

Water Gardens

A Family Experience

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Water Gardens – An Alaskan Experience

Water gardens are not just for experts or southern climes! Water Gardens offer almost unlimited variations, even in Interior Alaska – from a small fish bowl or aquarium with miniature water plants to a permanent outdoor pond – water, plants and even fish offer a ever-changing oasis of quite in a hectic world. At our house, Water Gardening is a family affair!

Water Gardens are fun, easy to care for (chickweed doesn't stand a chance), and the whole family can enjoy them. This class is designed to introduce or expand your interest in Water Gardens as a hobby, a family activity, or just as part of you interior design or exterior landscaping. You will receive information on how to start, maintain or expand a Water Garden, where to find supplies locally and what mail order catalogs offer products most likely to thrive in Interior Alaska

Introduction to Water Gardening – North

- Why water garden
- Family history of water garden
- Alaska water gardens – Powerpoint
- Materials to browse

Part 1 Dream Your Water Garden

- Long winters mean dream first
- Then Plan

Part 2 Build Your Water Garden

- Construction techniques
- Modifications for successful gardens in Interior Alaska
- Materials and local suppliers

Part 3 Populate and Care for Your Water Garden

- Choosing plants and critters
- Local and outside suppliers
- Maintaining your plants
- Managing critters – chosen and visiting

Part 1 - Dream Your Water Garden

Alaska's long winters are well suited to dreaming. Gardeners are vulnerable to the dreaming bug. We tend to dream as big as Alaska's clear winter skies! This is good thing. What fun to pour over books, magazines, catalogs and even videos building dream for summer's perfect water garden. There is the warm breeze wafting the sweet fragrance of water lilies and lotus in bloom. Hear the gentle hum of bees and the sweet songs of the birds as they splash in the shallow water. Watch the graceful fish glide among the grasses and water lilies and the swift dragon flies dart after their mosquito snack. Listen to the calming sound of water babbling over rocks in the waterfall or drifting down from the fountain. See the brilliant colors of flowers, grasses, and fish highlighted by the sun reflecting off the still surface of the pond

Okay – time for some reality. Spring is coming and it is time to get down to business and PLAN!

Long winters mean dream first

- Books –
 - Wesler, K.H. and Loiselle, P.V. **Your Garden Pond**, 2nd ed. Melle, West Germany, Tetra Press, 1986 ISBN 3-923880-21-9
 - Hessayon, D.G, **The Rock & Water Garden Expert**, London, Transworld Publishers LTD, 1993. ISBN 0-903505-38-x
 - Nash, Helen, **The Complete Pond Builder**, New Your, Sterling Publishing Company, Inc. 1996. ISBN 0-8069-3866-8
 - DeVito, C and Skomal, G. **An Owner's Guide to a Happy, Healthy Pet: The Goldfish**, New York, Simon & Schuster Macmillan Company, 1996. ISBN 0-87605-398-3
 - ***Ponds USA and Watergardens***, vol.1 no1, 1997. Irvine, CA, Fancy Publications, Inc.

- Home improvement magazine

- Catalogs (online is easiest)
 - Lilyponds <http://lilyponds.com/>
 - William Tricker, Inc. <http://www.tricker.com/>
 - Dripworks <http://www.dripworksusa.com/>
 - That Fish Place <http://www.thatpetplace.com/>
 - The Pond Guy <http://www.thepondguy.com>
 - The Water Garden <http://watergarden.com/>
 - Perry's Water Gardens www.perry.com

- Ponds you have seen

Things to consider when you plan -

1. Seasonal, above ground or permanent, in ground
 - a. Large bowl
 - b. Flower pot
 - c. Household object
 - d. A discard

 - e. Preformed
 - f. Flexible liner
 - g. Concrete (difficult to maintain in Alaska)
 - h. Natural pond

2. Location
 - a. Full SUN!! – long hours of midnight sun compensate for the cold conditions of our soils and short growing season.
 - b. Level or near level area gives more flexibility and easier construction
 - c. Clearance on all sides of the pond makes for easier maintenance
 - d. Close to electricity
 - e. Close to water source

3. Size
 - a. Limited only by your space or choice of materials
 - b. Size will determine what plants you can use
 - c. How much work it will take to maintain your pond

4. Shape and contours of pond
 - a. Determined by location and choice of materials
 - b. Varied depths allow for easier naturalization and greater range of plants and fish
 - c. Square corners are hard to clean

5. Depth of pond
 - a. Most literature suggest that a pond should be 24 – 36 inches deep
HOWEVER
 - b. Pond depth determines water temperature and water temperature limits choice of plants and aquatic animals
 - c. 18” at the deepest point provides for warmer water and more flexibility
 - d. Pond depth balances solar gain and the effect of cold soil temperatures

6. Filtration needs: the ideal is a balanced pond using plants and fish to maintain your pond but fluctuation of water temperature makes it difficult to balance a pond without the use of filters. In the construction phase we will talk about filters, but plan on them.

