



**An
Phríomh-Oifig
Staidrimh**

Central
Statistics
Office

Standard SIMS Report: Ecosystem Accounts



Single Integrated Metadata Structure (SIMS) Report

For

Ecosystem Accounts 2021

This documentation applies to the reporting period:

2021

Last edited: 22/09/2025



1. Table of Contents

1.	Table of Contents.....	3
2.	Introduction.....	5
3.	Contact.....	5
4.	Metadata Update	5
4.1.	Metadata last certified	5
4.2.	Metadata last posted	5
4.3.	Metadata last update	5
5.	Statistical Presentation	6
5.1.	Data Description.....	6
5.2.	Classification System.....	6
5.3.	Sector Coverage.....	6
5.4.	Statistical Concepts and definitions	6
5.5.	Statistical Unit.....	6
5.6.	Statistical Population	7
5.7.	Reference Area	7
5.8.	Time Coverage.....	7
5.9.	Base period	7
6.	Unit of Measure.....	7
7.	Reference Period	7
8.	Institutional Mandate	8
8.1.	Legal Acts and other agreements.....	8
8.2.	Data Sharing.....	8
9.	Confidentiality.....	8
9.1.	Confidentiality – policy.....	8
9.2.	Confidentiality – data treatment.....	8
10.	Release Policy.....	8
10.1.	Release Calendar	8
10.2.	Release calendar access.....	8
10.3.	User access.....	8
11.	Frequency of Dissemination.....	9
12.	Accessibility and clarity	9
12.1.	News release	9
12.2.	Publications.....	9
12.3.	On-line database	9
12.3.1.	AC 1. Data tables -consultations	9
12.4.	Micro-data Access.....	9
12.5.	Other	9
12.5.1.	AC2. Metadata consultations.....	9
12.6.	Documentation on Methodology	9
12.6.1.	AC3 – Metadata completeness – rate.....	10
12.7.	Quality Documentation.....	10
13.	Quality Management.....	10
13.1.	Quality Assurance	10
13.2.	Quality Assessment	10
14.	Relevance.....	10
14.1.	User Needs.....	10
14.1.1.	Main National Users	11
14.1.2.	Principal External Users.....	11
14.2.	User Satisfaction.....	11



14.3.	Data Completeness.....	11
14.3.1.	Data Completeness rate.....	12
15.	Accuracy and reliability.....	12
15.1.	Overall accuracy.....	12
15.2.	Sampling Error.....	12
15.2.1.	A1. Sampling error indicator.....	12
15.3.	Non-sampling Error.....	13
15.3.1.	Coverage error.....	13
15.3.2.	Measurement error.....	14
15.3.3.	Non-Response Error.....	14
15.3.4.	Processing error.....	14
15.3.5.	Model assumption error.....	14
16.	Timeliness and punctuality.....	14
16.1.	Timeliness.....	14
16.1.1.	TP1. Time lag – First results.....	15
16.1.2.	TP2. Time lag – Final results.....	15
16.2.	Punctuality.....	15
16.2.1.	TP3. Punctuality – Punctuality - delivery and publication.....	15
17.	Comparability.....	15
17.1.	Comparability – Geographical.....	15
17.1.1.	CC1. Asymmetry for mirror flow statistics.....	15
17.2.	Comparability over time.....	15
17.2.1.	Length of Comparable Time series.....	15
17.3.	Coherence – cross domain.....	16
17.3.1.	Coherence – Sub annual and annual statistics.....	16
17.3.2.	Coherence with National Accounts.....	16
17.4.	Coherence – internal.....	17
18.	Cost and Burden.....	17
19.	Data Revision.....	17
19.1.	Data Revision Policy.....	17
19.2.	Data Revision Practice.....	17
19.2.1.	Data Revision – Average size.....	17
20.	Statistical processing.....	17
20.1.	Source Data.....	17
20.1.1.	Population and sampling frame.....	18
20.1.2.	Sampling design.....	18
20.1.3.	Survey size.....	18
20.1.4.	Survey technique.....	18
20.2.	Frequency of data collection.....	18
20.3.	Data Collection.....	19
20.3.1.	Type of Survey/Process.....	19
20.3.2.	Questionnaire (including explanations).....	20
20.3.3.	Survey Participation.....	20
20.3.4.	Data Capture.....	20
20.4.	Data Validation.....	20
20.5.	Data Compilation.....	20
20.5.1.	Imputation (for Non-Response or Incomplete Data Sets).....	20
20.5.2.	Grossing and Weighting.....	20
20.6.	Adjustment.....	20
20.6.1.	Seasonal Adjustment.....	20
21.	Comment.....	20



