

SEVEN STEPS TO WATER EFFICIENCY

1. Planning & Design
2. Site Analysis
- 3. Appropriate Plant Selection**
4. Practical Turf Areas
5. Efficient Irrigation
6. Use of Mulches
7. Appropriate Landscape Management

Save water

Use water usefully

Enjoy your gardening!



North Carolina Cooperative Extension Service
Moore County Master Gardeners

Choose plants that aren't so thirsty

By Charles Fenyvesi

Special to The Washington Post

WASHINGTON — Last spring, three volunteers discussing a demonstration garden for the 1999 Montgomery County (Md.) Agricultural Fair took only a few seconds to decide to feature plants that require a minimum of water.

With two dry years behind us and a third here now, few would challenge the value of such a display.

The three gardeners — Penny McCrea, Cherry Barr and Ann Thompson— named their project a "Water-Wise Garden."

The women, who are trained master gardeners, all live on farms that rely on wells. As such, they have been enduring self-imposed water restrictions for weeks.

So far, their wells have held out, but wells belonging to friends and neighbors are running very low. Like almost everyone in upper Montgomery County, they are worried.

So far, their concern runs from day to day, without much thought to the long-range implications, such as the possibility of a climate change.

"We can no longer take water for granted," says Thompson, who, like McCrea, does professional landscaping and has raised herbs for sale. "I have become very careful with my choice of plants. I don't use those that are thirsty. We have to start thinking of ways of conserving water as a precious resource."

When the women embarked on the garden, they had to start from scratch. The agricultural fair's management told the county cooperative extension service the site that gardeners had cultivated for many years would no longer be available. That garden was in the shade of a big red oak.

"We are now in the full sun,

which is a very hot sun this year," says Barr. "Actually, the shade was welcome."

Another volunteer, landscape designer David Post, came up with the design.

Then about 10 volunteers built an octagonal raised garden on sloping, hard-packed ground by laying a dry retaining wall, rising at its highest point to 2½ feet. This frame of locally quarried stone was filled with recycled grass clippings from the county's recycling center, commercial topsoil from bags and a big load of dry manure left over from last year's agricultural fair.

In May, McCrea, Barr and Thompson planted their selection of hardy, dry-climate plants. They included such classic and beautiful herbs as rosemary, lavender, sage and thyme. They chose the tough perennials yucca, artemisia, echinops, echinacea, euphorbia, daylily, asclepia, coreopsis, achillea, rudbeckia, stachys and sedum.

Annuals included celosia, cleome, lantana, vinca, four o'clock, gomphrena, gazania and zinnia. The shrub buddleia and vine sweet autumn clematis were added, as well as a border of liri-ope.

When the three women began working on the site in April, they already had completed their master gardeners program. In return for the instruction, they agreed to volunteer hours — 40 hours in the first year — for plant clinics and such projects as the demonstration.

"Putting in the demonstration garden and taking care of it have taken a lot of time, far more than 40 hours for each of us so far," says Barr, who studied botany in college. "But it has been fun, and the garden looks good."

For information on the fair, visit the Web site www.mcagfair.com.

Annual Vinca

With heat, drought and poor soil tolerance, annual vinca (*Catharanthus roseus*), also known as Madagascar periwinkle, is a very popular annual in South Carolina.

Height/Spread

The plants grow 1 or 2 feet high and about the same in width. There are new spreading types that are wider and lower. Most vinca have a dense, rounded form.

Growth Rate

Vinca is grown as an annual. It will often return in following summers from self-sown seed. Annual vinca is not the same as the perennial periwinkles (*Vinca minor* or *V. major*) that are grown as groundcovers.

Ornamental Features

Vinca has durable, abundant flowers from June to frost. It is now available in a wonderful selection of new colors, larger flowers and even new growth habits. Both creeping and dwarf upright types are available.

Landscape Use

Vinca is an easy-to-grow annual for beds, borders, edging and containers. Vinca prefers full sun, tolerates heat and drought and can be relied on to flower in the hottest weather throughout the entire summer.

Vinca takes a long time to flower when started from seed. It should not be planted outside until the ground is very warm. If planted too early, vinca often develops fungus problems. Improper pH may increase disease problems with vinca. A pH of 5.4 to 5.8 is ideal. Good soil drainage is important to prevent disease.

