

Troubleshooting Leaks

Step 1: Does Your Pond Actually Have A Leak?

It's hard to imagine how much water can evaporate from a pond during the dog days of summer.

- Here in Minnesota you can expect to lose 1" to 1 ½" inch of water each week.
- Pond owners in the hot, arid southwest, such as Arizona, may have evaporation levels in excess of 3" a week.

Remember, these are averages. Some ponds may not experience evaporation levels this high, while other ponds with large pumps pushing high volumes of water, and /or ponds designed with multiple waterfalls with a lot of cascades and splashing, may have evaporation rates much greater than these.

Step 2: Look For Low Edges

- Here's a little secret. 99% of all leaks are ***not*** due to a hole in the liner, but rather water making its way over the edges of the pond, stream, or waterfalls.
- Look for any low edges. Settling at your pond's edge is the most common cause of a pond leaks in a new pond.
- Typically, the low edges are found around the stream and waterfall where settling may have occurred after a few rainfalls. These areas are usually built up during the construction of the pond using the soil from the excavation, and are prone to some settling.
- Low edge signs
 - a. Wet mulch along the edge of the pond or stream
 - b. Wet gravel along the edge of the pond or stream
- You may need to move back the gravel in certain areas to find the low edge.

How to Fix a Low Edge

Low edges can be built back up by simply backfilling and compacting soil beneath the liner in order to raise the edge of the liner above the water level.

Step 3: Look For Obstructions in the Stream and Waterfalls

- Check to make sure nothing is causing the pond leaks by restricting the flow of water down the "waterfall or stream". Any adjustments or moving of the rocks in the **waterfall** and stream may have inadvertently caused some of the water to be diverted over the liner.
- Water can also make its way over the edge due to excessive aquatic plant or algae growth in the stream or biological waterfall filter. The water simply gets backed up from all of the aquatic plant growth. Plants and algae should be maintained by trimming them back in order to let the water pass freely.

- All in all, these leaks are easy to fix but you should pay attention to and fixed as soon as possible.

Step 4: Shut Down the Pump

- You have spent 15 minutes or so following the suggestions listed above and you still can't find the leak. Well, we now have to go one step further and try to narrow things down a little more.
- Turn off the pump and leave the pond for a period of 12 hours or more (If your pond is heavily stocked with fish, provisions for supplemental oxygen may be necessary).
- After 12 hours, look to see if the water level has dropped in the pond.

What Does This Determine?

- If the water level has dropped then you know the **leak is in your pond**.
- If the water level remains the same in your pond then it is assumed that the pond **leak is in the stream or plumbing**.

If The Leak Is In Your Pond

- If you are concentrating on looking for the pond leaks, then completely ignore the waterfalls/stream.
- When the water level has stopped dropping, then concentrate your search around the perimeter of your pond at the level that the water has stopped dropping.
- If the water level stopped below the bottom of the skimmer faceplate you can rule out the skimmer and concentrate elsewhere.
- If the water level is above the bottom of the faceplate you should investigate the skimmer. It may not have sealed correctly, but don't tear apart the skimmer faceplate follow the next step below.

If The Leak Is In the Skimmer

- Investigate the skimmer faceplate without disassembling it.
- Simply move a few rocks around the front of the skimmer and slide your hand behind the liner. Feel for wet soil around the opening of the skimmer.
- If the soil is Bone dry, it's most likely not the skimmer.

- If you do determine it is the skimmer, it will need to be pulled apart, cleaned and re-apply silicone and set the screws.

If it's Not the Skimmer

- Investigate the liner for small punctures around the perimeter of your pond where the water level has stopped.
- Unfortunately, the only effective way to find this type of pond leak is to start moving rocks and gravel and search for the pond leak by hand and eye.
- The pond leak, once found, can be easily fixed using EPDM patch tape.

Example of a shutdown procedure where the leak is in the waterfalls/stream

- The pond water level has not dropped over the past 12 hours.
- This immediately tells us that the pond is not the source of the leak. So, in other words, do not waste your time looking in the pond or the skimmer for the leak...it's not down there. The leak is upstream!
- Turn the pump on and get the water flowing again.
- First, double check that all of the edges are high and any stream liner overlaps or liner seams are not leaking.
- Secondly, check to make sure the seal on the Biofalls lip is watertight.
- **Don't tear apart the Biofalls lip!** You can investigate the Biofalls lip without completely disassembling the waterfalls.
- Move a few rocks around the side of the Biofalls and/or remove some soil from the side of the Biofalls, allowing you to slide your hand behind the liner.
- Feel for wet soil around the Biofalls.
- If it's bone dry, it's most likely not the seal on the Biofalls.
- If the soil is saturated, or you feel water leaking, then the lip needs to be resealed.
- Reseal the Biofalls by removing the Biofall lip. Clean all of the old silicone and waterfall foam off the liner, and reseal lip with silicone and refoam as needed.
- If you have still been unable to find the source of the leak begin to investigate the rest of the stream and waterfalls.
- At this point it is most likely a hole that you should be looking for.

- If the waterfall is right off the side of the pond, or 5' back from the pond, the most efficient method is to remove the rocks and gravel in the waterfall area and search for the leak by hand and eye. The leak, once found, can easily be fixed using EPDM patch tape.

Narrowing Down the Leak on Long Streams

- Leaks can also be narrowed down on water falls and streams by performing the “pipe test”
- The pipe test will take a few days to determine the location of the leak, but it will be well worth the effort.
- The pipe test consists of a section of pipe laid on the ground. The pipe is connected to the pump in the skimmer. The pump is turned on and the end of the pipe is then set at the lowest point in the waterfalls/stream.
- Then check back the next day to see if the water level has dropped.
- If it hasn't dropped we move the pipe further up the stream. We do this process until we notice the water level in the pond has dropped. We can then move the rocks and gravel to search for the leak by hand and eye.