2. Introduction

These statistics give the extent (in hectares) of different terrestrial and transitional ecosystem types in Ireland. Also given are the changes (additions and reductions) for each ecosystem type, including the main conversions. The ecosystems are those defined at levels 1 and 2 of the new EU Ecosystem Typology. This can be found here:

<https://ec.europa.eu/eurostat/documents/1798247/12357920/EU-ecosystem-typology.pdf/265ef6e5-b146-e501-499a-d1467f7a6a90?t=1734604764993>

Note, marine ecosystems at levels 1 and 2 are not included.

3. Contact

Contact Organisation:	Central Statistics Office
Contact Organisation Unit:	Ecosystem Accounts
Contact Name:	Sam Belton
Contact person function:	Statistician
Contact Mail address:	Central Statistics Office, Ardee Road, Rathmines, Dublin 6, D06 FX52
Contact email address:	sam.belton@cso.ie
Contact Phone Number:	01 4984136
Contact Fax Number:	Contact fax

4. Metadata Update

4.1. Metadata last certified

13/10/2025

4.2. Metadata last posted

16/10/2025

4.3. Metadata last update

13/10/2025



5. Statistical Presentation

5.1. Data Description

The data includes the extent (in hectares) of different ecosystem types in Ireland for 2018 and 2021. Also include are the changes (additions and reductions) in the extent of each ecosystem. Extent figures are given for 11 and 31 ecosystem types at levels 1 and 2 of a new EU ecosystem typology, respectively. These figures are also disaggregated from national to county and local authority level.

5.2. Classification System

EU Ecosystem Typology – levels 1 and 2:

<https://ec.europa.eu/eurostat/documents/1798247/12357920/EU-ecosystem-typology.pdf/265ef6e5-b146-e501-499a-d1467f7a6a90?t=1734604764993>

5.3. Sector Coverage

Not applicable.

5.4. Statistical Concepts and definitions

This release reports the spatial extents (in hectares) of different ecosystems in Ireland. These are given in account format, with extent figures given for an opening year (or base year) and a closing year – for this iteration, these years are 2018 and 2021, respectively. As the accounts are produced based on a compiled ecosystem extent map, it is also possible to calculate directional changes in the extent of each ecosystem (i.e. additions and reductions). These sum to the net change in ecosystem extent between reference years. Therefore, the main variables associated with this release are:

- Opening extent: extent of each ecosystem in 2018
- Closing extent: extent of each ecosystem in 2021
- Change in ecosystem extent: additions and reductions of each ecosystem type between opening and closing extent years.
- Net change: overall change in the extent of each ecosystem type between 2018 and 2021.

5.5. Statistical Unit

Ecosystem type (Level 1)	Ecosystem type (Level 2)
1 Settlements & Other Artificial Areas	1.1 Continuous Settlement Areas
	1.2 Discontinuous Settlement Areas
	1.3 Infrastructure & Industrial Areas
	1.4 Urban Greenspace
	1.5 Other Artificial Areas
2 Cropland	2.1 Annual Cropland
	2.3 Permanent Cropland
	2.6 Other Farmland
3 Grassland	3.1 Sown Pastures & Other Grass
	3.2 Natural & Semi-Natural Grasslands
4 Forest & Woodland	4.1 Broadleaved Deciduous Forest



	4.2 Coniferous Forest
	4.4 Mixed Forests
	4.5 Transitional Forest & Woodland Shrub
	4.6 Plantations
5 Heathland & Shrub	5.2 Scrub & Heathland
6 Sparsely Vegetated Ecosystems	6.1 Bare Rocks
	6.2 Semi-Desert, Desert & Other Sparsely Vegetated Areas
7 Inland Wetlands	7.1 Inland Marshes & Other Wetlands on Mineral Soil
	7.2 Mires, Bogs & Fens
8 Rivers & Canals	8.1 Rivers & Streams
	8.2 Canals, Ditches & Drains
9 Lakes & Reservoirs	9.1 Lakes & Ponds
	9.2 Artificial Reservoirs
10 Marine Inlets & Transitional Waters	10.1 Coastal Lagoons
	10.2 Estuaries & Bays
	10.3 Intertidal Flats
11 Coastal Beaches, Dunes & Wetlands	11.2 Coastal Dunes, Beaches & Sandy & Muddy Shores
	11.3 Rocky Shores
	11.4 Coastal Saltmarshes & Salines

5.6. Statistical Population

All level one and level two ecosystem types in Ireland, as listed in the above table.