Vinca does not need either deadheading or pinching to maintain its bloom and form.

Problems

Annual vinca is one of the most trouble-free bedding plants. Some diseases such as root rots, stem rots and foliar diebacks can occur.

Cultivars

- 'Apricot Delight' has flowers white-flushed with apricot and a bright raspberry eye.
- 'Blue Pearl' is the closest to a blue vinca yet developed. It is a soft lavender blue with a white eye that grows to 18 inches tall.
- 'Cooler Series' has a uniform growth habit and clear, vibrant colors. 'Coolers' grow to 14 inches tall.
- 'Heat Wave Series' blooms extra early and grows to only 10 inches tall.
- 'Mediterranean' is a new series of spreading vinca. They reach only 6 inches tall and spread up to 2 feet wide. They can be used in hanging baskets, window boxes and at the front of the flowerbed. Colors available are lilac and white.
- 'Pacifica Series' grows to 14 inches tall and has large 2-inch-wide flowers with overlapping petals. This series is well-branched and extra early blooming. It is available in white, pink, rose and light purples with or without contrasting "eyes." 'Pacifica Red' is the first true red vinca.
- 'Passion' is a striking, deep orchid purple with a yellow eye. It grows 18 inches tall.
- 'Tropicana Series' is early blooming and has very large, rounded flowers. They grow to 15 inches or more.

Prepared by Karen Russ, HGIC Information Specialist, and Bob Polomski, Extension Consumer Horticulturist, Clemson University (New 03/99.)

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DROUGHT TOLERANT LANDSCAPE PLANTS FOR NORTH CAROLINA



MZ 1. Title Slide - Drought Tolerant Landscape Plants for North Carolina

MZ 2. The appropriate selection of plants is one of the most important parts of a landscape project. For good results, the plants should be compatible with the landscape design and well suited to the environment, which includes the soils and light exposure. For a wise-water-use landscape, the plants' water needs are also an important consideration. Most ornamental plants and turfgrass on the market can be used in a xeriscape-type landscape. It is surprising to learn how many plants can thrive without supplemental water once they are established. The following is a list of plants that are easily grown and readily available to North Carolina home gardeners and landscapers. The information given for each plant will help you make plant selections that create an attractive and water-efficient landscape.

Botanical Name and Common Name	Water Use Zone*	N.C. Hardiness Zone**	VINES			
			Flower Color/Time of Bloom	Growth Rate	Group	Exposure
MZ 3. <i>Gelsemium sempervirens</i> Carolina Jessamine (Top)	1,2,3	6b to 8	Yellow/ Spring	Medium	Evergreen	Sun/Semi-Shade
MZ <i>Lonicera sempervirens</i> Trumpet Honeysuckle (Bottom)	1,2,3	7b to 8	Orange-Red- Yellow/Spring	Fast	Evergreen	Sun/Semi-Shade
MZ 4. <i>Parthenocissus quinquefolia</i> Virginia Creeper	1,2,3	6b to 8	Greenish white//Summer	Fast Not showy	Deciduous	Sun to Shade
MZ 5. <i>Wisteria sinensis</i> Chinese Wisteria	1,2,3	6b to 8	Lilac/ Spring	Fast	Deciduous	Sun
MZ 6. <i>Campsis radicans</i> Trumpet Vine	1,2,3	6b to 8	Orange/ Summer	Fast	Deciduous	Sun/Shade

