

## **THE COST OF A GOLDFISH**

This title may not be completely self-explanatory. Goldfish prices vary wildly. But, let's explore the cost to keep a goldfish and then examine how that relates to the purchase price of the fish itself. We can do a rudimentary economic analysis of a home aquarium and then repeat the exercise for a small pond. Note that this is not a how-to-keep-a-goldfish article. The costs, along with the assumptions upon which costs were based, are purposely very optimistic. Consider it a best-case scenario. If you feel the numbers are way off, either too high or too low, your criticisms are accepted; almost expected. Every situation is different. The economic scenarios do not accurately reflect my situation either. Before going further, let me warn you that I have ulterior motives which will become clear in due course.

### **THE AQUARIUM SCENARIO**

First, the aquarium. Let's go for something fairly large, but not huge. How about a 55-gallon all-glass aquarium with lighted hood? We will also get a wrought iron stand and a generic canister filter rated for a 55-gallon tank. Many experienced goldfish keepers advise that the filter be rated for a tank which is twice as large to accommodate the waste load from goldfish, but we are being optimistic here. The filter uses only 20 watts of electricity and the light uses 40 watts. A pittance compared to the refrigerator or air conditioner. We are avoiding the temptation to add gravel to the tank and will go with a bare-bottom set-up. Maybe we will add some plants later. We were able to get the tank, hood, stand and filter for \$220. It is not the grandest of tanks, but represents a meaningful investment in these troubled economic times. Besides, we optimistically plan to use this tank and components for twenty years so the cost of the equipment, later called the "capital costs", is only \$11 per year. How could anything which brings so much pleasure cost so little?

While we were at the store we picked up some water conditioner to take care of the chloramines in our tap water. The bottle of conditioner only costs about \$7.50 and is enough to treat 2500 gallons. Since we will be exchanging 30% of the water every week the bottle will last a long time. The water test kits are a little pricy so we just picked up a pack of five-in-one test strips and are optimistic that they will suffice. The pack of strips cost \$13 and should last a year if we use them sparingly. We are confident that we will not need any sort of medication or other amendments.

Before we get the fish, we will need to pick up some feed. We plan to use good pellets, but perhaps not the best. At the store they had fancy 10.5 ounce foil packets of a popular brand for \$11. They say goldfish will only eat about 1.5% of their body weight in pellets every day. That can't amount to much. We will also feed bloodworms as a treat once each week and some fresh vegetables once each week. For only \$2.50 you can get 32 little cubes of frozen bloodworms and one or two cubes per week should be plenty. There are always some sort of fresh leafy vegetables in the refrigerator so that is no real cost at all.

When the time comes, we plan to get three fancy goldfish for the aquarium. Perhaps an oranda, a ranchu and a ryukin. They say each goldfish needs twenty gallons of water. Our 55-gallon aquarium may only hold fifty gallons at the operating volume, but that's probably close enough to twenty gallons per fish. We will buy young fish and plan to have them for at least three years. I guess the average weight over their lifetime will be about two ounces.

## **THE POND SCENARIO**

Our neighbors are putting in a 400-gallon goldfish pond. Some of us cannot relate to keeping goldfish which can only be seen and appreciated from above. But, to each their own. They bought the liner, liner underlayment, a skimmer, filter, 90 watt pump and plumbing for about \$560. I thought the cost was exorbitant, yet dwarfed by the effort to install it. The owner insists it is all fun and since he plans to enjoy the pond for at least twenty years the cost is only \$28 per year.

After seeing my water conditioner and test strips, the neighbors bought the same thing. They plan to change about 10% of the water each week so the bottle of conditioner will last about fourteen months.

Since they will be using more feed than I, they plan to use less expensive staple koi pellets in the one-eighth-inch size. They can get a big 4.4-pound bag for twenty-something bucks. I asked about bloodworms and fresh vegetables, but they say their fish will find plenty of live worms, insects and algae to supplement the pellets.

Being outside and unprotected like that, they will not be able to have fancy goldfish in their pond and will have to be satisfied with commons, comet, shubunkin, wakin, and such. They claim that their hardy goldfish will live longer and grow larger than my fancy varieties and plan to have them at least four years. They are thinking that eight fish will be about right and the average weight will be something like four ounces.

## **THE ACCOUNTING**

OK, so based on the assumptions above, what does it cost to keep a goldfish? Let's add up all these little costs in tabular form.

Oops, we need to add one more assumption. The average cost of residential electricity was 11¢/kwh in the U.S. in December 2008. Watts, multiplied by the hours used, divided by one-thousand, equals the kilowatt-hours (abbreviated kwh). Oh, here's another assumption ... There is no inflation and we use straight line depreciation.

Table 1 - THE AQUARIUM

**CAPITAL COSTS** (equipment and stuff that will last a while)

tank with hood and filter	55	gal		\$220	
life expectancy & amortization	20	yr			\$11.00 per year

**OPERATING COSTS**

electricity for canister filter	18	watts	24	hours per day	\$17.34	per year
electricity for hood with light	40	watts	7	hours per day	\$11.24	per year
pelleted feed	1.05	\$ per ounce	1.5	% fish body weight per day	\$34.41	per year
bloodworm treat	0.078	\$ per cube	1.5	cubes per week	\$ 6.07	per year
water	0.002	\$ per gallon	30	% per week exchange	\$ 2.09	per year
water conditioner	0.003	\$ per gallon	30	% per week exchange	\$ 2.57	per year
water testing	0.52	\$ per test	0.5	test per week	\$13.00	per year

<b>TOTAL COST</b>					\$97.73	per year
	with	3	fish		\$32.58	per fish per year
	over the	3	year life of the fish		\$97.73	per fish

Table 2 - THE POND

**CAPITAL COSTS**

pond materials	400	gallons		\$560	
life expectancy & amortization	20	years			\$ 28.00 per year

**OPERATING COSTS**

electricity for pump	90	watts	24	hours per day	\$ 86.72	per year
staple pellets	0.39	\$ per ounce	1.5	% fish body weight per day	\$ 68.81	per year
water	0.002	\$ per gallon	10	% per week exchange	\$ 5.06	per year
water conditioner	0.003	\$ per gallon	10	% per week exchange	\$ 6.23	per year
water testing	0.52	\$ per test	0.5	test per week	\$ 13.00	per year

<b>TOTAL COST</b>					\$ 207.83	per year
	with	8	fish		\$ 25.98	per fish per year
	over the	4	year life of the fish		\$ 103.91	per fish

Whoa ! We are going to spend about a hundred bucks to keep each goldfish. All those little costs really add up and this was supposed to be the best-case scenario. What's more, this does not even include the cost of the fish !

Well, that's sort of the point behind this whole exercise. In the US, the price of a goldfish can range from about a dollar to several hundred dollars. However, the cost to keep a one-dollar goldfish is essentially the same as keeping a two-hundred-dollar goldfish. They both need a tank or pond and they both gotta' eat. Remember this when shopping. If you really like the thirty-dollar fish but feel compelled save a few bucks by getting the less desirable ten-dollar fish instead, just think of the combined cost of the fish plus its upkeep. When all costs are considered, you could spend \$130 on the thirty-dollar goldfish and \$110 on the ten-dollar goldfish. If the choice is spending \$130 for the fish you really want versus \$110 (only a 15% savings) for something of significantly lower quality you will get the better fish.... and be happier with it in the long run.

Those ulterior motives which were mention above..... Well, yeah.... I breed goldfish and ship them to customers across the US. Please visit our web site at [www.RainGarden.US](http://www.RainGarden.US)

Thank You for Listening,

-steve hopkins  
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