5.7. Reference Area

Ireland, with breakdown by county and local authority area.

5.8. Time Coverage

2018-2021

5.9. Base period

Not applicable.

6. Unit of Measure

Hectares (ha)
Percentage (%)

7. Reference Period

This release accounts for the extent of each ecosystem in 2018 and 2021, as calculated based on compiled ecosystem extent maps. These maps were produced using a range of source land cover data, most of which endeavour to correspond to the typical land cover situation for the whole of their respective reference years.



8. Institutional Mandate

8.1. Legal Acts and other agreements

EU Regulation 691/2011 on Environmental Economic Accounts.

8.2. Data Sharing

- The National Land Cover Map and the PRIME 2 cadastral map database were provided to the CSO under the National Mapping Agreement.
- Administrative data from DAFM and Coillte were accessed through the CSO Administrative Data Centre, which receives data under the 1993 Statistics Act.

9. Confidentiality

9.1. Confidentiality – policy

All information supplied to the CSO is treated as strictly confidential. The Statistics Act, 1993 sets stringent confidentiality standards: Information collected may be used only for statistical purposes, and no details that might be related to an identifiable person or business undertaking may be divulged to any other government department or body.

These national statistical confidentiality provisions are reinforced by the following EU legislation: Council Regulation (EC) No 223/2009 on European statistics for data collected for EU statistical purposes.

Further details are outlined in the CSO's Code of Practice on Statistical Confidentiality.

For more information on the CSO confidentiality policy please visit:

<https://www.cso.ie/en/aboutus/lgdp/csodatapolicies/statisticalconfidentiality/>

9.2. Confidentiality – data treatment

Not applicable.

10. Release Policy

10.1. Release Calendar

The date of dissemination of all statistics released by CSO can be found in the Release Calendar published in CSO.ie. This calendar is regularly updated.

10.2. Release calendar access

The release calendar can be accessed via the CSO website, www.cso.ie, or directly from this link: <https://www.cso.ie/en/csolatestnews/releasecalendar/>

10.3. User access

In accordance with Principle 6 of the European Statistics Code of Practice all users of CSO statistics have equal access via the CSO website at the same time of 11 am. Any privileged pre-release access to any outside user is limited, controlled and publicised. In the event that leaks occur, pre-release arrangements are revised so as to ensure impartiality.

The CSO recognises that in very limited circumstances a business need for pre-release access may be substantiated. Any form of pre-release access is a privilege and a strict CSO pre-release



access policy is adhered to for these special requests. The full pre-release access policy can be accessed at <https://www.cso.ie/en/aboutus/lgdp/csodatapolicies/csopolicyonpre-releaseaccess/>

The various results are published nationally in statistical release format as well as on the CSO website (www.cso.ie). Selected extracts from the results are posted on the CSO's data dissemination database, PxStat.

11. Frequency of Dissemination

Principally, every three years. However, next year's accounts will be published for the reference year 2024, which is the base year for reporting to Eurostat. Subsequent releases will follow a three-year update frequency.

12. Accessibility and clarity

12.1. News release

Not applicable

12.2. Publications

The data were published on the CSO website and accessible through the following link: <https://www.cso.ie/en/statistics/ecosystemaccounts/ecosystemextentaccounts/>

12.3. On-line database

The data can be downloaded in various formats from the CSO's main dissemination database, PxStat from this link <https://data.cso.ie/product/EEA>.

12.3.1. AC 1. Data tables -consultations

Not calculated.

12.4. Micro-data Access

Not applicable.

12.5. Other

Not applicable.

12.5.1. AC2. Metadata consultations

Not calculated.

12.6. Documentation on Methodology

For more information on the methodology used to produce the accounts presented in this release, please see the methodology document located in the Methods sections of this release.