GROUND COVER
GROWTH COVERS

Botanical Name and Common Name	Water Use Zone*	N.C. Hardiness Zone**	Flower Color/Time of Bloom	GROWTH Normal Height (in)	Growth Rate	Group	Exposure
MZ (7) <i>Hedra helix</i> English Ivy	1,2,3	6b to 8	None	6-12	Slow to Medium	Evergreen	Shade
(8) <i>Hypericum calycum</i> Aaronsbeard St Johnswort	1,2,3	6b to 8	Yellow/ Spring	8-12	Medium to Fast	Evergreen	Semi-Sun/ Semi-Shade
MZ (9) <i>Juniperus conferta</i> 'Blue Pacific' Shore Juniper	2,3	6b to 8	None	12-18	Fast	Evergreen	Sun
MZ (10) <i>Liriope spicata</i> Creeping liriope	1,2,3	6b to 8	Purple	8-15	Medium	Evergreen	Sun/Shade
MZ (11) <i>Liriope muscarii</i> Liriope	1,2,3	6b to 8	Purple/ Summer	8-15	Medium	Evergreen	Sun/ Shade
(12) <i>Santolina chamaecyparissus</i> Lavender cotton	2,3	6 to 8	Yellow/ Summer	12-24	Moderate	Evergreen	Sun

ORNAMENTAL GRASSES

Botanical Name and Common Name	Water Use Zone*	N.C. Hardiness Zone**	Texture	Height and Spread	Panicle Length	Exposure
13. <i>Carex morrowii</i> Japanese Sedge Grass	1,2,3	6b to 8	Fine	1 ft/1 ft.	3 in.	Sun/Semi-Shade
MZ (14) <i>Chasmanthum latifolium</i> Northern Sea Oats	1,2,3	6b to 8	Fine	3 ft/2 ft.	8 in.	Sun/Semi-Shade
MZ (15) <i>Cortaderia selloana</i> Pampas Grass	1,2,3	7b to 8	Fine to Medium	8 ft/6 ft.	20 in.	Sun
16. <i>Miscanthus sinensis</i> 'Variegatus' Variegated Eualia	1,2,3	6b to 8	Fine	6 ft/3 ft.	11 in.	Sun
MZ (17) <i>Pennisetum alopecuroides</i> Fountain Grass	1,2,3	6b to 8	Fine	3 ft/2 ft.	3 in.	Sun
18. <i>Eragrostis curvula</i> Weeping Love grass	2,3	3 to 9				

SMALL SH BS (2 FT-5 FT)

Botanical Name and Common Name	Water Use Zone*	N.C. Hardiness Zone**	Normal Texture	Growth Form	Height	Rate	Group	Exposure
MZ 19. <i>Aucuba japonica</i> Dwarf Aucuba	1,2,3	6b to 8	Coarse	Oval	3-4 ft.	Slow	Evergreen	Shade/Semi-Sun
MZ 20. <i>Berberis thunbergii</i> Japanese Barberry	1,2,3	6b to 8a	Medium	Oval	3-5 ft.	Medium	Evergreen	Sun/Semi-Shade
- 21. <i>Ilex cornuta</i> 'Carissa' Carissa Holly	1,2,3	6b to 8	Medium	Rounded	3-4 ft.	Slow	Evergreen	Sun/Semi-Shade
22. <i>Ilex cornuta</i> 'Rotunda' Dwarf Chinese Holly	1,2,3	6b to 8	Coarse	Rounded	3-4 ft.	Slow	Evergreen	Sun/Semi-Shade
MZ 23. <i>Ilex vomitoria</i> 'Nana' Dwarf Yaupon Holly	1,2,3	6b to 8	Fine	Rounded	3-4 ft.	Slow	Evergreen	Sun/Semi-Shade
MZ 24. <i>Itea virginica</i> Virginia Sweetspire	1,2,3	6b to 8b	Medium	Upright	3-5 ft.	Medium	Deciduous	Sun/Shade
- 25. <i>Juniperus horizontalis</i> 'Plumosa' Andorra Juniper	1,2,3	6b to 8	Fine	Spreading	2 ft.	Slow	Conifer	Sun
MZ 26. <i>Rhaphiolepis indica</i> Indian Hawthorne	1,2,3	7 to 8	Medium	Spreading	2-4 ft.	Slow	Evergreen	Sun
MZ 27. <i>Spirea japonica</i> 'Shirobana' Spirea	1,2,3	6b to 8a	Fine	Irregular	2-3 ft.	Medium	Deciduous	Sun/Semi-shade

MEDIUM ~~SHR~~UBS (5 FT-8FT)

