

Do Community Recommendations Improve Metadata Completeness?

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Background

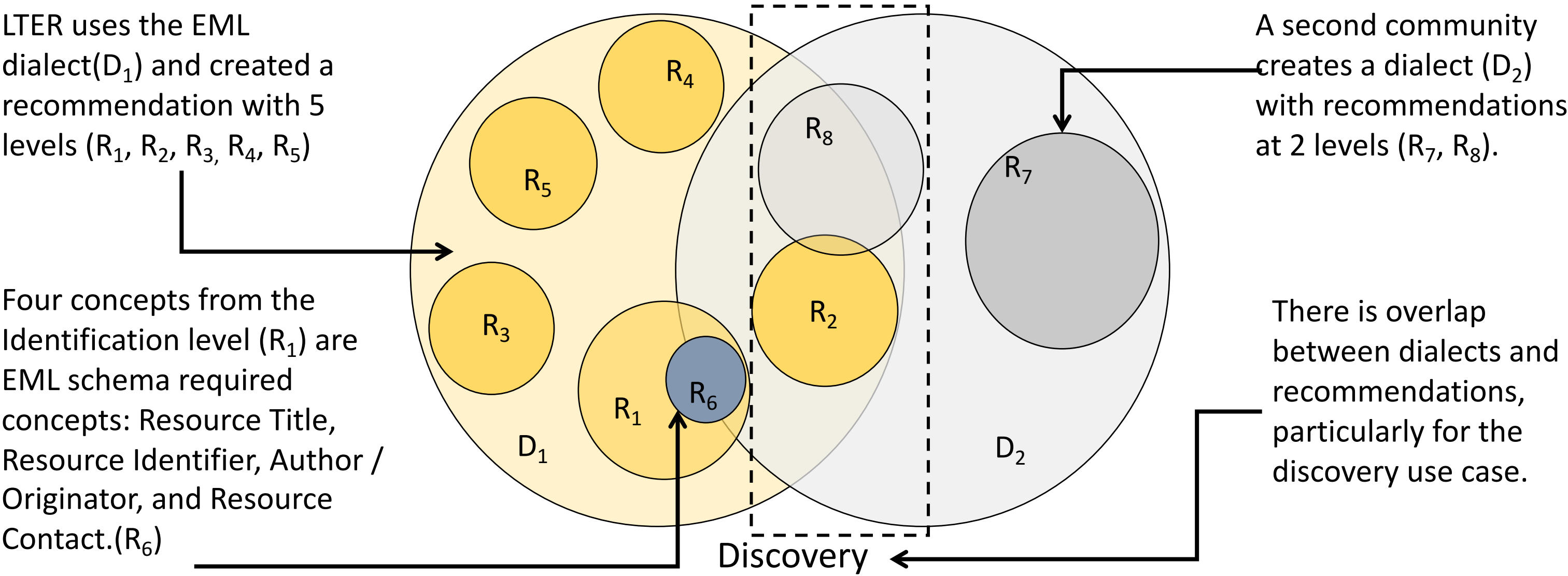
Many communities use the term "standard" when they describe their metadata and, as a result, there are many existing "standards". This approach focuses attention on differences between communities. We use the term "dialect" to focus attention on common concepts and goals.

Recommendations and Dialects:

Recommendations reflect community experiences and documentation needs. Communities have common documentation needs, so recommendations overlap, particularly for the discovery use case. Sharing recommendations is an important mechanism for sharing those experiences and community knowledge.