12.6.1.AC3 – Metadata completeness – rate

Not calculated

12.7. Quality Documentation

National quality reports are published alongside the national release and can be found at the following link: <https://www.cso.ie/en/methods/ecosystemaccounts/ecosystemextentaccounts/>

13. Quality Management

13.1. Quality Assurance

Quality Management Framework

The CSO avails of an office wide Quality Management Framework (QMF). This framework allows all CSO processes and outputs to meet the required standard as set out in the European Statistics Code of Practice (ESCoP). The QMF foundations are based on establishing the UNECE's Generic Statistical Business Process Model (GSBPM) as the operating statistical production model to achieve a standardised approach to Quality Management. All and any changes implemented to CSO processes and outputs require adherence to the QMF.

A national expert group consisting of experts from the below organisations was consulted:

- Environmental Protection Agency (EPA)
- National Parks & Wildlife Service (NPWS)
- Teagasc
- Department of Agriculture, Food and the Marine (DAFM).
- Atlantic Technological University (ATU)
- Coillte
- Department of Housing, Local Government and Heritage (DHLGH)
- Tailte Éireann
- Marine Institute
- Department of Foreign Affairs (DFA)
- University of Galway

These were consulted to obtain feedback on source data and methodology. In addition, feedback and guidance was also received from a dedicated Eurostat Task Force on Ecosystem Accounts and the ecosystem accounting and mapping experts from the European Environmental Agency (EEA).

13.2. Quality Assessment

Quality was assessed through coherence checks against other national data and statistics, in addition to a validation and accuracy analysis of the source data and compiled ecosystem extents map from which the accounts are based.

14. Relevance

14.1. User Needs

The CSO has consulted with a wide range of stakeholders. These included those who provided expert consultation, as listed above under Quality Assurance. The main outcomes of this engagement included:



- Improved cross-domain awareness of the accounts, including awareness amongst data compilers for reporting under the Nature Restoration Law and Global Biodiversity Framework.
- Decision to account for certain ecosystem types (e.g. Semi-Natural & Natural Grassland), even if corresponding source data were non-exhaustive or not up to date.
- Decision to include a map validation to provide account users with a measure of accuracy.

The CSO has also engaged with local authorities, including local Biodiversity Officers and GIS Officers. The main outcomes of this included:

- Improved awareness of the accounts amongst Biodiversity and GIS officers across local authorities.
- An understanding that Biodiversity officers in local authorities may be users of the accounts but may also provide data for future iterations of the accounts.
- Decision to disaggregate the accounts to local authorities.

In addition to the above, these accounts provide for the CSO's obligations to develop and produce ecosystem accounts under Ireland's 4th National Biodiversity Action Plan 2023–2030.

14.1.1. Main National Users

Policy makers, media, local authorities.

14.1.2. Principal External Users

European Union/ Eurostat/ European Environmental Agency (EEA)

14.2. User Satisfaction

Not measured.

14.3. Data Completeness

The data may be regarded as complete, except for the below ecosystem level two types:

- Mixed Farmland – data not compiled due to lack of clear guidance on how to characterise this ecosystem. In particular, further guidance is required around the scale at which this ecosystem type should be characterised and accounted for.
- Agro-forestry – this ecosystem type was presumed to be negligible in Ireland. However, the CSO has learned from last-minute stakeholder engagement that it may be more common than previously thought and its expansion is nonetheless a policy objective. Therefore, efforts will be made ahead of the next iteration of these accounts to assess potential data sources and methodologies for quantifying this ecosystem type in Ireland.
- Artificial Shorelines – this ecosystem type was excluded due to the CSO being unaware of sufficient and appropriate source data at the time of publishing. Furthermore, the definition of this ecosystem type is currently the subject of review by a subgroup within the Eurostat task force on Ecosystem Accounts. However, efforts will be made to include this ecosystem type within the next iteration of these accounts.
- The boundary for delineating the terrestrial-transitional ecosystem accounting area (EAA) – this boundary will likely be adjusted to better account for some coastal and transitional ecosystem types following a review of relevant data sources.



14.3.1. Data Completeness rate

This can be considered to be 100%.

