

Calculating Pond Gallons Laguna Koi Ponds

One of the most important aspects to having a successful fish pond is knowing your gallons.

Knowing your pond gallons allows you to size your pump, filter and UV clarifier correctly and use pond chemicals, medications and algacide correctly. Overdosing or underdosing certain chemicals will kill your fish. Knowing your gallons will increase your level of success.

Ideally you need to know the pond gallons within 10% to be successful.

The best way to determine accurate gallons is at the time you fill the pond the first time. There are 2 of ways to determine gallons at original fill.

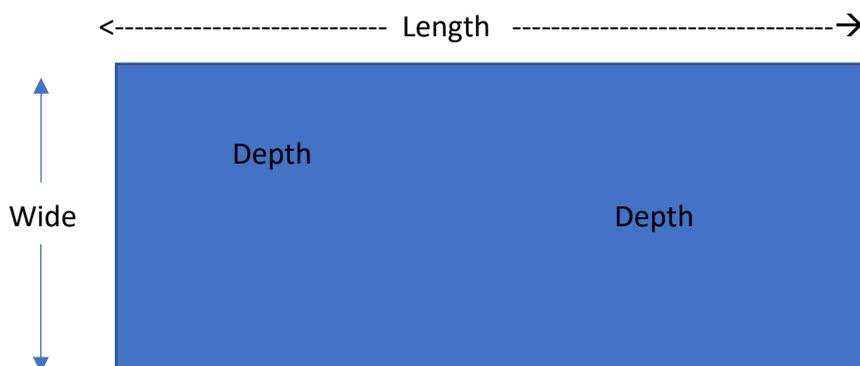
- 1- Use your home tap water meter at the street.
 - a. Stop use of all other water in the house except for the pond.
 - b. Read the numbers on your meter and write down the before number.
 - c. After filling the pond, you can subtract the end number from the first number.
 - d. The meter measures cubic feet of water. Multiply your cubic feet of water by 7.48 to determine gallons.
- 2- Use the fill time from a garden hose to calculate the gallons.
 - a. First, time the fill of a 5 gallon bucket with the garden hose on full speed. A typical garden hose on full blast will deliver 10 to 15 gallons per minute. So if your 5 gallon bucket takes 30 seconds to fill then you know the garden hose delivers 10 gallons per minute.
 - b. Time the fill of your pond and multiply your gallons per minute from garden hose by the actual fill time.

If you cannot determine gallons from filling the pond, then you will need to know a few mathematical formulas.

Square or Rectangular Pond with even water depth:

Measure inches only for accuracy. Length" x Width" x Depth" divide by 231 = gallons.

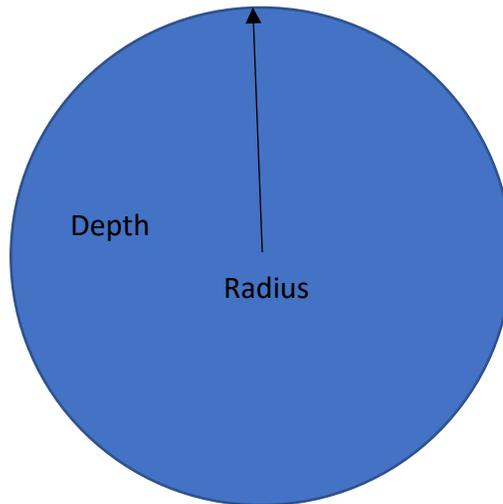
Measuring in feet or guessing will not be accurate.



Circular Ponds with even water depth uses a different formula.

Measure inches only for accuracy. Radius" x Radius" x 3.14 x Depth" divide by 231 = Gallons.

Radius is half the diameter.



Irregular Shaped Ponds and Ponds with a Varying Depth become more complicated.

In the example below, assume the water depth is the same throughout the pond.