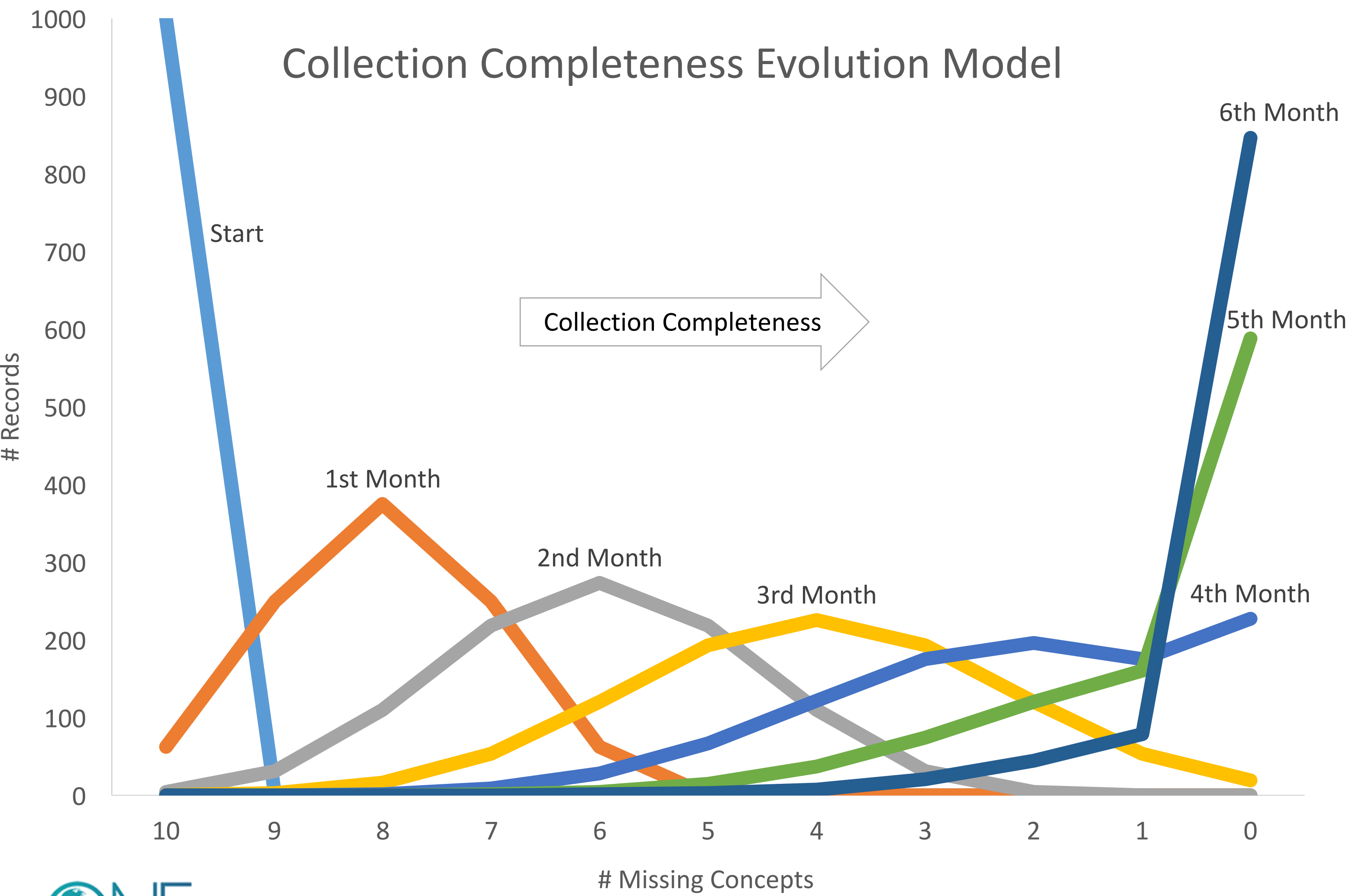
LTER and EML

The Long Range Ecological Network created the LTER Recommendation for Completeness to help guide the creation of Ecological Markup Language records. There are five levels in the LTER recommendation: Identification, Discovery, Evaluation, Access, and Integration. All levels of LTER are subsets of concepts in the EML dialect.



Premise

The LTER Completeness Recommendation includes documentation concepts the LTER community considers important for creating quality metadata. Ideally the completeness of LTER metadata would improve over time. The graph below illustrates how metadata collections evolve towards completeness. The model output improves 50% of 1000 records by one concept each time step. The visualization displays every fourth time step to simulate a 6 month period of collection development.