15. Accuracy and reliability

15.1. Overall accuracy

Two approaches were taken to estimate the reliability of the geospatial data used to produce these accounts:

1. Validation of source land cover

These extent accounts are based on compiled ecosystem extent maps. These maps were based on classification of compiled, high-resolution land cover maps produced *in house* using a range of European and National data sources. They are listed in the Background Notes accompanying the release.

These maps, in turn, were produced using data that corresponded to the definitions of each of the different ecosystem types for which extent figures are reported in this release – information on how these data corresponded to the different ecosystem types can be found in the methodology document accompanying this release. The Land use and land cover survey (LUCAS) points published by Eurostat were used to determine the accuracy of the source land cover maps. More information on the LUCAS sample points can be found using the below link:

https://ec.europa.eu/eurostat/statistics-explained/index.php?title=LUCAS_-_Land_use_and_land_cover_survey

This validation exercise is also detailed in the methodology document associated with this release.

The methodology document can be found via this page:

<https://www.cso.ie/en/methods/ecosystemaccounts/ecosystemextentaccounts/>

2. Estimation of confidence for each classified ecosystem

The final ecosystem extent maps from which these accounts were derived were based on a spatial aggregation from the above-mentioned source land cover maps. This necessarily reduced the resolution from 10 m² to 100 m² (or 1 hectare) and was done to reduce the statistical error introduced from the different geospatial source data. The ecosystem type label given to each 1-hectare area was therefore based on the most common ecosystem type (i.e. the statistical mode) in that area, as suggested by the source data. The proportion of different ecosystem types within each 1-hectare area can give an indication of confidence. As described in more detail in the methodology document accompanying this release, the median proportion per ecosystem type was given for each ecosystem.

15.2. Sampling Error

Not applicable

15.2.1.A1. Sampling error indicator

Not applicable



15.3. Non-sampling Error

These are errors in survey estimates which cannot be attributed to sampling fluctuations. Summarise the most important aspects of coverage, measurement, non-response, processing and model assumption errors.

Discuss the corresponding bias risks and actions undertaken to reduce them.

15.3.1. Coverage error

Overall accuracy estimates for the source land cover maps are given in the methodology document accompanying this release. The accuracy of these maps can be considered as moderate to substantial. The main sources of error affecting the accuracy of these maps are as follows:

- Conversion from vector to raster data: All of the national data sources were accessed as vector data, which were then generalised into a raster data format. This means that complex, real-world spatial features were generalised into a simple grid structure (more details are available in the methodology document accompanying this release), which introduces some error.
- Error present in the base land cover imagery onto which national level data were layered. This base land cover was the CLCplus Backbone, which is the next generation baseline landcover product produced by the Copernicus Land Monitoring Service (CLMS).
- Error present in the Irish National Land Cover Map (NLCM), which was a key data source for several mapped ecosystems. This data source was used for both maps (i.e. source land cover maps used to produce opening and closing extent maps) – greater error is expected where the NLCM was used for the closing extent map. This is because the NLCM is currently only available for 2018 and consequently will contain more error over time.
- PRIME 2, which is the database for the national cadastral map, was used as a key data source for several mapped ecosystems. Whilst likely rare, some features used from this map may be out of date.
- Error present in the Land Parcel Identification System (LPIS) database. The land parcels in this data often include ineligible areas of land cover corresponding to other ecosystem types. As these are not explicitly delineated, they can be incorrectly assigned to Cropland and Grassland ecosystem types. However, the classification approach, as outlined in the methodology document accompanying this release, was designed to minimise this source of error.
- Data used to map Semi-Natural and Natural Grasslands: This included CORINE Land Cover, which has relatively low resolution, and Article 17 Grasslands data, which are not exhaustive and subject to definitional changes. The classification approach for this ecosystem also employs a novel qualification method which has not yet been validated externally (detailed in methodology document accompanying this release).

15.3.1.1. A2. Over coverage rate

Not applicable

15.3.1.2. A3. Common units – proportion

Not applicable



15.3.2. Measurement error

Not applicable.

15.3.3. Non-Response Error

Not applicable.

15.3.3.1. Unit non response rate

Not applicable.

15.3.3.2. Item non response rate

Not applicable.

15.3.4. Processing error

A peer review of the R code used to produce these accounts was carried out.

