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Plants

for

play

A Plant Selection Guide
for Children's Outdoor
Environments

Robin C. Moore

Plants For Play

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Plants For Play

A Plant Selection Guide for Children's Outdoor Environments

Robin C. Moore



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How To Use This Book

This book is for anyone who is trying to make informed decisions about what plants to include in an outdoor play environment, be it a large public play area or a backyard. It will help you understand the importance of plants in play settings and assist you in the selection of plants that serve different functions and support child development.

Begin using the book by reviewing the table of contents. It will give you an overview of the range of functions that plants can serve in play settings. Read the book's introductory chapter to become familiar with the many ways in which plants can add value to any outdoor space used by children. Then start flipping back and forth through the plant lists and narrative introductions in the main body of the book to learn how specific plants can support children's play experiences.

To apply the contents of this book, you will first need to consider the functional aspects of your site. Identify locations that have good access to the sun, areas that need to be screened from the wind, and places where erosion might be a problem. Determine the constraints posed by soil type and drainage conditions. The introductory narratives to the tables on *Shade Quality*, *Screens*, *Erosion Control*, and *Drought Tolerance* provide information that may be of use in this regard. You will also need to identify the plant hardiness zone in which you are located (see the map on pages 84 and 85).

You must also consider the play opportunities you wish to provide and where such opportunities might be located on your site. Identify locations that lend themselves to climbing, swinging, hiding, interaction with "play props," harvesting of fruits and nuts, or exploration of different textures and fragrances. Determine how much emphasis you would

like to place on these activities that children enjoy so much, and how they should be distributed throughout the site.

You may also want to consider selecting plants that attract wildlife. Children love to hunt for insects, butterflies, and small mammals, and many young people enjoy observing birds. You can provide for these activities throughout the site or concentrate some of them in particular areas.

Other functional or aesthetic principles must also be considered. Issues of design style, for instance. A naturalistic style will emphasize indigenous species while a more formal style will incorporate elements such as avenues or grid-patterned orchards. You will also want to include other landscape elements besides plants: rocks, water features, play structures, seating areas, grade changes, etc.

As you consider the many variables affecting your planting design, particular species will begin to emerge as the favored choices. This book will help you make choices that are sensitive to the important role that plants serve in the play experiences of children. Depending on your knowledge of individual species, additional publications and/or a landscape architect may also need to be consulted.

Eventually, design issues will be resolved and a planting design will emerge and be installed. Over the years, the plants in your play area will grow and mature. Some will do very well, while others may do poorly and require replacement. Nonetheless, with a little thought and proper planning, these plants will provide a wide range of activities for children to explore and enjoy.

A key role in the initial stages of the creation of this book was played by Julia Barringer who worked closely with me to develop the bulk of the plant selections in each of the main categories. These were later checked for accuracy by Susan Gular.

Special thanks are due to landscape architect Susan Little and horticulturalist Sarah Price for carefully and expertly reviewing the final version of the manuscript.

I am especially grateful for David Driskell's many editorial suggestions that have considerably improved the clarity and usability of the book. David, graphic designers Anne Endrusick and Tim Lehane, production assistant Christopher Hamilton, and other members of the MIG Communications team gave much care and attention to the production of the book, always striving for the highest level of quality.

The idea for the book would never have happened without the input and enthusiasm of the scores of children I have worked with over the years who have demonstrated so clearly and dramatically that vegetation serves a unique and essential role in their play spaces. Time and time again, in inner city, suburban, and county locations, these children have given me fresh insights by allowing me to observe their behavior, by talking with me about their activities, and by expressing their appreciation of and feelings toward their natural play environments. To them, this book is dedicated.

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During the 1970s, Mr. Moore was a member of an interdisciplinary community participation team that developed the Environmental Yard, a community recreational and educational garden in Berkeley, California. He was a cofounder of Play and Learning in Adaptable Environments (PLAE), a program to integrate children with disabilities into the community through environmental and recreational programming.

Mr. Moore is a professor of Landscape Architecture at the School of Design, North Carolina State University (NCSU), and former chair of the Environmental Design Research Association (EDRA). He is the author of *Childhood's Domain: Play and Place in Child Development* (MIG Communications, 1986) and many articles about children's environments. He is coauthor of the *Play For All Guidelines* (MIG Communications, 1987) and *Natural Learning: The Life History of an Environmental Schoolyard* (MIG Communications 1997).

Mr. Moore is a principal of Moore Iacofano Goltzman. His most recent work has focused on children and family play environments in the United States and Latin America. He is currently President of the International Association for the Child's Right to Play (IPA) and editor of the IPA magazine, *PlayRights*.

Introduction



Plants for Play

The Role of Plants in Play

Over the years, I have conducted many design programming workshops with adults who work with children. As a warm-up exercise, I often ask the participants to think about the places from their childhood that they remember most vividly and to jot down some notes about the physical elements that made the places so memorable. I have conducted this exercise in many parts of the world, in many cultures; yet, regardless of the circumstances, elements of the natural environment (water, vegetation, animals, soil, rocks, sunlight) are nearly always the first thing people recall. Of these elements, plants in one form or another are the most frequently mentioned.

This book is primarily directed to those who feel that plants (trees, shrubs, flowers, vegetables, etc.) are an essential part of children's environments. I hope the book will be a useful source of guidance in the design and management of children's landscapes as well as an effective tool for convincing others that plants are an invaluable resource for play and child development.

Plants As Play Settings

Plants can be designed into many different types of play settings, but they should also be considered as play settings in and of themselves. Individually, collectively, or in combination with people-made elements, different types of plants can greatly extend the range of play activity: collecting plant parts, climbing and playing in trees, hide-and-seek games, and general exploration. Together with soil, sand, and water, plants provide manipulative settings that are quite different from the static, unchangeable character of fixed play structures.

*"The flowers are magic,"
a girl says very matter-of-factly, "especially these."
She bends down and picks some scarlet flax. "They'll make your hands magic,
then everything you touch'll be magic. Pens will write magic, glasses will see magic. Everything'll be magic."¹*

Because of their interactive properties, plants provide intrinsically interesting, open-ended settings that stimulate exploration and discovery, dramatic play, and imagination. In the Environmental Yard (a highly diversified, action-research play and learning space developed on the grounds of a California elementary school), detailed observational studies conducted over several years demonstrated that, when provided, children use vegetation as a basic resource for playing and learning.

Plants stimulate all of the senses—touch, sight, taste, smell, and hearing—so it is not surprising that children are closely tuned to vegetated environments. Plants also encourage a peaceful outlook on life and add a positive ambiance to play settings through their mix of sun, shade, color, texture, fragrance, and softness of enclosure.

Some General Guidelines

The following guidelines should be considered for all plantings in children's outdoor environments:

- Vary the texture of leaves: evergreen with deciduous; shiny with rough; serrated with smooth edges; thin with thick.
- Vary the form, size, and shape of plants.
- Select plants that emphasize seasonal change: evergreen contrasted with deciduous; seasonal color; early leaves; late flowers; seeds, nuts, and fruit.
- Consider opportunities for color in trees, ground covers, vines, annuals, and perennials.
- Select plants for fragrance.
- Select plants for craft and culinary activities.

- Select plants for auditory stimulation. Some plants, especially in the fall, produce interesting sounds when the wind blows through their dry leaves. Plants like bamboo and pine trees produce sounds year-round.

Plants As Design Elements

Plants can serve a variety of purposes in the design of children's outdoor environments:

Enclosure. The size, shape, and enclosure of play spaces can be enhanced by being wholly or partially defined with plants. This is because plants provide more boundary depth than plain fencing, thereby extending spatial variety. The highly varied spatial and textural qualities of plants increase the range of possible behaviors and add to the complexity and subtlety of games and social interactions. Plant-enclosed spaces make ideal settings for chase and hide-and-go-seek games and mature shrubs make excellent hideouts and refuges.² Plants also help soften the transition between indoors and outdoors—especially for people who have difficulty adjusting to sudden changes in light levels.

Identity. Distinctive plantings and specimen plants provide visual identity and a sense of place to children's environments. This helps children and the general community retain strong positive memories of their experiences. People of all ages respond to flowering shrubs, deciduous trees, rockeries, banked borders of flowers, herb gardens, and the imaginative forms of public garden design. If the overall design is pleasing and attractive, residents will see the play area as a valuable addition to their community.

"It makes you feel like you're in a special place. You can hide around in the bushes and spy on people or play hide-and-go-seek, which at any regular school you can't do. It's just neat."³

"I like the nature area because of all the scraps that can be turned into something else, like airplanes and boats for racing down the creek. If I see a branch that broke off a tree and it has a few leaves on it, I use it for a broom. If I find a plant that has a shape like a mushroom, then I pretend it's a mushroom. I use one of the rocks as a camping stove. Sometimes we make the ground moist and dig it over with a big stick. We collect seeds and plant them like a garden and pretend they're going to grow. They don't really. But they might. I wish they did." 7

Movement. The experience of movement through play areas can be greatly enhanced by using plants in relation to topography. As in the classic "circuit" or strolling gardens found in many cultures, plants can be used along paths to create a sequence of views, textures, smells, light, shade, and color. For children's environments, gardens should be designed for running and chasing as well as for strolling (which children will also do if the vegetation is interesting and intimately laid out). Specimen trees can be used as orienting elements.

Climbing. Tree-climbing is universally popular. Some species of trees and shrubs provide excellent support for climbing and swinging. The problem is that in many potential play spaces—from private residential yards to public parks and gardens—plants are viewed as hands-off aesthetic enhancements provided solely for adult enjoyment. When children use plants for *their* purposes, child-adult conflicts often result. For this reason, consider planting (or conserving) some trees or tree-like shrubs that can be designated for climbing—with an adequate shock-absorbing surface such as wood chips installed underneath.⁴

Play Props. Vegetation supplies a wide variety of play resources that children can harvest for themselves.⁵ There is no substitute for plant-generated play props. Leaves, flowers, fruits, nuts, seeds, and sticks stimulate an infinite variety of imaginative responses.

Programmed Activities/Education. Plants can be used to support many different program activities that require spatial diversity and a stimulating atmosphere.⁶ Trees and shrubs are good for building in and provide branches from which play items and structures can be suspended. Plant settings are essential for environmental education programs,

especially on school grounds.⁸ Plants provide a variety of learning materials that are virtually free of cost. For example, many annuals and perennials are suitable for craft activities such as dying and doll-making.

Accessibility/Integration. Plant settings can create intimate, touchable spaces that are accessible to children with disabilities and therefore offer particular advantages as integrated settings. A mix of natural and people-made elements will attract children of all abilities, providing excellent opportunities for child-to-child interaction and shared experiences that integrate children naturally.⁹ For this reason alone, every effort should be made to integrate plants into all outdoor play settings, especially in manufactured equipment areas, rather than restricting plants to segregated "nature areas."

Landmarks. Objects with a clear visual identity, such as trees, large rocks, and aquatic features, function as landmarks. They give the user a memorable sense of place and a feeling of security.

Seasonal Change. Plants mark the passing of seasons and introduce children to a sense of time and natural processes. A diverse mix of plant types can provide never-ending sequences of change, sensory stimulation, and educational opportunities.

Wildlife Enhancement. It is important for children to interact with wildlife as an environmental education resource.¹⁰ Plants support wildlife by providing essential food and shelter. Plants that bear fruits, cones, and seeds attract birds, squirrels, butterflies, and insect populations, all of which fascinate children and stimulate their imaginations. Children can get actively involved by constructing habitats such as bird-

"I make little horses out of pieces of wood and sit under the willow tree by the stream with one of my friends. It feels good there. Really quiet. Lots of kids just like to sit there and talk." 11

*"It's the only place in the whole world like this, with pretty ponds and trees and birds that come out. It's just a good-natured place. It gives me a new idea every day. It makes me feel like I can make skyscrapers and buildings out of sticks and sand. It's not too hot either, it's cool but not cold. The trees make shade. Kids learn about birds and trees and fish. And maybe they learn they can't push other people around."*¹³

houses. Indigenous plant communities provide a range of habitat conditions to support a variety of animal communities. These habitats should not be overly manicured or "tidied-up." This removes many of the loose materials that animals depend on for survival.¹²

Climate Modification. Because plants are so varied, they provide a greater range of microclimatic choice than people-made structures. Adults and children both dislike being hot, but children heat up more quickly than adults because of their smaller mass. For young children in hot climates, shade is extremely important. Natural shade in play spaces encourages day-long summertime use. Shade is particularly important for metal play equipment that can become hazardous when exposed to hot sun. Trees are the best way to provide shade, particularly spreading, deciduous species that shed their leaves to let in winter sun. Trees and shrubs can also provide excellent shelter from the wind.

Environmental Quality. Plants in play areas are an important determinant of environmental quality. Erosion, for instance, is a common problem in children's play areas. This is because space for play is often relegated to marginal land that is difficult to build on due to steep topography or poor drainage. On heavily used sites, regardless of the quality of the land, erosion can become a problem unless appropriate remedial action is taken. Effective management of surface water runoff emphasizes percolation of water back into the ground to replenish local aquifers. To this end, broad-leaved deciduous trees can be effective in reducing the direct impact of heavy rain on exposed ground surfaces, thereby extending the runoff time and allowing more time for the water to soak back into the soil. Plants with shallow, lateral root systems may help bind the soil to resist erosion from young feet as well as rain.

Use of Native and Introduced Species. Interest in the use of native vegetation in landscape design has been growing for many years. The most important reason to consider native species for play areas is that they are key components of the ecological and cultural heritage of the local region, and offer children highly significant experiential learning opportunities. Another reason often given for using native vegetation is survival. In many cases, native plants will be hardier and less likely to incur disease or insect problems because they are suited to the physical conditions of the region. However, this is not necessarily the case in the harsh, desertlike conditions of the urban environment. In these conditions, introduced species may actually perform better than native species.

When designing with native species, it is important to think of them as associated communities of plants—along with the animals that find food and shelter there. The design objective should be to replicate the conditions of the natural habitat of these communities as closely as possible in the play space (in terms of aspect, soils, drainage, etc.).

In outdoor settings for children, a mix of species is often the preferred approach. With careful design, native plantings can provide a foundation of small meadows, thickets, brushlands, and woodlands for free play, exploration, and learning activities. Exotic or introduced species can be used selectively to give a special identity to the play setting, to increase the diversity of play props, to enhance sensory variety, and to increase the resiliency of the plant setting as a whole. Cultivars of either native or introduced species can be used to provide bigger flowers, better foliage, more intense color, or varied forms.

Drought Resistance. The increasing interest in native vegetation and the use of drought-tolerant species provide further direction to the planting design choices for children's outdoor spaces. Interaction with these plant communities can have an important educational impact on children, giving them the knowledge necessary to make conservation-based decisions as adults.

Planning and Managing Plants for Play

Plants add a critical dimension of change and diversity to children's environments. They greatly extend the range of sensory stimulation beyond that which can be provided by synthetic, manufactured objects. Ever-changing, instantly responding to variations in the weather, expressing seasonal cycles, presenting fluctuating palettes of texture, color, form, fragrance, and sound, plants are unmatched in their ability to stimulate the senses and create a positive aesthetic effect.

Plants in children's play areas need to be carefully managed. If vegetated settings are to be child-relevant, they will never be maintenance-free. To ensure proper attention to plants, the importance of vegetation as a childhood resource must be recognized in public policy. Expert vegetation management must be provided in areas used by children, with pruning regimes and other maintenance procedures that respond to play and learning requirements.

As a first step, a list of local plants should be developed—using this book as a guide—to identify the most appropriate regional species for purposes such as play value, wildlife habitat, and shade quality. Local species that are highly poisonous or otherwise unsuitable in children's play environments should also be highlighted. These lists can then be

used to evaluate existing plantings in children's outdoor spaces, to select additional species, and to develop new designs that will provide a complete palette of plants to support children's play experiences.

A Note on Omissions

There are two topics which have been purposely omitted from this book. The first is the broad topic of wetlands and aquatic plants. While wetland and aquatic environments provide extremely valuable play and learning opportunities for children, the possibilities for developing such environments as children's play settings is extremely difficult, particularly in the United States, due to complex liability and maintenance issues. Such issues can only be addressed with specific, practical design solutions. Listings of aquatic plants by themselves, not tied to design, would not be meaningful or useful. Readers interested in aquatic design should consult Graham Flatt's *Pond Design Guide for Schools*.¹⁴

The second omission is the topic of gardening. Although flower and vegetable gardening activities are very important to children, the topic has already been addressed in great detail elsewhere. Numerous resource materials and guidebooks are available that address children's gardening specifically and community gardening in general. They should be consulted for listings of garden vegetables and flowers. Another useful reference is the *Play For All Guidelines*.¹⁵ It provides design information on children's gardens as well as an overview of design issues related to children's aquatic environments.

Endnotes

1. Robin C. Moore, "Plants as Play Props," *Children's Environments Quarterly* 6(1) (1989): 3-6.
2. Mary Ann Kirkby, "Nature as Refuge," *Children and Vegetation*, a special issue of *Children's Environments Quarterly* 6(1) (1989):7-12.
3. Robin C. Moore, "Before and After Asphalt: Diversity as an Ecological Measure of Quality," in A. Pellegrini and M.N. Bloch, eds., *The Ecological Context of Children's Play* (Norwood, NJ: Ablex, 1989), 203.
4. Robin C. Moore, Susan M. Goltzman, and Daniel S. Iacofano, *Play For All Guidelines: Planning, Design, and Management of Outdoor Play Settings for All Children*, 2nd ed. (Berkeley, CA: MIG Communications, 1992). Refer to pp. 117-127 for comprehensive information on safety surfaces.
5. Moore, "Plants as Play Props," 3-6.
6. Linda Allison, *The Reasons for Seasons: The Great Cosmic Megagalactic Trip Without Moving From Your Chair* (Boston: Little, Brown and Company, 1975); Jacklyn Johnston, *Nature Areas for City People* (London: London Ecology Unit, Bedford House, 125 Camden High St., London NW17JR; 1990); Moore, "Plants as Play Props," 3-6; Robin C. Moore and Herbert H. Wong, *Another Way of Learning: Child Development in Natural Settings* (Berkeley, CA: MIG Communications, in press).
7. Moore, "Plants as Play Props," 3.
8. Eileen Adams, *Learning Through Landscapes: A Report on the Use, Design, Management, and Development of School Grounds* (London: Learning Through Landscape Trust, Technology House, Victoria Road, Winchester Hants, S023 7DU, U.K.; 1990); Kirsty Young, *Using School Grounds as an Educational Resource* (London: Learning Through Landscape Trust, 1990); Department of Education and Science, *The Outdoor Classroom: Educational Use, Landscape Design, and Management of School Grounds*, Building Bulletin 71, (London: Her Majesty's Stationery Office, 1990).
9. John Mason, *The Environment of Play* (West Point, NY: Leisure Press, 1982); Robin C. Moore and Linda Schneekloth, eds., *Children and Vegetation*, a special issue of *Children's Environments Quarterly* 6(1) (1989).

10. D.L. Leedy, "Planning for Wildlife in Cities and Suburbs," *Urban Wildlife* (Washington, DC: Superintendent of Documents, U.S. Government Printing Office, 1982); Lisa Schicker, "Children, Wildlife, and Residential Developments," (Master's thesis, North Carolina State University, School of Design, 1986).
11. Moore, "Before and After Asphalt," 201.
12. City of Seattle, *Guidelines for Play Areas: Recommendations for Planning, Design, and Maintenance* (Seattle, WA: Department of Parks and Recreation, 1986).
13. Moore, "Before and After Asphalt," 203.
14. Graham Flatt, *Pond Design Guide for Schools* (Marsh Barton, Exeter: Wheaton Publishers, 1989). See also Johnston, *Nature Areas for City People* and Department of Education and Science, *The Outdoor Classroom*.
15. Moore, Goltzman, and Iacofano, *Play For All Guidelines*.

Plants by Function

Overview

Following are lists of plants that serve various functions in children's outdoor play environments. The functional listings included in this chapter are:

- **Sensory Variety**
Fragrance, Texture, Wind Effects
- **Play Value**
Climbing & Swinging, Hiding Places, Play Props
- **Nature's Bounty**
Fruits, Herbs & Nuts
- **Seasonal Interest**
Fall Color, Winter Berries & Evergreens, Winter Tracery & Bark, Winter Flowers, Spring Harbingers
- **Shade Quality**
- **Screens**
Physical Barriers, Wind Screens & Visual Buffers
- **Wildlife Enhancement**
- **Erosion Control**
- **Drought Tolerance**

Each plant list contains information that may be useful in selecting an appropriate species to meet your needs. Be sure to read the section *How to Read the Plant Lists* on page 21 before you begin using the lists.

The map on pages 84 and 85 should also be consulted to identify the “plant hardiness zone” in which you live. This will help you determine which plants are appropriate for your area (zones are identified for every plant in the plant lists). In addition, be sure to review Chapter Three, *Poisonous Plants and Pesticides* for a discussion of factors you should consider when addressing the issue of poisonous plants in children’s play areas. A list of the most common poisonous plant species is also provided.

The *Index of Plant Names* in Chapter Five is useful for identifying plants that serve multiple functions. It should be consulted during the plant selection process to identify plants that meet particular sets of needs (e.g., a tree that provides both shade quality and play value or a flowering plant that is both fragrant and drought-resistant).

The intent of the lists is to give guidance. They are by no means comprehensive. As you become familiar with the ways in which plants can support children’s play, you may find other plant species that better meet your local conditions and requirements. As you do so, you will begin to develop a custom list of regional favorites that do well in your area and provide a varied and stimulating environment for children.

Common Names and Botanical Names

The plants in this book are primarily organized by common name because these are the names that most people will find most familiar. However, be aware that any single plant may have several different common names associated with it. Likewise, one common name might be used to refer to several different plant species, depending on where you are geographically located.

Whenever a plant name is listed, both its common name and botanical name (or Latin name) are given to avoid any confusion between plants. The botanical name always appears in italics following the common name. It is critical that you reference the botanical name whenever purchasing plants for your play area.

Plants and Accessibility

Plants provide an excellent play medium for the integration of children of all abilities, providing an important ingredient of “universal design” to any play environment. However, no special plant list is provided here for “accessible” plants because nearly any plant can promote integration and accessibility if it is appropriately selected and located in the play environment.

To encourage positive interaction between children of different abilities, choose species that branch vertically and provide play interest between 18 to 48 inches from the ground. This will ensure optimum access for children who use wheelchairs. Containers offer an excellent means for bringing plant material to this height. Attention should also be given to the types of surfacing in the play area. Be sure to provide hard surfaced paths that allow children using wheelchairs to get up close to plants and participate in plant-oriented play.

Children with visual disabilities also enjoy plants. Vivid colors, a range of scents, and a variety of textures can provide fun and pleasure for everyone. Refer to the plant lists for *Sensory Variety (Fragrance, Texture, and Wind Effects)* and *Seasonal Interest (Fall Color and Spring Harbingers)* for plant species appropriate for children with visual disabilities. Shade is also an important feature for many children and adults with disabilities. The plant list on *Shade Quality* will help you identify appropriate species for ensuring year-round comfort for all users.

Region-Specific Species

Most of the plants listed here have been selected because of their broad hardiness characteristics. Many species are not listed because they are specific to a few regions. As a result, many species that grow in the southwest and western regions, particularly California, are under-represented. However, a number of the most outstanding western species have been included along with references to the *Sunset Western Garden Book*, a useful guide to western plants. This and other references are listed in Chapter Six and should be consulted for additional information.

How to Read the Plant Lists

The plant lists that appear in this chapter are presented in table format. They provide information on various plant characteristics that may be important in selecting a plant species appropriate for your play area. Each plant list includes the following information:

- **Common Name.** This appears in the first column of every table. Plants are listed alphabetically by common name, with subgroupings where appropriate (e.g., Ground Covers, Coniferous Trees, etc.).
- **Botanical Name.** This is the Latin name identifying the plant genus, species, and variety, where appropriate.
- **Zone.** This identifies the “plant hardiness zones” in which each plant may be grown. The 1990 USDA map identifying zones in the U.S. is shown on pages 84 and 85.

All plant lists include information regarding specific characteristics that are important to that plant function. These characteristics include fragrance, color, shape, height, spread, soil compaction sensitivity, and seasonal qualities.

The **Soil Compaction Sensitivity** rating system was developed by Gary L. Hightshoe (1988). It is used in the *Climbing & Swinging* (p. 30) and *Shade Quality* (p. 53) plant lists. The term is not precisely defined by Hightshoe, but is used as a general measure of the ability of a particular species to withstand the effects of urban soil compaction. The degree of sensitivity is primarily a function of root structure. Species with shallow, lateral roots are the most sensitive, those with deep lateral roots are more resistant, and those with taproots are most resistant. Sensitivity is also affected by the condition of the soil.

Poisonous plants are discussed in detail in Chapter Three. In addition, plants that appear in the plant lists which have toxic properties are identified with the following abbreviations in the plant lists:

HT = highly toxic MT = moderately toxic ST = slightly toxic

These classifications of toxicity are discussed in Chapter Three, as are factors you should keep in mind when deciding when and where you might consider including a plant with known toxic properties in a children's play area. Remember, simply because a plant is "poisonous" does not mean you should necessarily exclude it from consideration.