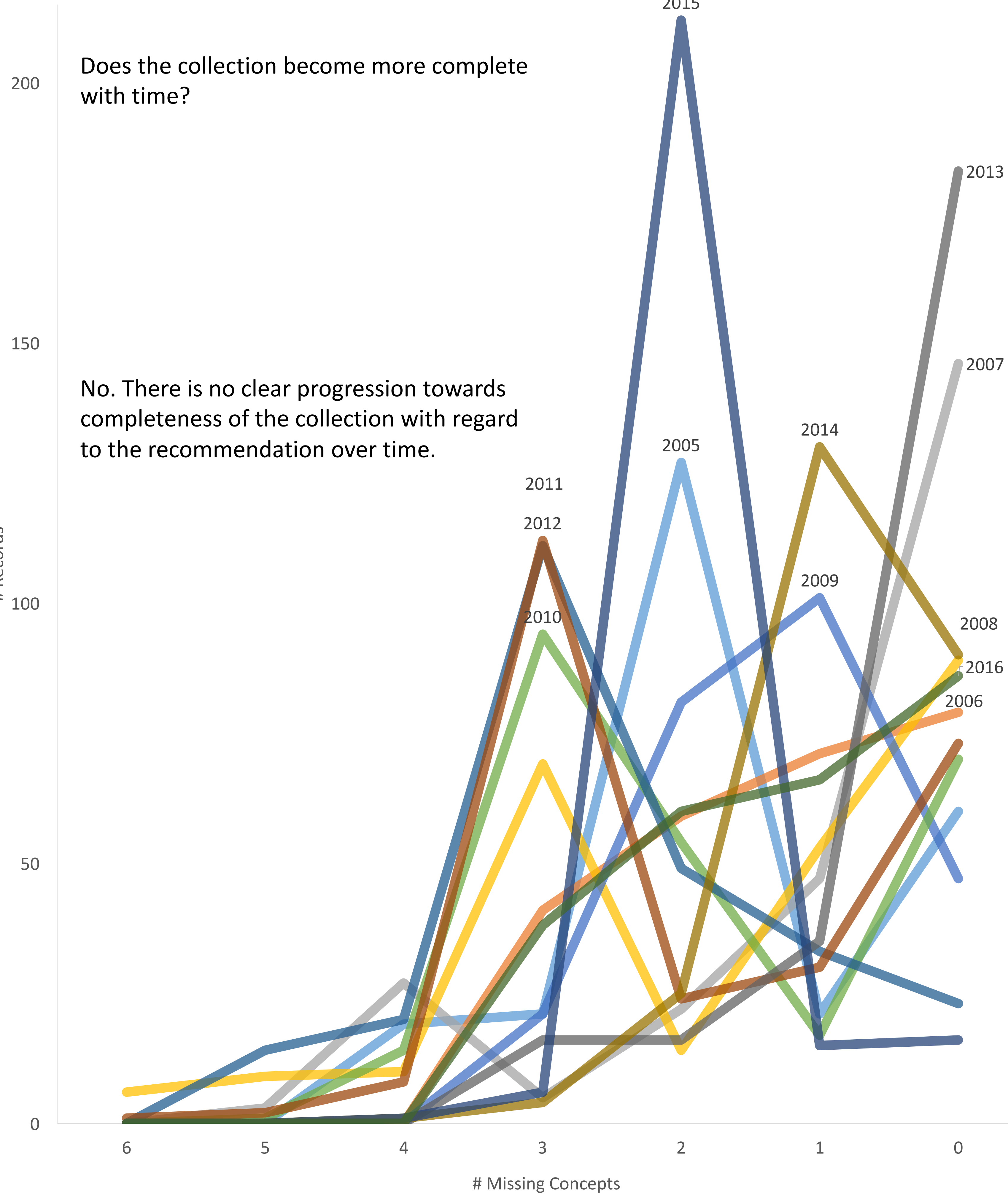
Process

- Sampled 250 LTER metadata records from DataONE to create collections for each year 2005-2016.
- Measured conceptual content existence in each record.
- Analyzed results for LTER Completeness in the Recommendations Analysis Dashboard¹ for each years collection.
- Compared analyses across time periods using collection evolution² analysis and a variation that focuses on individual concept completeness.
- Compared heterogeneity of each collection to completeness using signature score groups¹ and a distribution of completeness for each year.

