Rabbit Grazing on Seabird islands

Extracts from Nibblers online discussion group

Hi All,

Does anyone have any experience of manipulating rabbit grazing on seabird islands, or rabbit grazing in general - please see query below

Cheers, Sophie

I'm currently looking at the implications of the lack of rabbit grazing on seabird islands.

Last year, rabbits died out on one of our seabird islands. The island is designated for it's seabirds. It is thought that the lack of grazing by rabbits may lead to an increase in vegetation density which may have knock-on effects leading to damp vegetation chilling tern chicks.

We are considering whether to re-introduce rabbits to the island. Do you have any experience with the use of rabbit grazing for conservation purposes? Any information you could provide would be most useful.

This suggestion induced panic in me. Panic being what happens to Mother Superior when she finds the lavatory seat has been lifted.

If you introduce rabbits and there is a good supply of rations they will become the proverbial and breed. They carry one set of foetuses about to be born and a second on stand by, to getting going when the first salvo have arrived. Therefore you are in serious danger of them becoming over populated and cause erosion and land slip from their burrows, so then you want to introduce a predator and things like stoats, foxes, weasels, pole cats or cats, all will eat your seabirds if given half a chance, so that leaves you with myxomatosis.

Assuming that your fund providers are easy about the artificial use of biological agents your worries are not over. You introduce a good virulent strain which knocks out 95% of the rabbits which catch fleas, the mxy vector, from each other down their burrows, but then the 5% have the brilliant idea of not going down burrows, and live on the surface where the transmission of fleas does not occur nearly as much, and so you get surface dwellers. Over here these then get clobbered by foxes, badgers, and buzzards (surprisingly) and also big cats, although we are not exactly knee deep in those, but yours would have no predators to push them back under ground and a flea dwelling existence. Then the little buggers develop immunity like the American cotton tale.

Forget shooting as it is great fun but has absolutely no effect at all on the population. I suggest you introduce feral goats or sheep, and merely adjust the population by shooting and leaving the carcases for the birds to clean up, as collecting the carcases would probably be more trouble than they are worth. I would doubt that finding them would be a problem but on the Galapagos islands they had a brilliant wheeze which was to catch a good big billy goat and fit him up with a (brightly coloured ?) radio collar and

let him go. Being as randy as a goat, he soon rounded up a harem of females and you then could locate him in the thick bush and shoot out all his females, and leave him to find some more and so the goats got blotted out and the food supply for the tortoises was restored. These goats arrived with sailors years ago.

I wonder if slow breeding hares might work but again the cost of pulling down an excess population needs to be considered. What about pinioned Chinese geese that eat grass? (Europe may be very helpful by passing a regulation, or even a Directive, that the rabbits are forbidden to breed!)

Ask the Australian Embassy for help as they have the rabbit problem in spades; these were imported as a food source and then foxes were brought in for control and hunting but clobbered the hapless local inhabitants.

Rabbits eat grass, shit the resultant dung and then eat it a second time which seems to be a variation of chewing the cud but someone else will probably know more about this curious habit.

Rabbits are not keen to graze on windy nights as they cannot hear an approaching predators, and so if you want to see the size of your problem the first still night after a storm will tend to bring them out for assessing the how many you have.

Rabbit fencing is expensive as you need to dig a trench and lay netting flat facing outwards to stop them burrowing down alongside the fence and getting under.

I do not think rabbits in the UK need water as they get it from the grass, so do not bet on a contraceptive in the water supply over here.

Richard M

The National Trust produced a report into the reintroduction of Rabbits at Murlough Down in Northern Ireland which may be worth a read. I recall that it was, as Richard suggests, not as straightforward as it sounds, but they would now have several years of experience to draw on. Contact details appear in the Breeds Profile Handbook.

There is also a guy, Roger Trout, who works (worked?) for the Forestry Commission (Alice Holt Research Station) who knows an alarming amount about rabbits and their behaviour.

Phil

Hi everyone

Re rabbits - here's my penny-farthing's worth!

