

Tips for Safe and Effective Use of Dock De-Icers

- ◆ Complete a town application and post a sign (**required by law; RSA 270:33**) that is visible to winter recreationists warning them of open water and thin ice conditions when a de-icer is in use.
- ◆ When purchasing or replacing a de-icer, choose the smallest size possible to maintain an ice free zone around your dock.
- ◆ Set up your de-icer to form a narrow open water area around your dock (a bubbler device works best with this technique) creating space for ice to expand.
- ◆ If using a circulator type of de-icer, be sure to point it in a vertical direction not at an angle towards the middle of the lake as dangerous thin ice conditions will likely occur that are hard to see.
- ◆ Use a thermostat and timer to run the de-icer device only when air temperature drops below the freezing point and for a few hours a day.



Good



Bad

Alternate Strategy

When the time comes to replace your dock consider installing one that can be removed from the water such as a cantilever type eliminating the need for a de-icer device. Please refer to LSPA's *Lake Freindly Dock Choices* pamphlet for more information on dock types. This pamphlet is also available on LSPA's website.

Resource List

LGA. Don't Be Eaten Alive: Tips for Effective and Safe Use of Ice Eaters. Lake George Association. www.lakegeorgeassociation.org

LGA News. 2006. Safe Ice vs. Unsafe Ice: Ice Eaters Still A Hot Topic. Lake George Association. www.lakegeorgeassociation.org

Loren Hadley. Dock De-Icers 101: The Basics of Choosing a Dock De-icer to Protect Your Dock From Ice Damage. Ezine Articles. [http://ezinearticles.com/?Dock-De-Icers-101---The Basics-of-Choosing-a-Dock-De-icer-to-Protect-Your-Dock-From-Ice-Damage&id=1562850](http://ezinearticles.com/?Dock-De-Icers-101---The-Basics-of-Choosing-a-Dock-De-icer-to-Protect-Your-Dock-From-Ice-Damage&id=1562850)

De-Icer Manufacturers/Suppliers
De-Icers can be purchased locally from Clarke's Hardware and Watermark or from one of the many online suppliers.



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Dock De-Icers Tips for Safe and Effective Use

LSPA
*Devoted to the Environmental Quality
of the Lake Sunapee Watershed*

In an effort to protect permanent docks from ice damage, many property owners use a mechanical/electrical device that keeps ice from freezing around a dock or crib structure. These devices provide an ice free zone by moving water in much the same way as a flowing stream does. If not properly managed or installed these devices can create larger than necessary open water areas and thin ice that are unsafe for recreation during the winter months. These large open water areas can also lead to greater ice damage to a dock during the spring melt.

Types of de-icers

There are two common types of de-icers devices. One type may be better for your dock than the other depending on water depth, water obstructions, dock shape and geographic location.

Bubbler: This device works by releasing small air bubbles from a perforated hose(s) or air diffusion tubing in the lake bottom. The hose is attached to an air compressor typically located on your dock inside a specially made enclosure or inside a boathouse or other structure. Bubble de-icers don't stir up lake bottom sediment and are less likely to cause dangerous thin ice conditions.

Circulator: This device works by circulating the water near the lake bottom toward the surface and functions best in the water depths of at least 2.5 feet. The entire device is submerged in the water. Circulator de-icers typically open up larger areas of water as it can't be placed or adjusted as easily like the tubes of a bubble device can. Most of these devices also contain a fair amount of lubricating oil that can leak directly into the water from failed seals.

Negative Impacts of a De-Icer Device

The following list are some potential negative impacts associated with the use of de-icing devices. Many of these impacts can be prevented or minimized by following the tips for safe and effective use included in this pamphlet.

- ◆ Many de-icing devices simply open too large an area. This increases the amount of thin-ice for ice-skaters, cross-country skiers, snowmobilers, and ice-sailers, etc. These thin-ice areas maybe difficult to see.
- ◆ Lake water temperature and light conditions are altered which may have an impact on algae and plant growth, and alter feeding habits of fish and other aquatic organisms.

- ◆ De-icing devices (circulator type) can disturb bottom sediments possibly releasing nutrients such as phosphorus and increasing algae.
- ◆ These impacts are compounded if many de-icing devices are in use around the lake.
- ◆ De-icer devices are expensive to buy and operate and **do not guarantee less ice damage.**
- ◆ Dock de-icers can be noisy.

Size & Cost of Use Comparion

This cost comparison is approximate. Many units include a thermostat and/or a timer as an option. If a thermostat and/or timer are used, operating costs will be reduced. A device run only 4 hours a day will significantly reduce operating costs by as much as 85%.

Type	Avg. Cost of Unit	Motor Power Rating	Approximate Size of Ice Free Zone ¹	5 year Operating Cost ²
Circulator	\$450 - 500	2.5 Amps (1/4 HP)	25 foot circular hole	\$855
	\$500 - 600	5 Amps (1/2 HP)	50 foot circular hole	\$1,711
	\$525 - 700	7 Amps (3/4 HP)	70 foot circular hole	\$2,395
Bubbler ³	\$650 - 750	1 Amp (40 Watts)	50-60 feet of tubing	\$115
	\$800 - 1,000	1 Amp (65 Watts)	70-100 feet of tubing	\$185
	\$1,000 - 1,400	1 Amp (90 Watts)	110-150 feet of tubing	\$257

¹ Varies depending on water depth, air temperature, and configuration of unit/tubing.

² Based on 4 months of usage and the NH Office of Energy and Planning, 2015 average \$0.198 kWh rate.

³ Bubbler systems include air compressor and tubing.