

P1: Food Provision

Ecosystem service definition

Agricultural and horticultural production of food products via arable crops, livestock, vegetables, and fruits. Production of food products (i.e. berries, fungi, and game) through gathering and hunting practices.

Baseline methods and rationale

A relational (i.e. spatially modified) baseline dataset was produced to map food provision as an ecosystem service within Gloucestershire. Use of a spatial modifier was considered appropriate as the location of a given habitat was judged to be important in influencing its productivity, and therefore the provision of the service.

The modifying dataset and values were derived from the Oxfordshire natural capital study (Smith, 2020), which applied Agricultural Land Classification (ALC) data produced by Natural England (2020) as a modifier to the food provision ecosystem service baseline. These weighting values are provided in Table P1.1 below. These values were identified on the basis of estimated differences in productivity between each land class.

ALC Grade	Multiplier
1	3.03
2	2.40
3a	1.83
3	1.33
3b	1.00
4	0.67
5	0.50

Table P1.1: Multiplier values applied for each ALC grade

Opportunity Methods & Rationale

An opportunity dataset was not produced for the carbon storage ecosystem service due to the absence of a meaningful data that can be used to assess where the ecosystem service of carbon sequestration currently being delivered by natural capital assets is not meeting demand for delivery of the ecosystem service.

Limitations and Further Development

ALC data is not accurate enough to be used as anything other than general guidance, more accurate data should be used to indicate productivity of land, as a result, this dataset should not be used for assessment of individual land parcels, but rather for higher-level analysis.

The current habitat classification does not fully account for land management regimes, which may have a substantial impact on food production output.

Future work could include an assessment of different approaches to agriculture and food production (e.g. intensive, small-scale, crops, livestock) to provide a greater understanding of the spatial distribution of food provision in the county.

Data indicating productivity (the food production output) of land used for food production would also provide insights into the productivity of natural capital assets in delivering the food provision ecosystem service. Approaches to food production should be considered in the context of productivity data, to ensure impacts on other ecosystem services of these approaches are fully recognised; intensive agriculture can significantly impact water quality, for example.

An opportunity layer has not been produced for production, due to the current deficit of information regarding the location of natural capital assets managed for food production and the management regimes these assets are subject to. This data could allow production of an opportunity dataset through identification of how current food production is distributed in relation to the suitability of land to support food production.

References

Natural England, 2020. Provisional Agricultural Land Classification (ALC). Available at: <https://data.gov.uk/dataset/952421ec-da63-4569-817d-4d6399df40a1/provisional-agricultural-landclassification-alc>

Smith, A., 2020. Natural capital in Oxfordshire: Short report. Environmental Change Institute, University of Oxford.

P1: Food Provision (modified)

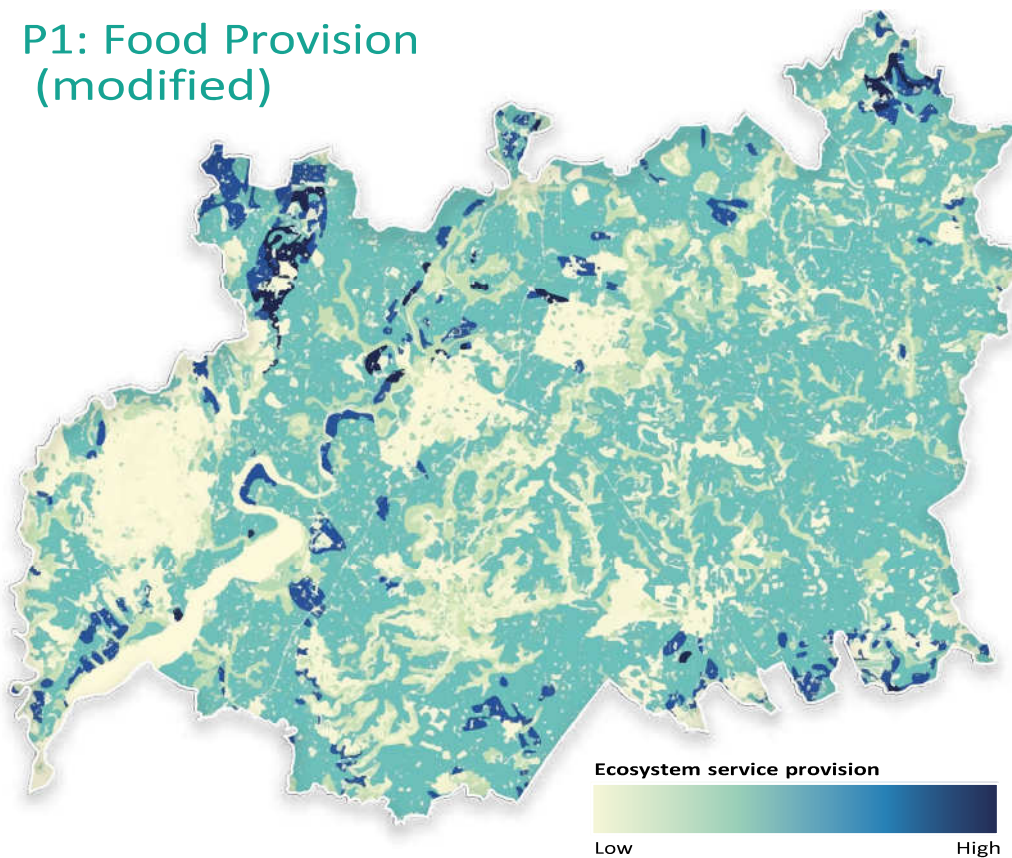


Figure P1.1: Food Provision Baseline (relational)