Botanical Name and Common Name	Water Use Zone*	N.C. Hardiness Zone**	Normal Texture	Growth Form	Height	Rate	Group	Exposure
MZ (28) <i>Abelia x grandiflora</i> Abelia	1,2,3	6b to 8	Fine	Irregular to Oval	3-4ft.	Slow	Evergreen	Sun/Semi-Shade
29. <i>Buxus sempervirens</i> Common Boxwood	1,2,3	6b to 7a	Fine to Medium	Rounded	5-8 ft.	Slow to Medium	Evergreen	Semi-Shade
MZ (30) <i>Cytissus scoparius</i> Scotch Broom	1,2,3	6b to 8a	Fine	Upright Open	5-6 ft.	Medium	Evergreen	Sun
(31) <i>Hydrangea quercifolia</i> Oakleaf Hydrangea	1,2,3	6b to 8	Coarse	Upright	6-8 ft.	Medium	Deciduous Irregular	Sun
MZ (32) <i>Mahonia bealei</i> Leatherleaf Mahonia	1,2,3	6b to 7b	Coarse	Upright	6-7 ft.	Medium	Evergreen	Semi-Shade/ Shade
MZ 33. <i>Nandina domestica</i> Nandina or Heavenly Bamboo	1,2,3	6b to 8	Medium	Upright	5-6 ft.	Medium to Fast	Evergreen	Sun/Semi-Shade
34. <i>Spiraea vanhouttei</i> Vanhoutte Spirea	1,2,3	6b to 7b	Medium	Rounded	5-7 ft.	Medium to Fast	Deciduous	Sun
MZ (35) <i>Yucca filamentosa</i> Adam's needle Yucca	1,2,3	6b to 8	Coarse	Upright	5-6 ft.	Medium	Evergreen	Sun

LARGE SHRUBS (8 FT AND UP)

(5)

Botanical Name and Common Name	Water Use Zone	N.C. Hardiness Zone	Normal Texture	Growth Form	Height	Rate	Group	Exposure
^{MZ} (36) <i>Buddleia davidii</i> Butterfly Bush	1,2,3	6b to 8	Medium	Upright Oval	10-15 ft.	Fast	Deciduous	Sun
37. <i>Chaenomeles speciosa</i> Flowering Quince	1,2,3	6b to 8	Medium	Rounded	8-10 ft.	Medium	Deciduous	Sun/Semi-Shade
- (38) <i>Hamamelis vernalis</i> Vernal Witchhazel	1,2,3	6b to 8a	Medium	Dense Rounded	8-12 ft.	Medium	Deciduous	Sun/Semi-Shade
^{MZ} (39) <i>Hibiscus syriacus</i> Shrub Althea (Rose of Sharon)	1,2,3	6b to 8	Medium	Rounded	8-12 ft.	Medium	Deciduous	Sun
X (41) <i>Ilex cornuta</i> 'Burfordii' Burford Holly	1,2,3	6b to 7b	Coarse	Oval to Rounded	8-12 ft.	Medium to Fast	Evergreen	Sun/Semi-Shade
X (42) <i>Juniperus chinensis</i> 'Pfitzeriana' Pfitzer Juniper	2,3	6b to 8	Fine	Broad Upright	8-10 ft.	Fast	Conifer	Sun
⁴³ 42. <i>Ligustrum lucidum</i> Waxleaf Privet	1,2,3	7b to 8	Medium	Rounded to Coarse	10-20 ft.	Medium to Fast	Evergreen	Sun/Semi-Shade
^{MZ} (44) <i>Myrica cerifera</i> Southern Waxmyrtle	1,2,3	7b to 8b	Medium	Upright Rounded	8-10 ft.	Medium	Evergreen	Sun/Semi-Shade
^{MZ} (45) <i>Viburnum plicatum</i> var. <i>tomentosum</i> Doublefile Viburnum	1,2,3	6b to 8a	Coarse	Round Spreading	8-10 ft.	Medium	Deciduous	Sun/Semi-Shade

SMALL TREES (10 FT-30FT)

