

Have you spotted this smart

winter fern?



**Christmas Fern** (*Polystichum acrostichoides*) This handsome, well-named plant stays green all winter. How does it manage this, when most other plants go dormant and all signs of foliage disappear?

Take a good look at the stem of the fronds (leaves) – what look like copper-colored hairs are actually scales that protect the stems from the drying winter winds.

Take another look at the thick dark green leaflets on these fronds: the plant stores extra energy in the leaves, instead of the roots. This stored sugar serves as an antifreeze, prevents ice crystals from forming to rupture the leaf cells, and allows the plant to keep photosynthesizing on sunny winter days, getting a head start on the next year's action.

The tough plants grow in dense, slow growing low colonies, and their roots help stabilize the soil. The plants aren't attractive to most wildlife for food, but provide habitat for small ground dwelling animals. A taller frond will have fruiting spores on the underside of leaflets at the tip of this frond. The plant can tolerate most soil and site conditions, except clay, high pH, standing water or full sun.

To learn about some winter strategies taken by other species, see the VT Center for Ecostudies [December Field Guide](#). You'll find that wood frogs also use the sugar approach for surviving winter - their glucose levels jump by 200 times, allowing ice to form around all body organs!