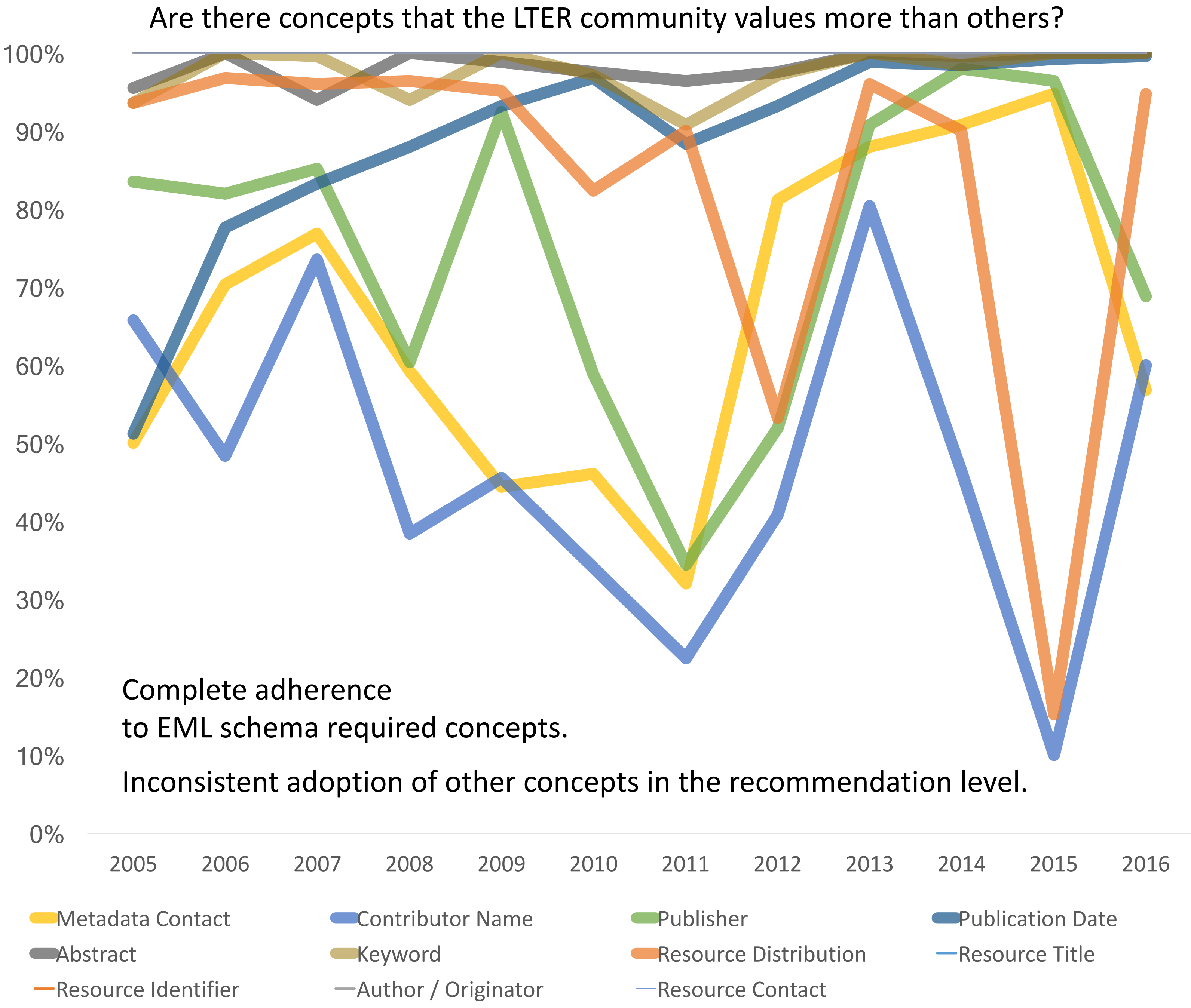
Limitations

- Not a set of records through time.
- Sampling proportion vs sampling size.
- No ethnographic perspective.

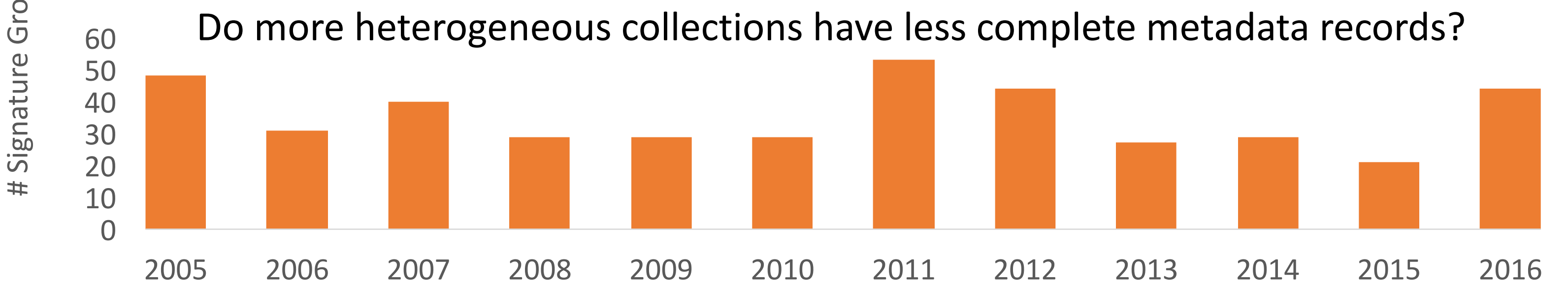
LTER Collection Evolution of LTER Identification



LTER Identification Concept Completeness



LTER Collection Heterogeneity



LTER Identification Completeness Distribution

