

How to Build an Osprey Nest



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Safety: It is essential that the highest standards of safety are used when carrying out osprey nest construction. All equipment and procedures should follow your necessary risk assessment procedures.

Nature Conservation requirements: You are required to abide by conservation regulations applying to a particular site and, if ospreys use your nests, you require the appropriate conservation licences to visit the nests. In England you need a special licence to repair nests once they are used by breeding ospreys.

1. Choice of Locality

The key requirements are:

- Adequate fishing areas and breeding habitat.
- Sympathetic landowners with suitable trees and land.
- Secluded localities safe from excess human disturbance.

There are four different types of localities which are suitable for building osprey nests:

- Within a present colony.
- Within 20-30 km of a present population.
- Within 1-10 km of the pioneer pair in a new area.
- In a completely new region with no breeding ospreys.

It is important to assess the suitability of an area for breeding ospreys before a programme of nest-building is started. Nowadays, anywhere in the British Isles is possible but there will be far more chance of success if the area has a variety of good fishing habitats and available fish species. Rivers, large streams, lakes, lochs, large ponds, gravel pits, estuaries and shallow coastline will all provide opportunities for ospreys to fish. A mixture of these habitats is most advantageous.

Generally speaking, the greater the number of species of fish the greater the opportunities for ospreys to hunt, and there are real advantages for those which can exploit estuarine species such as grey mullet and flounder. A wide variety of coarse species in freshwater sites are also important. Salmon are not taken as they are too small when they go to sea and too big when they return to the rivers.

The best place to start a project is in those areas where ospreys are regularly seen and especially those where they linger or spend part of the summer. Remember that sub-adults, especially two-year olds, often summer to the south of the breeding range.

Once a suitable area has been located it is necessary to find three to five potential nest sites within a radius of 5-10 km of the best fishing sites. Nests are most likely to be used in new areas if they are visible to ospreys from regular fishing sites or en route between good fishing sites. Remember ospreys see the nests from the air and have remarkable ability to locate nests.

Ospreys are becoming more tolerant of humans. Chicks that fledge from nests in view of people are more able to nest in locations close to humans. Ospreys in

remote nests are very sensitive to disturbance and will fly up at distances up to and over 500 m, while pairs breeding in public places will not even get off the nest at 100 m. This is now the case in Scotland and is frequent in other countries, especially where they were never persecuted. Nevertheless, it is better to build nests at least 250 m, preferably further, away from the nearest habitation or public place and it is best to avoid areas of intense human use.

Ospreys nest very close together in some parts of the world. In Florida for example there can be more than one nest in the same tree. However in the best areas for ospreys in the UK it is good practice to install nests and platforms a minimum of 2 km apart and out of direct line of sight of each other. In expanding colonies at Rutland Water and Maremma in Italy artificial nests 1 km apart have been successful in the same year. However if there is an imbalance in the sex ratios of a small population, nests that are sited close together may lead to:

- Interference by intruders – particularly if there is an excess of males and a young male sets up territory on an artificial nest close to an active site.
- Polygamy – particularly if there is an excess of females and an unpaired female settles on an artificial nest close to an active nest.

As such careful consideration should always be given to the distance between nests when siting new ones.



Ospreys tend to select prominent trees in remote areas as nest sites

2. Choice of Nest Site

There are three types of artificial nest sites and each is described below:

- Nests built in prominent trees to resemble natural nests.
- Nests built on poles specially constructed for ospreys.
- Nests structures built on pylons, towers and other man-made structures.

2.1. Natural-type tree nest

2.1.1. Site Selection

Select a prominent tree. Osprey eyries, being large and on the crown of prominent trees, are very visible structures to other ospreys and their behaviour suggests that young ospreys look for vacant eyries to occupy. The tree should be easily seen by passing ospreys and should be in the sort of place an osprey would choose to perch if it had a fish. If the loch or lake is secluded then a prominent tree on an island or close to the shore could be chosen. Normally one is looking for a tree half a mile or more back from the water's edge, out of usual public use.

Finding the best tree can take days of searching, while building the nest may take only three hours. Take plenty of time to find the best site, and try to think like an osprey. If you put up a nest in a poor site the chances are it will never be used, even in good osprey country.