As Richard says you can't easily manipulate rabbit grazing without it being an uphill battle. They breed fast and UK predators have little effect; shooting, trapping, ferreting can't reduce them in sufficient numbers. Poisoning is problematic (lots of issues here!) and in any case I think you would require a licence. But they do crash when food is

limited and there are too many rabbits, or when myxi or vhd hits. Due to disease, populations on many islands appear to have crashed recently, including Lundy. But they pick up again quite quickly. Some conservationists (as well as farmers) would give a lot to get rid of their rabbits, so if considering re-introduction of rabbits, the case needs to be well developed - their impact may be good or bad depending on where you're coming from.

Where vegetation gets rank and dense, rabbits tend not to feed, so vegetation management is a way to control rabbits, but first you have to keep them out of an area. Re-introducing rabbits to rank swards may be similarly problematic in reverse, as they find it difficult to get a start.

Goats and sheep such as Soays will graze cliff sides, especially the upper half of sloping cliffs, but I doubt they would have the same impact on lower terraces down as rabbits.

I think it would be a really good idea, and of huge benefit to the conservation world in general if the seabird population (and plant-life) of the island in question is monitored for some years in the absence of rabbits (e.g. might benefit some species more then others?) so we learn what can happen.

Jude

I am not sure that we can provide advice for a site-specific issue. We have no idea of any of the parameters; size of island, where it is, vegetation community, soil, fertility, climate, presence of predators (of rabbits or seabirds), reasons the rabbits "died out" and whether they'd reoccur. We know that nesting terns are an issue, but we don't know whether they are the only feature of interest or whether other species of importance occur.

Rabbits are a useful management tool where the objectives are for the type of sward they create, so shouldn't be condemned out of hand; and they have been on some islands for hundreds of years.

Proportionately, island nesting seabird species are the most threatened of all birds. With the exception of the current long lining and gill netting issues, virtually all of the threats emanate from introduced / escaped mammals; rats, cats, pigs, goats and super sized mice (that eat the butt ends out of albatross chicks while they are sitting in the nest!). The concept therefore of introducing any alternative grazing animal needs to be treated with huge caution.

I am with Jude in that the habitat condition needs to be monitored. It may be the case that grazing isn't necessary.

In a past existence I wardened a couple of tern colonies; they weren't grazed by rabbits or anything, and on the biggest the vegetation structure which was fairly varied and maintained by salt laden wind offered shelter for the chicks from predators (gulls, peregrines, kestrels, corvids etc) and the weather (a big killer of young chicks). So the demise of grazing could be beneficial

A little anecdote to be going along with - an unnamed but inhabited island with big numbers of burrow nesting puffins and Manx shearwaters had a significant rabbit problem; the local solution to the rabbits was to introduce ferrets - you can probably guess what comes next! The ferrets thrived, on rabbits in winter and seabirds and their chicks in summer. I think they might still be trying to eradicate the ferrets 20 years on!

Nigel Symes

Good stuff. What is the undesirable effect of goats - I know they eat almost anything but if eggs are on their menu it is news to me.

Did you hear about the rats that got locked into deep freeze containers and emerged BE & BT months later with long shaggy coats.

I read that the RSPB were getting a head of steam up about the Danes catching all the sand eels to supply (the sustainable !) trout/salmon farms and leaving no breakfasts for the birds.

Give us half a chance and you bet we can get in a muddle.

Richard M

Goats and seabird islands don't go together because the beggars trash the vegetation structure and quite a number of petrels and similar nest under dense tussock vegetation where the soil is too thin to burrow. Roseate terns nest under cover in Marram and tree marrow, and the chicks then hide amongst them (making ringing extremely difficult)

I suspect also that where alternative sources of minerals aren't available they would predate the chicks in a way similar to antelope in some parts of Africa which take lizards etc for the bones.

Nigel

The following reply posted on behalf of Juan Brown, Skomer Island warden

Dear Sophie,

I guess the question is what are you managing the island for? You mention terns. On the Farnes Rabbits were eradicated on the outer group of islands, but not on the inner group. Both host large tern colonies (Arctic, Common, Sandwich and one or two Roseate). The outer islands have become dominated by a lush grass sward (Puccinelia I think), which the tern colonies seem to cope OK with. Potentially taller unpalatable species are more prevalent on the inner isles - Hemlock, dock, nettles - due to selective Rabbit grazing. Certain species - especially Roseate - actually like nesting at the base of taller dicots such as dock, and Inner Farne did host thriving tern colonies when I was there (mid 90s) but interestingly enough the only vegetation management that took place was on Inner Farne, where rides were sprayed with Roundup to allow tern chicks to escape long vegetation when wet. Contact John Walton (National Trust Property Manager, Farnes, Northumberland) for further info on what's going on there.