6

Botanical Name and Common Name	Water Use Zone*	N.C. Hardiness Zone**	Texture	Form	Height Spread (ft.)	Growth Rate	Group	Exposure
46 <i>Cotinus coggygia</i> Common Smoketree	1,2,3	6b to 8a	Medium	Upright Spreading	<u>10-15</u> 10-15	Medium	Deciduous	Sun/Semi-Shade
MZ 47 <i>Cupressocyparis leylandii</i> Leyland Cypress	1,2,3	6b to 8	Fine	Upright	<u>60-70</u>	Fast	Evergreen	Sun/Semi-Shade
48 <i>Eriobotrya Japonica</i> Loquat	1,2	7b to 8	Coarse	Rounded	<u>10-20</u> 8-12	Medium to Fast	Evergreen	Sun
MZ 49 <i>Ilex x 'Nellie R. Stevens'</i> Nellie R. Stevens Holly	1,2,3	6b to 8	Coarse	Pyramidal	<u>15-25</u> 10-15	Medium	Evergreen	Sun/Shade
MZ 50 <i>Koelreuteria paniculata</i> Goldenraintree	1,2,3	6b to 8	Fine	Rounded	<u>20-30</u> 10-15	Medium	Deciduous	Sun
MZ 51 <i>Lagerstroemia indica</i> Crape Myrtle	1,2,3	6b to 8	Fine	Upright	<u>20-30</u> 10-15	Fast	Deciduous	Sun
MZ 52 <i>Magnolia x soulangiana</i> Saucer Magnolia	1,2,3	6b to 8	Coarse	Rounded	<u>20-30</u>	Medium	Deciduous	Sun/Semi-Shade
53 <i>Oxydendron arboreum</i> Sourwood	1,2,3	6b, 7a	Medium to coarse	Upright	<u>30-40</u>	Medium	Deciduous	Sun/Semi-shade
54 <i>Prunus caroliniana</i> Carolina Laurel Cherry	1,2,3	7 to 8	Medium	Oval	<u>20-30</u> 15-20	Fast	Evergreen	Sun/Shade
MZ 55 <i>Pyrus calleryana</i> 'Bradford' Bradford Pear	1,2,3	6b to 8	Medium	Upright Rounded	<u>35-40</u> 15-20	Medium to Fast	Deciduous	Sun
56 <i>Vitex agnus-castus</i> Chastetree	1,2,3	6b to 8	Medium	Oval	<u>15-20</u> 10-15	Medium	Deciduous	Sun

LARGE TREE (30 FT. AND UP)

7

Botanical Name and Common Name	Water Use Zone*	N.C. Hardiness Zone**	Texture	Form	Height Spread (ft.)	Growth Rate	Group	Exposure
57 <i>Acer floridanum</i> Florida Maple or Southern Sugar Maple	1,2,3	6b to 8	Medium	Oval	<u>40-50</u> 20-25	Medium to Fast	Deciduous	Sun/Semi-Shade
58 <i>Ginkgo biloba</i> Ginkgo or Maiden Tree	1,2	6b to 8	Medium	Irregular	<u>50-70</u> 30-40	Very Slow	Deciduous	Sun
58 <i>Juniperus virginiana</i> Eastern Redcedar	1,2,3	6 to 8	Fine	Conical	<u>40-50</u> 15-20	Medium	Evergreen	Sun
60 <i>Liquidambar styraciflua</i> American Sweetgum	1,2,3	6b to 8	Coarse	Broad Rounded	<u>60-75</u> 30-40	Fast	Deciduous	Sun
61 <i>Magnolia grandiflora</i> Southern Magnolia	1,2	6b to 8	Coarse	Upright Pyramidal	<u>60-80</u> 40-50	Slow to Medium	Evergreen	Sun MISSING
62 <i>Pinus taeda</i> Loblolly Pine	1,2,3	6b to 7	Medium	Horizontal	<u>80-100</u>	Fast	Evergreen	Sun
63 <i>Quercus accutissima</i> Sawtooth Oak	1,2,3	6b to 8	Medium	Broad Oval	<u>35-45</u> 35-45	Medium	Deciduous	Sun
64 <i>Taxodium distichum</i> Common Baldcypress	1,2,3	6b to 8	Fine	Conical	<u>50-70</u> 20-30	Medium	Deciduous	Sun
65 <i>Ulmus parvifolia</i> True Chinese Elm	1,2,3	6b to 8	Medium	Rounded	<u>40-50</u> 30-40	Fast	Deciduous	Sun

