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**title:** Key Inventory Qualities for Effective Heritage Management

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For an inventory to be effective in the broad range of uses mentioned in the **introduction** to this volume, information within it will ideally have certain qualities or characteristics that increase its utility. This chapter proposes what some of those desired qualities are, and explains why. Since an inventory is essentially an ongoing information record, the proposed qualities have been informed in part by guidance pertaining to general data quality, rather than qualities specific to the heritage field).[[1]](#endnote-1) This discussion assumes that inventory users, such as policymakers, public agency staff, emergency responders, property owners, and developers, all seek some degree of certainty when consulting inventory information about the status of places and properties when making decisions.

As will be discussed further in **chapter 2**, some jurisdictions have statutory inventories recognized by law as the information source upon which planning decisions regarding heritage are based. Statutory heritage inventories, as well as other official inventories that public agencies rely on to carry out their stewardship mandates, are typically recognized by law as authoritative or definitive records of a particular jurisdiction or organization. Having multiple inventories for a jurisdiction can cause confusion and uncertainty about which inventory is more accurate, and can lead to unnecessary duplication of effort and resource expenditures.

## Key Qualities

The qualities listed in this section are not exhaustive but are suggested as considerations for those working with inventories, who may wish to set out other qualities more fitting to their own circumstances. Various means to achieve those information characteristics are discussed in later chapters.

### Comprehensiveness of Coverage

This quality represents the aim of identifying, even with limited information, all significant heritage places within a particular jurisdiction. Comprehensiveness is essential to actively safeguarding heritage within that jurisdiction. Gaps in the geographic coverage of an inventory, such as an area of a site, city, or region that has never been surveyed, can put heritage at risk. Organizations usually seek to address those gaps with the aim of attaining complete geographic coverage. A complete understanding of the extent of archaeological resources is normally not possible, given that buried remnants tend to be incrementally revealed over time. However, one can strive to be as comprehensive as possible based on available research and evidence.

As the heritage field has evolved, additional heritage types have been recognized as significant (e.g., cultural landscapes, modern architecture, intangible). Consequently, for an inventory to be complete, when heritage types are newly recognized within a particular jurisdiction, activities need to be undertaken to also identify those resources. If an agency has created a thematic framework delineating specific historic or cultural themes to be represented within its inventory, the agency typically strives to have the inventory comprehensively represent those themes.

### Uniqueness

The quality of uniqueness holds that real-world phenomena, such as a building, event, or person, should be represented only once in an inventory. This is desirable to prevent confusion in determining which record is most reliable and to prevent duplication of effort. The most essential function of a heritage inventory is to definitively identify heritage resources deemed to be significant or potentially significant. This objective necessitates that, ideally, a unique record exists for each heritage resource within an inventory, and conversely that duplicate or multiple records for a given resource do not. Duplication particularly arises when combining data sets.

### Completeness of Required Information in Records

The quality of completeness holds that, for specified data fields within an inventory, if it is not already present data needs to be added, and it should be ready for use. This quality relates to determining what data is critical and what is optional. For inventories to be effective as tools for heritage management, it is important that certain data fields critical to informed decision-making, such as location, significance, and designation status, have complete information and are not left empty or partially completed. Completeness of noncritical information may be a lesser priority.

### Accuracy

Accuracy can be defined as the degree to which inventory information reflects the real-world places, objects, people, or events being described. Decision-makers need accurate information to make informed decisions about heritage places, whether to issue permits to demolish buildings, approve plans for development projects, or quickly respond to disasters. Errors in inventory data such as location, designation status, or significance, could have ruinous effects.

More generally, users of inventory information seek out and expect accurate information. Accuracy of inventory information can be promoted by incorporating data from authoritative sources to the greatest extent possible. Authoritative sources are specific, officially designated sources of information that provide a type or types of information that are trusted, timely, and secure ({{U.S. Department of the Interior 2008|F-1}}). Examples of data from authoritative sources include geospatial data obtained from a national or regional mapping agency and property ownership data obtained from a government agency legally mandated to maintain such information.

### Consistency

The quality of consistency has been defined as “absence of difference when comparing two or more representations of a thing against a definition” ({{DAMA UK Working Group 2013}}). For a heritage inventory, this might include consistently recording ratings of the condition or significance of heritage resources, or consistently classifying heritage resources according to terminology and related concepts in a thesaurus. Any single inventory typically holds data compiled from a multitude of sources. Those sources may include an initial amalgamation of disparate legacy data sets, as well as the contributions of a range of individuals who may have varying interests, expertise, and experience; who may communicate in different primary and secondary languages; or who may be collecting information through varying digital hardware and software. Consistency of information enables carrying out comparative analysis of heritage resources, as well as searching across an entire inventory according to specific attributes. Periodically revising or reworking data may be required to achieve consistency.

### Currency

The quality of currency is the degree to which information is up to date and reflective of the present state of the real world or state of knowledge. To help ensure that decisions affecting heritage places are well informed, managers of inventories strive to keep information up to date to reflect changes in the state of the environment.