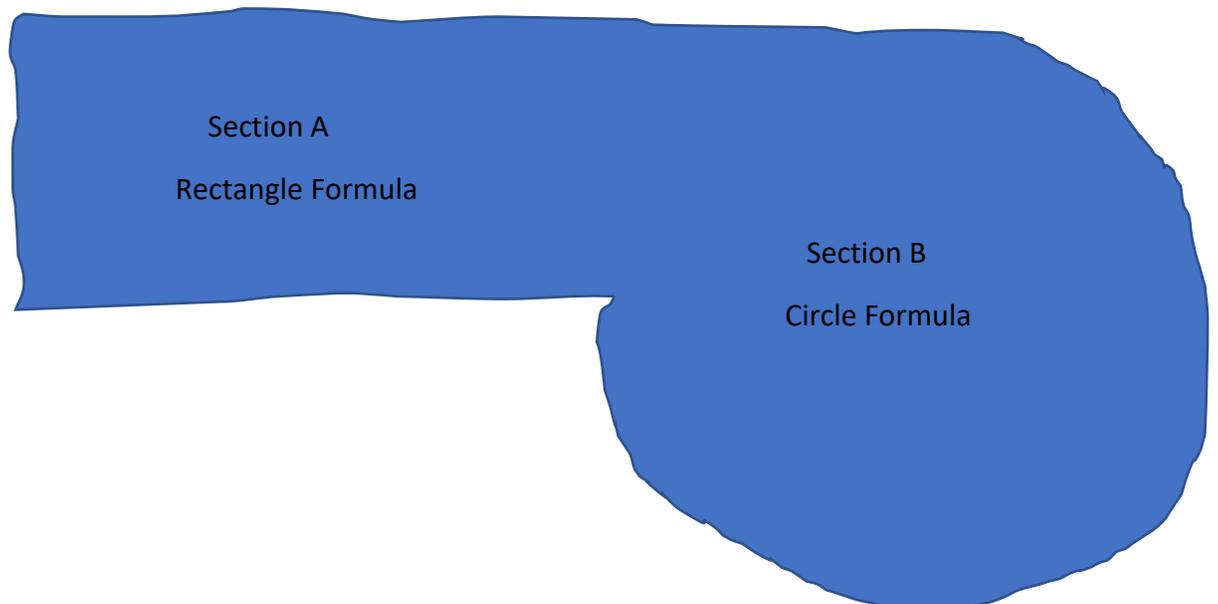
Divide the pond into 2 separate sections.

-Calculate the gallons in Section A (using rectangle formula).

-Calculate the gallons in Section B (using circle formula).

-Add the 2 sections together for total gallons.

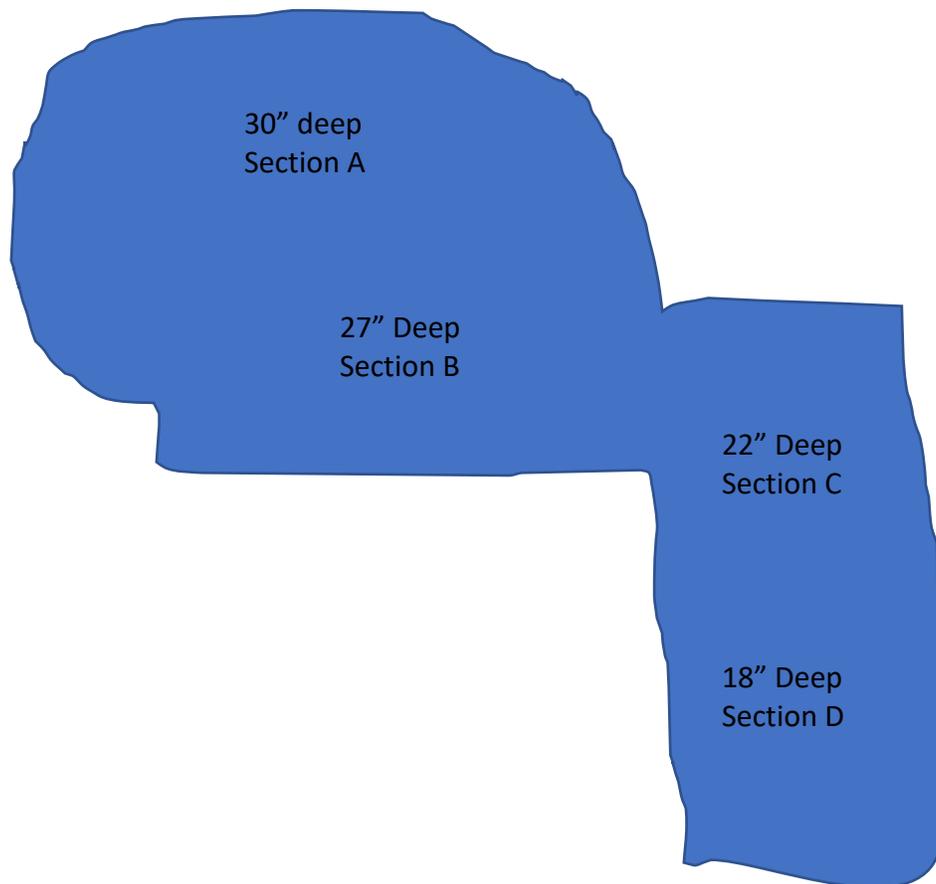
This method will not give you totally accurate results. But it can get you close.