Seasons are identified in the plant lists using the following abbreviations:

Su = Summer Sp = Spring F = Fall W = Winter

Other abbreviations are footnoted in the tables where they appear.

Have you ever stroked a velvety Lamb's Ear? Sniffed a spicy Pink? Heard the clatter of Golden-rain tree pods in the wind?

Children delight in environments that offer a variety of sounds, textures, and smells. Herbs can spellbind children with a wide range of sensations. In particular, many herbs and plants that bear fruits and nuts can stimulate children's taste buds when harvested (see pp. 37-39).

Plants can be selected to provide sensory variety throughout the play environment, or they can be planted together to create a "sensory garden" where children are invited to explore the different smells, tastes, and textures of nature.

Sensory Variety



Fragrance

| Common Name | Botanical Name | Zone | Fragrant Part | Fragrance | Fragrant Season |
|-------------------------|-----------------------------------|---------------------|--------------------|---------------------|-------------------------------|
| Ground Covers | | | | | |
| Geranium, Bigroot | <i>Geranium macrorrhizum</i> | 4 - 8 | leaf | geranium | Sp - F |
| Wintergreen | <i>Gaultheria procumbens</i> | 3 - 8 | crushed leaf | wintergreen | warm weather |
| Woodruff, Sweet | <i>Galium odoratum</i> | 5 - 8 | crushed leaf, stem | new-mown hay | late Sp - F |
| Perennials | | | | | |
| Allium Giant | <i>Allium giganteum</i> | 6 - 10 | cut/bruised leaf | onion | Sp - F |
| Ornamental | <i>Allium spp.</i> | 4 - 10 ¹ | cut/bruised leaf | onion | Sp - F |
| Balm, Bee | <i>Monarda didyma</i> | 4 - 8 | crushed leaf | mint/basil | Sp - F |
| Chamomile | <i>Chamaemelum nobile</i> | 3 - 9 | leaf | chamomile | Su - F |
| Daylily | <i>Hemerocallis spp.</i> | 3 - 9 ¹ | flower | varies ¹ | early Su - frost ¹ |
| Lily, Fragrant plantain | <i>Hosta plantaginea</i> | 3 - 9 | flower | honey | late Su |
| Pink, Cottage | <i>Dianthus plumarius</i> | 4 - 8 | flower | spicy | Sp - Su |
| Snowflake, Spring | <i>Leucojum vernum</i> | 4 - 8 | flower | sweet | early Sp |
| Thyme, Lemon | <i>Thymus x citriodorus</i> | 5 - 9 | leaf, flower | lemon | Sp - F |
| Shrubs and Trees | | | | | |
| Bayberry | <i>Myrica pensylvanica</i> | 4 - 9 | bruised leaf | spicy | all year |
| Butterfly bush | <i>Buddleia davidii</i> | 5 - 9 | flower | sweet | July - frost |
| Cedar, Eastern Red | <i>Juniperus virginiana</i> | 3 - 9 | bark, leaf | cedar | all year |
| Chaste tree | <i>Vitex agnus-castus</i> | 6 - 7 | flower | sweet | June - July |
| Cotton, Lavender | <i>Santolina chamaecyparissus</i> | 6 - 9 | bruised leaf | sage | Su |
| Fern, Sweet | <i>Comptonia peregrina</i> | 2 - 5 | leaf, stem | sweet | all year |
| Fothergilla Dwarf | <i>Fothergilla gardenii</i> | 6 - 9 | flower | honey | April - May |
| Large | <i>Fothergilla major</i> | 5 - 9 | flower | honey | April - May |
| Fringe tree | <i>Chionanthus virginicus</i> | 3 - 9 | flower (male) | sweet | May - June |

1. Depends on species or cultivar.

Fragrance *continued*

| Common Name | Botanical Name | Zone | Fragrant Part | Fragrance | Fragrant Season |
|----------------------------------|---|--------|-------------------------|---------------|-----------------|
| Shrubs and Trees (contd.) | | | | | |
| Germander, Chamaedrys | <i>Teucrium chamaedrys</i> | 4 - 9 | bruised leaf | pungent | all year |
| Hawthorn, Yeddo | <i>Raphiolepis umbellata</i> | 8 - 10 | flower | sweet | April |
| Hazel, Chinese Witch | <i>Hamamelis mollis</i> | 5 - 9 | flower | sweet | Feb - Mar |
| Jasmine, Poet's | <i>Jasminum officinale</i> | 7 - 10 | dried seed head, flower | jasmine | June - Oct |
| Juniper Hetz Blue | <i>Juniperus chinensis</i> 'Hetzii' | 4 - 9 | leaf | cedar | all year |
| Pfitzer | <i>Juniperus chinensis</i> 'Pfitzerana' | 4 - 9 | leaf | cedar | all year |
| Sargent | <i>Juniperus chinensis</i> var. <i>sargentii</i> | 5 - 9 | leaf | cedar | all year |
| Lavender, English | <i>Lavandula angustifolia</i> | 5 - 9 | flower, leaf | lavender | June - Aug |
| Magnolia Southern | <i>Magnolia grandiflora</i> | 7 - 9 | flower | sweet | May - June |
| Star | <i>Magnolia stellata</i> | 5 - 9 | flower | sweet | April |
| Sweet bay | <i>Magnolia virginiana</i> | 6 - 9 | flower | lemon | May - Sept |
| Myrtle, Wax | <i>Myrica cerifera</i> | 6 - 9 | bruised leaf | spicy | all year |
| Olive, Russian | <i>Elaeagnus angustifolia</i> | 2 - 9 | silvery flower | gardenia-like | May |
| Pine (native) | | | | | |
| Eastern White | <i>Pinus strobus</i> | 4 - 9 | needle | pine | all year |
| Red | <i>Pinus resinosa</i> | 3 - 6 | needle | pine | all year |
| Pine (non-native) | | | | | |
| Austrian | <i>Pinus nigra</i> | 5 - 8 | needle | pine | all year |
| Mountain | <i>Pinus mugo</i> | 3 - 7 | needle | pine | all year |
| Scotch | <i>Pinus sylvestris</i> | 3 - 7 | needle | pine | all year |
| Rose Memorial | <i>Rosa wichuriana</i> | 5 - 9 | flower | rose | late Su |
| Rugosa | <i>Rosa rugosa</i> | 4 - 9 | flower | rose | June - frost |

Note: See also the selection of herbs on pp. 38-39.

| Common Name | Botanical Name | Zone | Fragrant Part | Fragrance | Fragrant Season |
|--------------------------------------|------------------------------------|-------|-------------------------------------|-------------------------------|-------------------------|
| Shrubs and Trees (contd.) | | | | | |
| Spicebush | <i>Lindera benzoin</i> | 4 - 9 | flower, crushed leaf and stem | spicy | Sp - F |
| Summer-sweet | <i>Clethra floridus</i> | 3 - 9 | flower | spicy sweet, attracts bees | July - Aug (4-6 wks) |
| Sweet shrub, Common Viburnum Judd | <i>Calycanthus foetidus</i> | 5 - 9 | flower, leaf | strawberry | July |
| Korean spice | <i>Viburnum x juddii</i> | 5 - 9 | flower | sweet | April - May |
| Wintersweet, Fragrant | <i>Viburnum carlesii</i> | 6 - 9 | flower | sweet | April - May |
| | <i>Chimonanthus praecox</i> | 6 - 9 | flower | sweet | Dec - Feb |
| Vines | | | | | |
| Honeysuckle Common | <i>Lonicera periclymenum</i> | 5 - 9 | flower | sweet | Su - frost |
| Etruscan | <i>Lonicera etrusca 'Superba'</i> | 7 - 9 | flower | sweet | Su |
| Gold Flame | <i>Lonicera x heckrottii</i> | 4 - 9 | flower | sweet | late Sp - F |
| Privet | <i>Lonicera pileata</i> | 7 - 9 | flower | sweet | Sp |
| Sweet | <i>Lonicera caprifolium</i> | 6 - 9 | flower | sweet | late Sp - Su |
| Winter | <i>Lonicera fragrantissima</i> | 5 - 9 | flower | sweet | Jan - Mar |
| Jasmine Confederate | <i>Trachelospermum jasminoides</i> | 8 - 9 | flower | sweet | May - June |
| Yellow Star | <i>Trachelospermum asiaticum</i> | 7 - 8 | flower | sweet | May - June |

Fragrance *continued*

| Common Name | Botanical Name | Zone | Part | Texture | Effective Season |
|----------------------|------------------------------------|---------------------|--------------------|------------------|------------------|
| Arborvitae, Oriental | <i>Thuja orientalis</i> | 6 - 9 | leaf | reptilian | all year |
| Cypress, Leyland | <i>x Cupressocyparis leylandii</i> | 6 - 9 | leaf | reptilian | all year |
| Grass, Fountain | <i>Pennisetum setaceum</i> | 8 - 10 | plume | soft | mid to late Su |
| Kiwi Fruit | <i>Actinidia chinensis</i> | 7 - 9 | fruit | like stiff suede | Su - F |
| Lamb's Ears | <i>Stachys byzantina</i> | 4 - 9 | leaf | velvety | Sp - F |
| Smoke tree, American | <i>Cotinus obovatus</i> | 3 - 8 | flower | feathery | Su |
| Stonecrop | <i>Sedum spp.</i> | 4 - 10 ¹ | dried seed capsule | woody | persists thru W |
| Willow, Goat | <i>Salix caprea</i> | 5 - 8 | catkin | like stiff suede | Mar - early Apr |

1. Depends on species or cultivar.

Wind Effects

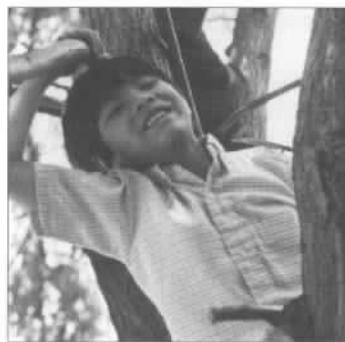
| Common Name | Botanical Name | Zone | Effective Part | Effect | Effective Season |
|---------------------------|---|--------|-----------------------------|-------------------------|---------------------------|
| Birch River Sweet | <i>Betula nigra</i> | 4 - 9 | leaves | wispy | Sp - F |
| | <i>Betula lenta</i> | 4 - 9 | leaves | white underside | Sp - F |
| Cypress, Common Bald | <i>Taxodium distichum</i> | 5 - 10 | leaves | wispy | Sp - F |
| Golden-rain tree | <i>Koelreuteria paniculata</i> | 5 - 9 | dried fruit cases leaves | rustling light, airy | persists thru W Sp - F |
| Grass, Fountain | <i>Pennisetum setaceum</i> | 8 - 10 | leaves plumes | majestic feathery | all year late Su to W |
| Locust, Thornless Honey | <i>Gleditsia triacanthos</i> var. <i>inermis</i> | 5 - 9 | leaves | light, airy | Sp - Su |
| Maple Japanese Red | <i>Acer palmatum</i> | 5 - 8 | samaras | red, twirling | Sept - Oct |
| | <i>Acer rubrum</i> | 3 - 9 | leaves, samaras | white underside | Sp - F |
| Money plant Variegated | <i>Lunaria annua</i> | 4 - 9 | dried seed cases | papery | Su - W |
| | <i>Lunaria annua</i> 'Variegata' | 4 - 9 | dried seed cases | papery | Su - W |
| Myrtle, Crape | <i>Lagerstroemia indica</i> | 7 - 10 | dried fruit capsule | rustling | persists thru W |
| Olive, Russian | <i>Elaeagnus angustifolia</i> | 2 - 9 | leaves | silvery underside | Sp - Su |
| Redwood, Dawn | <i>Metasequoia glyptostroboides</i> | 4 - 8 | leaves | wispy | Sp - F |
| Viburnum, Double-file | <i>Viburnum plicatum tomentosum</i> | 5 - 8 | leaves | white underside | Sp - F |

Play Value

Trees are natural climbing structures. Children of all ages, and even some adults, enjoy the challenge and excitement of climbing among the branches of large trees. However, trees intended for climbing and swinging must be properly located and managed (see note below).

Trees and shrubs also make magnificent hiding places, especially when deliberately chosen and placed for this purpose. Such plantings support chase and hide-and-go-seek games that children love to play. To establish hiding areas, use woody plants that have sparse branches close to the ground and cover a large area. A massing of Viburnums, for instance, creates many spots for hiding.

Probably the most valuable aspect of plants in play areas is the wide variety of play props that naturally drop or can be harvested without harm to the plant. Cones, seeds, pods, leaves, and flowers provide hours of creative recreation when mixed with children's imaginations. Play with plant parts is substantially reinforced if surfaces such as rocks, logs, ledges, and tables are provided above the ground surface.



A Word of Caution

When children climb trees, there is the possibility that they will fall out of them. In today's litigious society, that means possible legal action against the tree's owner. But since children always climb trees, it is perhaps wiser to include climbing trees in the relatively controlled conditions of playgrounds than to have children seek this excitement elsewhere. The listing of suggested species here is not intended to condone or disapprove of tree climbing. This issue must be resolved locally. Designers must check local bylaws regarding trees in public areas and design for safety. Trees with low, horizontal branches should be selected to help climbers feel sky-high with minimal risk, and shock-absorbing surfacing should be installed beneath any tree intended for climbing.

Climbing and Swinging

| Common Name | Botanical Name | Zone | Shape | SCS ¹ | Height | Spread |
|---|--|---------------------------|--------------------------------|------------------|--|--|
| Beech, American | <i>Fagus grandifolia</i> | 3 - 9 | oval | S | 50' to 70' | < height |
| Elm, Chinese | <i>Ulmus parvifolia</i> | 4 - 9 | oval to round | I | 40' to 50' | 70' |
| Hackberry, Common | <i>Celtis occidentalis</i> | 2 - 9 | round | I | 40' to 60' | 40' to 60' |
| Maple Red Sugar | <i>Acer rubrum</i> <i>Acer saccharum</i> | 3 - 9 3 - 8 | oval to round oval to round | R S | 40' to 60' 60' to 75' | 3/4 ht. 2/3 ht. |
| Oak Sawtooth White Willow | <i>Quercus acutissima</i> <i>Quercus alba</i> <i>Quercus phellos</i> | 5 - 9 5 - 9 5 - 9 | oval to round round oval | I S R | 35' to 45' 50' to 80' 40' to 60' | 35' to 45' 50' to 80' 30' to 40' |
| Pagoda tree, Japanese | <i>Sophora japonica</i> | 5 - 9 | spreading | I | 50' to 75' | 50' to 75' |
| Pine Aleppo Japanese Black Italian Stone | <i>Pinus halepensis</i> <i>Pinus thunbergii</i> <i>Pinus pinea</i> | 9 - 10 5 - 8 9 - 10 | conical irregular round | R R R | 15' to 40' up to 40' up to 30' | 10' to 25' variable up to 30' |
| Pistache, Chinese | <i>Pistacia chinensis</i> | 6 - 8 | oval to round | I | 30' to 35' | 25' to 35' |
| Sycamore, Eastern | <i>Platanus occidentalis</i> | 4 - 9 | round | R | 75' to 100' | 75' to 100' |
| Yellowwood | <i>Cladrastis lutea</i> | 3 - 8 | round | S | 30' to 50' | 40' to 55' |
| Zelkova, Japanese | <i>Zelkova serrata</i> | 5 - 8 | vase | R | up to 100' | 50' to 80' |

1. Soil Compaction Sensitivity: S = Sensitive; I = Intermediate; R = Resistant
See page 21 for description of Soil Compaction Sensitivity rating system.

Hiding Places

| Common Name | Botanical Name | Zone | Height | Spread |
|-------------------------------|---|---------------------|-------------------------|-------------------------|
| Bamboo ¹ | | | | |
| Blue Clump | <i>Semiarundinaria</i> spp. | 7 - 10 ² | 10' to 20' ² | 15' to 30' ² |
| Golden-groove | <i>Phyllostachys aureosulcata</i> | 6 - 10 | 20' to 25' | spreading |
| Hedge | <i>Bambusa glaucescens</i> | 8 - 10 | 10' to 12' | 4' to 6' |
| Beautyberry, Japanese | <i>Callicarpa japonica</i> | 5 - 8 | 4' to 6' | 4' to 6' |
| Birch, Cutleaf European White | <i>Betula pendula</i> 'Gracilis' | 2 - 6 | 10' to 15' | 10' to 15' |
| Bottlebrush, Weeping | <i>Callistemon viminalis</i> 'Red Cascade' | 8 - 10 | 10' to 25' | 10' to 15' |
| Cranberry bush, European | <i>Viburnum opulus</i> | 3 - 8 | 8' to 12' | 10' to 15' |
| Fringe tree | <i>Chionanthus virginicus</i> | 3 - 9 | 12' to 20' | 12' to 20' |
| Grass | | | | |
| Giant Feather | <i>Stipa gigantea</i> | 7 - 9 | up to 8' | tufts |
| Prairie Cord | <i>Spartina pectinata</i> | 5 - 9 | 4' to 6' | spreading |
| Ravenna | <i>Erianthus ravennae</i> | 6 - 9 | 9' to 12' | clump-forming |
| Silver | <i>Miscanthus</i> spp. | 4 - 10 ² | 3' to 12' ² | clump-forming |
| Switch | <i>Panicum virgatum</i> | 5 - 9 | 3' to 6' | spreading |
| Magnolia, Southern | <i>Magnolia grandiflora</i> | 7 - 9 | 60' to 80' | 30' to 50' |
| Maples | | | | |
| Amur | <i>Acer ginnala</i> | 6 - 8 | 15' to 18' | 15' to 18' |
| Hedge | <i>Acer campestre</i> | 5 - 8 | 25' to 35' | 25' to 35' |
| Japanese | <i>Acer palmatum</i> | 5 - 8 | 15' to 25' | 15' to 25' |

1. The *Sunset Western Garden Book* provides an excellent listing of bamboo species on pp. 237-39 of the 1988 edition.
2. Depends on species or cultivar.

Hiding Places *continued*

| Common Name | Botanical Name | Zone | Height | Spread |
|--|--|------------------|--------------------------|--------------------------|
| Photinia Fraser Japanese | <i>Photinia x fraseri</i> <i>Photinia glabra</i> | 8 - 10 8 - 10 | 6' to 10' 10' to 12' | 10' to 15' 15' to 20' |
| Pittosporum Japanese Victorian Box | <i>Pittosporum tobira</i> <i>Pittosporum undulatum</i> | 8 - 10 9 - 10 | 10' to 15' 15' to 40' | spreading spreading |
| Smoke tree, American | <i>Cotinus obovatus</i> | 3 - 8 | 20' to 30' | 10' to 20' |
| Viburnum Black Haw Double-file | <i>Viburnum prunifolium</i> <i>Viburnum plicatum</i> <i>tomentosum</i> | 3 - 9 5 - 8 | 12' to 15' 8' to 10' | 8' to 12' 9' to 12' |
| Willow, Weeping | <i>Salix babylonica</i> | 6 - 9 | 30' to 40' | 30' to 40' |

Play Props

| Common Name | Botanical Name | Zone | Play Prop | Height | Spread |
|---|--|-------------------------|--|--|--|
| Coniferous Trees | | | | | |
| Arborvitae Giant Oriental | <i>Thuja plicata</i> <i>Thuja orientalis</i> | 6 - 8 6 - 9 | cones .5" long .8" long | 50' to 70' 18' to 25' | 15' to 25' 10' to 12' |
| Cypress, Common Bald | <i>Taxodium distichum</i> | 5 - 10 | 1" wide | 50' to 70' | 20' to 30' |
| Fir Balsam Fraser Veitch | <i>Abies balsamea</i> <i>Abies fraseri</i> <i>Abies veitchii</i> | 2 - 5 4 - 7 3 - 6 | cones 2" to 4" long 2.5" long x 2" wide 2" long x 1.2" wide | 45' to 75' 30' to 40' 50' to 75' | 20' to 25' 20' to 25' 25' to 35' |
| Hemlock Canada Carolina | <i>Tsuga canadensis</i> <i>Tsuga caroliniana</i> | 3 - 7 4 - 7 | cones .5" long x 1" wide 1.5" long x 1" wide | 40' to 70' 45' to 60' | 25' to 35' 20' to 25' |
| Pine (native) Eastern White Red | <i>Pinus strobus</i> <i>Pinus resinosa</i> | 4 - 9 3 - 6 | cones/needles 6" to 8" long 2" x 2" | 50' to 80' 50' to 80' | 20' to 40' variable |
| Pine (non-native) Austrian Mountain Scotch | <i>Pinus nigra</i> <i>Pinus mugo</i> <i>Pinus sylvestris</i> | 5 - 8 3 - 7 3 - 7 | cones/needles 2" long x 1" wide 1.2" long x 1.6" wide 3" long | 50' to 60' 15' to 20' 30' to 60' | 20' to 40' 25' to 30' 30' to 40' |
| Spruce Black Narrow Oriental White | <i>Picea mariana</i> <i>Picea orientalis</i> <i>Picea glauca</i> | 2 - 7 4 - 7 2 - 6 | cones 1.5" long 4" long x 1" wide 2.5" long x .75" wide | 30' to 40' 50' to 60' 40' to 60' | narrow up to 15' 10' to 20' |

Play Props *continued*

| Common Name | Botanical Name | Zone | Play Prop | Height | Spread |
|-----------------------------|-------------------------------|-------|---|-------------|------------|
| Non-Coniferous Trees | | | | | |
| Hazel | | | | | |
| Common Witch | <i>Hamamelis virginiana</i> | 3 - 8 | woody capsule | 20' to 30' | 20' to 35' |
| Vernal Witch | <i>Hamamelis vernalis</i> | 5 - 9 | woody capsule | 6' to 10' | 6' to 10'+ |
| Magnolia | | | | | |
| Saucer | <i>Magnolia x soulangiana</i> | 5 - 9 | follicle, flower | 20' to 30' | variable |
| Southern | <i>Magnolia grandiflora</i> | 7 - 9 | leaf, follicle | 60' to 80' | 30' to 50' |
| Star | <i>Magnolia stellata</i> | 5 - 8 | flower, follicle | 15' to 20' | 10' to 15' |
| Sweet bay | <i>Magnolia virginiana</i> | 6 - 9 | follicle, seed follicle | 10' to 30' | 10' to 20' |
| Maple | | | | | |
| Amur | <i>Acer ginnala</i> | 6 - 8 | paired samaras red to brown; 1" long | 15' to 18' | 15' to 18' |
| Hedge | <i>Acer campestre</i> | 5 - 8 | | 25' to 35' | 25' to 35' |
| Japanese | <i>Acer palmatum</i> | 5 - 8 | | 15' to 25' | 15' to 25' |
| Nikko | <i>Acer maximowiczianum</i> | 5 - 7 | | 20' to 30' | 20' to 30' |
| Oak | | | | | |
| Red | <i>Quercus rubra</i> | 4 - 8 | paired, capped nut | 60' to 75' | 40' to 80' |
| Water | <i>Quercus nigra</i> | 7 - 9 | capped acorn | 50' to 80' | 40' to 50' |
| White | <i>Quercus alba</i> | 5 - 9 | capped nut | <100' | 50' to 80' |
| Willow | <i>Quercus phellos</i> | 5 - 9 | capped nut | 40' to 60' | 30' to 40' |
| Pecan | <i>Carya illinoiensis</i> | 5 - 9 | husked edible nut | 70' to 100' | 40' to 75' |
| Redbud, Eastern | <i>Cercis canadensis</i> | 5 - 9 | 3" pod | 20' to 30' | 25' to 35' |
| Silverbell, Carolina | <i>Halesia carolina</i> | 4 - 8 | bell-shaped flower | 30' to 40' | 20' to 35' |
| Smoke tree, American | <i>Cotinus obovatus</i> | 3 - 8 | feathery flower | 20' to 30' | 10' to 20' |
| Sycamore, Eastern | <i>Platanus occidentalis</i> | 4 - 9 | soft, woody ball | 75' to 100' | > height |

Play Props *continued*

| Common Name | Botanical Name | Zone | Loose Parts | Height | Spread |
|---------------------------|---|---------------------|---------------------------|------------------------|------------------------|
| Perennials | | | | | |
| Lamb's Ears | <i>Stachys byzantina</i> | 4 - 9 | leaf | 6" to 12" | 24" |
| Money plant | <i>Lunaria annua</i> | 4 - 9 | seed case | 30" | 12" |
| Variegated | <i>Lunaria annua 'Variegata'</i> | 4 - 9 | seed case | 30" | 12" |
| Stonecrop | <i>Sedum spp.</i> | 4 - 10 ¹ | dried corymb | 2" to 18" ¹ | 8" to 24" ¹ |
| Shrubs and Grasses | | | | | |
| Bamboo, Heavenly | <i>Nandina domestica</i> | 7 - 10 | red berry | 6' to 8' | < height |
| Bayberry | <i>Myrica pensylvanica</i> | 4 - 9 | waxy, grayish-white berry | 9' | 5' to 12' |
| Beautyberry, Purple | <i>Callicarpa dichotoma</i> | 5 - 8 | lilac berry | 4' to 6' | 4' to 6' |
| Cranberry bush, European | <i>Viburnum opulus</i> | 3 - 8 | bright red berry | 8' to 12' | 10' to 15' |
| Fetterbush | <i>Pieris floribunda</i> | 5 - 8 | flower, capsule | 9' to 12' | 6' to 8' |
| Grass | | | | | |
| Feather Reed | <i>Calamagrostis acutiflora 'Stricta'</i> | 5 - 9 | leaf, plume | 4' | 3' |
| Fountain | <i>Pennisetum setaceum</i> | 8 - 10 | leaf | 2' leaves | 3' |
| Reed | <i>Calamagrostis arundinaceae</i> | 6 - 9 | plume | 3' to 4' stems | 5' |
| Myrtle, Wax | <i>Myrica cerifera</i> | 6 - 9 | waxy, grayish-white berry | 10' to 15' | 10' to 15' |

Common Name**Botanical Name****Zone****Play Prop****Height****Spread****Shrubs and Grasses (contd.)**

Rose-of-Sharon

Hibiscus syriacus

5 - 8

flower, capsule

8' to 12'

6' to 10'

Skimmia, Japanese

Skimmia japonica

7 - 8

red female berry

3' to 4'

3' to 4'

Sumac, Fragrant

Rhus aromatica

3 - 9

male catkin,
red female berry

2' to 6'

6' to 10'

Viburnum

Arrowwood

Viburnum dentatum

2 - 8

blue berry

6' to 8'

6' to 15'

Black Haw

Viburnum prunifolium

3 - 9

pink changing to blue

12' to 15'

8' to 12'

Double-file

Viburnum plicatum

5 - 8

tomentosum
red changing to black

8' to 10'

9' to 12'

Nannyberry

Viburnum lentago

3 - 8

bluish-black

15' to 18'

6' to 10'

Willow

Goat

Salix caprea

5 - 8

1" long, pinkish-
gray catkin

15' to 25'

12' to 15'

Pussy

Salix discolor

3 - 9

1-1/2" long silver-
gray catkin

up to 25'

10' to 15'

Vines

Akebia, Five-leaf

Akebia quinata

4 - 9

pod

20' to 40'

6' to 10'

Nature's Bounty

Plants provide shade, attract birds, and produce beautiful flowers and fragrances. They are even more cherished when they bear fruits, nuts, or seeds to eat. Children love gathering these items.

