Louisiana Irises
A NATURAL FOR WATER GARDENS

Text and photos by Marie Caillet

Some plants can be adapted to water gardening, but Louisiana irises are just naturally a water plant, having originated in the swamps and marshes of the Gulf Coast states. Their natural habitat is a wet, boggy area that floods during the winter and spring. They may dry out some during the summer and go dormant, but they begin their new growth once fall rains begin. If kept well watered in the dry summer months, the irises will produce larger rhizomes and more increases for bloom in the spring. Water is essential for tall, healthy bloom stalks and for maximum flower size.

Growing Louisianas in water also accomplishes other advantageous gardening jobs. The weeding needed in flower beds is avoided. Dead foliage will usually rot and sink into the pond or bog, which eliminates clean up. This decayed

Opposite page:
(inset) 'Cajun Sunrise'
(above) Marie Caillet's pond

matter in a pond serves as a natural fertilizer. The water serves like a mulch to cut the sun off the rhizome. 'Sun scald' on exposed Louisiana iris rhizomes results in stunted plants, poor bloom, and even death. This can be corrected in a raised bed by use of a heavy mulch, but it is not needed when the irises are grown in water.

Thus, all the basic requirements for growing Louisiana irises are naturally met by growing in water or bogs. The requirement of an acid soil condition may not always be true. They do grow best in a neutral or slightly acid soil but are known to grow and bloom in a more alkaline soil. *I. giganticaerulea* growing in the coastal

'Prof. Neil Mertzweiller'

'Bayou Fountain'

(above) 'Praline Festival'
(left) The east end of Marie Caillet's pond…

marshes is known to survive in somewhat salty water, as occurs after a hurricane. Louisiana irises have adapted to my neutral or slightly alkaline soil in North Texas and show no adverse effects. They are practi-

cally free of disease, especially when growing in water. I do mulch the plants on the edge of the pond during a hot, dry summer to shade the rhizomes and keep them cooler. A mulch such as pine needles is less likely to float away with a rain. If the pond water level gets very low, water will need to be added. My pond is small enough to use a soaker hose around the perimeter, so that the irises on the outer edge can be watered.

Shallow ponds with a natural base of soil, especially a heavy clay that holds water, makes an ideal planting place. The banks or sides of a deeper pond or lake are also desirable, as the irises will grow both toward the shallower edges or even go deeper into the water. As the rhizomes spread into deep water, they may live and bloom without putting roots down into the soil. This will result in stalks that have no support or plants that become loose from old rhizomes and float elsewhere in the pond. In case of a heavy rain, they may even be washed out of the pond and into drainage areas. A pasture in north Louisiana is being covered with Louisiana irises that have washed out of a stock pond and floated

'Aunt Shirley'

(above) 'Little Caillet'
(left) 'Edith Wolford'

into lower ground. When snagged by debris and tree roots, they have settled in and rooted. This explains how certain native irises may have spread in natural situations as well as their spreading by seed dispersal.

Planting in a pond or the boggy edges of a lake requires only one step different to planting in a flower bed. Rhizomes must be anchored down in some manner until they can put roots into the soil. If not done, the rhizomes will fall over or be washed into the pond. A hairpin shaped wire can be used to anchor the new rhizome and allow it to settle in until it produces new roots. Such staples can be bought or can be made by hand with heavy wire. Plants moved in with soil attached, as with a potted iris, can be planted in a hole dug in the mud. In order for the plant to breathe, the foliage must extend above the water level. Do not trim the foliage shorter than the depth of the water where you are planting. Possible water depth varies, but 6 to 8 inches is considered a maximum for most cultivars. However, it is not unusual for some Louisiana irises to move into much deeper water. Tall cultivars will move into water 12 to 15 inches deep. The tetraploids hybridized by Josepth Mertzweiller are known for excellent growth and for producing 5-foot stalks when growing in a foot of water. A sustained period of ice on a pond will result in damaged foliage, but does not seem to affect the rhizome. New growth and bloom stalks will appear in the spring. With warm winters the pond water gives enough warmth for early bloom, but a frozen pond may slow the bloom period.