7. Waterfalls and Fountains: waterfalls and fountains add music to the water garden. You can create your own waterfall as you plan your garden and surrounding landscaping. You may use rocks, pond liner, concrete or pre-molded forms. Then you simply divert water from you pumps to flow down you waterfalls. Fountains can attach directly to your pump. Both waterfalls and fountains aerate water and limit algae growth.

It is difficult to protect your pond and its contents completely but you can plan the location to minimize these dangers to the pond and plant your pond to protect your fish hiding places.

This is Alaska and some losses of both aquatic animals and plants should be expected. But good planning will protect your pond plants, animals and its liner. Just as when you put out a birdfeeder you expect to attract birds, when you put in a pond you will attract native species. The problem is that some species are quite large!

- Moose – the LOVE water plants
- Smaller animals – beaver, otter, fox, ermine, etc. especially water based feed on fish and other aquatic life. Fortunately most do not seem to travel great distances just to find a pond.
- Water fowl – many feed on small fish (including gold fish) or water plants. They also contribute seeds
- Birds of prey – eagles, hawks, and owls like fish too and are good hunters.

Winter is probably the biggest danger to your pond. You will need to take into account as you choose pond components. You will also need plan how you will winterize your pond, to protect your investment.

Also, remember to protect children that might live in the area of your pond. Open water is always an attraction and a danger to young children. The use of fencing and landscaping can limit the danger posed.

Part 2 **Build Your Water Garden**

A water garden can be as simple of as intricate as your dream. The key to a successful water garden is the attention paid to the special issues posed by the unique climate and soil conditions of the Interior. The reality is that indigenous water gardens are abundant in the Interior. That is encouraging; however, many of us want to incorporate more variety and this means taking special care in construction. This class will discuss standard pond construction and the modifications that our climate dictates.

Construction techniques –

1. Lay out pond
 - a. Hose
 - b. Rope & ground staples to hold in place
2. Remove sod or tundra overlay
 - a. Save good sod for finishing edges
 - b. Or use in other areas of yard
3. Stake out area and begin digging
 - a. Reset markings, this time with rope and ground staples
 - b. Be sure to mark shelves, deep area etc
4. Leave shelves in solid soil
 - a. Slope from center of pond to edges
 - b. Make a wide as possible for pond size (12 – 18”)
5. Watch level – water ALWAYS seeks the level
 - a. The lowest point of the sides determines pond depth
 - b. Use string level during digging BUT
 - c. Use contractors level on 2x4 for final checks
6. Insulate bottom of pond
 - a. Insulation
 - i. Allows for water to warm to higher temp earlier
 - ii. Blue solid sheets (1-2”)
7. Pad the bottom and edges of pond
 - a. Sand for shaping
 - i. Especially important for preformed pond
 - b. Newspaper
 - i. More insulation
 - ii. Leak stop
8. Lay in liner
 - a. Pond liner – rubber
 - b. Tank farm liner – reinforced vinyl
 - c. Preformed pond –
9. Begin filling pond
 - a. Fill slowly at first
 - b. Adjust liner as water fills
 - c. Filling takes time but be sure to check liner regularly
 - d. Adjusting liner after fill means emptying the pond
10. Stabilize edges – check level again

- a. DON'T cut edges yet
 - b. Check levels again and build up edges or shave edges as needed to maintain level
11. Continue filling and let stand for a few days to stabilize
 - a. Recheck levels
 - b. Fill in edges if subsiding
12. Install pumps, filters, etc and turn them on
 - a. Run pumps and filters while pond is settling
 - b. Look for water flow, filter action, etc.
13. Finish edging and landscaping
 - a. Leave 8-10" overhand on liner
 - b. Dig in liner and bury well
 - c. Finish with rocks, flower beds, etc.

Part 3 **Populate and Care for Your Water Garden**

- Choosing plants and critters
 - Plants – Native
 - Display – floral
 - Marsh Marigolds
 - Local Calla
 - Cinquefoil
 - Wild iris (iris setosa)
 - Water lilies
 - Oxygenators and clarifiers
 - Grasses & Tundra cotton (erriophorum scheuchzeri)
 - Cat Tails
 - Plants – Imported
 - Display – floral
 - Water lilies
 - Lotus
 - Marginal
 - Iris
 - Palms & papyrus (dwarfs)
 - Taros
 - Rushes
 - Plantains
 - Cannas
 - Miniatures
 - Pygmy water lilies
 - Water poppies
 - Floating heart
 - Pennywort
 - Variegated 4 leaf clover
 - Oxygenators and clarifiers
 - Water hyacinths – floater
 - Water lettuce – floater
 - Anacharis – underwater
 - Sagittaria – underwater
 - Milfoil – underwater
 - Duckweed – floater
 - Azolla – floater
 - Critters
 - Native
 - Local frogs
 - Snails
 - Depending on pond depth – native fish
 - Check with fish and game
 - Imported – take care NOT to introduce invasive species into the natural environment
 - Snails

