





Lyis: Food Forestry, Animals 2022

Nursery in Owen Sound, run by Andrii Logan Zvorygin a Ukrainian-Canadian

✉ lyis@liberit.ca  <https://lyis.ca> ☎ 226-537-0147

 @lyis.ca  @lyis_ca  @lyisforestry

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“The vision of the New Eden is food forest communities where all of our needs can be met on site.” – Age of Peace.

It is no secret that growing fruit and nut trees creates a source of food, and consequently attracts wildlife. One of the first rules of permaculture is to grow enough for yourself and the animals, which requires to firstly grow enough for yourself, and then have at least 10% extra for the animals.

Due to clearing of forests many of our eco-systems are out of balance, and there are not enough stable populations of prey and predators to keep things in balance. By providing habitat for prey and predators, as well as providing loving companionship we can help bring our local eco systems and ourselves into balance again.

1 Grey/Black Squirrel (*Sciurus carolinensis*)

The prey population that is most likely to overflow is the Eastern Grey Squirrel, also known as black squirrels, which are considered to be one of the smartest and most invasive squirrel species on the planet. Traditional European animals such as cats and dogs do not have any ability to manage them besides occasionally scaring them off. However the native *Pekania pennanti* AKA Fisher, is a cat sized weasel which dines primarily on tree squirrels such as the Grey Squirrel.

The only other predator of tree squirrels is humans. If you own a relatively small lot, then you may be able to get by with hunting and-or trapping your squirrels. In suburban settings in some municipalities bow hunting or sling shot hunting is permissible with a

valid hunting license, though check your local bylaws. Otherwise with a trapping license it is generally much easier and quicker to get a significant number of squirrels during the open season.

Squirrels have a fairly tough hide, so need a fairly sharp knife to skin them, but the toughness is also good as they can be used for more things than thinner hides such as rabbit furs. Squirrel meat tastes similar to chicken but with significantly richer flavour since they generally have a better diet. Mostly they have leg meat, but there is a little bit of breast/“wing” meat as well.

If you do decide to keep meat squirrels, they are much easier to take care of than chickens, and can even limit feeding them to fatten them up for hunting/trapping season. They eat oil seed based bird foods, such as black sunflower seed.

Instead a chicken coop you can make some squirrel boxes for them, one squirrel box usually keeps 4-6 squirrels. The squirrel boxes are used by nesting mothers in the spring time, where they have 1-4 baby squirrels up to twice a year. They are also used by the squirrels for sleeping in at night, and for shelter during the winter. So you can easily find your squirrels during the hunting season as they will be in their boxes and exit them to forage in the morning and evening. If you decide to also have a Pekani box, then the squirrel boxes will also be a shelter the squirrels can hide from the Pekani.

A squirrel box can be made of 25cm (10in) wide by 2cm (1in) thick plank, some mesh and screws. It is 35cm (14in) high, and 25cm long and wide. With a baffle entrance that is 5cm (2in) high. The mesh covers the side and bottom to help the young ones climb in and out, and prevent them from

making extra holes in the squirrel house. Can see a picture of a fairly fancy one at https://lyis.ca/pfet/squirrel_box.png.

2 Rabbits (Sylvilagus floridanus)

Rabbits are the second most common issue for establishing a food forest, as they will eat small seedlings if they are not protected by a staked mesh of some sort. Also during the winter they may debark juvenile trees which are unprotected, or if the snow pack lets them to go higher than the protection.

While rabbits have many predators, in a food forest setting the most effective is the ermine and long-tailed weasel as well as Pekani, though coyotes do a fair job as well. Rabbits are too big for cats, and few dogs are able to catch them.

Since rabbits often do the bulk of their damage at night, the easiest manner of manual management is through trapping, since they can not be hunted after dark. Rabbits are commonly reared for meat so there are many resources you can turn to for that. Providing them a hutch with an entrance and an exit is a possibility. Rabbits are primarily meadow creatures though, so are mostly an issue only in the early stages of growing a food forest.

3 Chipmunks (Tamias striatus)

Chipmunks are a rodent sometimes called a ground squirrel as they nest underground, but have a diet similar to squirrels. If they have no predators in the area their populations can get out of hand, however that is rare, as many things prey on them, including cats, dogs, coyotes, birds of prey and ermine.

4 Birds

There are a variety of birds that may be an issue in a permaculture setting. Some like Ruffed Grouse are desirable, others such may be less so. Cats and Pekania eat birds, though if you have a lot of land, you can put in some platforms and nesting boxes for birds of prey such as owls and hawks.

5 Deer

In some areas Deer can be a real issue with establishing food forests, since they will eat seedlings, and in winter can debark juvenile trees. While the type of damage they do is similar to a rabbit, they can do it higher up. With deer you would need to put a top on the fencing you use around your seedlings, as the deer may be able to simply get their head in.

If the area is not too large then can have a dog patrol the area to keep deer away. Hunting in the autumn to lower populations can help lower the amount of debarking that happens in the winter.

In terms of more long term solution can plant the border of the property with thorny and prickly plants, including black raspberries, hawthorns, seabuckthorns, osage orange, and thorny honey locust. You can also plant thorny raspberries alongside your other seedlings as a form of natural barrier, bramble and thorny shrubs will naturally die down once the tree they are protecting gets big enough. Though keep the large thorny trees such as thorny honey locust and osage orange for the outside perimeter as they can overgrow your interior plants and be difficult to remove.