With smaller home gardens, many water gardeners have a small lined pond requiring all plants to be in containers. Louisianas grow

'Good Vibes'

'Starlight-Starbright'

'Creole Rhapsody'

equally well in a container, but will grow out of it rapidly. One of their drawbacks has always been the very long rhizomes that present a real problem in a container. One must use a wide mouth pot just to accommodate a well-grown rhizome, which can easily span the opening. When increas-

es come, they can cause plants to grow over the sides of the pot. Pots can be placed in any water depth and can be submerged. Some hybridizers are working toward shorter rhizomes and more compact growth that forms a clump rather than wide-spaced growth. Descriptions of cultivars will state this characteristic.

Modern hybridizing has developed Louisiana irises in all colors and in a variety of forms. Stalk heights vary from a foot to five feet or even taller. Those growing in water generally produce taller stalks than those grown on high ground. Tetraploids with larger stalks and better flower substance have come into general use and the interploids, a cross between tetraplolids and diploids, are just coming on the market. One of the newest hybrids is a cross between a Louisiana iris and *I. virginica*, another water type species. It has the characteristic of *I.virginica* of maintaining better green foliage during a hot summer. It is also a rampant grower that keeps to a close clump... making it suitable for pot culture.

'Koorawatha'

The bloom date will vary with climates, but it falls later than that of spring bulbs and prior to the daylily bloom, thus bridging a gap in your garden. Bloom will also be determined by the species in the background of a cultivar with some blooming early and others as much as a month later. Catalogs will give information as to 'early,' 'mid-season' or 'late.' A warmer than average winter will produce early bloom while a heavy and late winter will delay bloom. In relation to other water irises you may be growing, Louisianas bloom about the same time as *I. pseudacorus* and Siberian irises. Their bloom may be slightly later than that of *I. virginica* and much earlier than the Japanese irises (*I. ensata*). Since the Louisiana hybrids on the market are derived from various compatible species with different bloom periods, modern cultivars cover a wide bloom range. Some will open as much as a month earlier than others. By careful selection, one can have bloom over a period of several months.

Care after bloom is the same as for most perennials. Flowers produce many 'bee crosses' and quite large and heavy seed pods. To avoid stalks falling in the water and unwanted seedlings coming up, one should cut stalks after bloom. The natural growth and rotting of old rhizomes growing in water makes transplanting almost unnecessary. Gardeners with natural lakes and stock ponds may never transplant but allow the Louisiana irises to grow much as they do in their native habitats. In my 15' x 40' shallow pond, partial removal and replanting has been done about every three to five years.

To learn more about these irises, join the Society for Louisiana Irises and receive their informative quarterly newsletters. (Dues are $10.00 a year or $25.00 for 3 years. Send to Elaine Bourque, 514 Garenne Rd, Lafayette, LA 70508.) Another source is the revised edition of The Louisiana Iris published by the Society in 2000. It is a hard cover book of 254 pages with 116 color illustrations, published by Timber Press, 133 SW Second Ave, Suite 450, Portland, OR 97204-3527. Price is $34.95 plus $6.00 shipping cost.

'Honey Galore'

(above) 'Duval Bluebird'
(left) 'Rose Cartwheel'

Marie Caillet has been growing Louisiana irises for 60 years and was the co-editor of the first edition of The Louisiana Iris, and is a contributing editor of the revised edition. She has written articles on Louisiana irises for numerous gardening magazines and iris publications. Marie Caillet is professor emerita at the University of Lousiana in Lafayette and is a charter member of the Society for Louisiana Irises.

A New Way
TO EVALUATE POND PUMPS

by David A. Dec

Many of us have tried to compare pumps to see which one would be best for our pond. This has been difficult to do until now. The Creech Pump Index (CPI) allows us to compare the energy efficiency of any pump with any other pump. The larger the Creech Pump Index, the more energy efficient is the pump.

The origin of the Creech Index goes back forty years to the Illinois Institute of Technology, during work on my Ph.D. in Physical Chemistry. It is simply Physics. It compares the work done by a pump, i.e., the flow against the pump head, versus the power used to do the work. I have never seen it used for pond or pool pumps, but it does allow quick and easy comparisons.

Creech Pump Index =
[GPM x Total Dynamic Head x Specific Gravity x %Efficiency] ÷ [Watts]

Key to Formula's Terms

GPM = gallons per minute

Since many manufacturers list pump flow in GPH (gallons per hour), you may need to divide the GPH by 60 to determine the gallons per minute. Your pump's flow rate is determined by the total dynamic head. This figure is often available in pump manufacturers' charts. See TDH below.

