

Ornonomics

Doveish policy

How an auction is helping the turtle dove

"AS SUN to day, as turtle to her mate," declares Shakespeare's Troilus of his commitment to Cressida. Chaucer wrote of "the wedded turtledove with her heart true". Yet Britain has not been kind to these migratory birds, whose numbers in the British Isles have dwindled by 98% since the 1970s to an estimated 3,600 breeding pairs in 2016.

Paul Klemperer, Elizabeth Baldwin and Alex Teytelboym, all of Oxford University, are using economics to help. They have designed a reverse auction in which farmers bid publicly for contracts to provide suitable habitats. This is trickier than it sounds. Turtle doves need wildflower seeds to eat, shallow-sided open water to drink and thick scrubby hedgerows in which to nest—all in proximity. A farmer might wish to provide just one or two of these, and to rely on neighbours to provide the rest. Moreover, breeding pairs must be able to find the sites, but they must not be too

clumped together. And finally, the habitats offered by farmers can vary in quality as well as price—a problem Mr Klemperer encountered during the global financial crisis, when designing an auction in which the Bank of England offered emergency loans to banks against collateral of varying quality.

To solve it this time round, the economists constructed an index of turtle-dove happiness (TDH, or "ta-das"). An algorithm searches combinations of bids, seeking to maximise ta-das for a given budget. Bids both compete with and complement each other: a high-priced offer to grow wildflowers might beat a cheaper one if they would be nearer a nesting site, and would thus create more ta-das. The Royal Society for the Protection of Birds, a charity, has used the system in two pilot auctions in Norfolk and Suffolk, attracting 63 bidders. The latest closed in June, and seeds should be sown in the autumn.

The experiments are funded by the government as part of a broader post-Brexit effort to redirect farming subsidies towards support for providing public goods. The European Union's common agricultural policy, which rewards intensive farming, had led to the loss of diverse natural habitats for wildlife of all kinds.

Yet international co-operation also matters for saving turtle doves, which migrate to sub-Saharan Africa in winter, facing the risk of being shot by hunters in continental Europe along the way. In June campaigners chalked up a victory when most Spanish regions banned hunting the birds for a year. They hope that, in the fight to save these symbols of love and fidelity, better habitats at home and less hunting abroad will dovetail.



Billing and cooing

Economists develop UK subsidy auction to save endangered turtle dove

Oxford professor behind Britain's 3G sell-off creates system to protect declining species



Turtle dove numbers in the UK have declined 98 per cent since the 1970s © Education Images/UiG/Getty

Nic Fildes in London JULY 23 2021

The Oxford economist behind the record £22.5bn sale of British 3G telecoms licences and the auction structure that helped stabilise the UK banking sector after the collapse of Northern Rock has now applied his expertise to a more natural challenge: the plight of the turtle dove.

Professor Paul Klemperer, a world expert in complex auction structures and game theory, together with Professors Elizabeth Baldwin and Alex Teytelboym, has helped to divide up subsidies to farmers in Norfolk and Suffolk in the east of England to create environments that meet the needs of the UK's fastest declining bird species.

The turtle dove auction could prove influential as the UK government looks for better ways to attribute agricultural subsidies after Brexit and Britain's departure from the bloc's Common Agricultural Policy.

The Department for Environment, Food and Rural Affairs has worked with Klemperer's team and the Royal Society for the Protection of Birds on the auction, which built environmental protection into the bidding process instead of offering blanket subsidies.

"No matter what your views [are] on Brexit, alternatives to the Common Agricultural Policy can only be seen as a good thing. This is a really good opportunity to find a balance that works for everybody," said Jake Zarins, senior species recovery officer at the RSPB. "Our green and pleasant land isn't what it used to be. This is an opportunity to redress that."



UK farmers face losing half the subsidies they received from the EU's Common Agricultural Policy following Brexit © Andrew Michael/Education Images/UiG/Getty

Turtle dove numbers in the UK have declined 98 per cent since the 1970s due to changes in agricultural practices and recreational shooting on the bird's flight path between Africa and Britain. The RSPB estimates that numbers have dropped by another third since 2016 when only 3,000 were counted.

The bird, the herald of spring in folklore, has cultural resonance for Britain appearing in numerous Shakespeare's plays, Chaucer's Parlement of Foules and perhaps most notably as the penultimate item gifted in the "12 Days of Christmas" carol.

Although the decline in the number of turtle doves globally is less dramatic than in the UK, the RSPB says the bird could easily become extinct unless action is taken.

A subsidy amounting to £720,000 was made available to farmers in the two target areas of the country over two auctions this year with 49 farmers successfully bidding.

UK farmers face losing half the funds they received under the CAP after the Brexit vote so the "reverse auction" structure used for the doves raised fears among farmers that it could be a "race to the bottom" with the lowest bids accepted according to Zarins.

However, the complex turtle dove scoring system, developed by Klemperer and his colleagues Elizabeth Baldwin and Alex Teytelboym, prioritised qualitative elements of the bids.

It was structured to combine the food, water and breeding ground needs of the birds, which are deemed to be "fussy" given they have short legs but feed on the ground so require more open space. Local and regional density and environmental factors such as whether the water was from a river bank in need of restoration rather than a trough were also factored in.

Another measure — called TDH or Ta-Da — was used to factor in "turtle dove happiness".

"Usually farmers would be paid so much for a hedgerow or so much to restore a river bank but it is pointless if all the ponds are in Suffolk and the meadows in Norfolk," said Klemperer on the need to structure the auction to deliver wider public benefits.

He added that the turtle dove auction was a far more complex structure than that which created the 3G bonanza in 2000 and was more akin to the banking crisis auctions he designed after being called in by Mervyn King, the then governor of the Bank of England, to structure auctions to inject funds into the financial system.