- Frogs *
 - Fish
 - Gold fish
 - Coy
 - Bottom feeders
 - Catfish and corydoras
 - Plecostomus
- Local vs outside suppliers (placing a group order saves)
 - Few local vendors sell decorative plants and very expensive
 - Some pet stores have some underwater plants but –
 - Aquarium varieties
 - Small size
 - May lack hardiness
- Planting and Maintaining your plants
 - Use broad shallow pots to house plants
 - Plant in dense soil or sand and pea gravel mix
 - Sometimes Lowes or Home Depot has water plant medium
 - Top with 1-2” of pea gravel to hold soil in pot
 - Trim off yellowed leaves and spent blooms as they develop
 - Fertilizing with good aquatic plant fertilizer is critical
 - Two or three tablets in 6 -8 in pot when planting
 - Every two weeks from mid-March thru August 1
 - Lilypons Plant food
 - Tricker’s Trico

Managing critters – resident and visiting

- Invited
 - Frogs
 - Native need no care
 - Imported probably will not survive, even in summer
 - Snails
 - Natives need no care
 - Imported, be sure that none escape to wild
 - Fish
 - Gold fish (feeder) are easiest to manage
 - Tolerate wide range of water temperatures
 - Feed well on natural and commercial food
 - Less affected by move to winter quarters
 - 2-3 inch fish are easier to view in larger outdoor pond
 - Smaller feeder fish do fine in small patio ponds
 - Fish produce a lot of ammonia so plants are necessary
 - Filtration may also be necessary
 - Moving water is easier on fish, adds oxygen
 - Do NOT over feed – outdoor fish need little supplemental feeding
- Visitors

- Two legged
 - Safety concerns for the little ones
 - Solid edges if pond is near trafficked areas
 - Clearly demarcated edges
- Four legged
 - Pets – yours and neighbor's
 - Fencing helps
 - Cats dig in surrounding flower beds
 - Dogs drink, swim, etc
 - Moose
 - Area fencing can help, especially electric
 - Noise alarms
 - Sparklers or fireworks
 - Other wild animals
 - Again fencing and alarms
 - Your barking dog
- Winged
 - Ducks, sandpipers, geese, etc – with bigger ponds only
 - Will bring seeds to add to your plantings
 - May eat smaller fish
 - Song birds
 - Enjoy the water
 - May leave weed seeds
 - Bees, wasps and other insects
 - Insects will be attracted
 - Fish will enjoy eating them, especially in larval stage
 - Bees (and wasps) will just sip a little water and pollinate flowers
 - Fish will eat them if they get over deeper water
 - It pond in on patio or porch this may pose stinging hazard
 - Raptors –
 - Great to watch
 - May steal some fish

Part 4 – Winterizing your Pond

- Winterizing our Pond
 - Your pond structure determines the winterizing process
 - Filters, pumps, fountains
 - Remove from pond
 - Clean well and dry
 - Store in dry, above freezing location
 - Concrete ponds
 - Completely drain ponds
 - Fill any cracks or depressions
 - Place wood blocks in pond in case water or snow melt collect before it warms in the spring.
 - Rubber or tank farm liner pond
 - Remove plants that need to be wintered
 - If there is too much debris or algae, drain pond
 - Refill pond with clean water
 - Pond should be full to protect liner
 - Molded plastic ponds
 - Remove plants
 - Drain pond
 - If possible, store pond in above freezing location
 - Large pot, found objects, etc
 - Empty and clean object
 - Store in a safe location for material involved
- Wintering Plants
 - Native species
 - Leave in pond
 - Cover with water before freeze-up
 - Do not walk over area even though frozen
 - Imported
 - As plants stop growing trim yellowed leaves
 - Pull plants, pots and all from water
 - Place pots in large plastic container
 - Fill with water one or two inches over crown of plants
 - Cover with lid
 - Place in cool (35-45 degrees), dark or semi-dark location
 - In mid-march bring plastic contain w plants into warm sunny room
 - Fertilize bi-weekly
 - As soon as days are warm, move container outside
 - Cover until nights no longer freeze
 - Move to pond when pond is ready, late May or early June
- Wintering Fish
 - Fish will not survive Alaskan winters in shallow water
 - Wintering options
 - Indoor aquarium
 - School aquarium partnerships

- Do not just leave in pond to freeze, decomposing in the spring will make it difficult to clear pond

Enjoy your pond. If you questions as you build your pond, feel free to contact at lilyvale@awcable.com or marji@northpolepeonies.com or by phone 488-0446.