Herbs and plants that bear fruits, nuts, and seeds can provide valuable educational opportunities in school yards and other programmed environments. They can be used to teach children which plants are edible and which plants are harmful. Of course, plants should be carefully selected and located to avoid putting harmful substances within children's reach. Refer to Chapter Three, *Poisonous Plants and Pesticides*, for more information on this subject. Also, be sure to select insect-resistant varieties so that your pickings will be naturally bigger and better.



Fruits, Herbs & Nuts

| Common Name | Botanical Name | Zone | Height | Spread / Form |
|----------------------|--------------------------------|--------|------------|---------------|
| Fruits | | | | |
| Blueberry | <i>Vaccinium corymbosum</i> | 4 - 8 | 6' to 12' | 8' to 12' |
| Highbush | | | | |
| Lowbush | <i>Vaccinium angustifolium</i> | 3 - 7 | 6" to 2" | 8' to 12' |
| Cherry, Pin | <i>Prunus pensylvanica</i> | 3 - 8 | 20' to 35' | 20' to 35' |
| Chokecherry, Common | <i>Prunus virginiana</i> | 3 - 8 | 35' to 50' | 20' to 35' |
| Cranberry, American | <i>Vaccinium macrocarpon</i> | 2 - 6 | 2' to 6' | indefinite |
| Buffalo Currant | <i>Ribes odoratum</i> | 3 - 8 | 6' to 8' | 6' to 8' |
| Elderberry, American | <i>Sambucus canadensis</i> | 3 - 9 | 6' to 12' | 6' to 12' |
| Kiwi Fruit | <i>Actinidia chinensis</i> | 7 - 9 | vine | indefinite |
| Mulberry, Red | <i>Morus rubra</i> | 5 - 9 | 35' to 50' | 35' to 50' |
| Persimmon, Common | <i>Diospyros virginiana</i> | 5 - 9 | 50' to 75' | 35' to 50' |
| Plum, American | <i>Prunus americana</i> | 3 - 9 | 20' to 35' | 20' to 35' |
| Pomegranate | <i>Punica granatum</i> | 7 - 10 | 12' to 20' | 12' to 20'+ |
| Herbs | | | | |
| Balm, Lemmon | <i>Melissa officinalis</i> | 4 - 8 | up to 2' | spreading |
| Chamomile | <i>Chamaemelum nobile</i> | 3 - 9 | up to 1' | spreading |
| Chive | <i>Allium schoenoprasum</i> | 3 - 10 | 10" to 18" | clump |
| English Lavender | <i>Lavandula angustifolia</i> | 5 - 9 | 1' to 3' | clump |

Note: It is best to pick herbs in the morning before the sun releases their oils.

Fruits, Herbs & Nuts *continued*

| Common Name | Botanical Name | Zone | Height | Spread / Form |
|-----------------------|--------------------------------------|--------|-------------|---------------|
| Herbs (contd.) | | | | |
| Geranium | <i>Pelargonium spp.</i> | 9 - 10 | 3" to 3' | indefinite |
| Mint, Pineapple | <i>Mentha suaveolens 'Variegata'</i> | 5 - 9 | 18" | spreading |
| Nasturtium | | | | |
| Canary Creeper | <i>Tropaeolum peregrinum</i> | 9 - 10 | up to 6" | climber |
| Garden Wreath | <i>Tropaeolum majus</i> | 5 - 10 | up to 2" | spreading |
| | <i>Tropaeolum polyphyllum</i> | 7 - 9 | up to 18" | spreading |
| Oregano | <i>Origanum vulgare</i> | 5 - 10 | 18" to 24" | spreading |
| Peppermint | <i>Mentha x piperita</i> | 2 - 9 | 12" to 24" | spreading |
| Rosemary | <i>Rosmarinus officinalis</i> | 8 - 10 | 4' to 6' | 4' to 6' |
| Sage | <i>Salvia officinalis</i> | 4 - 9 | 2' to 3' | clump |
| Spearmint | <i>Mentha spicata</i> | 2 - 9 | 1' to 2' | spreading |
| Thyme | | | | |
| Common | <i>Thymus vulgaris</i> | 5 - 9 | 6" to 12" | 6" to 9" |
| Lemon | <i>Thymus x citriodorus</i> | 5 - 9 | 4" to 10" | spreading |
| Nuts | | | | |
| Chestnut, Chinese | <i>Castanea mollissima</i> | 5 - 7 | 40' to 60' | 40' to 60' |
| Filbert, European | <i>Corylus avellana</i> | 5 - 10 | 10' to 15' | 10' to 15' |
| Hazelnut, Western | <i>Corylus californica</i> | 8 - 10 | 5' to 12' | 5' to 12' |
| Pecan | <i>Carya illinoensis</i> | 5 - 9 | 70' to 100' | 40' to 75' |

Seasonal Interest



Autumn's colors are amazing to young children and provide visual testimony to the changing seasons. Winter then presents its own quiet ensemble: cheerful winter berries, exfoliating barks, exquisite patterns of bare branches dusted by newly fallen snow, and handsome evergreens in plush contrast to the starkness of the surrounding landscape. The first few blooms of Spring inspire excitement and promise warmer days ahead.

Fall Color

| Common Name | Botanical Name | Zone | Leaf Color |
|---|--|--|--|
| Ash, White | <i>Fraxinus americana</i> | 4 - 9 | yellow |
| Bamboo, Heavenly | <i>Nandina domestica</i> | 7 - 10 | reddish (persists) |
| Birch, Sweet | <i>Betula lenta</i> | 4 - 9 | yellow |
| Dogwood Chinese Flowering | <i>Cornus kousa</i> <i>Cornus florida</i> | 5 - 8 5 - 9 | red-purple, scarlet red, red-purple |
| Fothergilla Dwarf Large | <i>Fothergilla gardenii</i> <i>Fothergilla major</i> | 6 - 9 5 - 9 | yellow, orange, scarlet yellow, orange, scarlet |
| Gum, American Sweet | <i>Liquidambar styraciflua</i> | 6 - 9 | orange, red, purple |
| Locust, Thornless Honey | <i>Gleditsia triacanthos</i> var. <i>inermis</i> | 5 - 9 | yellow |
| Maidenhair tree | <i>Ginkgo biloba</i> | 5 - 9 | bright yellow |
| Maple Amur Hedge Japanese Nikko Red Sugar | <i>Acer ginnala</i> <i>Acer campestre</i> <i>Acer palmatum</i> <i>Acer maximowiczianum</i> <i>Acer rubrum</i> <i>Acer saccharum</i> | 6 - 8 5 - 8 5 - 8 5 - 7 3 - 9 3 - 8 | red, yellow (red samara) yellow yellow, bronze, purple, red red, yellow, purple orange-red (variable) orange, red, yellow |
| Oak, Red | <i>Quercus rubra</i> | 4 - 8 | russet, wine red |
| Silverbell, Carolina | <i>Halesia carolina</i> | 4 - 8 | yellow |

Fall Color *continued*

| Common Name | Botanical Name | Zone | Leaf Color |
|-----------------------|---|-------|---------------------------------|
| Smoke tree, American | <i>Cotinus obovatus</i> | 3 - 8 | yellow, red, orange, red-purple |
| Sourwood | <i>Oxydendrum arboreum</i> | 5 - 9 | red, purple |
| Spicebush | <i>Lindera benzoin</i> | 4 - 9 | yellow |
| Spindle tree, Winged | <i>Euonymus alatus</i> | 3 - 8 | pink-scarlet |
| Summer-sweet | <i>Clethra alnifolia</i> | 3 - 9 | yellow |
| Tulip tree, American | <i>Liriodendron tulipifera</i> | 4 - 9 | yellow |
| Viburnum Arrowwood | <i>Viburnum dentatum</i> | 2 - 8 | yellow, red, purple |
| Black Haw | <i>Viburnum prunifolium</i> | 3 - 9 | red, bronze |
| Double-file | <i>Viburnum plicatum</i> <i>tomentosum</i> | 5 - 8 | red-purple |
| Linden | <i>Viburnum dilatatum</i> | 5 - 9 | yellow, orange, red |
| Wintergreen | <i>Gaultheria procumbens</i> | 3 - 8 | reddish (persists) |

Winter Berries & Evergreens

| Common Name | Botanical Name | Zone | Fruit Color | Fruit Season | Evergreen ¹ |
|--|--|-------------------------|------------------------|------------------------------------|------------------------|
| Apple, Crab <i>HT</i> | <i>Malus spp.</i> ² | 4 - 9 ³ | red or yellow | F into W | |
| Arborvitae Giant Oriental | <i>Thuja plicata</i> <i>Thuja orientalis</i> | 6 - 8 6 - 9 | greenish | F into W | EG |
| Spicebush | <i>Aucuba japonica</i> | 7 - 10 | red | F into W | EG |
| Bamboo, Heavenly | <i>Nandina domestica</i> | 7 - 10 | red | F - W | EG |
| Barberry Japanese Korean Paleleaf | <i>Berberis thunbergii</i> <i>Berberis koreana</i> <i>Berberis candidula</i> | 4 - 9 3 - 8 5 - 9 | red red purplish | F into W F into W Aug - Sept | |
| Bayberry | <i>Myrica pensylvanica</i> | 4 - 9 | gray, waxy | F into W | EG |
| Cedar, Eastern Red | <i>Juniperus virginiana</i> | 3 - 9 | bluish gray | F into W | EG |
| Chokeberry, Red | <i>Aronia arbutifolia</i> | 5 - 9 | red | F into W | |
| Cotoneaster <i>MT</i> | <i>Cotoneaster 'Autumn Fire'</i> | 5 - 8 | bright red, orange | F into W | |
| Cotton, Lavender | <i>Santolina chamaecyparissus</i> | 6 - 9 | | | EG |
| Cranberry bush, European | <i>Viburnum opulus</i> | 3 - 8 | red | Oct - Sp | |

1. Evergreen trees and shrubs are identified by the abbreviation "EG."

2. For information on the many species and cultivars available see Hériteau, Brickell, and Sunset Western Garden Book (pp. 367-69).

3. Depends on species or cultivar.

Common Name

Botanical Name

Zone

Fruit Color

Fruit Season

Evergreen

Cypress, Leyland

x Cupressocyparis leylandii

6 - 9

EG

Dogwood
Chinese
Flowering*Cornus kousa*

5 - 8

red

Aug - Oct

Cornus florida

5 - 9

glossy red

July - Oct

Fetterbush

Pieris floribunda

5 - 8

pearly buds

W - Sp

EG

Fir

Abies balsamea

2 - 5

brown

F - W

Abies fraseri

4 - 7

brown

F - W

Abies veitchii

3 - 6

brown

F - W

Abies concolor

4 - 7

brown

F - W

Fire thorn, Scarlet ^{MT}*Pyracantha coccinea*

7 - 8

red

F - W

Germander, Chamaedrys

Teucrium chamaedrys

4 - 9

EG

Hawthorn, Yeddo

Raphiolepis umbellata

8 - 10

bluish-black

F - W

EG

Hemlock

Canada

Carolina

Tsuga canadensis

3 - 7

brown

F - W

EG

Tsuga caroliniana

4 - 7

brown

F - W

EG

Juniper

Hetz Blue

Pfitzer

Juniperus chinensis 'Hetzii'

4 - 9

EG

Juniperus chinensis

4 - 9

'Pfitzerana'

EG

Sargent

*Juniperus chinensis*var. *sargentii*

5 - 9

EG

Lily-of-the-valley bush

Pieris japonica

5 - 8

pearly buds

F - W

EG

Winter Berries & Evergreens *continued*

Common Name

Botanical Name

Zone

Fruit Color

Fruit Season

Evergreen

Lilyturf

Big Blue
Creeping*Liriope muscari*
*Liriope spicata*6 - 10
5 - 10black
blackF - W
F - WEG
EG

Magnolia

Southern
Sweet bay*Magnolia grandiflora*
*Magnolia virginiana*7 - 9
6 - 9red
redF
FEG
EG

Myrtle

Pacific Wax
Wax*Myrica californica*
*Myrica cerifera*8 - 11
6 - 9purple
grayF - W
F - WEG
EG

Oak, Chinese Evergreen

Quercus myrsinifolia

7 - 9

brown

F - W

EG

Photinia

Chinese
Fraser
Japanese*Photinia serrulata*
Photinia x fraseri
*Photinia glabra*7 - 9
8 - 10
8 - 10EG
EG
EG

Pine (native)

Eastern White
Red*Pinus strobus*
*Pinus resinosa*4 - 9
3 - 6brown
brownF - W
F - WEG
EG

Pine (non-native)

Austrian
Mountain
Scotch*Pinus nigra*
Pinus mugo
*Pinus sylvestris*5 - 8
3 - 7
3 - 7brown
brown
brownF - W
F - W
F - WEG
EG
EG

Winter Berries & Evergreens *continued*

| Common Name | Botanical Name | Zone | Fruit Color | Fruit Season | Evergreen |
|---|--------------------------------|-------|-------------|--------------|-----------|
| Skimmia Japanese Reeves | <i>Skimmia japonica</i> | 7 - 8 | red | Oct - Sp | EG |
| | <i>Skimmia reevesiana</i> | 7 - 9 | crimson | W | EG |
| Spruce Black Narrow Oriental White | <i>Picea mariana</i> | 2 - 7 | brown | F - W | EG |
| | <i>Picea orientalis</i> | 4 - 7 | brown | F - W | EG |
| | <i>Picea glauca</i> | 2 - 6 | brown | F - W | EG |
| Viburnum, Leatherleaf | <i>Viburnum rhytidophyllum</i> | 5 - 9 | | | EG |
| Wintercreeper | <i>Eunonymus fortunei</i> | 4 - 9 | orange-red | F | EG |
| Wintergreen | <i>Gaultheria procumbens</i> | 3 - 8 | scarlet | June - Apr | EG |

Winter Tracery & Bark

| Common Name | Botanical Name | Zone | Shape | Bark |
|--|---|--------|-----------------------|--------------------------|
| Ash Green White | <i>Fraxinus pennsylvanica</i> | 4 - 9 | irregular, spreading | ash-gray, furrowed |
| | <i>Fraxinus americana</i> | 4 - 9 | open, round | ash-gray, furrowed |
| Birch Paper (White) River | <i>Betula papyrifera</i> | 2 - 6 | oval-round | chalky white, exfoliates |
| | <i>Betula nigra</i> | 4 - 9 | rounded crown | cinnamon, exfoliates |
| Dogwood Chinese Flowering | <i>Cornus kousa</i> | 5 - 8 | vase | mottled, exfoliates |
| | <i>Cornus florida</i> | 5 - 9 | tier effect | gray, rectangular blocks |
| Fringe tree | <i>Chionanthus virginicus</i> | 3 - 9 | spreading, open | gray, smooth, |
| Katsura tree | <i>Cercidiphyllum japonicum</i> | 4 - 8 | spreading | becoming ridged |
| Locust, Thornless Honey | <i>Gleditsia triacanthos</i> var. <i>inermis</i> | 5 - 9 | open, round | brown, shaggy |
| Magnolia, Saucer | <i>Magnolia x soulangiana</i> | 5 - 9 | pyramidal, spreading | gray-brown, scaly |
| Maple Amur Japanese Nikko Paperbark Sugar | <i>Acer ginnala</i> | 6 - 8 | rounded | smooth, gray |
| | <i>Acer palmatum</i> | 5 - 8 | layered | smooth, gray-brown |
| | <i>Acer maximowiczianum</i> | 5 - 7 | vase | gray-brown |
| | <i>Acer griseum</i> | 6 - 8 | oval, rounded | cinnamon, exfoliates |
| | <i>Acer saccharum</i> | 3 - 8 | upright, round, dense | gray-brown, variable |
| Myrtle, Crape | <i>Lagerstroemia indica</i> | 7 - 10 | variable | mottled, exfoliates |

Winter Tracery & Bark *continued*

| Common Name | Botanical Name | Zone | Shape | Bark |
|-----------------------|-------------------------------------|-------|--------------------------|--|
| Oak | | | | |
| Pin | <i>Quercus palustris</i> | 4 - 8 | pyramidal | gray-brown |
| Red | <i>Quercus rubra</i> | 4 - 8 | round top, symmetrical | gray |
| White | <i>Quercus alba</i> | 5 - 9 | spreading, round | ashy gray, scaly |
| Pagoda tree, Japanese | <i>Sophora japonica</i> | 5 - 9 | upright, rounded crown | pale gray-brown |
| Redbud, Eastern | <i>Cercis canadensis</i> | 5 - 9 | spreading, divided trunk | brownish-black |
| Redwood, Dawn | <i>Metasequoia glyptostroboides</i> | 4 - 8 | pyramidal | red-brown, exfoliates |
| Silverbell, Carolina | <i>Halesia carolina</i> | 4 - 8 | broad, round crown | gray-black, furrowed |
| Sycamore, Eastern | <i>Platanus occidentalis</i> | 4 - 9 | open, massive | mottled, white, brown |
| Tulip tree, American | <i>Liriodendron tulipifera</i> | 4 - 9 | oval-round | brown, furrowed |
| Willow, Weeping | <i>Salix babylonica</i> | 6 - 9 | weeping, rounded | ridged, furrowed |
| Yellowwood | <i>Cladrastis lutea</i> | 3 - 8 | round | beech-like |
| Zelkova, Japanese | <i>Zelkova serrata</i> | 5 - 8 | vase | youth: cherry-like maturity: exfoliates |

Winter Flowers

| Common Name | Botanical Name | Zone | Flower Color | Season |
|-----------------------|-----------------------------|--------|-----------------------------------|----------------|
| Camellia, Common | <i>Camellia japonica</i> | 7 - 9 | white, rose, red, & multi-colored | Nov - Apr |
| Cherry, Cornelian | <i>Cornus mas</i> | 5 - 8 | yellow | Nov - Apr |
| Fothergilla, Dwarf | <i>Fothergilla gardenii</i> | 6 - 9 | white | early Sp |
| Hazel, Vernal Witch | <i>Hamamelis vernalis</i> | 5 - 9 | yellow, red | late Jan - Mar |
| Jasmine, Winter | <i>Jasminum nudiflorum</i> | 6 - 10 | bud: red flower: yellow | Jan - Mar |
| Wintersweet, Fragrant | <i>Chimonanthus praecox</i> | 6 - 9 | yellow | Dec - Feb |

Spring Harbingers

| Common Name | Botanical Name | Zone | Flower Color | Season |
|------------------------------|---|--------------------|------------------------------|-------------------------|
| Apple, Crab ^{HT} | <i>Malus spp.</i> ¹ | 4 - 9 ² | white | early Sp |
| Azalea ^{HT} | <i>Rhododendron spp.</i> | 6 - 9 ³ | varies ³ | Sp ³ |
| Fetterbush | <i>Pieris floribunda</i> | 5 - 8 | white | Apr - May |
| Fothergilla, Dwarf | <i>Fothergilla gardenii</i> | 6 - 9 | white | early Sp |
| Glory-of-the-snow | <i>Chionodoxa luciliae</i> | 3 - 9 | blue with white | early Sp |
| Golden-bells | <i>Forsythia x intermedia</i> | 5 - 9 | yellow | early Sp |
| Hazel, Chinese Witch | <i>Hamamelis mollis</i> | 5 - 9 | red-brown | Mar - Apr |
| Hyacinth, Grape | <i>Muscari armeniacum</i> | 2 - 9 | blue | early Sp |
| Lily-of-the-valley bush | <i>Pieris japonica</i> | 5 - 8 | white | Mar - Apr |
| Magnolia Saucer Star | <i>Magnolia x soulangiana</i> <i>Magnolia stellata</i> | 5 - 9 | white, pink, purple white | by mid-Apr Mar - Apr |
| Mimosa, Golden | <i>Acacia baileyana</i> | 9 - 10 | bright yellow | early Sp |
| Quince, Japanese | <i>Chaenomeles japonica</i> | 4 - 9 | red, orange-red | early Sp |
| Redbud Eastern Western | <i>Cercis canadensis</i> <i>Cercis occidentalis</i> | 5 - 9 8 - 10 | magenta, pink magenta | mid Sp mid Sp |

1. For information on the many species and cultivars available see Hériteau, Brickell, and **Sunset Western Garden Book** (pp. 367-69).

2. Depends on species or cultivar.

3. Depends on species or cultivar. See also Hériteau (pp. 149-53) for further details on azalea cultivars available.

Spring Harbingers *continued*

| Common Name | Botanical Name | Zone | Flower Color | Season |
|-------------------------------|--|--------------------|---------------------------|------------------|
| Rhododendron ^{HT} | <i>Rhododendron spp.</i> | 4 - 9 ¹ | varies ¹ | Sp ¹ |
| Skimmia Japanese Reeves | <i>Skimmia japonica</i> <i>Skimmia reevesiana</i> | 7 - 8 7 - 9 | creamy creamy | Mar - Apr Apr |
| Snowflake, Spring | <i>Leucojum vernum</i> | 4 - 8 | white with green | early Sp |
| Viburnum, Korean Spice | <i>Viburnum carlesii</i> | 6 - 9 | red buds, pink flowers | Mar - Apr |
| Willow, Goat | <i>Salix caprea</i> | 5 - 8 | 1" male catkins | early Sp |

1. Depends on species or cultivar. See also Hériteau (pp. 153-55) for further details on rhododendron species and cultivars available.



Shade Quality

Large, deciduous trees provide much-needed escape from summer sun and heat. They also add an overhead dimension of "ceilings" that can help differentiate functional areas within the play space. For example, areas with shade ceilings can be designed for quiet play activities or as places where adults can sit while children play in the sun. Shade is also important for children and adults with particular types of disabilities. The design of the play environment should provide a diversity of shaded, semi-shaded, and non-shaded areas to better meet a wide range of needs.

When fully established, shade trees can often be climbed and can serve as swing supports. Since children will naturally play around trees, some protection for the tree's root system may be needed to ensure its growth and stability. This can be provided by spreading a mulch of large woodchips up to twelve inches thick around the base of the tree. This will also help reduce the potential for injury should a child fall from the tree.

The trees listed in the following table vary in height and spread, as well as in the quality of shade provided. However, the typical overall shapes are vase, oval, or round. All listings are deciduous.

| Common Name | Botanical Name | Zone | Shape | Shade Quality | SCS ¹ |
|------------------------------------|--|-------------------------|--------------------------------|----------------------------|------------------|
| Birch, Sweet | <i>Betula lenta</i> | 4 - 9 | oval to round | moderate | S |
| Dogwood Chinese Flowering | <i>Cornus kousa</i> <i>Cornus florida</i> | 5 - 8 5 - 9 | vase to round round | light dense | S |
| Elm, Chinese | <i>Ulmus parvifolia</i> | 4 - 9 | oval to round | dense | I |
| Linden, Small-leaved | <i>Tilia cordata</i> | 3 - 7 | oval to round | dense | S |
| Locust, Thornless Honey | <i>Gleditsia triacanthos</i> var. <i>inermis</i> | 5 - 9 | irregular to round | light | R |
| Maple Red Sugar | <i>Acer rubrum</i> <i>Acer saccharum</i> | 3 - 9 3 - 8 | oval to round oval to round | moderate dense | R S |
| Mimosa, Silk tree | <i>Albizia julibrissin</i> | 7 - 10 | round | light | R |
| Oak Sawtooth White Willow | <i>Quercus acutissima</i> <i>Quercus alba</i> <i>Quercus phellos</i> | 5 - 9 5 - 9 5 - 9 | oval to round round oval | dense moderate dense | I S R |
| Olive | <i>Olea europaea</i> | 9 - 10 | round, spreading | moderate | R |
| Pagoda tree, Japanese | <i>Sophora japonica</i> | 5 - 9 | vase | light | I |
| Pecan | <i>Carya illinoinensis</i> | 5 - 9 | round | light | S |
| Pistache, Chinese | <i>Pistacia chinensis</i> | 6 - 8 | oval to round | moderate | I |
| Silverbell, Carolina | <i>Halesia carolina</i> | 4 - 8 | vase to round | dense | S |
| Sycamore, Eastern | <i>Platanus occidentalis</i> | 4 - 9 | round | light to moderate | R |
| Yellowwood | <i>Cladrastis lutea</i> | 3 - 8 | round | moderate | S |
| Zelkova, Japanese | <i>Zelkova serrata</i> | 5 - 8 | vase | dense | R |

1. *Soil Compaction Sensitivity: S = Sensitive; I = Intermediate; R = Resistant*
See page 21 for description of Soil Compaction Sensitivity rating system.