15.3.5. Model assumption error

- CSO Methodology provided critical feedback on the geospatial methods used to produce the ecosystem extent map from which these accounts are derived.
- The data, metadata and classification workflow were also reviewed by Eurostat as part of a voluntary data submission process.
- Eurostat GISCO and the European Environmental Agency (EPA) provided *ad hoc* feedback following queries made on different aspects of the ecosystem classification model.

16. Timeliness and punctuality

16.1. Timeliness

These accounts describe the extent of different ecosystem types in Ireland, as was the case approximately 3 years and 10 months before publication.

Most of the source data used to compile the final ecosystem extent maps from which these accounts were derived correspond to the general land cover situation in the respective reference years. There were two main exceptions:

1. National Land Cover Map (NLCM): As already mentioned in section 15.1, this data was only available for the reference year of the opening extent accounts. However, it was reused for the reference year of the closing extent accounts. The relevant land cover classes used from the NLCM were updated with new data sources. However, where the NLCM was the only data source for a given ecosystem (NLCM), the maximum extent that could be recorded for that ecosystem was the total extent of the corresponding land cover source in the NLCM for 2018.
2. Forest survey data: These included the National Survey of Native Woodlands (NSNW) and the Ancient and Long-established Woodland (ALEW) survey. These datasets are considerably outdated and cover the period between 2003 and 2010. These data were small, auxiliary data sources and were updated with newer data. Nonetheless, it is possible that some of the surveyed areas in these data have ceased to be forestry and that such an error will be present in the final ecosystem extent map.



16.1.1. TP1. Time lag – First results

Not applicable.

16.1.2. TP2. Time lag – Final results

Not applicable.

16.2. Punctuality

Not applicable.

16.2.1. TP3. Punctuality – Punctuality - delivery and publication

Not applicable.

17. Comparability

17.1. Comparability – Geographical

The accounts are based on a compiled extent map. This map is based on a source land cover map which uses a range of wall-to-wall land cover data. These means that the disaggregation of the data to county and local authority area is valid and extent estimates at this level can be regarded as comparable.

17.1.1. CC1. Asymmetry for mirror flow statistics

Not applicable.

17.2. Comparability over time

This release includes accounts for two reference periods, corresponding to the years of the opening and closing accounts. The reference periods are comparable. Although the CSO has previously published ecosystem extent accounts covering the period between 2000 and 2018, they were produced using a single data source (CORINE Land Cover) and are consequently not comparable with the accounts in this release. Moreover, CORINE Land Cover has a large minimum mapping unit (MMU) of 25 hectares, meaning ecosystems smaller than this area were not mapped. As a result, the extent of some ecosystems was substantially overestimated, whereas others were substantially underestimated. These accounts, which are estimated based on a compiled ecosystem extent map with a 1-hectare MMU (except for Semi-Natural & Natural Grasslands, which has a 25 MMU), may be regarded as being significantly more accurate. Finally, the previous iteration of the accounts based on CORINE Land Cover were published as a CSO Frontier Release, reflecting the fact that methodology was still subject to significant revisions. Any revisions to subsequent iterations of these accounts will be minor, meaning that these accounts should be comparable with future iterations.

17.2.1. Length of Comparable Time series

The current time series comprises only of 2 years (2018, 2021).



17.3. Coherence – cross domain

The ecosystem extent estimates in this release are coherent with other official data. For example:

- The National Land Cover Map (NLCM): The ecosystem types have a broad correspondence to the land cover types in the NLCM – where these correspond, their extents are coherent. This is partly because some of their source data overlap (e.g. PRIME 2). Where they are less coherent, they can be explained. For instance, the total extent of Forest & Woodlands for both reference years in the ecosystem extent accounts are slightly lower than the total extent of 'Forest, Woodland and Scrub' in the NLCM. However, this is because this land cover class in the NLCM includes the extent of all hedgerows and treelines. By contrast, hedgerows and treelines are mapped as part of the broader ecosystem types in which they tend to be situated (e.g. Cropland or Grassland).
- The total extent of Forest & Woodland is consistent with the extent as published in Ireland's National Forest Inventory (NFI).
- The extents of the ecosystem type 'Sown Pastures & Other Grass' are coherent with those reported by CSO Agriculture Statistics.
- The extents of the Cropland ecosystem type are approximately 24% greater than the total area reported by CSO Agriculture Statistics for 2018 and 2021. This corresponds to around 86 thousand hectares. This difference can be explained as follows:
 - The Agricultural Statistic estimate is based on the area claimed by farmers in the LPIS database, whereas the Cropland ecosystem extent estimate is based on the total digitised area of each LPIS land parcel in which there is a claim. Therefore, the latter would include unclaimed areas of arable land, in addition to landscape features such as hedgerows, small waterbodies and areas of scrub occurring within a LPIS crop parcel. From an ecosystem perspective, these are integral components of the Cropland ecosystem which would otherwise be disregarded if adhering to a strict land cover definition of cropland.
 - The Cropland ecosystem type is also inclusive of small landscape features adjacent to but not necessarily included within a LPIS parcel. This can include – for example – small roads, artificial surfaces such as farmyards and rural dwellings, and rivers. Eurostat also recommends aggregating such small features into their broader ecosystem type.
 - The Cropland ecosystem type was also classified using CLMS crop type and arable land cover data. This is derived from earth observation and will include any crop areas not present in the LPIS database.
 - The Cropland ecosystem type also includes areas of temporary grassland. This includes areas used to grow crops that have since been converted to grass and continue to be grass up until six years after resowing, after which they are deemed to be permanent grassland (in which case they are classified as the Grassland ecosystem type).

17.3.1. Coherence – Sub annual and annual statistics

Not applicable.

17.3.2. Coherence with National Accounts

Not applicable.



17.4. Coherence – internal

The different geospatial source data used to classify the ecosystem extent maps on which these accounts are based were determined to be coherent with one another.

18. Cost and Burden

Not applicable.

19. Data Revision

19.1. Data Revision Policy

Published statistics are subject to correction and revision for a variety of reasons. The most common reasons include the receipt of additional information (for example, late survey responses) and updated seasonal factors. Occasional revisions also occur as a result of changes to definitions, methodology, classifications and general updating of statistical series. It is recognised internationally that the existence of a sound revisions policy maintains credibility in official statistics. The CSO General Revisions Policy, which details how revisions should be managed and communicated to users, outlines the three main types of revisions:

- Planned Routine Revisions
- Planned Major Revisions
- Unplanned Revisions.

One reason for unplanned revisions occurring can be when errors are detected after publication. The 'CSO Error Correction Policy – How to deal with Publication Errors' outlines the steps taken when these errors are detected. As required under Principle 6.3 of the European Statistics Code of Practice, errors detected in published statistics are corrected at the earliest possible date and users are informed. An important step in the process is the documentation and analysis of errors that have occurred and their causes. This allows the CSO to take measures preventing similar errors from occurring in the future and uniformity in dealing with them when they do.

The data revision policy that CSO statistics adheres to can be found via the following link:
<https://www.cso.ie/en/methods/quality/treatmentofrevisions/>

19.2. Data Revision Practice

Data are not revised.

19.2.1. Data Revision – Average size

Note applicable.

20. Statistical processing

20.1. Source Data

The geospatial data used to compile the ecosystem extent maps on which these accounts are based came from a range of sources. These can be classified as either:

- Official EU data (earth observation products from the CLMS)



- Official national data
- National administrative data
- National habitat survey data

The official EU data is inclusive of the entire area of Ireland.

National data sources can be summarised as follows:

- PRIME2 - DLM Core cadastral map – covers all of Ireland
- National Land Cover Map (NLCM) – covers all of Ireland
- CSO Built Up Urban Areas – covers all of Ireland
- Water Framework Directive (WFD) - Transitional Waterbodies – covers all of Ireland
- Land Parcel Identification System (LPIS) – covers all of Ireland
- Forest administrative data – covers vast majority of forest sites in Ireland (excludes small, potentially wild and unproductive areas which are not in receipt of grants. This can include small patches of upland woodland in areas within LPIS under commonage ownership, for example).
- National Survey of Native Woodlands (NSNW) – areas surveyed cover the vast majority of putatively native broadleaf woodland sites located throughout the Ireland.
- Ancient and Long-Established Woodland (ALEW) – areas surveyed cover the vast majority of putatively ancient broadleaf woodland sites located throughout the Ireland.
- Article 17 Grasslands – areas surveyed are expected to cover only a small subset of the natural grassland habitats located throughout the Ireland. The extent to which they are not exhaustive is not currently known.
-

20.1.1. Population and sampling frame

For these accounts, the sampling frame corresponded to the entirety of the areas of the different ecosystem types listed under section 'Statistical Unit'.