Rabbit pros are:

- the maintenance of a short open sward (but only in some areas, where density not too high and rank unpalatable species are unable to take hold) and areas of bare ground - good for some inverts, feeding Chough (relevant in Wales), Wheatear, and floral diversity to a certain extent (if not overgrazed)
- provision of burrows for underground nesting seabirds (Puffin and Manx Shearwater, though both are capable of digging their own)
- food for some species (and nest-lining material for Chough in the absence of sheep).
- Bardsey lost their Rabbits in a Myxi outbreak a few years back, and wanted to reintroduce them as three of their main features - nesting Wheatear, feeding Chough and a terricolous lichen - disappeared overnight. I don't know if they ever did, and there was a lobby against this as it provided an ideal opportunity to investigate the effects of absence of Rabbits, and to manage the island in a more controlled way (sheep grazing). On an island in the Hebrides dieing off of Rabbits allegedly caused problems for Puffins, as Tree Mallow took hold. Puffins do not nest in tall vegetation, and declined. Tree Mallow is kept in check by Rabbits (on Skomer it only grows on inaccessible cliffs, whereas on neighbouring Middleholm [no Rabbits] it thrives). Tree Mallow is favoured by nesting Roseate Terns on Rockabill (Co Dublin) though, so again it depends for what spp you are managing.

Cons are:

- creation of an 'unnatural' situation as Rabbits are an introduced species
- the favouring of a dominance of rank unpalatable vegetation through selective grazing (Bracken monoculture on Skomer), and loss of species diversity when overgrazed e.g. massive reduction in heathland and flowering plants on Skomer due to heavy grazing pressure.
- suppression of climatic climax vegetation (trees and scrub, though this will not return immediately with the removal of Rabbits without management, as a dense grass mattress tends to form)
- denudation of vegetation (often exacerbated by exposure to salt spray) leading to soil erosion - this is a problem on Inner Farne (where salt marsh grass is being transplanted in an effort to stabilise the soil cap). A thick soil cap is required by burrow-nesting seabirds, and a good vegetation cover is required to stabilise this. Soil erosion is currently not a problem on Skomer though.

I would not personally hasten to reintroduce Rabbits if they died out - consider yourself in a lucky position, much harder (practically and politically) to eradicate them deliberately - but if you see a dramatic crash in the species the island is important for then reintroduction may be the most pragmatic solution.

Hope this helps.

Juan Brown

Warden, Skomer Island National Nature Reserve

We have undertaken research on rabbits and trying to get them to graze more widely on dunes on Jersey. The rabbits were already there though, we did not introduce them. We cut the dune grassland around rabbit warrens, and this encouraged them to graze areas that they had not grazed appreciably before. I believe the NT in Northern Ireland have also done some work on rabbit management on dunes. One paper I co-authored on our work is 1992 : Anderson, P. and Romeril, M.G. Mowing experiments to restore a species-rich sward on sand dunes in Jersey, Channel Islands, GB. In: Coastal Dunes - Geomorphology, Ecology and Management for Conservation Proceedings of the Third European Dune Congress, Galway, Ireland 17-21 June 1992. Eds. RWG Carter, TGF Curtis and MJ Sheehy-Skeffington. A A Balkema, Rotterdam.

Hope this helps a bit

Kind regards, Penny Anderson

Maybe someone should try putting down phosphate fertiliser on areas that you want grazed as that is reputed to help. According to some wildlife programme wildebeest seek out phosphate rich grazing in the Masai Mara. Do you think that it is the grazing that rabbits select or is it areas where they can see and hear best, as nasty things that go bump in the night live in long grass and scrub.