6 Weasels such as Ermine (mustela erminea)

A female ermine is around the size of a chipmunk but much longer and can follow mice into the burrows and eat them. A male ermine is around the size of a small red squirrel and can follow rats and rabbits into their burrows and eat them. They typically nest in chipmunk burrows which they have taken over.

Notably cats hunt and eat ermine, as they are similar in size to chipmunks which are small enough for domestic cats to handle. So if you wish to have ermine then you would either need to avoid having cats, keep your cats indoors, or train them not to eat/hunt the ermine. If you would like to attract ermine, then avoiding cats in the area, and having source of food for many chipmunks is a good start.

Notably that if you do keep ermine, but you also wish to keep fowl, then the fowl

cages will need to have no openings larger than about 1cm (1/4 inch), since the ermine can squeeze through holes that are 2cm across.

Ermine need to eat about a third of their body weight every day to stay alive. Similar to ferrets they can be kept as (outdoor) pets, and can be fed ferret food or kitten food (not adult cat food). As with all weasels they are rather smelly, so they wouldn't make good indoor pets, though you may decide to let them have a home in a food shed, as they will eat all the mice or rats that try to get in.

In terms of habitat for them, they use chipmunk burrows, so something similar could be usable by them.

7 Pekani Fisher (*Pekania pennanti*)

The *Pekania* is about the size of a house cat, but is a top predator that can take down a Canada lynx, small deer, dogs, cats and porcupine. Stomach analysis of various *Pekania* has found that their primary diet is tree squirrels, they prefer to stay in well forested areas, hunt during dawn and dusk and avoid venturing into meadows,

If you have more squirrels than you can hunt or trap and have at least several acres of forest then you can put up a *Pekania* nesting/roosting box, and once occupied they will eat all/most of the squirrels in the area.

They are a wild animal, and while they generally avoid humans, they can attack if threatened, cornered or starving. The same care should be taken with them as one would with any predatory animal, such as a coyote or wolf. Similar to the ermine and ferret it may be possible to partially domesticate them with ferret food, or squirrel meat.

Keeping 10 or more squirrel boxes for every one fisher box can help maintain sufficient food for the fisher to keep from going hungry.

It may be possible to have outdoor dogs at the same time as a fisher as long as there are two or more dogs that can watch each others backs.

A *Pekania* box can be made from 30cm (12in) wide by 2cm (1inch) thick planks, the height should be about 90cm

(36in) high, and the length and width are 30cm, the entrance hole should be 10cm in diameter, or 10cm tall and 7.5cm (3in) wide. A very fancy version can be found at <https://lyis.ca/pfet/2016-fisher-den-box.pdf>.

8 Hunting

To get a hunting license in Ontario one needs to take a hunter education course which can be done online or in person, all options can be seen on ohep.net. Once one has the hunter education course completion certificate one can go to service ontario to get become a registered hunter. Then one can get a small games license for their outdoor card, which would allow one to hunt squirrels, rabbits, grouse and other small game.

Bow hunting is the cheapest and most sustainable method. A beginner 10kg or 22lb bow is sufficient for hunting small game, though for deer need to be at least 18kg or 40lb bow. Crossbows require less practice to use effectively but are more expensive.

For learning with a regular recurve bow, it is good to start with reading some books and-or watching some videos about archery, proper form is the most important aspect of learning to shoot with a regular bow, the idea being that if you can reliably replicate your form, you can reliably hit the target. For example drawing to under your chin, where the string touches your chin, lips and nose. Having a point on the bow for proper gap, always making sure you are aiming with your dominant eye, holding the bow in the same way, and other such posture concerns.

Can start with a beginner bow that is around 10kg draw weight, and get a dozen arrows appropriate for your bow. Then can do target practice starting at a small distance (3-5m), and shooting roughly 100 to 120 arrows a day at the target, which can take roughly an hour. Once you have shot at least 500-600 arrows from a certain distance you should be reasonably proficient at hitting the bulls eye a majority of the time and can attempt to shoot from a different distance or angle (while sitting for example). Assuming you are in good health within several months you should be able to hit the bulls eyes or a squirrel on the head from five to ten meters away with reasonable reliabil-

ity. It is advisable to start practicing several months before each hunting season, so that by the time the hunting season begins you can focus on the hunt and be confident in your accuracy.

9 Trapping

For trapping you need to have a hunting license and a trapping license, more information at <https://www.ontario.ca/page/trapping-ontario>. Technically can only trap during the open season, so it is limited to same timeframe as hunting.

With a trapping license it is also to live trap an animal that may be a pest in an area, and release it on the land of someone that wants the animal.

10 Breeding

If you wish to keep Ermine, Fisher or Squirrels indoors in captivity, such as for the purpose of farming/breeding for fur or providing semi-domesticated ones for providing squirrel/rat/rabbit pest management services. Then you can get a license from the Ministry of Natural Resources and Forestry (MNRF) to farm a furbearing mammal.

If however you merely provide habitat, including source of shelter, food and water for them outdoors then no license is required.

If you end up with too many then live trapping and releasing them at places where people do want them is also possible.

11 Conclusion

For small plots hunting/trapping can be sufficient for managing prey populations. Though for larger acreages it is advisable to have a Fisher nesting box so that they can hunt the squirrels during the off season as well. Ermine can be an interesting alternative to cats for mousing, and can take care of rabbits and rats which most domestic cat breeds are unable to do.

All domestic animals were once wild, and the wild animals of North America are just as capable of forming loving and kind connections with humans as those from Eurasia and Africa.

12 Contact

Andrii Logan Zvorygin



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lyis@liberit.ca



226-537-0147



@lyis.ca



@lyis_ca



@lyisforestry