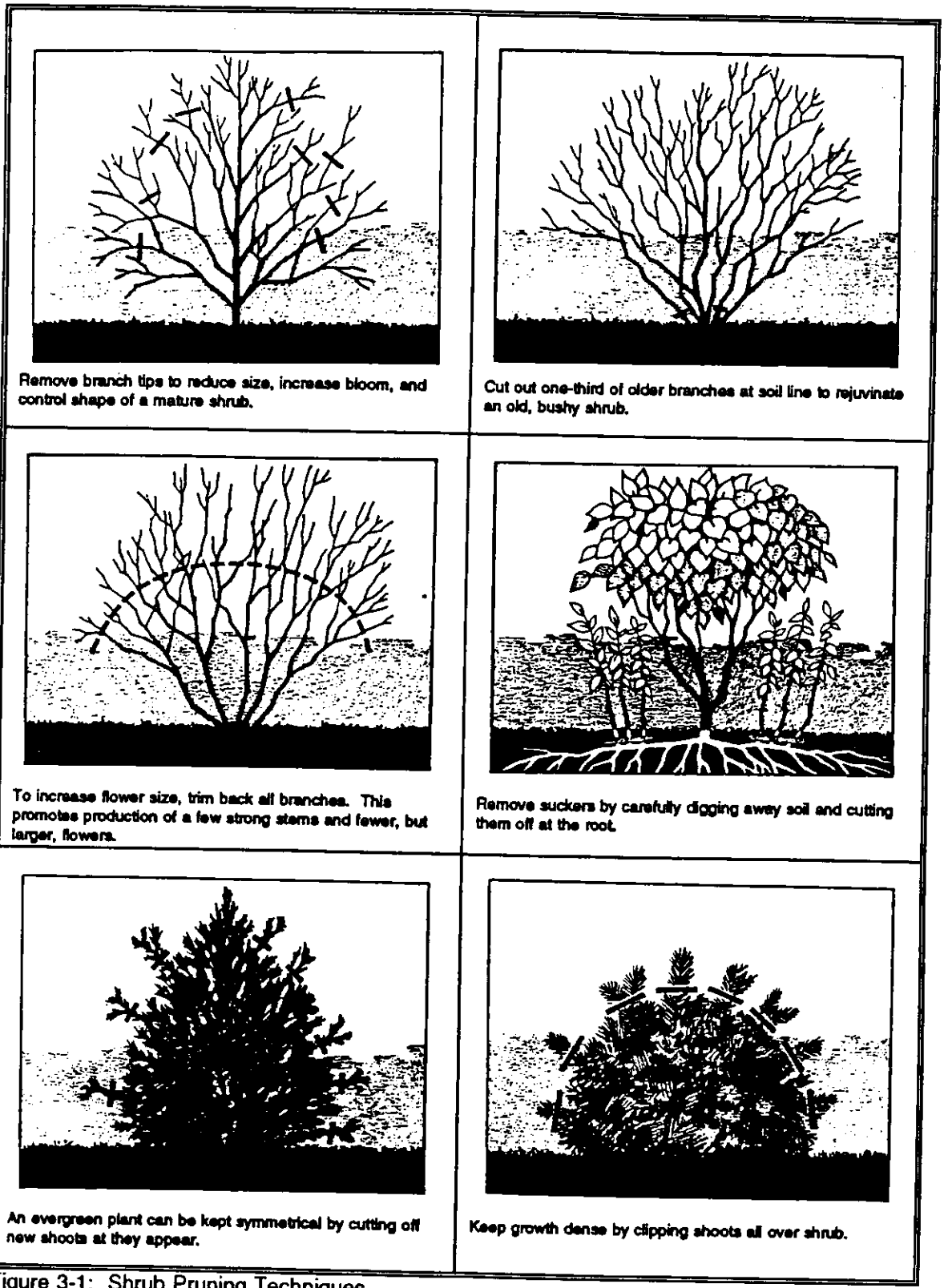

Figure 3-1: Shrub Pruning Techniques

In cold winter climates, schedule maintenance pruning between December and March. Prune damaged shrubs or those constituting a hazard during any season of the year. For species which bloom on last

year's growth, pruning should occur after the spring blooming period.

SECTION G WATERING

See Chapter Two, Section G, for guidelines on irrigation systems and watering quantities. Desirable watering frequency varies greatly from microclimate to microclimate, but as a general rule it is recommended that all necessary watering be done once to twice a week (except when the ground is frozen) to establish optimum growing conditions. During periods of drought and intense heat (June through September), the frequency should be increased as needed. During periods of extensive precipitation, watering should be decreased accordingly.

Young shrubs require water more frequently than do older, more established shrubs, which need very little additional watering. Watering is best done in the early morning to reduce evaporation (which would occur with mid-day watering) and to reduce the potential for mildew growth (which would occur with an evening watering).

SECTION H FERTILIZING

Fertilization promotes good color, stimulates growth, and enhances a plant's ability to withstand adverse environmental conditions and disease. See Chapter Two, Section H, for fertilization information. Woody foliage plants benefit from higher proportions of nitrogen, whereas plants grown for flowers and fruits benefit from higher percentages of phosphorous. Unless there is a particular need for quick results, slow-release fertilizers are recommended.

The recommended percentages of nitrogen, phosphorus, and potassium for shrubs and perennials is, like that for trees, dependent on plant type. For flowering plants, the fertilizer should have a low percentage of nitrogen, such as a 1-1-1 proportion, while for leafy shrubs the nitrogen ratio may be increased.

The rate and method of application are dependent upon fertilizer type. Generally, fertilizer should be applied to shrubs (also perennials and ground covers) at a rate of 3 pounds per 100 square feet of bed area once a year in early spring, and watered within one hour of fertilizing. It is important, however, to refer to the manufacturer's specific instructions. Do not allow fertilizer to spray or leach to turf areas.

SECTION I PLANT-PROBLEM DIAGNOSIS

Sometimes correct diagnosis of a plant's problems can lead to early intervention and result in saving the shrub. Consult Chapter Two, Section I for a plant-problem diagnosis table, which may help to identify the source of landscaping plants' problems.

SECTION J SHRUB REMOVAL

Dead or dying shrubs should be cleared from all development areas. "Dying shrubs" are those which will not survive if left in their present condition, and which cannot be saved by normal maintenance pruning or care. It is also necessary to identify for removal any shrub with a 50 percent dead crown, unless there is a strong reason to save it.

All parts of shrubs to be removed, including the complete root structure, should be taken out. Some shrubs will sprout from existing root stock even after all above-ground growth has been removed. When the removed shrubs are to be replaced with ground cover or grass, the soil pit should be leveled with the surrounding ground surface. If the pit is located in a lawn, it should be seeded or sodded with a grass type identical to that of the surrounding grass.

SECTION K CLEANUP

See Chapter Two, Section L for information on site cleanup.

SECTION L SCHEDULE

See Chapter Nine - Schedule for schedule information.

END OF CHAPTER THREE