Screens

Evergreen trees and shrubs can provide excellent visual screens and protection from strong winds. Vine-covered fences and densely branched deciduous plants can also serve these purposes.

To create effective wind screens, use several rows of defense. A first row of smaller shrubs can begin to reduce the wind's velocity, while each successive row of shrubs becomes taller and further softens the wind's effects. A final row of trees can seal your area from wind blasts. The screen's range of effectiveness is roughly equal to two times its height (e.g., a screen that is 10' tall will provide protection for a distance of 20' on the leeward side).

A careful match between your requirements and a plant's natural characteristics (height, spread, density) will result in a relatively low-maintenance screen. The plants listed in the following tables tend to grow quickly, resist mildew, and tolerate wind.

Thorny plants can also be used to create physical barriers that enhance the safety of a play area (without compromising aesthetic quality). For example, a dense row of Barberries can be just as effective as a fence in keeping children from wandering into a hazardous area.

Physical Barriers

| Common Name | Botanical Name | Zone | Height | Spread |
|------------------------|----------------------------------|-------|------------|------------|
| Aralia, Five-leafed | <i>Acanthopanax sieboldianus</i> | 4 - 9 | 8' to 10' | 8' to 10' |
| Barberry | | | | |
| Japanese | <i>Berberis thunbergii</i> | 4 - 9 | 3' to 6' | 4' to 7' |
| Korean | <i>Berberis koreana</i> | 3 - 8 | 4' to 6' | < ht. |
| Mentor | <i>Berberis x mentorensis</i> | 5 - 9 | 5' | 5' to 7' |
| Paleleaf | <i>Berberis candidula</i> | 5 - 9 | 2' to 4' | 5' |
| Wintergreen | <i>Berberis julianae</i> | 6 - 9 | 6' to 8' | 6' to 8' |
| Elaeagnus, Thorny | <i>Elaeagnus pungens</i> | 6 - 9 | 10' to 15' | 10' to 15' |
| Fire thorn, Scarlet MT | <i>Pyracantha coccinea</i> | 7 - 8 | 6' to 18' | 6' to 18' |
| Quince, Flowering | <i>Chaenomeles speciosa</i> | 4 - 9 | 6' to 10' | 6' to 10' |
| Rose, Rugosa | <i>Rosa rugosa</i> | 4 - 9 | 6' to 8' | 6' to 8' |

Note: See *Sunset Western Garden Book*, pp. 103 - 105, for additional selections of physical barrier plants.

Wind Screens & Visual Buffers

| Common Name | Botanical Name | Zone | Height | Spread |
|---|--|---------------------------|--|---------------------------------|
| Arborvitae American 'Wareana' | <i>Thuja occidentalis</i> <i>Thuja occidentalis 'Wareana'</i> | 3 - 8 3 - 8 | 40' to 60' 8' | 10' to 15' 3' to 5' |
| Cedar, Eastern Red | <i>Juniperus virginiana</i> | 3 - 9 | 40' to 50' | 8' to 20' |
| Cypress, Leyland | <i>x Cupressocyparis leylandii</i> | 6 - 9 | 60' to 70' | 1/4 ht. |
| Gum tree | <i>Eucalyptus spp.</i> ¹ | 9 - 10 | 30' to 300' | 20' to 50' |
| Hemlock Canada Carolina | <i>Tsuga canadensis</i> <i>Tsuga caroliniana</i> | 3 - 7 4 - 7 | 40' to 70' 45' to 60' | 25' to 35' 20' to 25' |
| Oak, Laurel | <i>Quercus imbricaria</i> | 4 - 8 | 50' to 60' | 50' to 60' |
| Photinia Chinese Fraser Japanese | <i>Photinia serrulata</i> <i>Photinia x fraseri</i> <i>Photinia glabra</i> | 7 - 9 8 - 10 8 - 10 | 20' to 30' 10' to 15' 10' to 12' | 2/3 ht. 1/2 ht. 8' to 10' |
| Pine, Eastern White | <i>Pinus strobus</i> | 4 - 9 | 50' to 80' | 20' to 40' |
| Spruce Norway Serbian | <i>Picea abies</i> <i>Picea omorika</i> | 2 - 7 4 - 7 | 40' to 60' 50' to 60' | 25' to 30' 20' to 25' |
| Viburnum, Leatherleaf | <i>Viburnum rhytidophyllum</i> | 5 - 9 | 10' to 15' | 10' to 15' |

Note: See **Sunset Western Garden Book**, pp. 108 - 109, for additional selection of screen plants.

1. Numerous species are available; Flowering Gum (*Eucalyptus flicifolia*) and Silver-Dollar Tree (*Eucalyptus cinerea*) are especially interesting for play areas.

For children to become environmentally aware, they must be able to see how plants feed and shelter animals. Birds flock to berries and seeds, squirrels scurry to acorns, and butterflies flutter to flowers full of nectar. Vegetation provides habitat for a myriad of insects, anthropods, arachnids, and other small organisms that fascinate children.

Perhaps you can dedicate a specific part of your play yard for a caterpillar/butterfly garden; or place a bird sanctuary outside a window where birds can be identified for winter education. These "nature gardens" take a relatively small area, yet produce hours of contentment and education for children as well as adults.

Here is a list of trees and shrubs that will coax animals into your playground.¹

Wildlife Enhancement



1. There are a number of excellent references that provide additional information and lists of plants that attract wildlife. They include: **Calloway Gardens' Butterfly Gardening**, **Peter Cawdell's Starting a Butterfly Garden**, **Rosalind Creasy's Earthly Delights** (pp. 89-97), **Michael Dirr's Manual of Woody Landscape Plants** (pp. 59-60), **Jacqueline Hériteau's National Arboretum Book of Outstanding Garden Plants** (pp. 43-46, 135, 180, 227), **Nigel Matthews' Garden for Birds**, and the **Sunset Western Garden Book** (pp. 154-155). All of these sources are listed in the Annotated Bibliography at the end of this book.

| Common Name | Botanical Name | Zone | Wildlife Users |
|---------------------------------|--------------------------------|-------|--|
| Very High Wildlife Value | | | |
| Abelia | <i>Abelia chinensis</i> | 5 - 9 | butterflies |
| Birch | | | |
| Gray Paper (White) | <i>Betula populifolia</i> | 4 - 7 | song & water birds, small mammals, browsers |
| | <i>Betula papyrifera</i> | 2 - 6 | song & upland groundbirds, small mammals, hoofed browsers |
| River | <i>Betula nigra</i> | 4 - 9 | songbirds, waterfowl, small mammals, browsers |
| Sweet | <i>Betula lenta</i> | 4 - 9 | song & upland groundbirds, small mammals, browsers |
| Blueberry | | | |
| Highbush | <i>Vaccinium corymbosum</i> | 4 - 8 | song & upland gamebirds, waterfowl, small mammals, browsers, waterfowl |
| Lowbush | <i>Vaccinium angustifolium</i> | 3 - 7 | songbirds, waterfowl, upland gamebirds, marshbirds, large & small mammals |
| Butterfly bush | <i>Buddleia davidii</i> | 5 - 9 | hummingbirds and butterflies |
| Cedar, Eastern Red | <i>Juniperus virginiana</i> | 3 - 9 | song & upland groundbirds, small mammals, hoofed browsers |
| Dogwood, Flowering | <i>Cornus florida</i> | 5 - 9 | song & upland groundbirds, small mammals, hoofed browsers, waterbirds, large mammals |
| Maple | | | |
| Red | <i>Acer rubrum</i> | 4 - 9 | song & waterbirds, small mammals, browsers |
| Sugar | <i>Acer saccharum</i> | 3 - 8 | song & upland groundbirds, small mammals, hoofed browsers |
| Oak, White | <i>Quercus alba</i> | 5 - 9 | song & upland groundbirds, small mammals, hoofed browsers |

| Common Name | Botanical Name | Zone | Wildlife Users |
|---|-------------------------------------|-------|---|
| Very High Wildlife Value (contd.) | | | |
| Pine | | | |
| Eastern White | <i>Pinus strobus</i> | 4 - 9 | song & upland groundbirds, small mammals, hoofed browsers |
| Red | <i>Pinus resinosa</i> | 3 - 6 | song & upland groundbirds, small mammals, hoofed browsers |
| Spicebush | <i>Lindera benzoin</i> | 4 - 9 | song & upland gamebirds, white-tail deer |
| Sumac, Fragrant | <i>Rhus aromatica</i> | 3 - 9 | upland gamebirds, large & small mammals, hoofed browsers |
| High Wildlife Value | | | |
| Fir | | | |
| Balsam | <i>Abies balsamea</i> | 2 - 5 | songbirds, small mammals, hoofed browsers |
| White | <i>Abies concolor</i> | 4 - 7 | songbirds, small mammals, hoofed browsers |
| Spruce | | | |
| Black | <i>Picea mariana</i> | 2 - 7 | songbirds, small mammals, hoofed browsers |
| White | <i>Picea glauca</i> | 2 - 6 | songbirds, small mammals, hoofed browsers |
| Viburnum, Double-file | <i>Viburnum plicatum tomentosum</i> | 5 - 8 | upland gamebirds, songbirds |
| Intermediate Wildlife Value | | | |
| Fringe tree | <i>Chionanthus virginicus</i> | 3 - 9 | small mammals, songbirds |
| Hemlock, Canada | <i>Tsuga canadensis</i> | 3 - 7 | small mammals, songbirds |
| Pecan | <i>Carya illinoiensis</i> | 5 - 9 | songbirds |
| <i>Note: Wildlife species prefer indigenous plants but will gradually grow accustomed to non-natives.</i> | | | |



Erosion Control

Play areas are often relegated to marginal land with steep slopes or poor drainage. Both weather and children at play can cause significant erosion on these sites.

Plants can play an important role in reducing erosion in play areas. For example, groundcovers for large and small areas can help reduce erosion caused by water, wind, and the feet of children at play. Likewise, large, broad-leaved deciduous trees can help reduce the impact of heavy rain on ground surfaces, extending the runoff time and promoting percolation of water back into the ground. The roots of such trees also help stabilize soils on hillsides and insulate loose soil from precipitation and wind. Trees and shrubs used as windbreaks can also mitigate the erosive effects of wind (see page 56 for a list of plants that make good wind screens).

| Common Name | Botanical Name | Zone | Height | Spread |
|-------------------------------------|--|----------------|------------------------|--------------------------|
| Akebia, Five-leaf | <i>Akebia quinata</i> | 4 - 9 | 20' to 40' | twining climber |
| Bayberry | <i>Myrica pensylvanica</i> | 4 - 9 | 5' to 12' | 5' to 12' |
| Dogwood, Tartarian | <i>Cornus alba</i> | 2 - 8 | 8' to 10' | 5' to 10' |
| Fern, Sweet | <i>Comptonia peregrina</i> | 2 - 5 | 2' to 4' | 4' to 8' |
| Forsythia Border Weeping | <i>Forsythia x intermedia</i> <i>Forsythia suspensa</i> | 5 - 9 6 - 8 | 8' to 10' 8' to 10' | 10' to 12' 10' to 15' |
| Jasmine, Winter | <i>Jasminum nudiflorum</i> | 6 - 10 | up to 10' | up to 10' |
| Juniper, Sargent | <i>Juniperus chinensis</i> var. <i>sargentii</i> | 3 - 9 | 18" to 2' | 7.5' to 9' |
| Myrtle, Wax | <i>Myrica cerifera</i> | 6 - 9 | 10' to 15' | 5' to 15' |
| Periwinkle, Dwarf | <i>Vinca minor</i> | 4 - 8 | 3" to 6" | 5' |
| Rose, Memorial | <i>Rosa wichuriana</i> | 5 - 9 | trailing vine | 15' to 30' |
| Spurge, Japanese | <i>Pachysandra terminalis</i> | 4 - 8 | 4" | spreading |
| Sumac, Fragrant | <i>Rhus aromatica</i> | 3 - 9 | 2' to 6' | 6' to 10' |
| Summer-sweet | <i>Clethra alnifolia</i> | 3 - 9 | 3' to 8' | 4' to 6' |
| Viburnum Arrowwood Nannyberry | <i>Viburnum dentatum</i> <i>Viburnum lentago</i> | 2 - 8 3 - 8 | 6' to 8' 15' to 18' | 6' to 15' 6' to 10' |

Note: Hériteau, p. 113, provides additional listings of ground covers useful for erosion control.

Drought Tolerance



Dry, hot environments can place considerable stress on plants; many plants cannot tolerate such conditions. Even more demanding are climates where temperatures fluctuate daily from hot to cold. Only very resistant plants can withstand large diurnal temperature changes.

Many plant species have characteristics such as deep root systems and fleshy, waxy, or hairy leaves that help them withstand grueling heat, limited water, and sudden drops in temperature. Such plants are valuable resources for play areas in extreme climates. They also offer valuable education opportunities. Native species can be used to teach children about nature's adaptations to local conditions and to introduce concepts such as water conservation.

Locating plants in cooler, moist micro-climates (under shade trees, beside a pond) can bolster stability. Even the hardiest plants will react positively to such protection in harsh climates.

| Common Name | Botanical Name | Zone | Tolerances ¹ | | |
|---------------------|--|--------------------|-------------------------|------|---------|
| | | | Cold | Heat | Drought |
| Shrubs | | | | | |
| Bayberry | <i>Myrica pensylvanica</i> | 4 - 9 | R | R | R |
| Blueberry | | | | | |
| Highbush | <i>Vaccinium corymbosum</i> | 4 - 8 | R | R | R |
| Lowbush | <i>Vaccinium angustifolium</i> | 3 - 7 | R | R | R |
| Buffalo berry | <i>Shepherdia canadensis</i> | 2 - 7 | R | R | R |
| Ceanothus | <i>Ceanothus spp.²</i> | 3 - 9 ³ | R | R | R |
| Cinquefoil, Shrubby | <i>Potentilla fruticosa</i> | 3 - 8 | R | R | R |
| Fothergilla | | | | | |
| Dwarf | <i>Fothergilla gardenii</i> | 6 - 9 | I | I | I |
| Large | <i>Fothergilla major</i> | 5 - 9 | I | I | I |
| Juniper | | | | | |
| Hetz Blue | <i>Juniperus chinensis 'Hetzii'</i> | 4 - 9 | R | R | R |
| Pfitzer | <i>Juniperus chinensis 'Pfitzerana'</i> | 4 - 9 | R | R | R |
| Sargent | <i>Juniperus chinensis var. <i>sargentii</i></i> | 5 - 9 | R | R | R |
| Lilac | | | | | |
| Common | <i>Syringa vulgaris</i> | 5 - 8 | R | R | R |
| Persian | <i>Syringa persica</i> | 5 - 9 | R | R | R |

1. Tolerances: R = Resistant; I = Intermediate resistance.

2. Many *Ceanothus* species and cultivars are available, particularly on the West Coast. The *Sunset Western Garden Book* provides a good list on pp. 271-72.

3. Depends on species or cultivar.

| Common Name | Botanical Name | Zone | Tolerances ¹ | | |
|------------------------|-------------------------------|------|-------------------------|------|---------|
| | | | Cold | Heat | Drought |
| Shrubs (contd.) | | | | | |
| Rose | | | | | |
| Carolina | <i>Rosa carolina</i> | 4-9 | I | R+ | R+ |
| Rugosa | <i>Rosa rugosa</i> | 4-9 | R | R | R |
| Summer-sweet | <i>Clethra alnifolia</i> | 3-9 | R | I | I |
| Viburnum | | | | | |
| Black Haw | <i>Viburnum prunifolium</i> | 3-9 | R | R | R |
| Nannyberry | <i>Viburnum lentago</i> | 3-8 | R | R | R |
| Wintergreen | <i>Gaultheria procumbens</i> | 3-8 | R | I | I |
| Trees | | | | | |
| Ash | | | | | |
| Green | <i>Fraxinus pennsylvanica</i> | 4-9 | R | R | R |
| White | <i>Fraxinus americana</i> | 4-9 | R | I | I |
| Birch | | | | | |
| Gray | <i>Betula populifolia</i> | 4-7 | R | R | R |
| River | <i>Betula nigra</i> | 4-9 | I | R | R |
| Sweet | <i>Betula lenta</i> | 4-9 | R | I | I |
| Cedar, Eastern Red | <i>Juniperus virginiana</i> | 3-9 | R | R | R |
| Dogwood, Flowering | <i>Cornus florida</i> | 5-9 | I | I | I |
| Elder, Box | <i>Acer negundo</i> | 3-9 | R | R | R |

1. Tolerances: R = Resistant; I = Intermediate resistance.

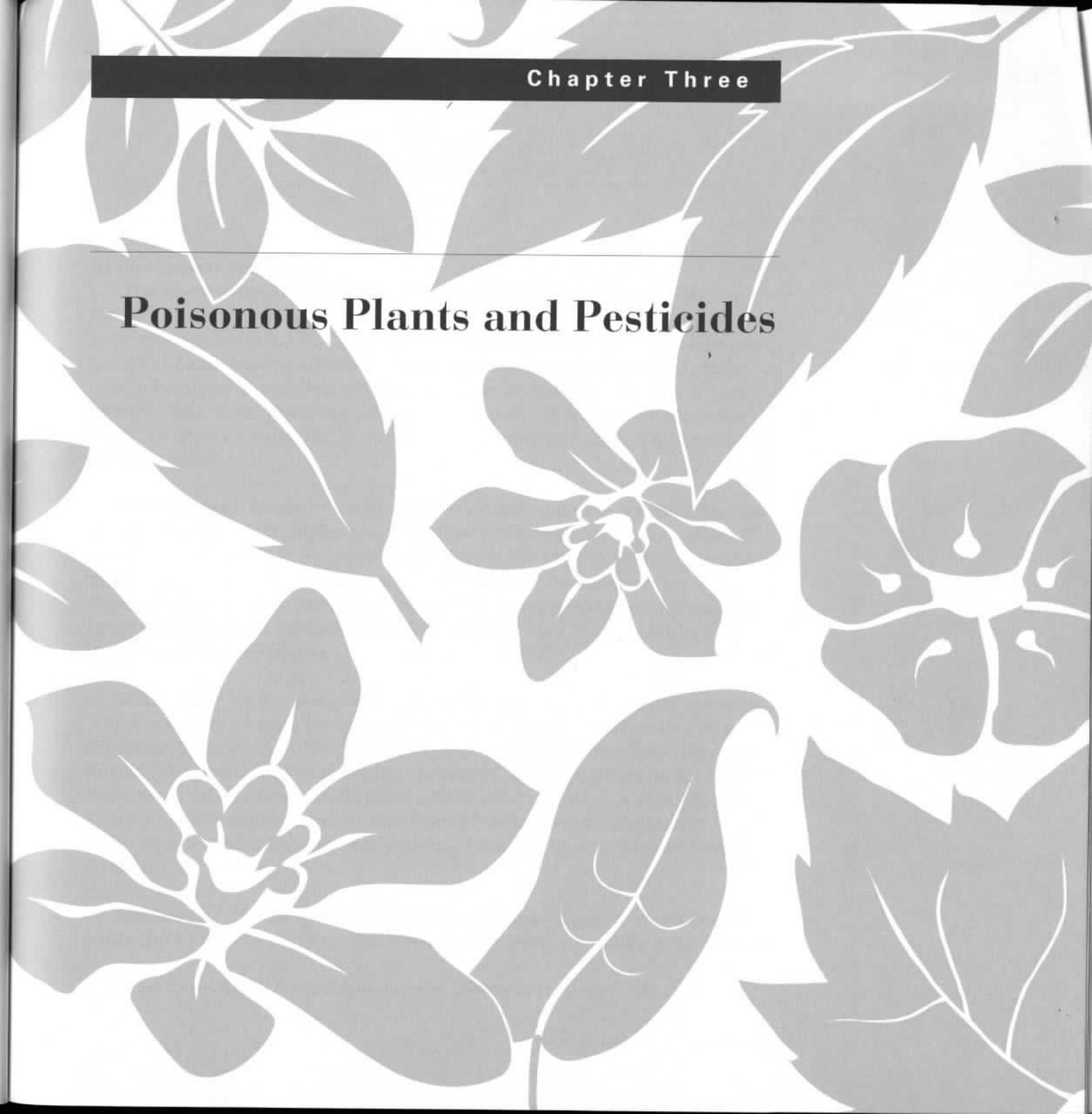
| Common Name | Botanical Name | Zone | Tolerance ¹ | | |
|-----------------------|---|------|------------------------|------|---------|
| | | | Cold | Heat | Drought |
| Trees (contd.) | | | | | |
| Golden-rain tree | <i>Koelreuteria paniculata</i> | 5-9 | I | R | R |
| Hackberry, Common | <i>Celtis occidentalis</i> | 2-9 | R | R | R |
| Hornbeam | | | | | |
| American | <i>Carpinus caroliniana</i> | 3-9 | R | R | R |
| European | <i>Carpinus betulus</i> | 5-9 | I | I | R |
| Locust | | | | | |
| Black MT | <i>Robinia pseudoacacia</i> | 4-9 | R | R | R |
| Idaho | <i>Robinia ambigua 'Idahoensis'</i> | 5-9 | R | R | R |
| Thornless Honey | <i>Gleditsia triacanthos</i> var. <i>inermis</i> | 5-9 | R | R | R |
| Maidenhair tree | <i>Ginkgo biloba</i> | 5-9 | R | R | R |
| Maple | | | | | |
| Hedge | <i>Acer campestre</i> | 5-8 | R | R | R |
| Norway | <i>Acer platanoides</i> | 4-7 | R | R | R |
| Red | <i>Acer rubrum</i> | 4-9 | R | I | I |
| Trident | <i>Acer buergerianum</i> | 5-9 | R | R | R |
| Mulberry, Paper | <i>Broussonetia papyrifera</i> | 7-9 | R | R | R |
| Olive, Russian | <i>Elaeagnus angustifolia</i> | 2-9 | R | R | R |
| Pagoda tree, Japanese | <i>Sophora japonica 'Regent'</i> | 5-9 | R | R | R |

1. Tolerances: R = Resistant; I = Intermediate resistance.

| Common Name | Botanical Name | Zone | Tolerances ¹ | | |
|--------------------------|------------------------------|-------|-------------------------|------|---------|
| | | | Cold | Heat | Drought |
| Trees (contd.) | | | | | |
| Pecan | <i>Carya illinoiensis</i> | 5 - 9 | I | I | I |
| Pine, Red | <i>Pinus resinosa</i> | 3 - 6 | R | I | I |
| Redbud, Eastern | <i>Cercis canadensis</i> | 5 - 9 | I | R | R |
| Smoke tree, American | <i>Cotinus obovatus</i> | 3 - 8 | I | R | R |
| Sourwood | <i>Oxydendrum arboreum</i> | 5 - 9 | I | I | I |
| Spruce Black White | <i>Picea mariana</i> | 2 - 7 | R | R | R |
| | <i>Picea glauca</i> | 2 - 6 | R | R | R |
| Sycamore, Eastern | <i>Platanus occidentalis</i> | 4 - 9 | I | R | R |

1. Tolerances: R = Resistant; I = Intermediate resistance.

Poisonous Plants and Pesticides



About Poisonous Plants

The great majority of plants are highly beneficial and perfectly safe for children's play areas. However, there are a number of naturally occurring poisons in the plant world, some of which are highly concentrated in certain plant species. Some of these poisons can be dangerous to humans if ingested while others can cause dermatitis or other allergic reactions. For example, one or two seeds from a castor bean plant (*Ricinus communis*), if chewed and swallowed, could be deadly to a young child.

Nonetheless, children rarely die from plant poisons. In 1989, the latest year for which statistics are available, only one child in the under 5 year old group died from plant poisoning in the United States. No children in the 5 to 14 year old group died.¹ The *American Medical Association Handbook of Poisonous and Injurious Plants* indicates that most cases of plant ingestion are the result of very young children eating parts of *indoor* plants.

Depending on the species, poisons may be found throughout various plant parts or may be concentrated in one part. That is why it is possible to eat the harmless petioles of rhubarb (*Rheum rhabarbarum*) but not the poisonous leaf blades. Likewise, some plant parts that are poisonous when raw or unripe are edible when cooked or ripened. For example, the poison found in the roots of certain kinds of cassava (*Manihot*), a staple food in many parts of the world, is dispelled when cooked.