Richard M

Sorry Richard, but the last thing you want to put down in the British context is phosphate - it increases soil fertility (as it is generally limiting in quantity) and generates competition, thus the smaller and weaker plants are lost, and the dominants take over - to the loss of biodiversity.

Kind regards,
Penny

So that won't work! How do you break the cycle of grazing a bit, which then gets dung and so gets more fertile, and get some beast to eat the coarse grass and scrub which it seems is what is wanted. Obviously fences are hopelessly uneconomic. Mobile watering points? mineral/salt licks? over stocking to force the stock onto the "bad" land?

There must be answer but what it is I have no idea -yet. Lets keep kicking it around - but not into the long grass !

I was wondering about elephants as some guy who kept elephants had his bush hat eaten by one, three times. I guess but cannot prove that he washed it between each time it was knicked and eaten ! I can see a slight conflict between elephants and ground nesting birds but never worry about such details.

Regards Richard M

I agree with Nigel it is very difficult to advise as we don't have any details of the current habitat, species, objectives etc. I hadn't intended to give the impression that rabbits

were all bad (indeed as always with management tools it's a case of 'horses for courses'). I just had alarm bells ringing that rabbits might be re-introduced without fully considering whether these were really beneficial as they are impossible to manage in the same way as the larger grazers (e.g. goats etc can easily be culled or eradicated). Anyway, I passed the original query on to David Bullock who asked me to post these comments (but please don't respond to me regarding this!) :

Jude Smith

---

1 Puffin Island, off Ynys Mon

Brown rats were eradicated and the poisoning apparently killed off the remaining rabbits after a mxy or RVHD outbreak there. The reason for eradicating the rats was, apparently, to enhance the seabird populations. Puffin Island is now, apparently, too well vegetated - lots of elder for example - and this has caused concern that the breeding success of seabirds may be compromised (shading? access to nests? not sure). There was talk of introducing goats to tackle and reduce the woody vegetation that has increased post rabbit die off but not sure whether that happened (and would very much like to know). Not sure either if the target seabird species increased as a result of rat eradication (and would very much like to know).

It is possible that John Ratcliffe of CCW has more details

2. Lundy Island

The rabbit population was very high through the early part of this century (some say because of the eradication of rats - no evidence for that and the long series of mild winters is just as likely). Certainly rabbits were widely distributed on the island and well away from the long established warrens where soil erosion was very evident. Mxy arrived in early 2006 and decimated the population. I do not know the impact of this dramatic reduction in the rabbit density but it may have contributed to soil conservation and more opportunities for burrow nesting seabirds.

On both Lundy and Rathlin Island concerns have been expressed about soil erosion (Lundy) and damage to puffin burrows (Rathlin) by feral goats.

Lucy Cordrey (NT) has the rabbit count data available for Lundy over the last two decades. Wildlife Management International Ltd may have data on the impact of rabbits on other seabird populations

3. Round Island, Mauritius

Goats and rabbits were shot out in 1978 and poisoned out in 1986 respectively having been there since the 1840s or so during which time they reduced much of the island to bare rock. The impact of these eradications on the very important seabird populations is unclear. The large wedge tailed shearwater population is likely to benefit from an increase in the soil now the island becomes more vegetated. One species, the Round Island petrel - a kind of Herald Petrel (Pterodroma arminjoniana), nests under rock ledges and may get heat stressed there so some vegetation may help to reduce this but

may also hinder their access. I do not think the tropic birds (white - tailed and red - tailed) would be affected by removal of rabbits.

Vikash Tataya (Mauritian Wildlife Foundation) is researching the petrel and may have some data.

4. Ailsa Craig, Firth of Clyde

Rabbits were eradicated on the back of a rat eradication programme over a decade ago and puffins have apparently returned of late. I don't know the impact of increased vegetation cover and density as a result of rabbit eradication on burrow and ground nesting seabirds.

Bernie Zonfrillo (University of Glasgow) did the rat eradication and should have up to date info.

Regards, David Bullock.

Hi All,

RSPB emailed with thanks for all the thoughts received re rabbits on seabird islands. It sounds as though they won't be reintroducing rabbits to Coquet, but will put some monitoring in place to see how things change post rabbits.

Cheers, Sophie