TDH = Total Dynamic Head

Total Dynamic Head reflects how hard the pump must work to carry water from the pond to the water's re-entry point. Stated in feet, it includes both static height (the physical height of the water return point) and friction losses. Many pump manufacturers provide a chart showing the water's flow rate at various TDH's. This column is usually labeled "Head" or "Lift" with the corresponding water flow rate given for each foot increment of height. However, water flow is slowed by friction in pipe lengths, around elbows in the plumbing, and through diversion into filters or past UV lights.

Specific gravity = the density of the liquid
For water, this is essentially equal to 1.0.

The %Efficiency is not usually given by pump manufacturers and often is 60% or much less, but since we don't know it, just ignore it and use 100% or 1.0. (If you knew the %Efficiency at any one point, you could calculate it at all points. You would divide the CPI by it to get the Maximum CPI and then divide all the other points by the Maximum CPI to get the %Efficiency.)

Watts = amount of electricity used to power the pump

Unfortunately, some manufacturers list their pumps' amperage (amps), while others list the watts. To make the conversions:

Amps x Voltage = Watts or Watts
Voltage = Amps

Now we can calculate the Creech Pump Index for any pump, regardless of the data supplied by the manufacturer. For example, let's look at some of the pumps in the marketplace today:

Example 1:

W-Brand 2-speed pumps

HP	GPH	GPM	TDH	Amps	Volts	Watts
1	3,900	65	27.5'	8.8	115	1,012
1.5	4,410	73.5	35'	12.2	115	1,403
2	4,680	78	43'	16.4	115	1,886

The Creech Index is 1.8 for all 3 pumps.

Example 2.

Y-Brand

HP	GPH	GPM	TDH	Amps	Volts	Watts
2	2100	33.33	82'	25	115	2875
2	4200	70	74'	25	115	2875
2	6300	105	62'	25	115	2875
2	8160	136	43'	25	115	2875

The Creech Index computes as 1.0, 1.8, 2.3 and 2.0. It is not the same because the %Efficiency at 43' is twice the efficiency at 82' TDH, with its most efficient performance at 62' Ph. This is important information to know. However, if we average the Creech Indexes for the Y-Brand 2 HP, it is 1.8, the same as the W-Brand pumps.

Following are the CPI numbers for several very popular pond pumps

	HP	Creech Pump Index	GPH	GPM	TDH	Amps	Watts
Multi-HP	1/8	3.0	1,500	25	15.75'	0.33	76
Brand Y 1	1/8	2.3	1,800	30	15'	1.7	196
Brand X 1	1/8	1.5	3,852	64.2	4.6'	1.7	196
Multi-HP	1/6	3.0	1,650	27.5	19'	0.44	101
Brand X 2	1/6	1.7	4,116	68.6	5.78'	2	230
Brand Y 2	1/6	0.7	720	12	18'	2.8	322
Multi-HP	?	3.0	1,890	31.5	25'	0.65	150
Brand X 3	?	2.3	2,640	44	15'	2.5	288
Brand Y 3	?	2.4	2,400	40	21'	3.1	357
Multi-HP	?	3.1	2,385	39.8	40'	1.3	517
Brand Y 4	?	1.4	1,800	30	46'	8.76	1,007
Multi-HP	5/8	3.1	2,565	42.75	46'	1.6	637
Brand Z 1	5/8	0.8	2,000	33.3	20'	7.1	817
Multi-HP	3/4	3.0	2,726	45.4	52'	2.0	776
Brand Y 5	3/4	1.8	2,400	40.0	63'	12.26	1,410
Multi-HP	1	3.0	3,000	50	63'	2.6	1,035
Brand X 4	1	1.8	5,880	98	23'	11	1,265
Brand Z 2	1	1.9	7,200	120	34'	19	2,185
Multi-HP	2	2.4	4,200	70	67'	5	1,990
Brand Y 6	2	1.8	4,200	70	74'	25	2,875
Brand Z 3	2	0.9	3,600	60	58'	35	4,025
Multi-HP	3	2.3	6,000	100	62'	6.8	2,706
MultiHP	5	2.7	9,000	150	80'	112'	4,456

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