Because of the complex nature of poisonous plants, it is not necessarily the best policy to ban them altogether from your play area. Most

1. National Safety Council, *Accident Facts* (Itasca, IL: National Safety Council, 1992), p. 98.

plant poisons can act only if ingested, and the seriousness of reaction depends on the amount eaten. For example, apple (*Malus*) seeds are poisonous, but a child would have to eat a large number of apple seeds to fall seriously ill. It would be an extreme reaction to keep children away from apples as a means of protecting them from these toxic seeds.

The actual risk of children being harmed by plants outdoors can be minimized if reasonable precautions are taken when selecting plant species and locating them in children's outdoor play environments. The best approach is to familiarize yourself with plants that have poisonous properties and to take preventative measures. The list of plant species on the following pages will help you quickly identify some of the more common plants in which poisons are found. These plants are listed by botanical name to avoid the possibility of confusion with other plant species. Additional information can be found in several of the sources listed in the annotated bibliography at the end of this book. Your local agricultural extension service office or poison control center can also provide useful information.

In addition to increasing your knowledge of poisonous plants, you should consider the following:

Age of Children. The age of the children who will be using your play area should be considered when selecting and locating plants. Greater care must be taken with regard to toxic plants in areas used by infants and toddlers, since these age groups are likely to put plant parts in their mouths if given the opportunity. Avoid placing highly toxic plants, particularly plants with poisonous fruits and plants that can cause dermatitis, within reach of these age groups. Of equal concern are plants with small seeds or berries that very young children could choke on.

Educational Benefits. Children will come across poisonous plants at some point during their childhood. If they are unaware of what those plants look like and the dangers they represent, there is a greater possibility that they may expose themselves to those dangers. School yards and other supervised environments provide opportunities for teaching children about plants that are poisonous. I remember well the lessons I received about "deadly nightshade" (*Solanum nigrum*) when I was growing up in rural England. I can recognize the plant in an instant even today. You may want to purposely include different types of common poisonous plants in your planting design to support such educational opportunities. Depending on the species you choose, you may want to label or group these plants together.

Supervision and Prevention. The best method of prevention is to teach children not to put any plant or plant part into their mouth that they cannot positively identify as good, wholesome food. Selected plantings of edible species (as listed in *Nature's Bounty* on pages 38 and 39) can help children identify plants that are good to eat so that they can avoid all others. In addition, supervisory staff should be aware of which plants in the play area have poisonous properties and should keep younger children away from them. If a poisonous plant is ingested, a physician should be consulted immediately. The phone number of a physician and/or your local or regional Poison Control Center should be kept next to your phone for such emergencies.

About Pesticides

There are many more children that fall ill each year from exposure to pesticides than from ingesting natural plant poisons. Improper pest management and weed control practices can make all of the plants in your play area, including edible species, poisonous.

To the extent possible, you should employ natural methods of pest management and weed control. These can include selection of pest- and disease-resistant plant species and the use of mechanical controls such as a strong jet of water to literally wash pests off, removal of plant debris that attracts pests, or good old-fashioned weeding by hand. Nonchemical pest management alternatives include release or encouragement of beneficial insects and use of botanical insecticides such as natural pyrethrins.

If you have to resort to chemical preparations, do so only with great care. Follow label directions exactly and do not let children use the area until it is absolutely safe. If misused, chemical pesticides can damage your plants and pose an environmental hazard. However, use of such pesticides may be necessary to address large-scale infestations.

For more information on pest management and weed control in your locale, consult a professional at a reputable local nursery, a horticultural consultant, or the agriculture department at a nearby university. There are also several references listed at the end of this book.

About the Lists

The following list is organized in three sections: Highly Toxic Plants, Moderately Toxic Plants, and Slightly Toxic Plants. **Highly Toxic Plants** are those species that are known to cause serious illness or (in extreme cases) death when ingested. **Moderately Toxic Plants** include those species that can cause illness when ingested or serious contact dermatitis. **Slightly Toxic Plants** are species that cause mild illness or contact dermatitis. Remember, however, that the seriousness of reaction depends in large part on the amount of plant material eaten as well as the condition and tolerances of the person affected. Young children are likely to have more pronounced responses to plant toxins than adults simply because they are smaller in size.

The plants listed here are among the more common species of poisonous plants. However, it is not a comprehensive list. There are over 700 plants in North America that are known to be poisonous to humans or animals. The *American Medical Association Handbook of Poisonous and Injurious Plants* by Kenneth Lampe (see Chapter Six, *Annotated Bibliography*) is an excellent reference for a more comprehensive treatment of this subject.

Highly Toxic Plants

| Botanical Name | Common Name | Toxic Parts |
|---|--------------------------|----------------------|
| <i>Abrus precatorius</i> | Rosary pea | seeds |
| <i>Acokanthera spp.</i> [<i>Carissa spectabilis</i>] | Poison bush, Wintersweet | fruit and plant |
| <i>Aconitum napellus</i> | Monkshood | all parts |
| <i>Alocasia macrorrhiza</i> | Taro | all parts |
| <i>Atropa belladonna</i> | Belladonna | all parts |
| <i>Conium maculatum</i> | Hemlock | all parts |
| <i>Convallaria majalis</i> | Lily-of-the-valley | all parts |
| <i>Daphne spp.</i> | Daphne | berries, bark |
| <i>Datura spp.</i> | Angel's trumpet | nectar, seeds |
| <i>Delphinium spp.</i> | Larkspur | all parts |
| <i>Dieffenbachia spp.</i> | Dumb cane | berries |
| <i>Duranta repens</i> | Golden-dewdrop | berries |
| <i>Euphorbia pulcherrima</i> | Poinsettia | sap |
| <i>Euphorbia spp.</i> | Spurges | sap |
| <i>Gloriosa superba</i> | Glory lily | all parts, esp. root |

Highly Toxic Plants *continued*

| Botanical Name | Common Name | Toxic Parts |
|-----------------------------|---------------------------------------|--------------------------------|
| <i>Ilex aquifolium</i> | English holly | fruits and leaves |
| <i>Ilex opaca</i> | American holly | fruits and leaves |
| <i>Jatropha spp.</i> | Coral plant, Barbados nut, Physic nut | seeds |
| <i>Kalmia spp.</i> | Laurels | all parts |
| <i>Laburnum anagyroides</i> | Golden-chain tree | all parts |
| <i>Lantana spp.</i> | Lantana | green fruits |
| <i>Ligustrum spp.</i> | Privet | fruit |
| <i>Lobelia cardinalis</i> | Cardinal flower | all parts |
| <i>Malus spp.</i> | Apple | leaves, seeds in large amounts |
| <i>Melia azedarach</i> | Bead tree, Chinaberry | fruit, leaf, bark and flowers |
| <i>Nerium oleander</i> | Oleander | all parts |
| <i>Nicotiana glauca</i> | Tree tobacco | all parts, esp.leaves |
| <i>Prunus spp.</i> | Apricot, Peach, Bitter almond | kernel, flower, leaf, bark |
| <i>Rheum rhabarbarum</i> | Rhubarb | leaf blade |

Highly Toxic Plants *continued*

| Botanical Name | Common Name | Toxic Parts |
|-----------------------------------|------------------------|---|
| <i>Rhododendron</i> spp. | Rhododendrons, Azaleas | leaf |
| <i>Ricinus communis</i> | Castor bean plant | seeds (2 - 8) |
| <i>Solanum dulcamara</i> | Nightshade | all parts |
| <i>Solanum nigrum</i> | Nightshade | green fruit |
| <i>Solanum pseudocapsicum</i> | Jerusalem cherry | berries |
| <i>Solanum sodomeum</i> | Apple-of-Sodom | fruit |
| <i>Solanum tuberosum</i> | Potato | green skin |
| <i>Tabernaemontana divaricata</i> | Crape jasmine | all parts |
| <i>Taxus</i> spp. | Yews | all parts, esp. seed in pod |
| <i>Thevetia peruviana</i> | Yellow oleander | all parts, esp. seed in kernel |
| <i>Wisteria</i> spp. | Wisteria | seeds and pods |
| <i>Zantedeschia aethiopica</i> | Arum lily, Calla lily | all parts, esp. juice of leaves & stem |

Moderately Toxic Plants

| Botanical Name | Common Name | Toxic Parts |
|---------------------------------|-------------------------------------|-----------------------|
| <i>Aesculus</i> spp. | Buckeye, Horse chestnut | all parts |
| <i>Aleurites fordii</i> | Tung-oil tree | fruit kernel |
| <i>Allamanda</i> spp. | Allamanda | fruit |
| <i>Amaryllis belladonna</i> | Lily, Belladonna | bulb |
| <i>Anemone</i> spp. | Windflower | all parts |
| <i>Aquilegia</i> spp. | Columbine | seeds |
| <i>Arum italicum</i> | Italian arum | sap, esp. berries |
| <i>Arum maculatum</i> | Lords-and-ladies | sap |
| <i>Asclepias fruticosa</i> | Swan plant | pods |
| <i>Caladium</i> spp. | Caladium | all parts |
| <i>Castanospermum australe</i> | Black bean, Moreton bay chestnut | seeds |
| <i>Celastrus</i> spp. | Bittersweet | all parts |
| <i>Cestrum</i> spp. | Day-blooming cestrum, Jessamine | all parts, esp. fruit |
| <i>Chrysanthemum morifolium</i> | Florist's Chrysanthemum | all parts |
| <i>Colocasia</i> spp. | Elephant's-ear | root |
| <i>Colocasia esculenta</i> | Taro root | root |

Moderately Toxic Plants *continued*

| Botanical Name | Common Name | Toxic Parts |
|-------------------------------|-----------------------|---------------------------------|
| <i>Cotoneaster spp.</i> | Cotoneaster | fruit, flowers |
| <i>Crataegus spp.</i> | Hawthorn | fruit |
| <i>Cydonia oblonga</i> | Quince | seeds, fresh leaves |
| <i>Digitalis purpurea</i> | Foxglove | all parts |
| <i>Eriobotrya japonica</i> | Loquat | seeds |
| <i>Euonymus europaea</i> | European spindle tree | all parts, esp. fruit and seeds |
| <i>Gelsemium sempervirens</i> | Yellow jessamine | all parts |
| <i>Hedera helix</i> | English ivy | all parts, esp. berries |
| <i>Hura crepitans</i> | Sandbox tree | all parts |
| <i>Hyacinthus orientalis</i> | Hyacinth | all parts, esp. bulb |
| <i>Hydrangea spp.</i> | Hydrangea | flowers |
| <i>Iris germanica</i> | Flag, Fleur-de-lis | all parts |
| <i>Lupinus spp.</i> | Lupine | seed pods |
| <i>Manihot esculenta</i> | Cassava | raw roots |
| <i>Moraea spp.</i> | Iris, Butterfly | all parts |
| <i>Narcissus jonquilla</i> | Jonquil | sap and bulb |

Moderately Toxic Plants *continued*

| Botanical Name | Common Name | Toxic Parts |
|----------------------------------|----------------------------|----------------------|
| <i>Narcissus pseudonarcissus</i> | Daffodil | sap and bulb |
| <i>Nerine spp.</i> | Spider lily | bulb |
| <i>Ornithogalum arabicum</i> | Star-of-Bethlehem | bulb or flower spike |
| <i>Ornithogalum thyrsoides</i> | Chincherinchee | bulb or flower spike |
| <i>Philodendron spp.</i> | Philodendron | all parts |
| <i>Physalis alkekengi</i> | Ground cherry | unripe fruit |
| <i>Physalis ixocarpa</i> | Tomatillo, Chinese lantern | unripe fruit |
| <i>Plumeria spp.</i> | Frangipani | sap |
| <i>Poinciana gilliesii</i> | Bird-of-paradise plant | unripe seed pod |
| <i>Prunus cerasus</i> | Pie cherry, Sour cherry | kernels |
| <i>Prunus laurocerasus</i> | Laurel cherry | bruised leaves |
| <i>Pyrus communis</i> | Pear | seeds |
| <i>Rhamnus spp.</i> | Buckthorn, Cascara sagrada | fruit |
| <i>Robinia pseudoacacia</i> | Black locust | all parts |
| <i>Solandra spp.</i> | Golden chalice, Gold cup | sap, leaves, flowers |
| <i>Solanum aviculare</i> | Kangaroo apple | green fruit |

Moderately Toxic Plants *continued*

| Botanical Name | Common Name | Toxic Parts |
|-----------------------------------|---------------------------------|----------------------|
| <i>Schinus molle</i> | Pepper tree | fruit |
| <i>Schinus terebinthifolius</i> | Brazilian pepper tree | fruit, large amounts |
| <i>Hyacinthoides non-scriptus</i> | English bluebell | all parts |
| <i>Scilla peruviana</i> | Cuban lily, Hyacinth-of-Peru | all parts |

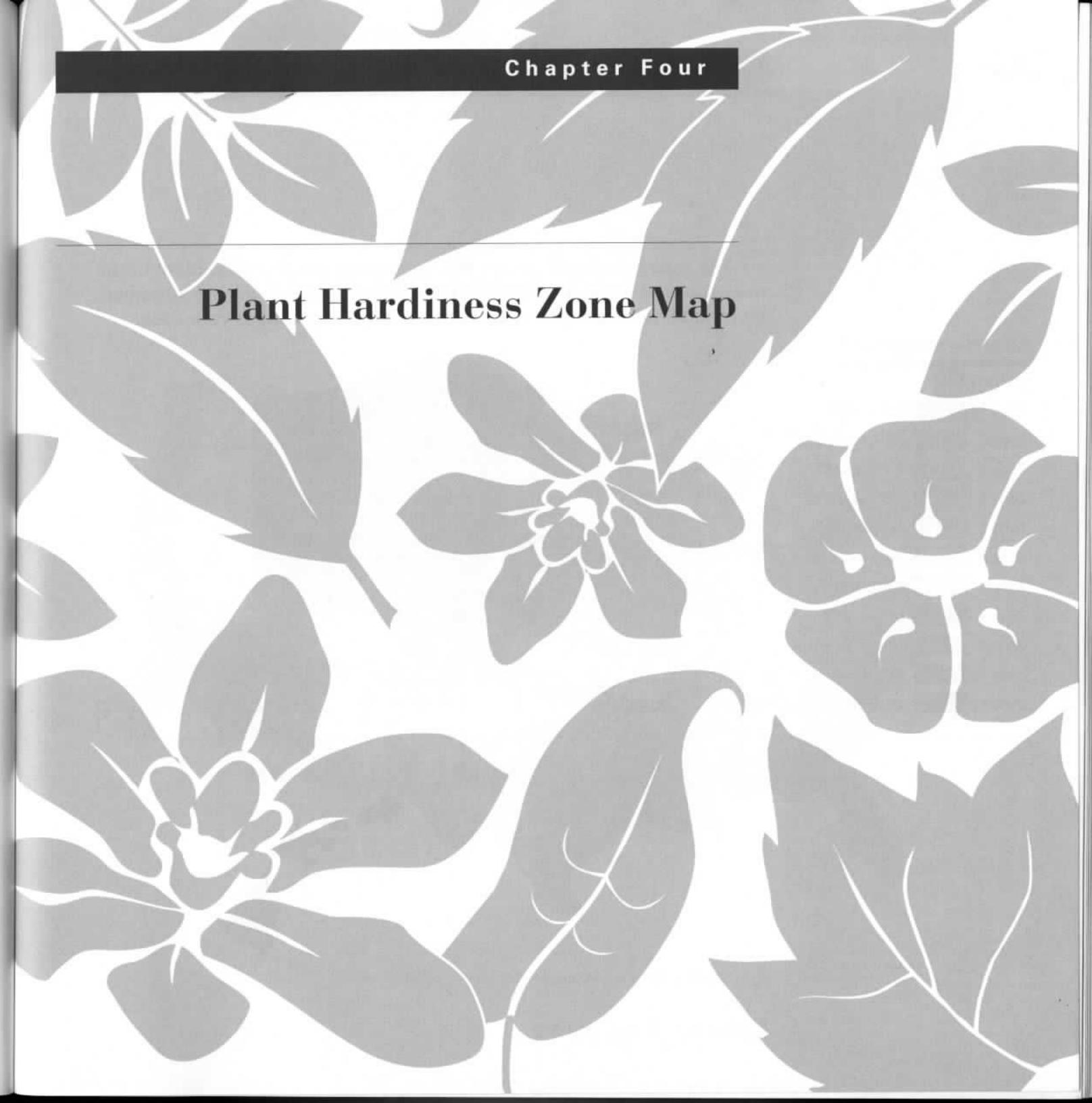
Slightly Toxic Plants

| Botanical Name | Common Name | Toxic Parts |
|---------------------------------|------------------------------------|--|
| <i>Achillea millefolium</i> | Milfoil, Common yarrow | all parts |
| <i>Agapanthus africanus</i> | African blue lily | sap |
| <i>Artemisia absinthium</i> | Common wormwood | all parts |
| <i>Chrysanthemum coccineum</i> | Pyrethrum | all parts |
| <i>Chrysanthemum parthenium</i> | Feverfew | all parts |
| <i>Clematis spp.</i> | Traveller's joy | all parts |
| <i>Colchicum autumnale</i> | Autumn crocus | flowers |
| <i>Cosmos bipinnatus</i> | Cosmos | all parts |
| <i>Cotinus coggygria</i> | Smoke Tree | sap |
| <i>Cycas spp.</i> | Zamia palm | seeds, fresh or improperly prepared |
| <i>Dicentra spectabilis</i> | Bleeding heart | all parts |
| <i>Echium lycopsis</i> | Paterson's curse | all parts |
| <i>Helenium autumnale</i> | Sneezeweed | all parts |
| <i>Helianthus annuus</i> | Sunflower | all parts |
| <i>Monstera deliciosa</i> | Fruit salad, Swiss cheese plant | ripe fruit |
| <i>Primula obconica</i> | Primula | all parts |

Slightly Toxic Plants *continued*

| Botanical Name | Common Name | Toxic Parts |
|--------------------------|------------------|-------------|
| <i>Ranunculus spp.</i> | Buttercups | all parts |
| <i>Rhus radicans</i> | Poison ivy | all parts |
| <i>Rhus vernix</i> | Poison sumac | all parts |
| <i>Rudbeckia hirta</i> | Black-eyed-Susan | all parts |
| <i>Senecio cineraria</i> | Dusty miller | all parts |
| <i>Tanacetum vulgare</i> | Common tansy | all parts |
| <i>Urtica spp.</i> | Stinging nettle | all parts |

Plant Hardiness Zone Map



Plant Hardiness Zone Map

The map below and on the following page identifies the plant hardiness zones of the U.S. All of the plants listed in this book are identified by zone to help you select plants that are appropriate for your area.

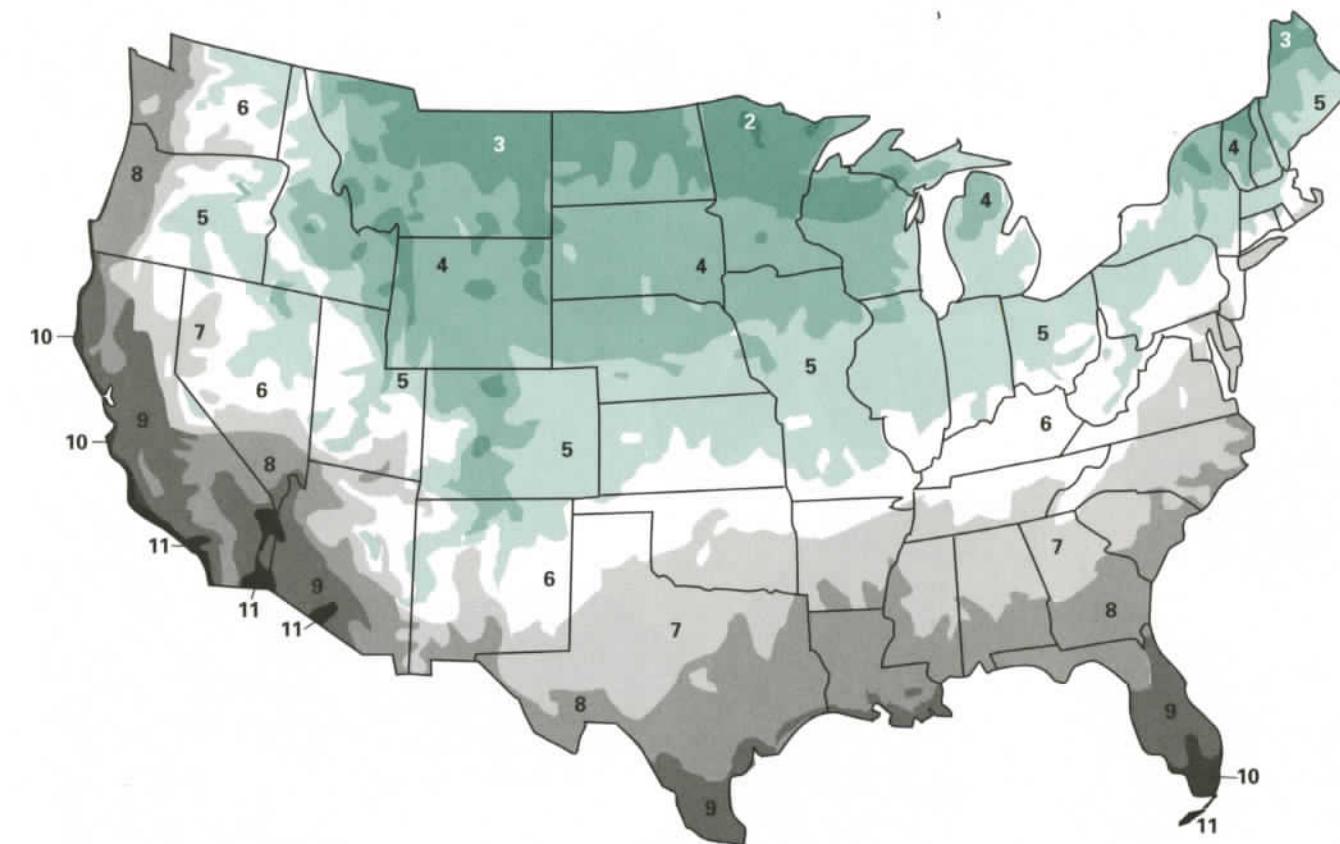
Range of average annual minimum temperatures for each zone.

| | |
|---------|------------------|
| Zone 1 | Below -50° F |
| Zone 2 | -50° F to -40° F |
| Zone 3 | -40° F to -30° F |
| Zone 4 | -30° F to -20° F |
| Zone 5 | -20° F to -10° F |
| Zone 6 | -10° F to 0° F |
| Zone 7 | 0° F to 10° F |
| Zone 8 | 10° F to 20° F |
| Zone 9 | 20° F to 30° F |
| Zone 10 | 30° F to 40° F |
| Zone 11 | Above 40° F |



Plant Hardiness Zone Map

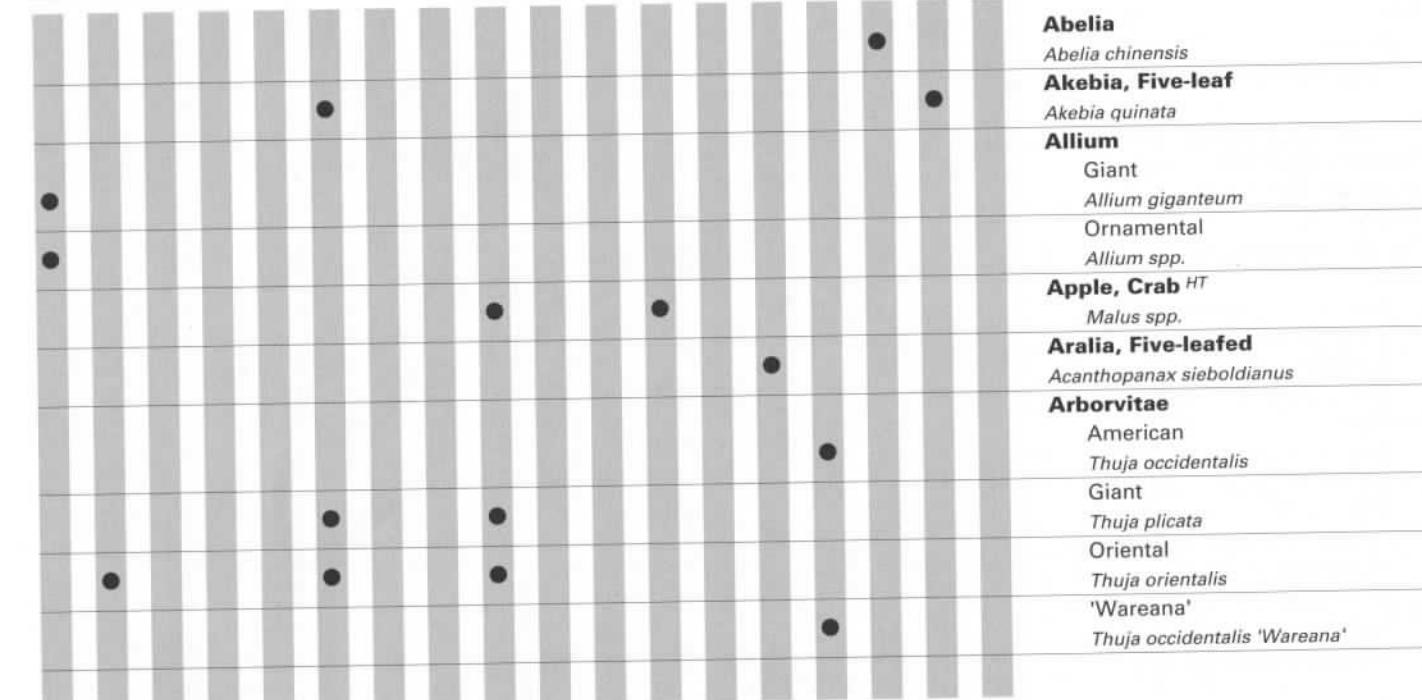
If your location is not shown on the map, use the temperature ranges to determine the appropriate zone designation.



