Solar Farms

EcoSeeds has been collaborating in large scale habitat restoration since 2003 and draws on 25 years' experience of biodiversity enhancement.

1. Site survey and pre-planning

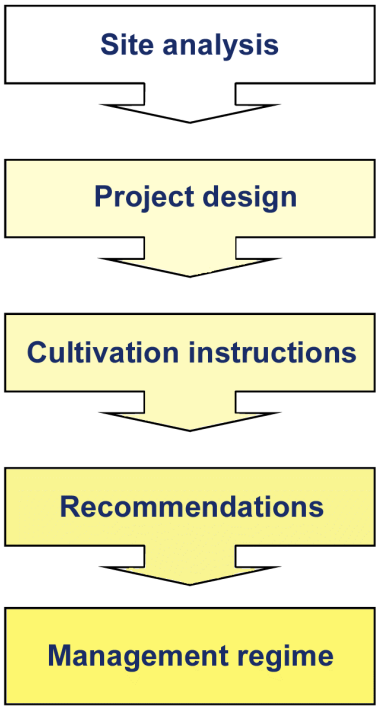
Solar farms – due to their large footprint – can provide homes, food, and shelter for a wide range of wildlife if sown with appropriate native species.

We first sample soil and examine vegetation in the surrounding area in order to match the project area with a suitable local 'donor site'. We then develop a site specific three year habitat management plan – tailored to the construction timetable.

A habitat management plan tailored to the site is an essential part of a successful construction project. The ideal time to assess existing vegetation and to generate an appropriate restoration plan is before construction starts.

In our experience the most successful projects adhere to the following system:

1. Site assessment - including fertility testing, pH analysis, etc.
2. Site specific project report including design plan, timetable of actions, community engagement, etc.
3. Detailed ground and seed bed preparation instructions (ploughing, rotovation, etc).
4. Recommendations on the species or products, how they should be sown, and any other specialised services required.
5. Site specific instructions on seasonal cutting regimes, remedial action, weeding advice, etc.



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2. Seed collection and processing

We collect seed by brush harvesting – a comparatively quick and cost effective method in which a gently rotating brush lifts seeds from vegetation leaving donor plants intact. The brush harvester is typically towed by a small quad or alpine tractor causing minimal disturbance to the existing habitat.

The advantage of using local seed is that it is unique to its origin in Ireland and has co-evolved over thousands of years with our native insects lifecycles.

Harvesting seed for Bullstown Solar farm.

The benefits of using locally harvested seed from donor sites include:

1 Carbon capture:
Native wildflowers have deep rooting systems that can help with carbon sequestration. Because we can sow directly into grass with disc seeding we do not have to plough, rotovate, and/or power harrow – which are all activities that release carbon dioxide into the atmosphere.

2 Ground nesting birds:
It has been shown that solar farms sown with wildflowers can provide habitat for ground nesting birds (including rare species).

3 Bees and pollinators:
Solar farms sown with wildflowers can provide habitat for butterflies and solitary bees (many of which are becoming rare).

4 Visual amenity:
If managed with correct weed control they can provide spring, summer, and early autumn colour for many years.

5 Farming benefit:
EcoSeeds partners with several farmers harvesting seed from their species rich grassland – providing an economic benefit to the farmer.

Further information on brush harvesting is available here.

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3. Disc seeding

Disc seeding is the process of introducing seed into an existing sward by creating grooves or slits in the ground with an array of discs. Our purpose built machine opens up the ground to allow air and moisture to penetrate and sows seed accurately at the correct depth for germination. The machine then rolls the sward or seed bed to ensure good seed/soil contact.

This method can be used to sow larger areas including some solar farm projects.

4. Hydroseeding

Hydro-seeding is a unique method of sowing that entails spraying a seed containing biodegradable mulch onto exposed soil surfaces. This creates a matrix that holds the seed in place during germination. The mulch provides an ideal environment for germination by retaining moisture and preventing seed loss from run-off or wind exposure.

On solar farms this method can be used to establish vegetation quickly on damaged areas where remedial action is needed.

Further information on hydroseeding is available here.

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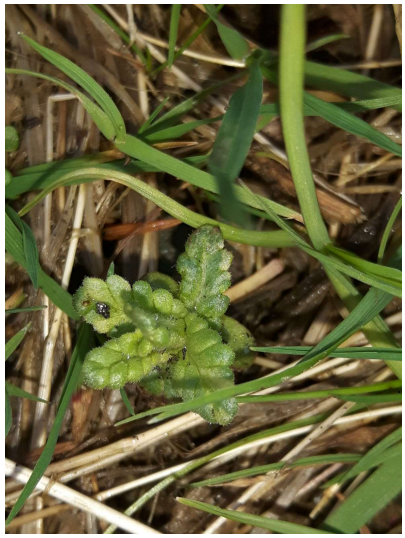
5. On-going monitoring and assessment

In our experience, the first year of establishment of a restoration project is the most critical phase of its development. At key stages during the first year we recommend monitoring visits be conducted by an EcoSeeds consultant:

- An initial visit to ensure that the area is ready for sowing and is accurately measured;
- Several weeks after sowing, an establishment visit to assess germination and the presence of unwanted species;
- Throughout the growing period at least one further monitoring visit is usually carried out to determine target species growth, weed burden, and any consequential remedial management required.



Remedial action is sometimes needed. For example, where there is on-going construction activity which could cause damage to previously sown areas. We typically hold some harvested seed in reserve to enable any damaged areas to be repaired or over-sown.

Good communication between all parties is essential during the construction phase. This allows the restoration process to easily dovetail with construction. Soil storage can also be planned ahead so that seeding can be carried out as soon as possible to reduce erosion.

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