For Ponds with Varying Depths you need to divide the pond into imaginary sections of squares, rectangles and circles according to the depth in that section.

It is best to make a drawing and then use a tape measure to test the depth throughout the pond.

Base your sections on an area with even depth. You will end up with multiple sections and then apply the appropriate formula for each section and then add them all together.



A third method to calculate gallons is using additions of rock salt and measuring with a salt meter. Then adding the numbers to our "Pond Salinity Calculator" on our web site.

-If we add 4 pounds of salt to 100 gallons = 0.5% salt solution confirmed with a salt meter.

-If we add 5 pounds of salt to 100 gallons = 0.6% salt solution confirmed with a salt meter.

The procedure is thus:

1-Test the starting salt level in your pond with a calibrated Salt Meter. Record the % number.

2-Add a known quantity of salt in pounds to the pond. Record the weight added.

3-Test the salt level again after the salt has dissolved for 12 hours. Record the % number.

4-Subtract the first % number from the second % number to get the difference.

Record the difference.

5-Follow this link to our web site for the “Pond Salinity Calculator”:

<http://www.lagunakoi.com/Pond-Salinity-Calculator.html>

6-Clear out all cells to zero.

Pond Salinity Calculator

Two of the three fields are required to calculate the empty field.

[Volume of Water] – [% Salinity Change]
Or
[Amount of non-iodized Salt]

The calculator will retain the last field entered and will calculate the missing field.

For example, if you enter Gallons and then go to Amount, the % Salinity will be calculated or if you enter Gallons and then % Salinity, the Amount will be calculated.

(note 0.1 = 10%)

Salt concentrations will vary; always consult with a professional before introducing any major changes to your ponds ecosystem.

Volume of Water		(required) % Salinity change	Amount of non-iodized Salt			Calculated Automatically
Gallons - US	Liters		Pounds	Ounces	Grams	
0	0	0	0	0.000	0.000	

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-(Clear all cells to zero.)

7- In the cell called “Pounds” enter the pound of salt you added to the pond in step 2.

8-In the cell called “Required % Salinity Change” enter the % difference from step 4.

The Calculator will automatically determine the gallons in your pond!!

Pond Salinity Calculator

Two of the three fields are required to calculate the empty field.

[Volume of Water] – [% Salinity Change]
Or
[Amount of non-iodized Salt]

The calculator will retain the last field entered and will calculate the missing field.

For example, if you enter Gallons and then go to Amount, the % Salinity will be calculated or if you enter Gallons and then % Salinity, the Amount will be calculated.

(note 0.1 = 10%)

Salt concentrations will vary; always consult with a professional before introducing any major changes to your ponds ecosystem.

Volume of Water		(required) % Salinity change	Amount of non-iodized Salt			Calculated Automatically
Gallons - US	Liters		Pounds	Ounces	Grams	
1597.706	6047.316	0.15	20	320.000	9072.000	

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-(Enter the pounds added in Step 2; Example 20 pounds.)

-(Enter the % difference from Step 4; Example 0.15%)

In this case the gallons calculated at 1597.706