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Plants for Play

Abelia*Abelia chinensis***Akebia, Five-leaf***Akebia quinata***Allium**

Giant

Allium giganteum

Ornamental

*Allium spp.***Apple, Crab** HT*Malus spp.***Aralia, Five-leafed***Acanthopanax sieboldianus***Arborvitae**

American

Thuja occidentalis

Giant

Thuja plicata

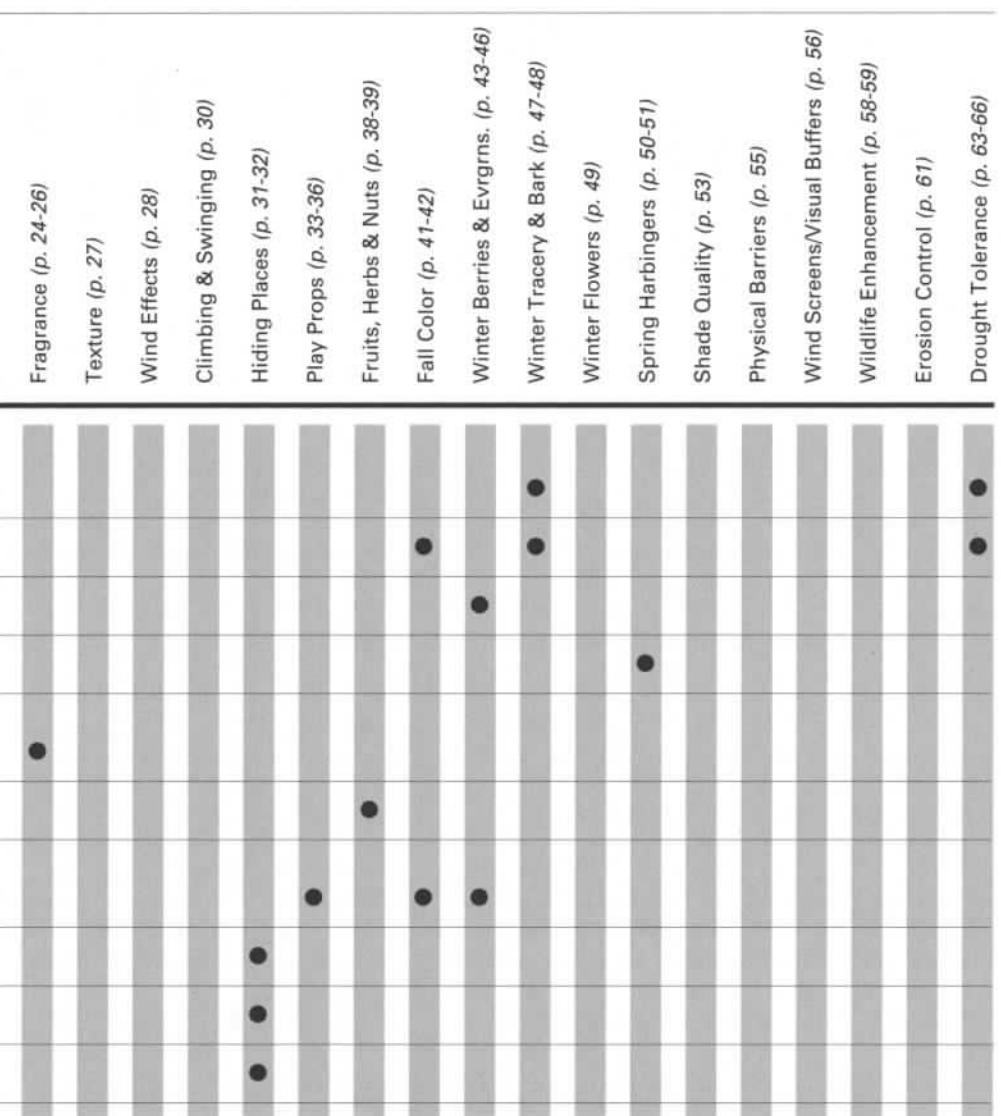
Oriental

Thuja orientalis

'Wareana'

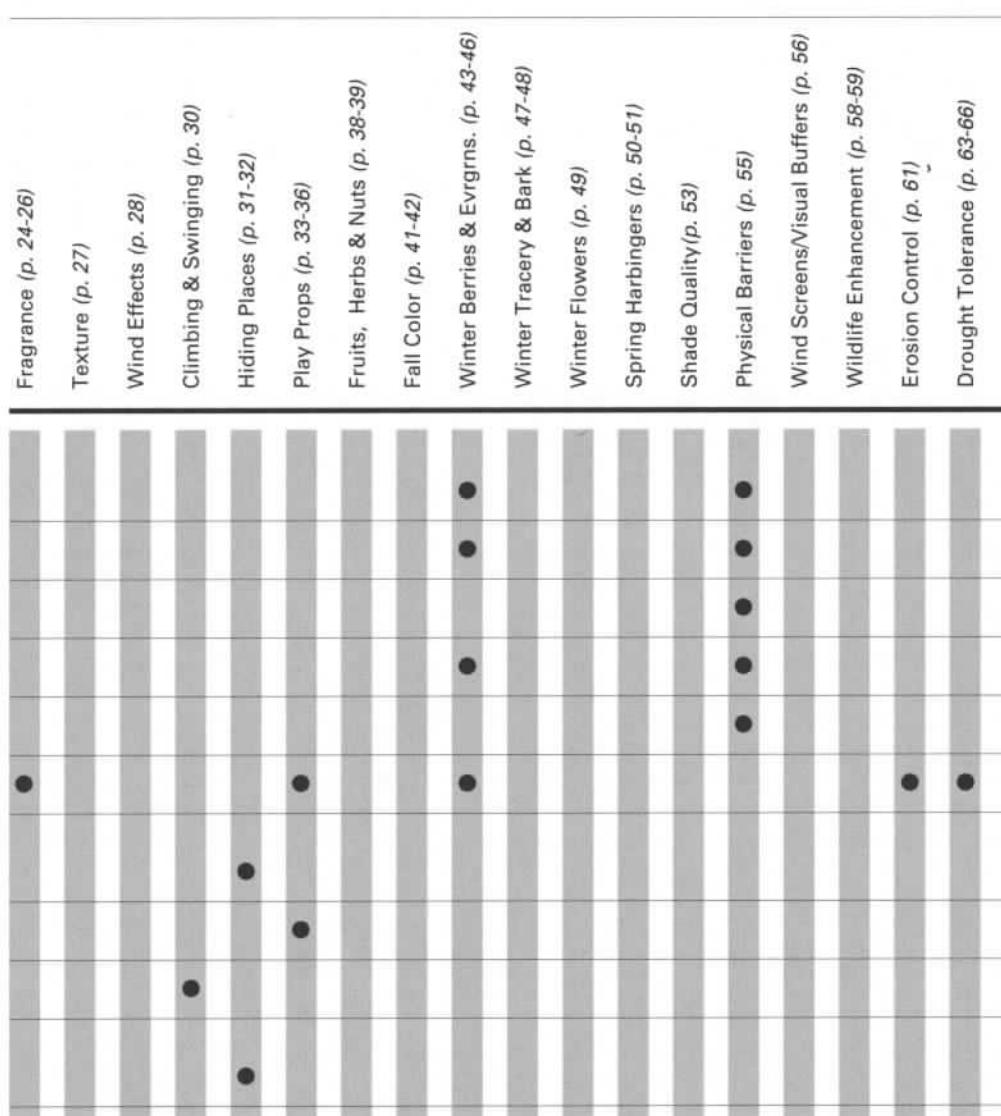
Thuja occidentalis 'Wareana'

Plant Functions



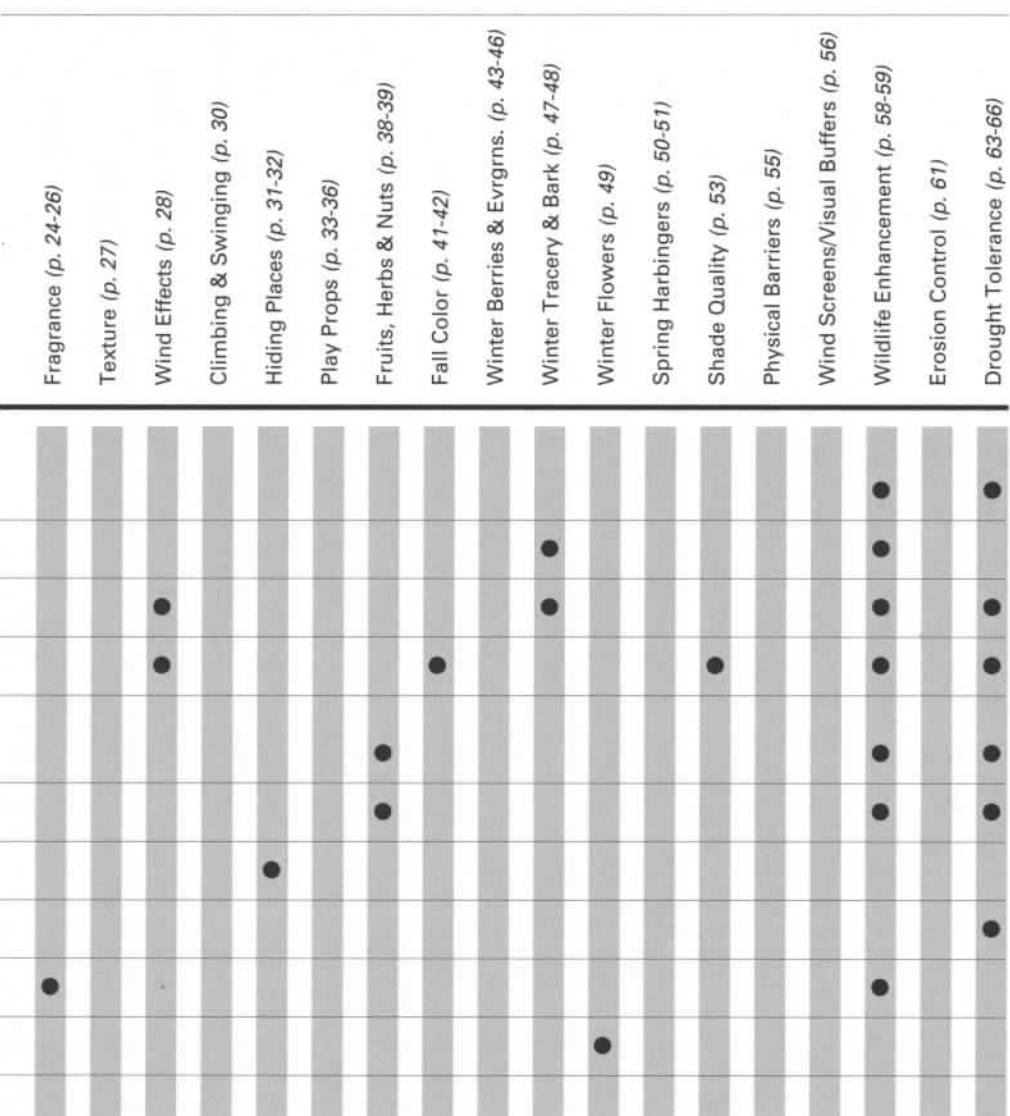
Plants for Play

Plant Functions



Plants for Play

Plant Functions



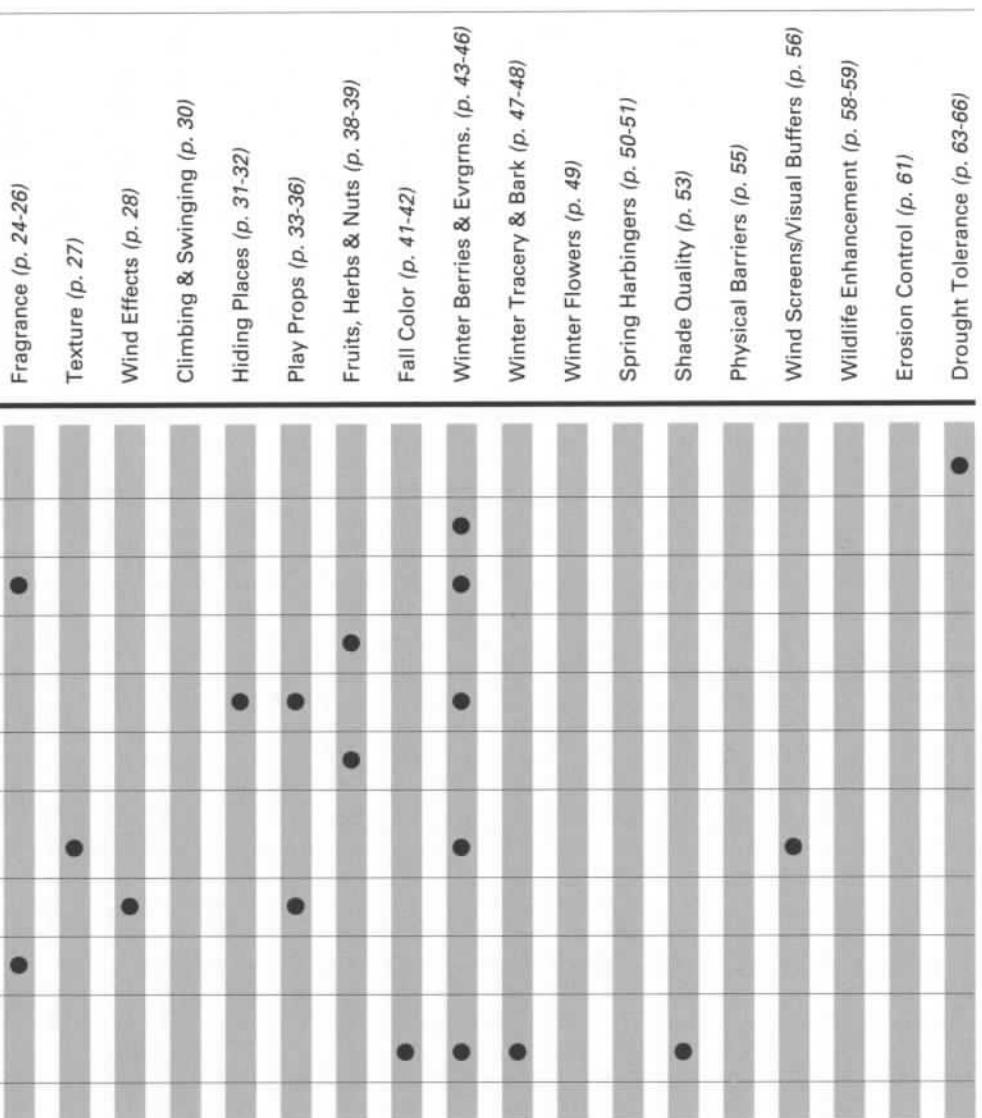
Plants for Play

Plant Functions



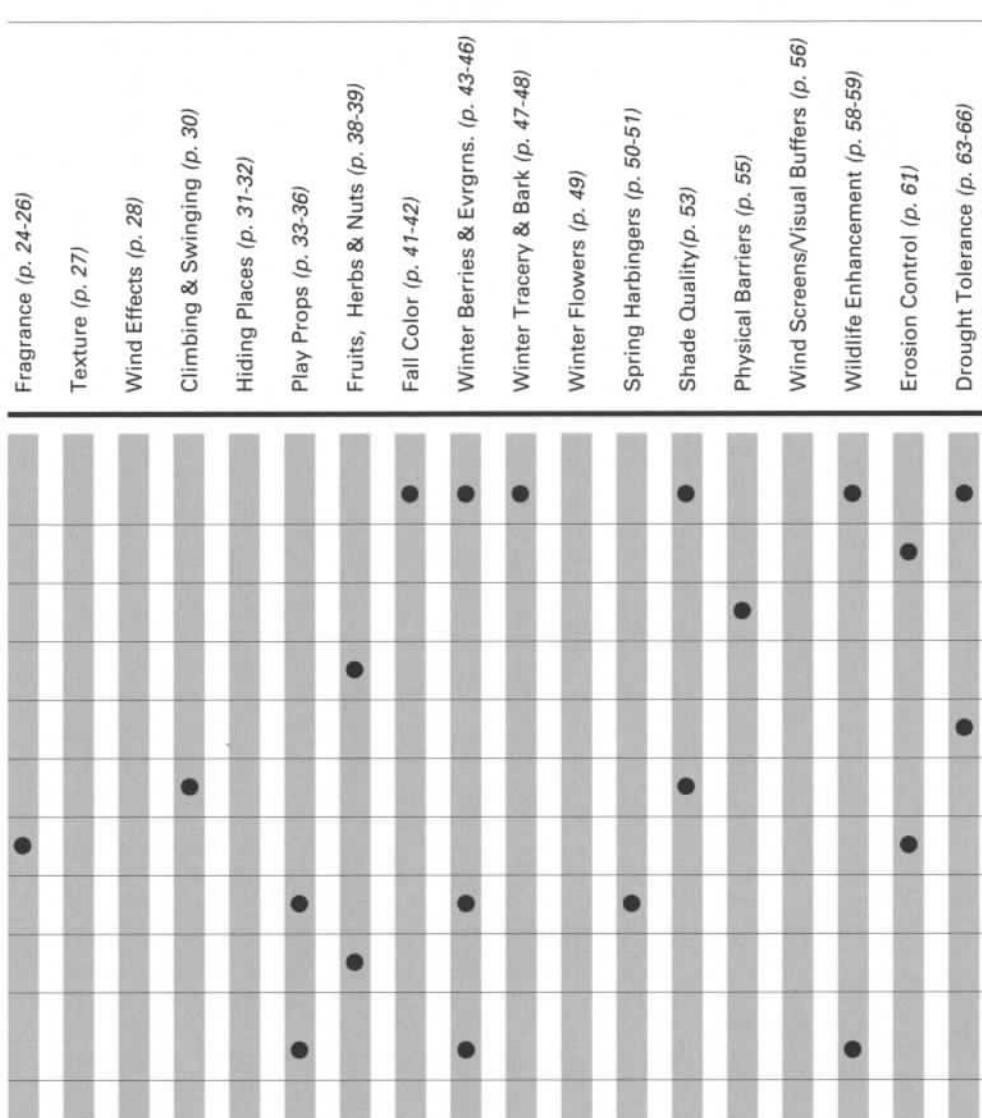
Plants for Play

Plant Functions



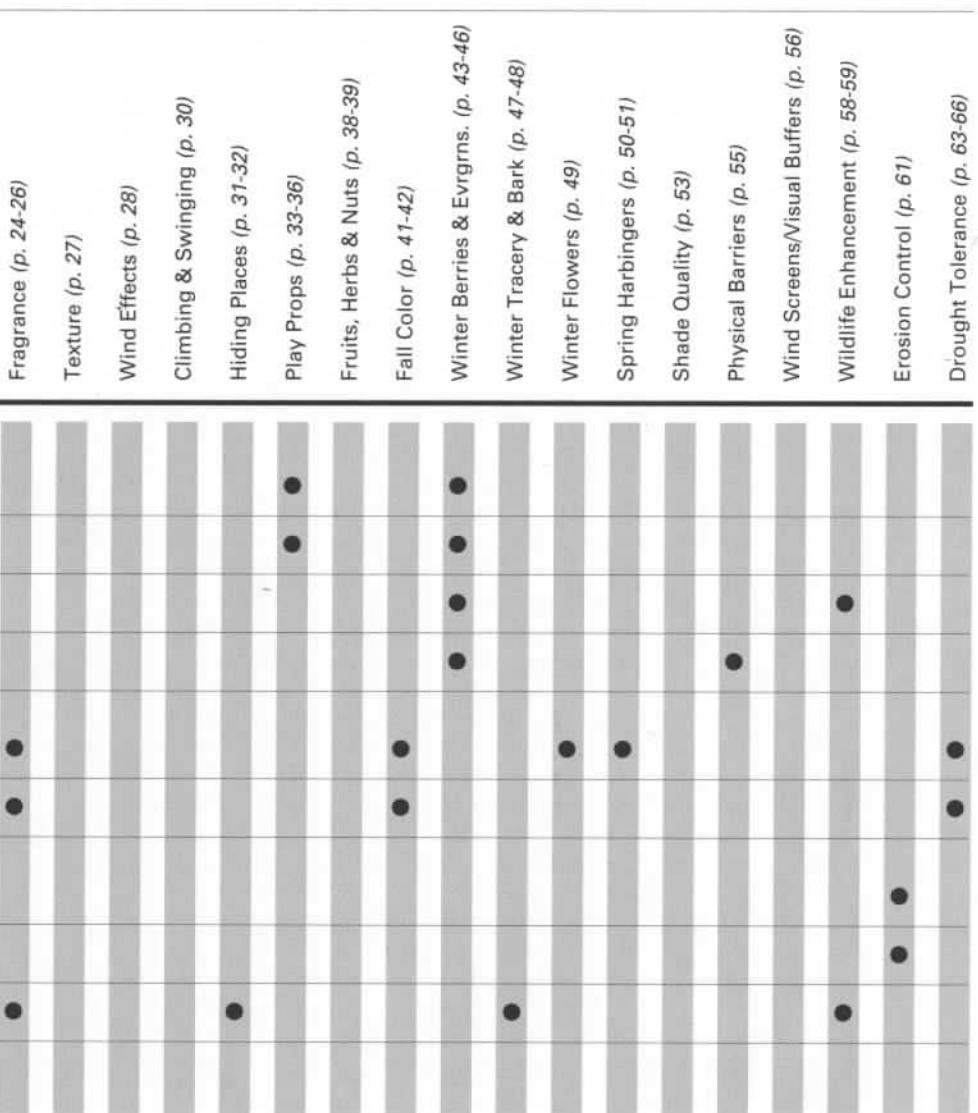
Plants for Play

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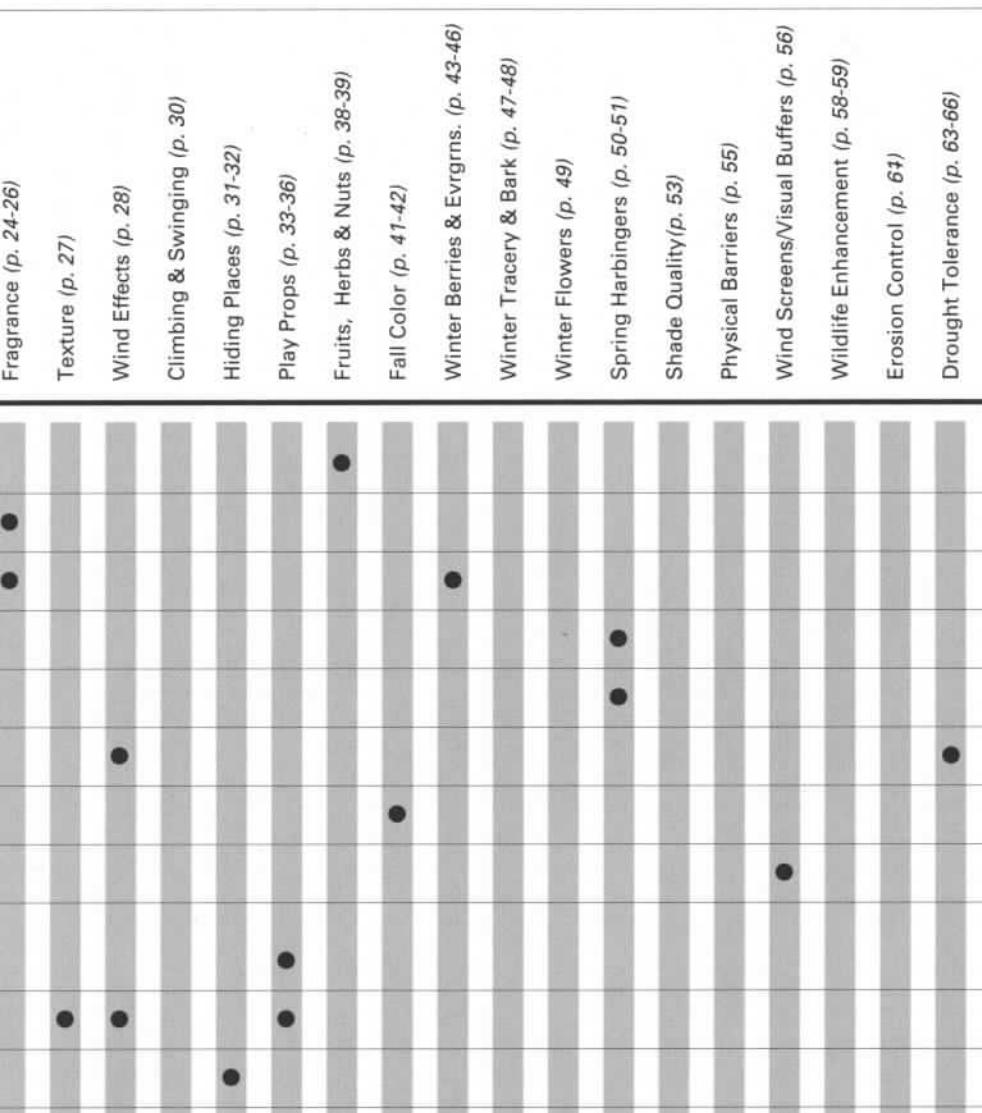
Plants for Play