Scottish ospreys nest in trees ranging in height from 12 feet to 120 feet - the important feature is that the tree is prominent to its neighbours or is in a prominent clump of trees. It is an advantage to have at least one dead tree, or dead-topped trees, close to the nest to serve as perches for off-duty birds, and for them to collect nest material in flight. It is usually best to choose a tall conifer (Scots pine or Douglas fir are good) or use a safe dead tree. Deciduous trees can be used but the general shape is often not as easy to convert into a nest site than tall, slender-shaped trees like conifers.

In many areas most trees are not suitable for ospreys for nesting. They prefer tall trees which have been damaged and have broken tops caused by storms, heavy snow, or lightning strikes. These provide a secure base for their nests.

2.1.2. Constructing the nest

To build a new nest, at least three people are needed, including a good tree-climber. Use an extending ladder, climbing ropes, nylon slings, karabiners, bushman saw, axe, hammer and nails, flexible wire, courlene twine, plastic sacks and a good knife.

One person climbs the tree and secures himself near the top with climbing slings just below the top most branches. He also secures a karabiner and a small pulley on a convenient branch and runs a long climbing rope to the ground. The rope is joined so that a continuous loop passes from the base of the tree up through the pulley; this is for the ground party to pull nest material up to the climber. Sometimes, the climber needs to remove some side branches as he or she climbs the tree to allow the stick bundles to be pulled up the tree.

The first task is to cut off the top of the tree at the first ring of strong side branches, while colleagues on the ground select nest materials. First of all three or four strong branches about 5" thick and 5-6 feet in length - these can be live or dead as long as they are strong. Next, bundles of dead sticks up to 2" thick and 2-5 feet in length (preferably barkless conifer sticks which have weathered and have a pale look - this is to make the nest pale and obvious to passing ospreys). These should be tied in bundles about a foot thick with nylon slings which can be hitched and unhitched easily from the karabiner on the endless rope. About four to six bundles are needed. These must be dead sticks, not cut live.



The next step is to fit the long branches into the fork in a triangle (or square shape) to form the main support. Nail or tie into main branches and the top of the cut off trunk. Secondary supports are tied or nailed across the main frame. The ground party then pull up bundles of sticks starting with the biggest. The climber builds these into a circle at least 4 feet in diameter. The lower ones are tied by twine or soft wire to the base. They should be worked together and some sticks are laid

across the middle as well. Keep building up until the nest is at least two feet high - it must look big and bulky.



When you are getting towards the finish, at least two sackfuls of nest lining is pulled up. This should be a mix of dead grass, moss and leaf litter or rotted straw. This must be pushed deep into the base of the nest, really pushing it into the sticks. When the nest is full of dead grass and leaf litter it should be flat. Then take one more bundle of dead sticks, the whitest possible, at least an inch thick but not as long as the ones in the base in the nest and these are arranged around the edge of the nest. Some should be pushed at an angle down through the lining to hold the whole thing together. Then spread one more load of earth or leaf litter to form a nest which looks as though it has been home to a brood of young ospreys. Finally, some people have white washed the outer ring of sticks to make the nest obvious from the air, but pale sticks and dead grass will do.



Nests need to be lined with suitable nesting material to replicate natural nests and strongly built up to make them easily visible to passing ospreys

The last important action is to create an extremely good perch for ospreys, preferably close to the nest. If possible, leave one of the top branches sticking out from the side of the nest as a perch - in fact it is good to leave a perch beside or just above and to one side of nest. Remove foliage from this branch. Trim a nearby tall tree, or select a dead tree, to act as an off duty perch. If necessary cut and clean a prominent branch at the top of the nearest tall tree to create a really good perch. The final nest should look as though it has been made by ospreys.



Ospreys like a good perch close to the nest, as shown by this natural nest

2.2. Osprey nesting pole

In areas where there are no suitable trees for building a natural looking nest, it is possible to use nesting poles. These have been used in various parts of the world to good advantage and the best examples in this country are at Rutland Water nature reserve. Many designs have been used in North America.