ANNUALS

/ ANNUALS

(8)

Botanical Name and Common Name	Water Use Zone*	Height (in.)	Color	Suggested Planting Time	Exposure
-- 66. <i>Capsicum annuum</i> Ornamental Pepper	1,2,3	6-12	Fruit	Spring/Summer	Sun
MZ 67. <i>Catharanthus roseus</i> Madagascar Periwinkle	1,2,3	6-18	WPL	Spring/Summer	Sun/Partial Shade
68. <i>Celosia cristata</i> Cockscomb	1,2,3	6-30	All but B	Spring/Summer	Sun
MZ 69. <i>Cleome hasslerana</i> Spider Plant	1,2,3	36-60	WPL	Spring/Summer	Sun
70. <i>Gaillardia pulchella</i> Blanket Flower	1,2,3	12-30	YGR	Spring/Summer	Sun
MZ 71. <i>Melampodium paludosum</i> Melampodium	1,2,3	24-36	Y	Spring/Summer	Sun/Partial Shade
MZ 72. <i>Petunia x hybrida</i> Petunia	1,2,3	6-12	All	Spring/Summer	Sun
73. <i>Gomphrena globosa</i> Globe Amaranth	1,2	8-24	WPL	Spring/Summer	Sun

INTERGRATA OLIA

HERBACEOUS PERENNIALS

9

Botanical Name and Common Name	Water Use Zone*	Height (in.)	Color	Time of Bloom	Exposure
MZ (74) <i>Achillea millefolium</i> Yarrow	1,2,3	2-4 ft.	W.P.Y.G	Summer	Sun
75. <i>Asclepeas tuberosa</i> Butterfly Weed	1,2,3	1-2 ft.	O.Y	Summer	Sun
MZ (76) <i>Hemerocallis sp.</i> Daylily	1,2,3	1-4 ft.	W.P.Y.R.O	Summer	Sun/Partial Shade
77. <i>Monarda didyma</i> Beebalm	1,2,3	2-3 ft.	W.R.P	Spring/Summer	Sun
78. <i>Salvia farinacea</i> Blue Salvia	1,2,3	1/2-5 ft.	W,B,R,L	Summer/Fall	Sun/Partial Shade
MZ (79) <i>Sedum spectabile</i> Sedum	1,2,3	1 in.-2ft.	W.P.R	Spring/Fall	Summer SUN/PT SHADE
MZ (80) <i>Solidago hybrids</i> Goldenrod	1,2,3	1-3 ft.	Y	Summer/Fall	Sun
HOSTA	1,2	VARIED	VARIED	JUMMER	SUN/PART SH/SHADE (NO SLIDE)
HELEBOROUS	1,2	1-2 ft	"	FALL/WINTER TURF GRASSES	" " " (NO SLIDE)

Botanical Name and Common Name	Water Use Zone*	N.C. Hardiness Zone**	Shade Tolerance	Propagation	Green Foliage	Plant
80. <i>Cynodon dactylon</i> hybrids 'Tifway', 'Tifgreen', Bermuda	1,2,3	6b to 8	Poor	Sprigs, Plugs, Sod	Spring, Summer, Fall	May-July

* Water Use Zone - 1=Regular irrigation, 2=Moderate irrigation (occasional), 3=Low (no irrigation) natural rainfall

** N.C. Hardiness Zone (in general) - 6=Mountains, 7=Piedmont, 8=Coastal

ADDITIONAL SOURCES FOR HORTICULTURAL INFORMATION

Master Gardener HOTLINE – Moore County
March to Oct. 31st
Monday – Friday 10 a.m. to 12 noon
Call 910-947-3188

Moore County Web Site

www.ces.ncsu.edu/moore/staff

N.C.S.U. Web Site

www.ces.ncsu.edu/depts/hort/comsumer

American Waterworks Association (AWWA)

www.awwa.org/science/topic/landscaping

Water saving tips

www.h2ouse.org

Reference Books

North Carolina Gardener's Guide by Toby Bost

**Best Garden Plants for North Carolina By
Pam Beck & Laura Peters**



Compiled by Master Gardeners Mike Zihal and Dolores Muller