20.1.2. Sampling design

Not applicable.

20.1.3. Survey size

Not applicable.

20.1.4. Survey technique

Not applicable.

20.2. Frequency of data collection

Information on the frequency of the geospatial source data used in this release is available in the below table.

Data Name	Reference years (for these accounts)	Update frequency
CLCplus Backbone	2018, 2021	two years
High resolution layer (HRL)-vegetated land cover characteristics (VLCC) – Crop Types	2018, 2021	annual



High resolution layer (HRL)-vegetated land cover characteristics (VLCC) – Ploughing	2018, 2021	annual
High resolution layer (HRL)-vegetated land cover characteristics (VLCC) – Mowing	2018, 2021	annual
CORINE Land Cover (CLC)	2018	six years
PRIME 2 - DLM Core cadastral map	2018 Q1, 2021 Q4	quarterly
National Land Cover Map (NLCM)	2018	six years
CSO Built Up Urban Areas	2022	reviewed with every Census cycle
Water Framework Directive (WFD) - Transitional Waterbodies	2018, 2021	six years
Land Parcel Identification System (LPIS)	2018, 2021	annual
Forest administrative data (1)	2018, 2021	annual
Forest administrative data (2)	2018, 2021	annual
National Survey of Native Woodlands (NSNW)	2003-2008	once-off
Ancient and Long-Established Woodland (ALEW)	2010	once-off
Article 17 Grasslands	2019	six years

20.3. Data Collection

Not applicable.

20.3.1. Type of Survey/Process

- Land Parcel Identification System (LPIS) – this is updated and maintained by the Department of Agriculture, Food and the Marine (DAFM) to administer area-based payments to farmers. The data provides the geospatial delineation of farm parcels corresponding to different farmers. The crop descriptions associated with each parcel are self-declared by the farmer.
- Coillte forest data – this data contains information on the forest parcels representing the forest estate belonging to Coillte. The data includes information on forest type, species composition and planting year. This data is maintained and updated internally by Coillte.
- DAFM private forest data – this data is similar to that which is provide by Coillte, except the forest parcels it refers to are in private ownership.
- Corine Land Monitoring Service (CLMS) products, including CLCplus Backbone and HRL-VLCC are pan-European land cover products produced every one to two years by the CLMS.
- CLC is also a CLMS product but is produced every six years – its 2024 iteration may be its last.
- PRIME 2 – DLM Core cadastral map. This is the ‘skin of the earth’ national cadastral map updated regularly and released quarterly by Tailte Éireann.
- NLCM – Ireland-wide land cover map produced by Tailte Éireann and with a commitment to reiterate every six years.
- WFD – transitional waterbodies data. These polygons are produced by the Environmental Protection Agency (EPA) for reporting under the Water Framework Directive.
- Forest survey data (NSNW and ALEW) – once-off data sets provided by the National Parks & Wildlife Service (NPWS).
- Article 17 Grasslands data – produced by the NPWS for reporting under Article 17 of the Habitats Directive.



20.3.2. Questionnaire (including explanations)

Not applicable.

20.3.3. Survey Participation

Not applicable.

20.3.4. Data Capture

The administrative data indicated under section 'Type of Survey/Process' are compiled by their respective departments on their own IT infrastructure. The data was obtained by the CSO Administrative Data Centre Under the Statistics Act 1993.

All other external data used for this release was publicly available and downloaded from their respective providers.

20.4. Data Validation

See "Accuracy" for information on validation. A more detailed overview of the validation approaches used to produce the source land cover maps – on which the ecosystem extent maps and derived accounts were produced – can be found in the methodology document accompanying this release.

20.5. Data Compilation

Operations performed on data to derive new information according to a given set of rules. A detailed overview of the geospatial data compilation workflow can be found in the can be found in the methodology document accompanying this release.

20.5.1. Imputation (for Non-Response or Incomplete Data Sets)

Not applicable.

20.5.1.1. A7. Imputation rate

Not applicable.

20.5.2. Grossing and Weighting

Not applicable.

20.6. Adjustment

Not applicable.

20.6.1. Seasonal Adjustment

Not applicable.

21. Comment