Osprey nesting pole at Rutland Water (photo by John Wright)

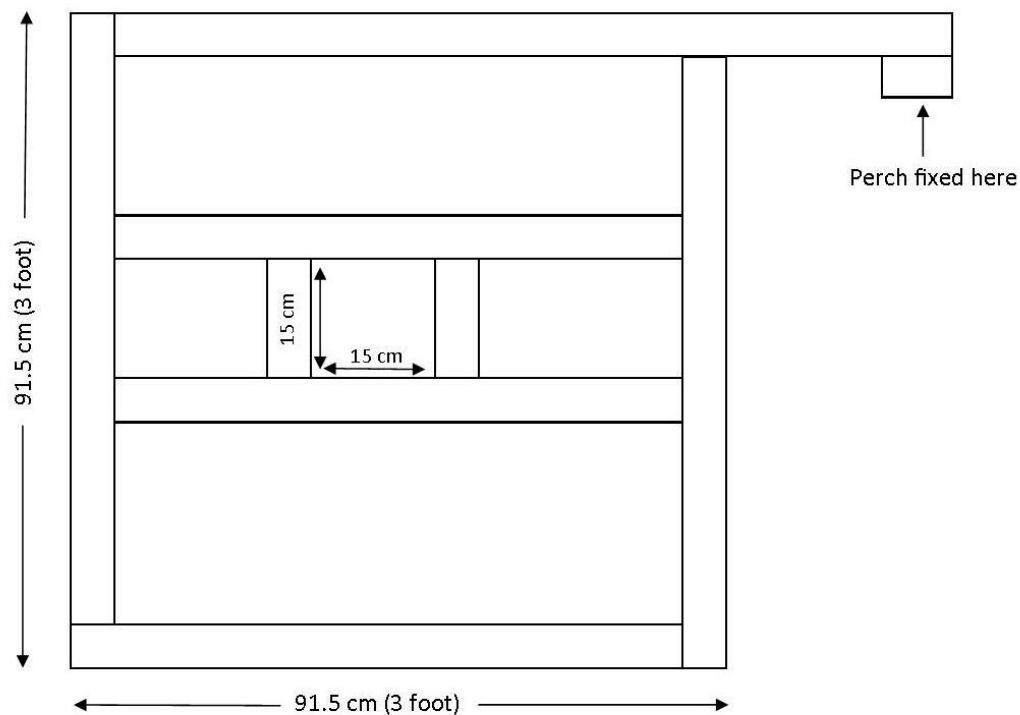
2.2.1. Site selection

In many ways choosing the site for a pole nest is easier than a tree because you can locate the pole where you like. Nevertheless it is essential to give careful consideration to proximity to other nests, fishing grounds and current land use (see section 1 – Choice of Locality). The other key requirement is that the nest is situated in an open area away from tall trees. Osprey prefer a prominent site with clear, open views, and so a pole nest should always be sited at least 40-50 m and preferably further from groups of trees, copses or woods. Isolated trees are less of a problem and may provide a good perch for the off duty bird. Nevertheless the pole should still be sited 10-15 m away. In arable areas poles work well in hedgelines and nesting ospreys become very tolerant of farm machinery. Nests can also be positioned next to silage or hay fields, but consideration needs to be given to when the field will be cut in relation to key stages of the breeding season. In pastoral areas regular checking of sheep or cows and its potential impact on breeding ospreys should be factored in when choosing a site. Remember, the least disturbance the better.

2.2.2. Constructing the nest

First, you need a strong pole, about 10 metres (approx. 30 feet) or more in length. The best are those used by electricity companies for local supply lines. Sometimes, it's possible to beg or buy a few when they are replacing poles. These are very strong well treated poles.

Next, you need to construct a square wooden platform to fit on the pole to hold a nest. Use 47 x 100 C16 (4" x 2") graded treated timber to make a wooden frame of approximately 1 metre square. One side of the frame should extend approximately 30 cm outwards to provide a fixing point for the nest perch that will be fitted later. The inner spars of the frame should form a 15 cm x 15 cm (6" x 6") opening where the frame will be bolted to the pole. Welded wire mesh (12 gauge 2.5mm wire with 1x1" holes, hot dip galvanized) should then be fixed to the upper side of the frame using fencing staples or similar (Nb. This welded wire mesh is usually sold in 6' x 3' sheets - hence the size of the wooden frame in the diagram below).



Basic design of the wooden frame

Next square off the top of the pole using a chainsaw so that the frame fits snugly. M10 coach screws can then be used to fix the frame to the pole. Once the frame is securely fixed a perch that will extend approximately 1 metre above the nest at a 45° angle should be coach screwed to the pole and then fixed to the wooden frame to provide additional support. An oak branch or similar hardwood (or a fence post) with a T perch screwed on top is best. Once the perch has been fitted the sticks forming the base of the nest should be cable tied to the mesh. This reduces the amount of work that needs to be done once the pole has been erected.