Plant Functions



Plants for Play

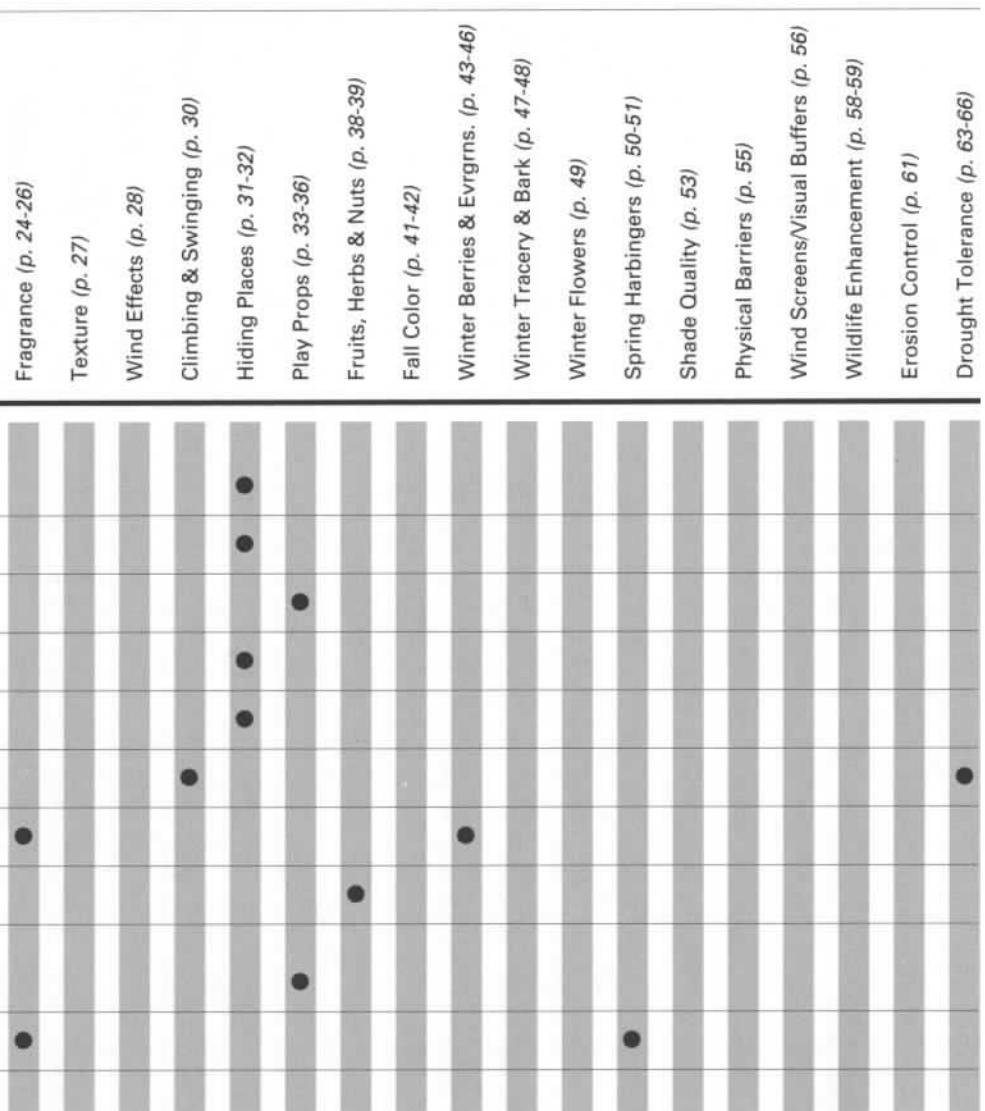
Plant Functions



Plants for Play

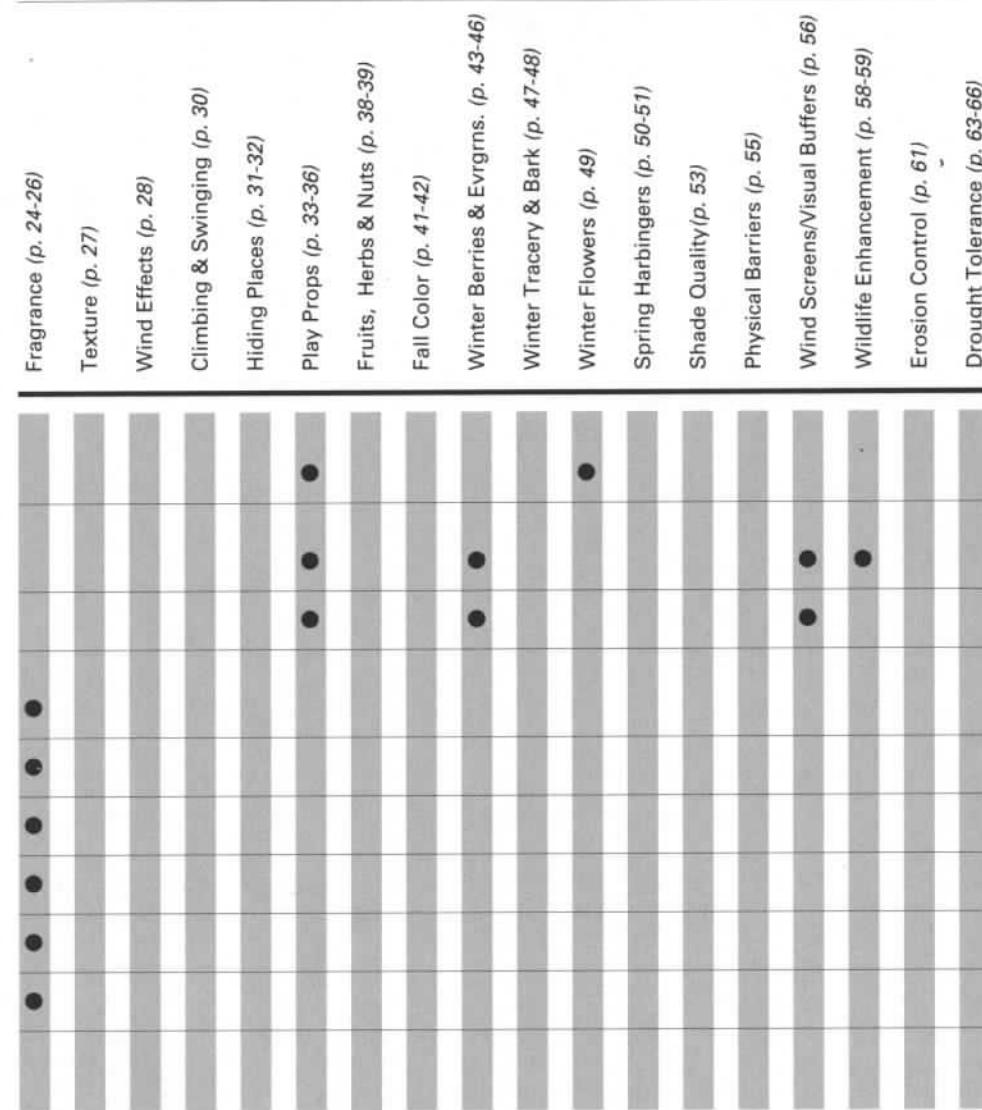
Geranium
Pelargonium spp.
Geranium, Bigroot
Geranium macrorrhizum
Germander, Chamaedrys
Teucrium chamaedrys
Glory-of-the-snow
Chionodoxa luciliae
Golden-bells
Forsythia x intermedia
Golden-rain tree
Koelreuteria paniculata
Gum, American Sweet
Liquidambar styraciflua
Gum tree
Eucalyptus spp.
Grass
Feather Reed
Calamagrostis acutiflora 'Stricta'
Fountain
Pennisetum setaceum
Giant Feather
Stipa gigantea

Plant Functions



Plants for Play

Plant Functions



Plants for Play

| | |
|--|--|
| Hornbeam | |
| American | |
| <i>Carpinus caroliniana</i> | |
| European | |
| <i>Carpinus betulus</i> | |
| Hyacinth, Grape | |
| <i>Muscari armeniacum</i> | |
| Jasmine | |
| Confederate | |
| <i>Trachelospermum jasminoides</i> | |
| Poet's | |
| <i>Jasminum officinale</i> | |
| Yellow Star | |
| <i>Trachelospermum asiaticum</i> | |
| Winter | |
| <i>Jasminum nudiflorum</i> | |
| Juniper | |
| Hetz Blue | |
| <i>Juniperus chinensis 'Hetzii'</i> | |
| Pfitzer | |
| <i>Juniperus chinensis 'Pfitzerana'</i> | |
| Sargent | |
| <i>Juniperus chinensis</i> var. <i>sargentii</i> | |

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| | |
|---------------------------------|--|
| Katsura tree | |
| <i>Cercidiphyllum japonicum</i> | |
| Kiwi Fruit | |
| <i>Actinidia chinensis</i> | |
| Lamb's Ears | |
| <i>Stachys byzantina</i> | |
| Lavender, English | |
| <i>Lavandula angustifolia</i> | |
| Lilac | |
| Common | |
| <i>Syringa vulgaris</i> | |
| Persian | |
| <i>Syringa persica</i> | |
| Lily, Fragrant plantain | |
| <i>Hosta plantaginea</i> | |
| Lily-of-the-valley bush | |
| <i>Pieris japonica</i> | |
| Lilyturf | |
| Big Blue | |
| <i>Liriope muscari</i> | |
| Creeping | |
| <i>Liriope spicata</i> | |

Plants for Play

Linden, Small-leaved*Tilia cordata***Locust**

Black MT

Robinia pseudoacacia

Idaho

Robinia ambigua 'Idahoensis'

Thornless Honey

Gleditsia triacanthos var. *inermis***Magnolia**

Saucer

Magnolia x soulangiana

Southern

Magnolia grandiflora

Star

Magnolia stellata

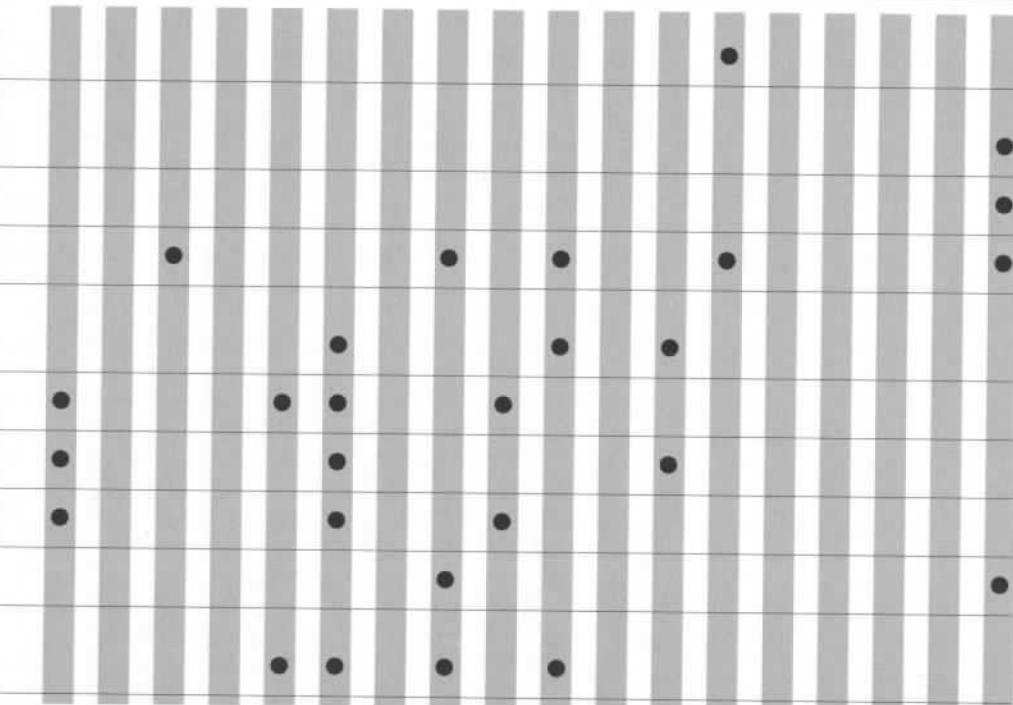
Sweet bay

*Magnolia virginiana***Maidenhair tree***Ginkgo biloba***Maple**

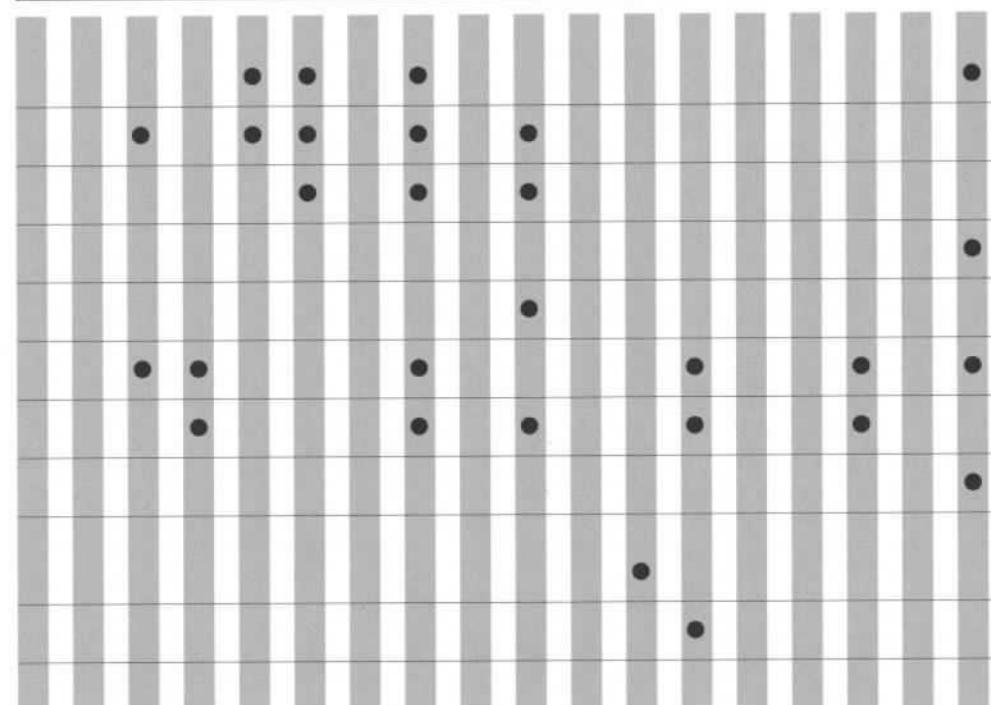
Amur

Acer ginnala

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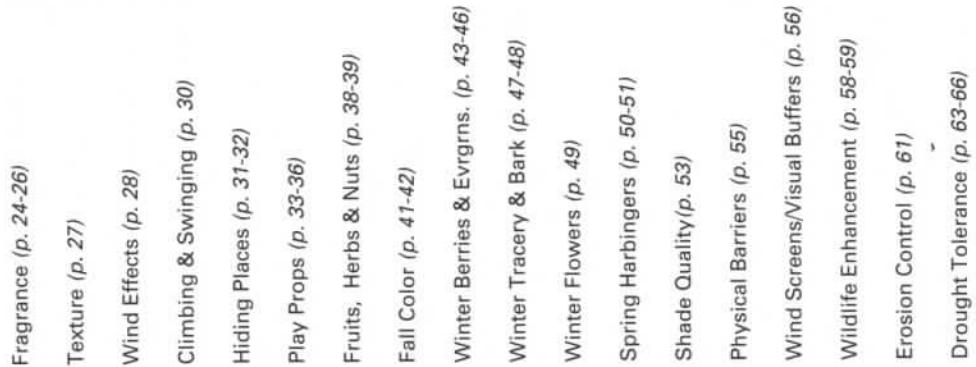
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Mint, Pineapple*Mentha suaveolens 'Variegata'***Money plant***Lunaria annua**Lunaria annua 'Variegata'***Mulberry***Paper**Broussonetia papyrifera**Red**Morus rubra***Myrtle***Crape**Lagerstroemia indica**Pacific Wax**Myrica californica**Wax**Myrica cerifera***Nasturtium***Canary Creeper**Tropaeolum peregrinum**Garden**Tropaeolum majus*

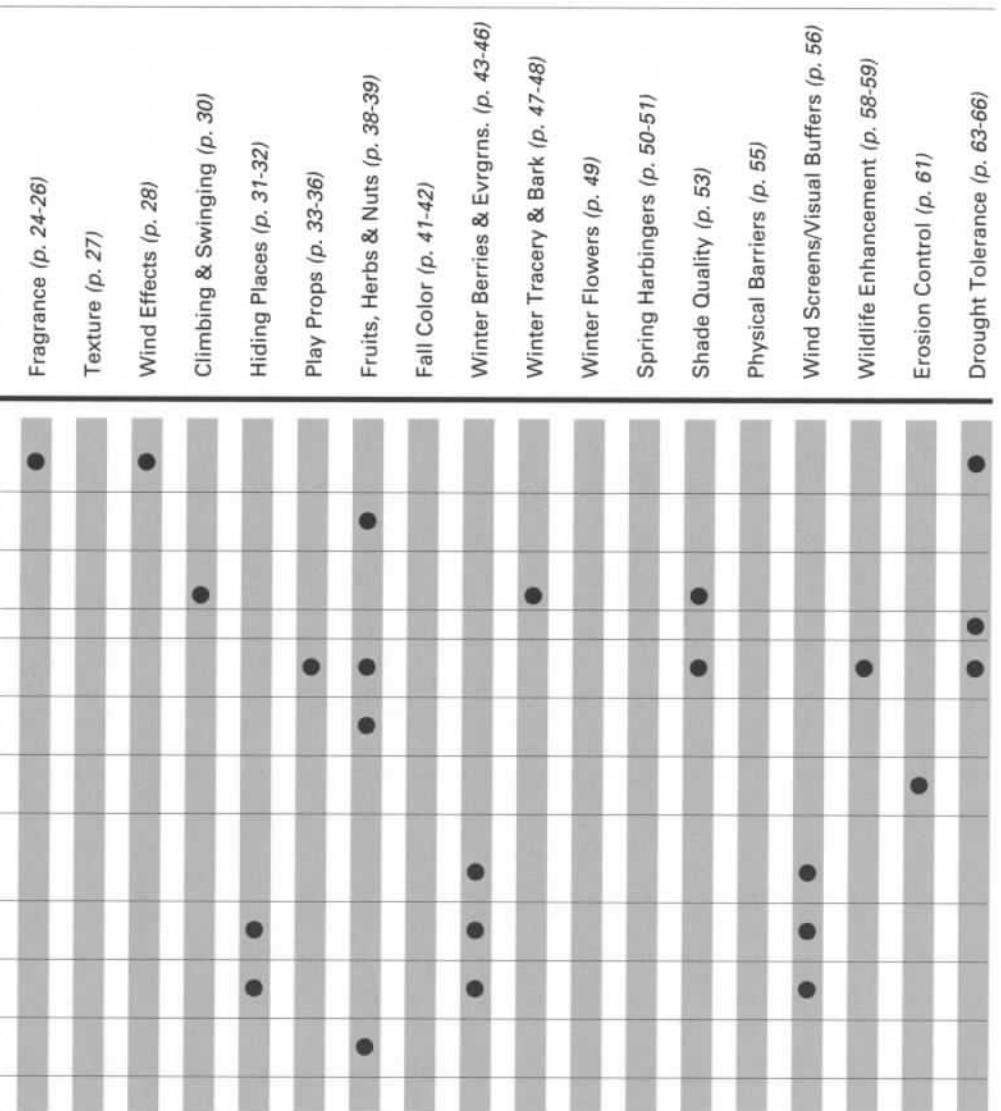
Plants for Play

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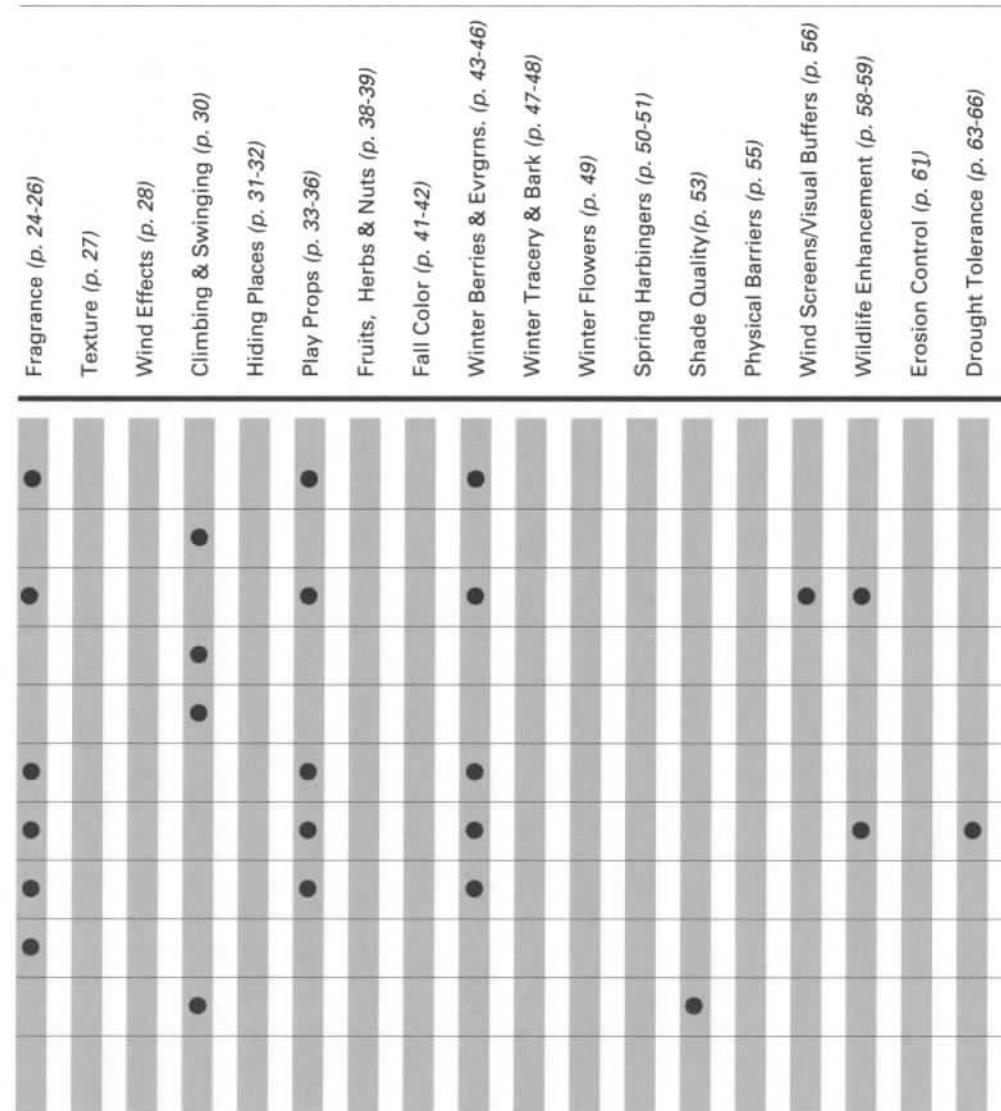
Nasturtium (contd.)*Wreath*
*Tropaeolum polyphyllum***Oak***Chinese Evergreen**Quercus myrsinifolia**Laurel**Quercus imbricaria**Pin**Quercus palustris**Red**Quercus rubra**Sawtooth**Quercus acutissima**Water**Quercus nigra**White**Quercus alba**Willow**Quercus phellos***Olive***Olea europaea*

Plant Functions



Plants for Play

Plant Functions



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| Drought Tolerance (p. 63-66) | ● |

Pittosporum

Japanese

Pittosporum tobira

Victorian Box

*Pittosporum undulatum***Plum, American***Prunus americana***Pomegranate***Punica granatum***Quince**

Flowering

Chaenomeles speciosa

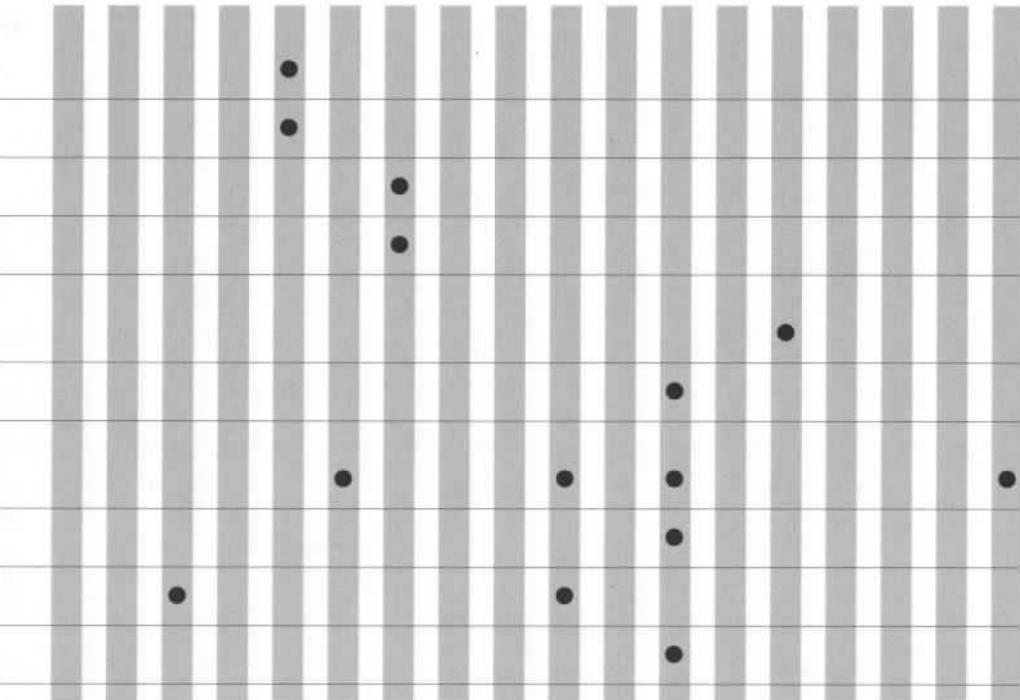
Japanese

*Chaenomeles japonica***Redbud**

Eastern

Cercis canadensis

Western

*Cercis occidentalis***Redwood, Dawn***Metasequoia glyptostroboides***Rhododendron** HT*Rhododendron* spp.

