

**Summary of Aquatic Vegetation Management and Associated Costs by Year for  
Magician Lake in Cass and Van Buren Counties, Michigan**

**Restorative Lake Sciences, Lake Manager**

<b>Year</b>	<b>Date Treated</b>	<b>Herbicides Used</b>	<b># Acres of EWM</b>	<b>Total Cost</b>
<b>2011</b>	6-23	Renovate OTF, Navigate, diquat, copper	89.2	\$38,738.20
	6-23	Canal-diquat, copper, Mukk Digest pellets	0	\$831
		Permit Invoice	NA	\$1,500
				<b>\$41,069.92</b>
<b>2012</b>	5-23	Channel-diquat, copper	0	\$392
	6-22	Canal-Mukk Digest pellets	0	\$848
	6-26	Renovate OTF, Clipper	5.6	\$9,261
	7-24	Channel-diquat, copper	0	\$392
		Permit Invoice	NA	\$1,500
				<b>\$12,393</b>
<b>2013</b>	5-23	Copper, Aquathol-K, diquat, Muck MD pellets	0	\$1,312
	6-13	Renovate OTF, Clipper	9.33	\$7,648.19
	6-21	Canal-copper	0	\$64
	7-16	Canal-Muck MD pellets	0	\$800
	7-24	Canal-copper	0	\$64
		Permit Invoice	NA	\$1,500
				<b>\$11,388.19</b>
<b>2014</b>	6-4	Canal and Channel-MD pellets, copper, diquat, Clipper	0	\$1,640
	6-26	Renovate OTF, Sculpin, diquat, copper	9.8	\$6,531.90
		Permit Invoice	NA	\$1,500
				<b>\$9,067.19</b>
<b>2015</b>	5-20	Copper, diquat, Clipper (Channel)	0	\$875
	7-23	Copper, diquat (Cannel)	0	\$428.75
		Permit Invoice	NA	\$1,500
				<b>\$2,803.75</b>
<b>2016</b>	5-24	Renovate OTF, Aquathol-K, MD pellets, diquat, Clipper	10	\$10,137.60
		Permit Invoice	NA	\$1,500
				<b>\$11,637.60</b>
<b>2017</b>	5-25	Renovate OTF, MD pellets, Copper, diquat, Clipper	17.4	\$7,064.40

	6-19	MD pellets	0	\$848
	7-18	Copper	0	\$70
		Permit Invoice	NA	\$1,500
				<b>\$9,482</b>
<b>2018</b>	5-31	Renovate OTF, copper, diquat, Clipper	1.11	\$1,890.83
	5-31	MD pellets	0	\$848
	7-2	Copper, diquat	0	\$306.25
	7-19	Copper	0	\$60
		Permit Invoice	NA	\$1,500
				<b>\$4,605.08</b>
<b>2019</b>	6-3	Renovate OTF, diquat, Komeen (Starry)	3.5	\$3,588.75
	6-10	MD pellets	0	\$768
		Permit Invoice	NA	\$1,500
				<b>\$5,856.75</b>

Notes: All copper, diquat, Aqua-thol K products were used exclusively in the Channel to reduce invasives such as Curly-leaf Pondweed and Starry Stonewort.

All Muck MD pellets were used exclusively in the Canal for muck reduction with aerators.

All milfoil treatments consisted of very selective systemic herbicide treatments in the open waters.

Total annual costs depend upon many factors including seed bank and climate characteristics which vary among years.