M10 coach screws are used to fix the frame.
to the pole.



The perch should be positioned so that it is well clear of the nest.

Once a good layer of sticks has been added to the nest the nest pole is erected in a suitable area for breeding ospreys away from tall trees – remember ospreys like an exposed site and clear view. It is embedded at least 1.5 metres (five feet) into the ground using an excavator. The nest platform should be at least 7 metres (approx. 24 feet) above the ground. A successful system abroad is to site poles in areas to be

flooded before flooding or, as at Rutland Water, to erect them when reservoirs are at very low water levels. Electricity companies are often willing to do this for you. In some exposed locations it is good practice to brace the bottom of the pole using fence posts and lengths of treated timber to ensure that it does not move once erected.



Electric companies will often assist with the erection of nests.



Nests can be braced at the base using fence posts and treated timber.

Once the pole is in the ground sticks should be built up to a height of approximately 0.5 - 0.75 metres (2 foot). Sticks that are 5 cm (2") thick and 60-100 cm (2-3.5 feet) in length are best, but start with thicker sticks at the base and smaller ones to finish. The work is best done from a triple-extending ladder that is safely tied in to the platform. The nest must then be lined with a combination of turf, wood chip, moss and soil almost to the height of the sticks, thereby creating a flat platform that resembles an osprey nest once the young have fledged. Prior to adding the nest lining it is helpful to cable tie narrow gauge chicken wire to the weld mesh to prevent the lining falling through.



It is important to line the nest almost to the top of the sticks.

An alternative option is to use a pre-fabricated specially designed metal frame or basket in place of the wooden platform. This provides greater longevity but is a more expensive option.



Metal platforms provide greater longevity



Different types of basket structures used on top of artificial nesting poles

2.3. Artificial structure

Ospreys regularly nest on the top of electricity pylons in various parts of the world, for example Germany, Australia and North America. There are at least four in Scotland. Sometimes these nests cause problems for the electricity companies and special metal baskets have been designed by the electricity companies in other countries, for ospreys and white storks. These can be bolted on top of the pylons to keep the nest clear of the important parts of the electricity supply. These can be very successful nests as they are secure from human interference. It may be possible to find companies which might be pleased to help with a conservation project for ospreys. At this height and in these circumstances, it will not be possible to build a big nest, but at least some nesting material should be placed in the basket to encourage nesting.

Nesting platforms of a similar style to the pole or the pylon can be fitted on the top of channel markers, navigation towers or structures in coastal and estuarine areas. But make certain you have permission. There are other potential sites. At least one pair has tried to nest on a mobile phone mast in Scotland and another nested on the chimney stack of a deserted house.



Osprey nest built on an artificial structure in Spain

3. Maintenance

Once built it is important to maintain nests in good condition. They should be inspected in March to repair any winter damage. Remember that they may not be used for many years but it really is worth keeping them in good condition, just in case. Do not give up hope. One nest we built in a Scots pine in Sutherland in 1993 was finally used in 2004, after a wait of eleven years!

In some areas, especially in lowland England, osprey nests built close to water may be used for nesting by Canada, graylag or Egyptian geese. If they do, they are capable of deterring ospreys from nesting; especially as they may have settled in the nest before ospreys have returned in early April. In Canada, they suggest using the convex lid of a dustbin to cover the nest during the winter and leave it in place until the first ospreys are seen in April. The smooth surface will prevent the geese from nesting earlier.



Installing a fake osprey to encourage passing adults to consider the nest

4. Conclusion

It is important to realise that many artificial nests may never be used but at least it's worth trying to encourage ospreys to return to their original range throughout the British Isles. It's incredibly exciting when your first nest is used and there has never been a better time to try. With the new outlying pairs at Rutland Water and in Wales, and a new translocation project underway at Poole Harbour, the future for this wonderful bird looks very good.

If you have any queries, please give us a call or write. We would be interested to hear of any successes or improved techniques.

5. Consultancy

If you decide that you are not able to do this work yourself but require help to select and build ospreys nests, we are able to provide an expert consultancy service to carry out such work.

For enquiries in Scotland please contact Roy Dennis – roydennis@aol.com or if you are in England or Wales please contact Tim Mackrill – timmackrill@hotmail.com. We look forward to hearing from you.



Good luck!