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Rose*Rosa* carolina

Rugosa

Rosa rugosa

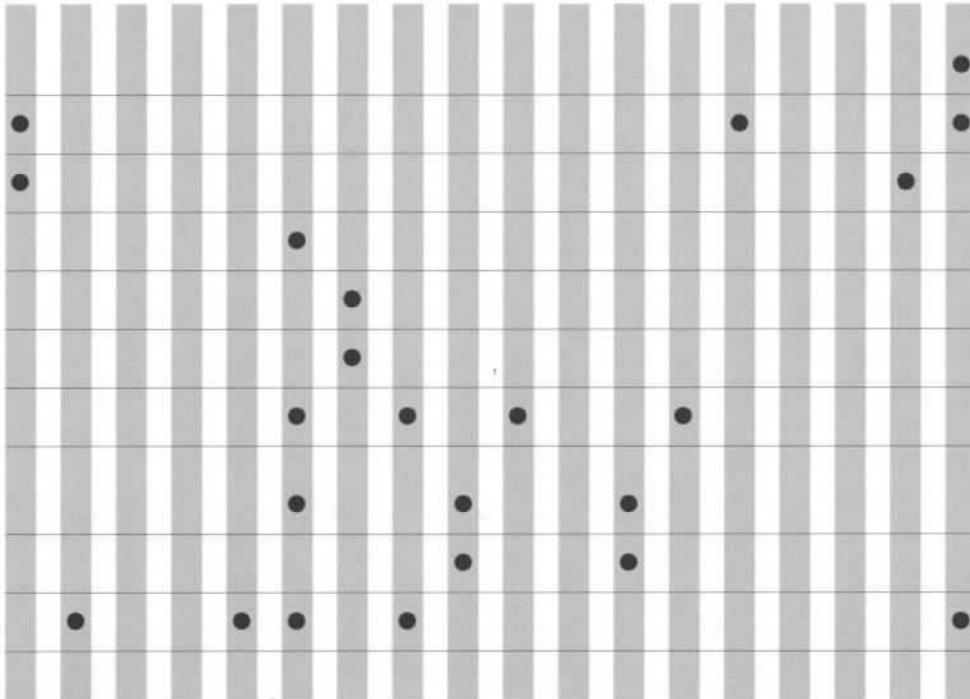
Memorial

*Rosa wichuriana***Rose-of-Sharon***Hibiscus syriacus***Rosemary***Rosmarinus officinalis***Sage***Salvia officinalis***Silverbell, Carolina***Halesia carolina***Skimmia**

Japanese

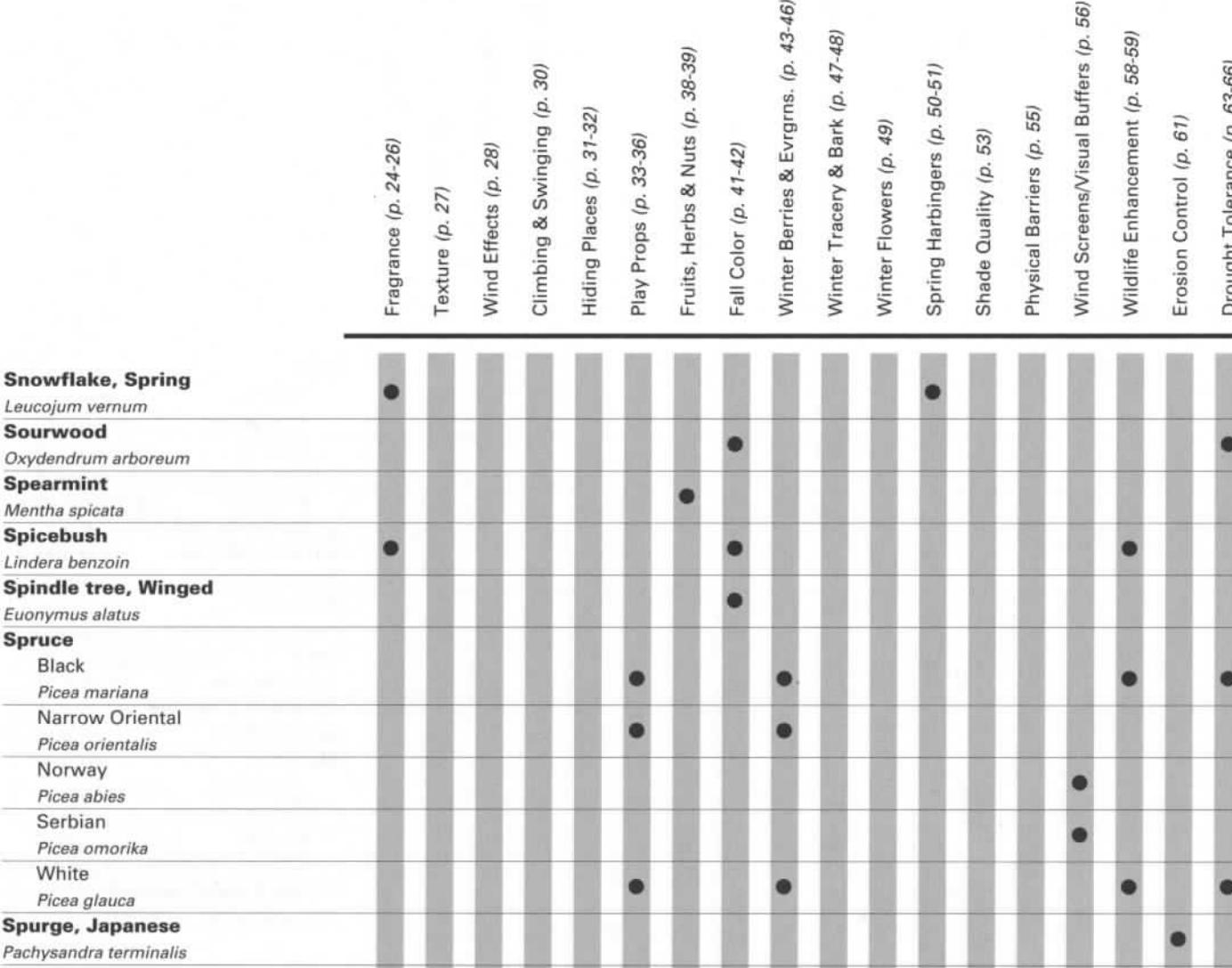
Skimmia japonica

Reeves

*Skimmia reevesiana***Smoke Tree, American***Cotinus obovatus*

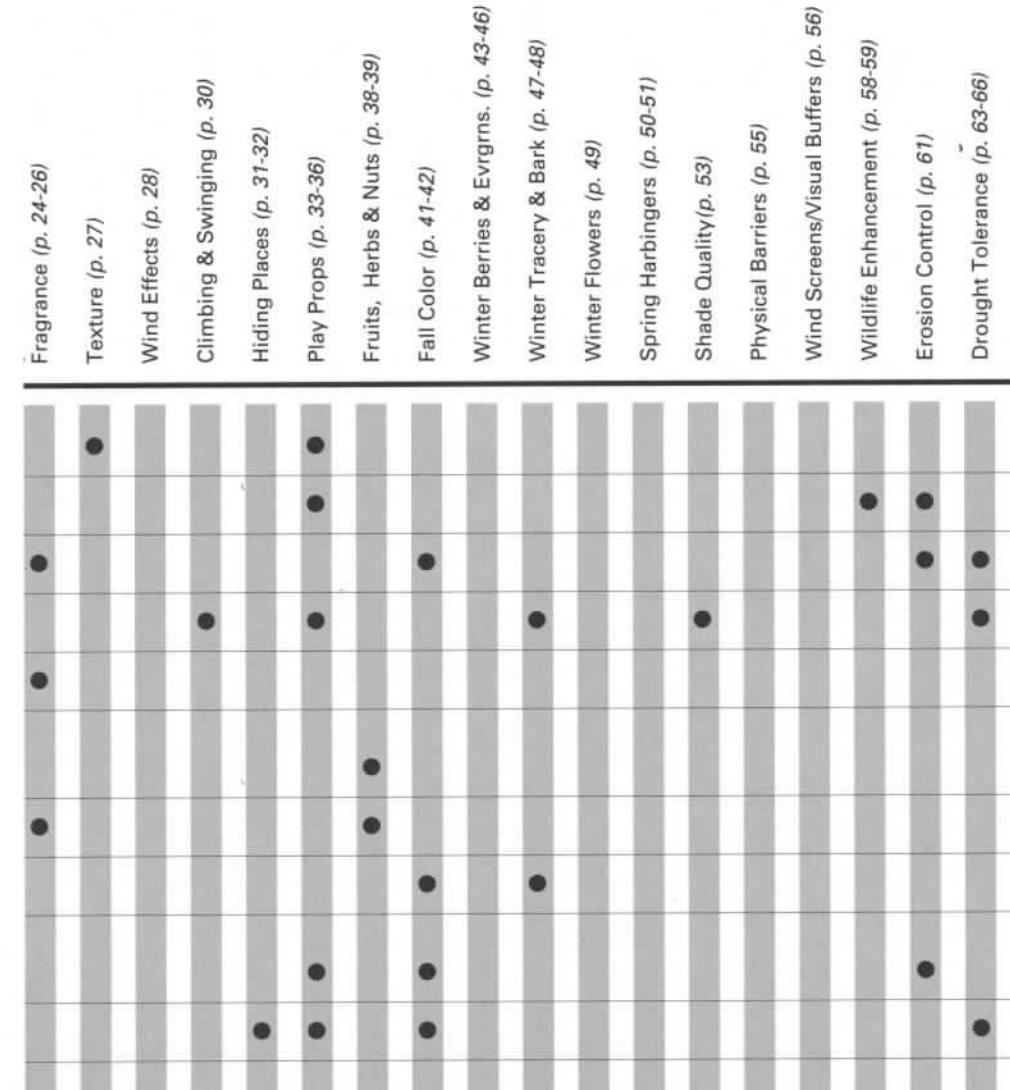
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Viburnum (contd.)

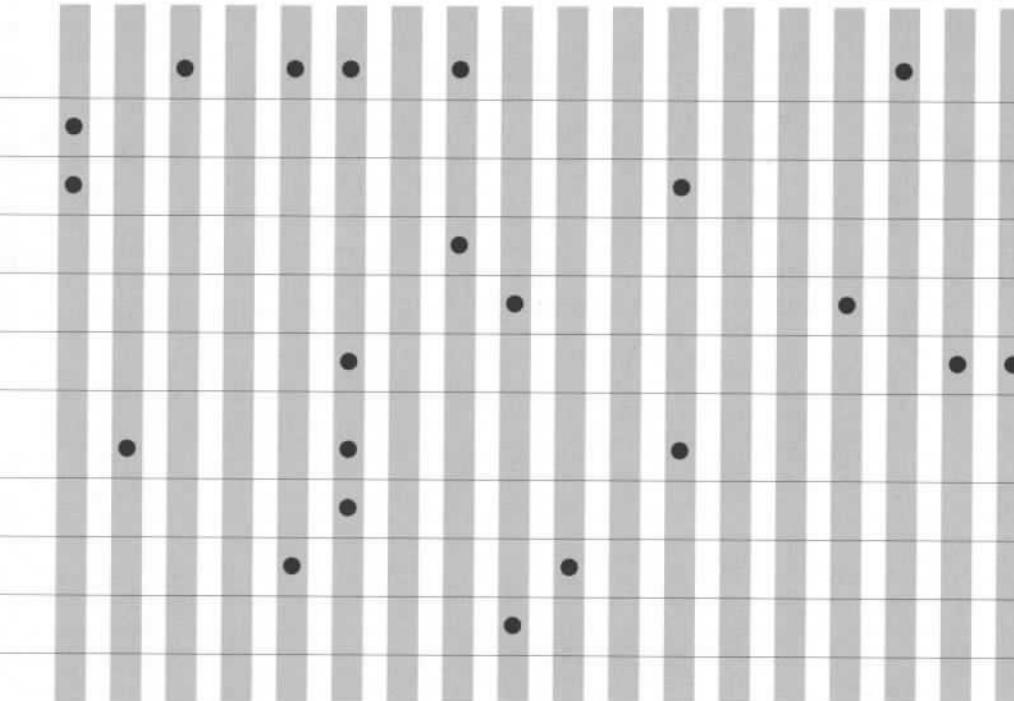
- Double-file
- Viburnum plicatum tomentosum*
- Judd
- Viburnum x juddii*
- Korean Spice
- Viburnum carlesii*
- Linden
- Viburnum dilatatum*
- Leatherleaf
- Viburnum rhytidophyllum*
- Nannyberry
- Viburnum lentago*

Willow

- Goat
- Salix caprea*
- Pussy
- Salix discolor*
- Weeping
- Salix babylonica*

Wintercreeper

- Euonymus fortunei*



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Wintergreen

- Gaultheria procumbens*

Wintersweet, Fragrant

- Chimonanthus praecox*

Woodruff, Sweet

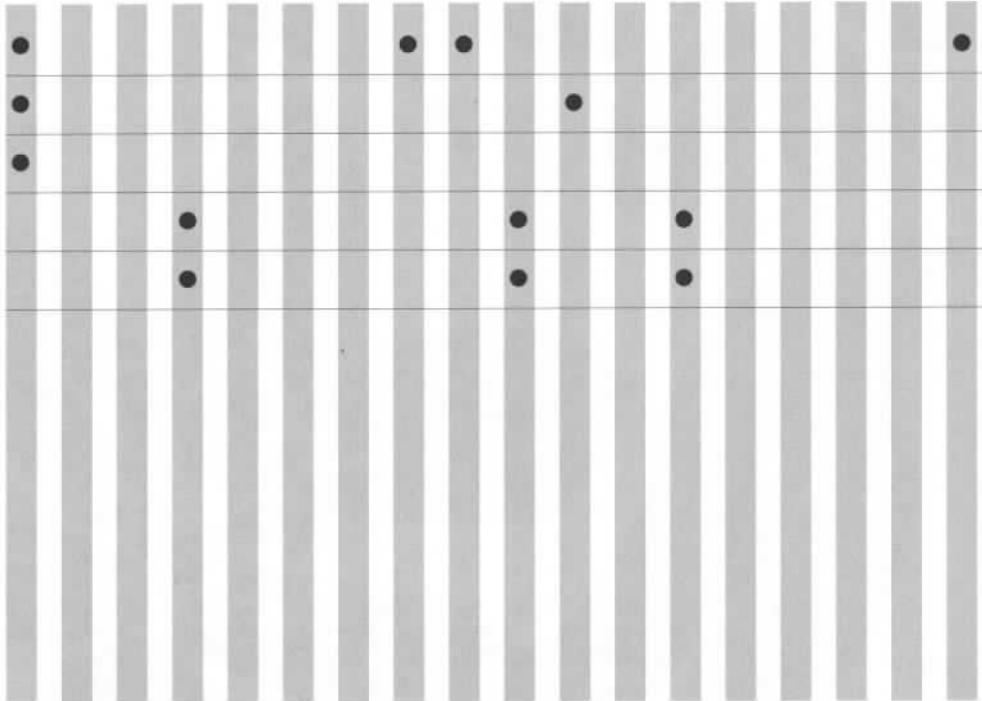
- Galium odoratum*

Yellowwood

- Cladrastis lutea*

Zelkova, Japanese

- Zelkova serrata*



Plants for Play

Annotated Bibliography

Bailey, Liberty H.; and Bailey, Ethel Z.; revised and expanded by the staff of the L.H. Bailey Hortorium, Cornell University. *Hortus Third: A Concise Dictionary of Plants Cultivated in the United States and Canada*. New York: Macmillan Publishing Company, 1976. ISBN 0-02-505470-8

This is widely considered the authoritative reference for plants in the U.S. and Canada. It contains nearly 24,000 entries. Written for advanced horticulturalists and others interested in cultivated plants, it is sparsely illustrated (260 line drawings). But if a plant exists in the U.S. or Canada, your likely to find it here with information on its characteristics and habitat.

Brickell, Christopher, ed. *The American Horticultural Society Encyclopedia of Garden Plants*. New York: Macmillan Publishing Company, 1989. ISBN 0-02-557920-7

This is the American version of the *Royal Horticultural Society Encyclopedia of Garden Plants* (published in London by Dorling Kindersley). Over 8,000 plants are listed in this excellent guide, more than 4,000 of which are illustrated with color photographs in a "plant catalog" that is systematically arranged by plant type, size, season of interest, and color. Every plant description includes information on size, shape, preferred light and soil conditions, and hardiness rating.

Creasy, Rosalind. *Edible Landscaping*. San Francisco: Sierra Club Books, 1982. ISBN 0-87156-249-9; 0-87156-278-2 (pbk.)

A broad treatment of how to design food-bearing, tastable landscapes. Although the focus is on backyards, the book is an excellent source of information that can be applied in other gardening and landscape contexts.

Dirr, Michael A. *Manual of Woody Landscape Plants: Their Identification, Ornamental Characteristics, Culture, Propagation and Uses.* 3rd edition. Champaign, IL: Stipes Publishing Co., 1983. ISBN 0-87563-344-7

Over 1000 species are listed and many cultivars are cited. Each listing includes detailed information on: Leaves, Buds, Stem, Size, Hardiness, Habit, Rate, Texture, Bark, Leaf Color, Flowers, Fruit, Culture, Diseases & Insects, Landscape Value, Propagation, and Additional Notes. Illustrated with line drawings.

Halfacre, R. Gordon; and Shawcroft, Anne R. *Landscape Plants of the Southeast.* 5th ed. Raleigh, NC: Sparks Press, 1989. ISBN 0-916822-14-1

This is a useful reference for designers in the Southeast. Organized by plant size, it provides one page of information per plant, including color photos and just about the right amount of detail. Not fully comprehensive, but an excellent place to start.

Hériteau, Jacqueline. *The National Arboretum Book of Outstanding Garden Plants.* New York: Simon and Schuster, 1990. ISBN 0-671-66957-5

This was the first book published after the USDA issued the new Hardiness Zone Map in January 1990. It provides a comprehensive selection of "1700 proven performers" (i.e., "the most beautiful, durable, and adaptable... that will thrive with the least amount of fertilizing and watering, and that are the most resistant to pests and diseases."). The book is organized by categories that designers will find easy to work with: flowers, aquatic plants, herbs (sure winners with children), ornamental grasses (magnificent, and very appropriate for children's areas), ground covers, vines, shrubs, and trees. There are lengthy narrative descriptions of each plant, but many are not illustrated with photographs.

Hightshoe, Gary L. *Native Trees, Shrubs, and Vines for Urban and Rural America.* New York: Van Nostrand Reinhold, 1988. ISBN 0-442-2327-8

An invaluable source with extensive elimination keys. Over 750 species are included. There are excellent tables on foliage, bud and fruit color, bark characteristics, flower fragrance, and wildlife value. A phenological calendar shows flowering, foliage, and fruiting time by month in bar chart. Plants are listed by botanical name, indexed by common name. Each listing includes information on: form, branching, foliage, flower, fruit, habitat, soil, hardiness, susceptibility, urban tolerance, and associate species. Illustrated with line drawings, maps, and b/w photos.

Lampe, Kenneth F. *AMA Handbook of Poisonous and Injurious Plants.* Chicago: American Medical Association, 1985. ISBN 0-89970-183-3

This book has just about everything you could possibly want to know about poisonous and injurious plants in general and the details of each toxic species in particular, including a photograph of each. It also includes detailed medical descriptions of symptoms and treatments.

Sunset Western Garden Book. Menlo Park, CA: Lane Publishing Co., 1988. ISBN 0-376-03853-5

The book for gardeners in the western U.S. Organized alphabetically by scientific and common names (cross-referenced to the scientific) and containing 1200 line illustrations, the book provides a comprehensive encyclopedia of western plants. An extensive introduction includes discussions of plant care issues and lists of plants that are drought tolerant and deerproof, among others. Plants are zoned by 24 western climate zones.

Tampion, John. *Dangerous Plants.* New York: Universe Books, 1982. ISBN 0-87663-280-0; 0-87663-568-0 (pbk.)

Appendix 1 provides a compilation of poisonous plants. It includes numerous references and differentiates the levels and types of toxicity and dermatitis.

Tull, Delena. *A Practical Guide to Edible and Useful Plants.* Houston, TX: Pacesetter Press, 1987. ISBN 0-87719-022-4

Although poisons are not the main focus, this book is a useful and reasonable guide to poisonous and harmful plants. In Chapter Four, the book differentiates between toxic wild plants and toxic ornamentals; between toxicity and rashes and sneezes. Other chapters discuss more positive aspects of plants, such as teas, spices, and fibers. The book includes an index and is illustrated with line drawings and color photos.

Wyman, Donald. *Shrubs and Vines for American Gardens.* Revised and Enlarged Edition. New York: Macmillan Publishing Co., 1969. ISBN 0-02632160-2

This book lists over 1500 plant species, including many cultivars. It provides a number of lists organized by plant function: Hardiness, Order of Bloom, Ornamental Fruits, Foliage Colors, and Shrubs for Various Purposes. Wyman's expertise lies with plants for the western U.S.

For Additional Information On Plants That Attract Wildlife

There are several useful resource materials that readers may wish to consult for additional information regarding plants that attract wildlife to children's play areas:

Calloway Gardens. *Butterfly Gardening.* Pine Mountain, GA: Calloway Gardens Education Department, n.d.

A free pamphlet available by writing to Calloway Gardens, Education Department, Pine Mountain, GA 31822-2000; tel. (706) 663-5133.

Cawdell, Peter. *Starting a Butterfly Garden.* Lincolnshire, U.K.: School Garden Company, 1987. ISBN 1-85116-801-X

Available by writing to the School Garden Company, P.O. Box 49, Spalding, Lincolnshire, PE11 1NZ, U.K; tel. 0775-69518.

Creasy, Rosalind. *Earthly Delights.* San Francisco: Sierra Club Books, 1985. ISBN 0-87156-841-1; 0-87156-840-3 (pbk)

Contains a chapter titled "The Wildlife Garden" on pp. 89-97.

Matthews, Nigel. *Garden For Birds.* Lincolnshire, U.K.: School Garden Company, 1992. ISBN 1-85116-805-2

Available by writing to the School Garden Company, P.O. Box 49, Spalding, Lincolnshire, PE11 1NZ, U.K; tel. 0775-69518.

National Wildlife Federation. *Planting an Oasis for Wildlife.* Washington, DC: National Wildlife Federation, 1986. ISBN 0-945051-52-2

Plants for Play

A Plant Selection Guide for Children's Outdoor Environments

Robin C. Moore

Plants have magical effects on children and add a critical dimension to any play environment, whether it's a city park, a school playground, or a backyard.

In *Plants For Play*, the author shares his years of experience in selecting plants that support children's play activities. More than 200 plant species are listed in eighteen plant function tables: Fragrance; Texture; Play Props; Full Color; Fruits, Herbs & Nuts; Winter Flowers; Shade Quality; Wildlife Enhancement; and more. Plants are coded by climatic zone and a special section identifies and discusses poisonous plants.

Robin C. Moore is a Professor of Landscape Architecture at North Carolina State University, Raleigh, and President of the International Association for the Child's Right to Play (IPA). He is a principal in the firm Moore Iacofano Goltsman and has more than twenty-five years of experience designing children's environments. His other books include *Childhood's Domain: Play and Place in Child Development* (1986), *Play For All Guidelines* (coeditor, 1987) and *Natural Learning* (coauthor, 1997), all published by MIG Communications.



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