The currency of certain types of information, such as the condition of a heritage resource, tends to diminish over time. In most cases, data currency can only be an aspiration due to the number of geographically dispersed heritage places and limited resources, particularly personnel. In such cases, priority can be placed on keeping current specific types of information required to carry out an organization’s core responsibilities, for example, whether heritage resources still exist, their significance and designation status, and perhaps their condition.

Related to information currency, some data quality standards also specify timeliness of information: the timeframe within which certain information is expected to be updated. For example, information on the designation or listing status of heritage resources might be expected to be updated within a few weeks of a change in designation or listing status, whereas for a given heritage site the condition status of individual heritage resources might be expected to be updated annually.

### Accessibility

Accessibility can be defined as the quality of inventory information being readily usable by intended users. For the overarching aims of a heritage inventory program to be realized, an inventory’s information needs to be accessible to a range of users, who very often have differing locations and institutional affiliations. As will be expanded on in later chapters, in some cases access to specific types of information – such as detailed archaeological or indigenous site information – may be restricted by law, or confidentiality considerations may apply.

Far too often, information is less accessible than desired due to limitations of the information technology underlying an inventory system; for example, the system may not be web-based or may have limited search capabilities. Sometimes agencies have no inventory database, and heritage information is maintained within broader planning databases, and that can effectively prevent searching across all heritage information. In cases where digital information is unstructured (e.g., formatted as free text rather than being fielded), searchability is limited. In other cases, inventory data is inaccessible due to constraints of information formats, such as occurs when a digital file format is no longer readable or when analog records have not yet been digitized.

### Security

The quality of security focuses on ensuring that inventory information is protected from accidental loss (including from disasters or conflicts), erasure, corruption, or intentional damage. A fine-tuned heritage inventory and survey program can fail if its information assets are insecure. Security also relates to maintaining privacy and confidentiality of personal or sensitive information, which are sometimes dictated by government regulations. Maintaining information security requires the creation and implementation of security policies and procedures to provide proper backup and auditing of information as well as controls to ensure appropriate access. Measures relating to information security are discussed in **chapter 2**.

### Interoperability

The quality of interoperability is the ability of an information system to provide data in such a way that it can be used by another information system or service without the need for additional work, such as rekeying ({{English Heritage 2012}}). Although not essential for all inventory information systems, interoperability is becoming both advantageous and feasible in an increasing number of cases. Interoperability can enable, for example, integration between inventory systems and external authoritative data sources, such as legally authorized systems managing data on street addresses, land ownership, and locational mapping.

## Additional Principles

It is worth noting two other sets of principles relating to data management and access that may be relevant to heritage inventories. The FAIR Guiding Principles, which are intended to promote data discovery and reuse, provide guidance for helping make data findable, accessible, interoperable, and reusable. The FAIR acronym and principles were defined in a March 2016 paper in the journal *Scientific Data* by a science-focused consortium representing academia, industry, funding agencies, and scholarly publishers ({{Wilkinson et al. 2016}}). The FAIR principles have increasingly been applied in the field of archaeology. Two of the five concepts within FAIR – accessibility and interoperability – are represented in the inventory information qualities proposed above.

Also of relevance, the CARE Principles for Indigenous Data Governance were created by the Global Indigenous Data Alliance ({{Carroll et al. 2020}}) to promote the legal principles underlying the collective and individual data rights set out in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). They are intended to complement the FAIR principles and the broader movement toward open data, to better support the particular rights and interests of indigenous peoples as they relate to data. The CARE Principles strive for the following ({{GIDA 2019}}):

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**Collective Benefit** Data ecosystems shall be designed and function in ways that enable Indigenous Peoples to derive benefit from the data.

**Authority to Control** Indigenous Peoples’ rights and interests in Indigenous data must be recognized and their authority to control such data be empowered.

**Responsibility** Those working with Indigenous data have a responsibility to share how those data are used to support Indigenous Peoples’ self-determination and collective benefit.

**Ethics** Indigenous Peoples’ rights and wellbeing should be the primary concern at all stages of the data life cycle and across the data ecosystem.

**[END BLOCK]**

An inventory program can create metrics to assess the degree to which inventory information reflects whatever key qualities are deemed most appropriate. Such metrics are addressed further in chapter 2 under **Monitoring and Periodic Evaluation**.

1. An entire field of practice focusing on information and data quality has developed guidance, tools, frameworks, and other potentially relevant information resources. One resulting data quality assessment approach is known as *data quality dimensions*. The inventory information characteristics identified here were in part informed by reviewing published guidance on data quality dimensions, such as the DAMA (Data Management Association) UK Working Group on Data Quality Dimensions’ 2013 white paper, which details six key dimensions recommended for assessing or describing data quality: completeness, uniqueness, timeliness, validity, accuracy, and consistency ({{DAMA UK Working Group 2013}}). [↑](#endnote-ref-1)