Paleo Temporal Coverage

Element Description

The Paleo Temporal Coverage element defines the time period for geologic and/or paleoclimate data. The element is predominantly used for data samples that originated prior to 01-01-0001.

Best Practices

Paleo Temporal Coverage tags identify time periods where geologic and paleoclimate data collection occurred. The time period tags can be used to id entify the start and end dates for data collection. There is also the option to provide the names of the eon, era, period, epoch and stage associated with the data collection. It is suggested that Paleo Temporal Coverage tags are as specific as possible to aid in data discovery. The names of eons, eras, periods, epochs and stages must be selected from a controlled vocabulary list managed by the Keyword Management System (KMS). Because the tags are KMS controlled, if a specific tag is not already included in the KMS, a request to have it added can be made through the GCMD Keywords Community Forum.

It is important to note that even if Paleo Temporal Coverage metadata is provided, it is still required that a Temporal Extent be provided in addition. Please see the Temporal Extent wiki page for details.

Examples:

PaleoTemporalCoverage/StartDate: "560 ka"

PaleoTemporalCoverage/EndDate: "60 ka"

PaleoTemporalCoverage/ChronostratigraphicUnit/Eon: "PHANEROZOIC"

PaleoTemporalCoverage/ChronostratigraphicUnit/Era: "CENOZOIC"

PaleoTemporalCoverage/ChronostratigraphicUnit/Period: "QUATERNARY"

PaleoTemporalCoverage/ChronostratigraphicUnit/Epoch: "PLEISTOCENE"

PaleoTemporalCoverage/ChronostratigraphicUnit/Stage: "LATE"

PaleoTemporalCoverage/StartDate: "175 myr"

PaleoTemporalCoverage/EndDate: "160 myr"

PaleoTemporalCoverage/ChronostratigraphicUnit/Eon: "PHANEROZOIC"

PaleoTemporalCoverage/ChronostratigraphicUnit/Era: "MESOZOIC"

PaleoTemporalCoverage/ChronostratigraphicUnit/Period: "JURASSIC"

PaleoTemporalCoverage/StartDate: "100 ka"

PaleoTemporalCoverage/EndDate: "20 ka"

PaleoTemporalCoverage/ChronostratigraphicUnit/Eon: "PHANEROZOIC"

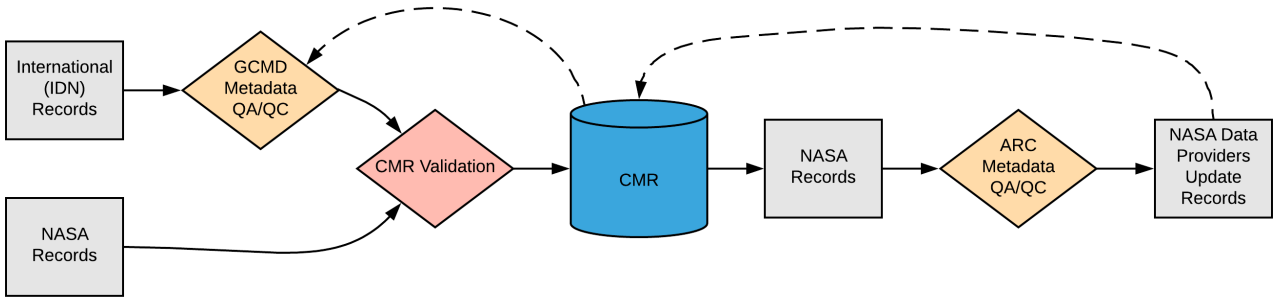
Element Specification

Paleo Temporal Coverage is an optional metadata element, and should only be provided if it is applicable to the dataset. The Paleo Temporal Coverage element may not be repeated (Cardinality: 0..1).

Model	Element	Type	Usable Valid Values	Constraints	Required?	Cardinality	Notes
UMM-C	PaleoTemporalCoverage/PaleoStartDate	String	n/a	1 - 80 characters	No	0..1	Provide a date unit for the start and end date (e.g. myr, ka, mya, B.C., etc.).
UMM-C	PaleoTemporalCoverage/PaleoEndDate	String	n/a	1 - 80 characters	No	0..1	Provide a date unit for the start and end date (e.g. myr, ka, mya, B.C., etc.)
UMM-C	PaleoTemporalCoverage /ChronostratigraphicUnits/Eon	String	GCMD Chronostratigraphic Unit Eon Keywords	KMS controlled	Yes, if applicable	1	Providing Chronostratigraphic Units are optional. If included, the Eon must be provided at a minimum.
UMM-C	PaleoTemporalCoverage /ChronostratigraphicUnits/Era	String	GCMD Chronostratigraphic Unit Era Keywords	KMS controlled	No	0..1	
UMM-C	PaleoTemporalCoverage /ChronostratigraphicUnits/Period	String	GCMD Chronostratigraphic Unit Period Keywords	KMS controlled	No	0..1	
UMM-C	PaleoTemporalCoverage /ChronostratigraphicUnits/Epoch	String	GCMD Chronostratigraphic Unit Epoch Keywords	KMS controlled	No	0..1	
UMM-C	PaleoTemporalCoverage /ChronostratigraphicUnits/Stage	String	GCMD Chronostratigraphic Unit Stage Keywords	KMS controlled	No	0..1	
UMM-C	PaleoTemporalCoverage /ChronostratigraphicUnits /Detailed_Classification	String	n/a		No		

Metadata Validation and QA/QC

All metadata entering the CMR goes through the below process to ensure metadata quality requirements are met. All records undergo CMR validation before entering the system. The process of QA/QC is slightly different for NASA and non-NASA data providers. Non-NASA providers include interagency and international data providers and are referred to as the International Directory Network (IDN).



Please see the expandable sections below for flowchart details.

Manual Review

- Identify errors, discrepancies or omissions.
- Proof all content for conciseness and readability.

XML Schema Validation Only
ARC Priority Matrix

Priority Categorization	Justification

Red = High Priority Finding	This element is categorized as highest priority when:
	• No Paleo Temporal Coverage is provided (for relevant collections).
	• Paleo Temporal Coverage is provided but it is not applicable for the dataset (i.e. data were collected after 0001-01-01).
	• The Paleo Temporal Coverage term does not align with the KMS.
	  ○ The Paleo Temporal Coverage term does not exist in the KMS.
	  ○ A term(s) is missing from the hierarchy.
	  ○ A term(s) is placed in the incorrect position of the hierarchy (e.g. an Eon term is placed in the Epoch field).
	• The Paleo Temporal Coverage term is not appropriate for the dataset.

Yellow = Medium Priority Finding	This element is categorized as medium priority when: • A recommendation is made to add to an existing Paleo Temporal Coverage term in the metadata (i.e. to extend a keyword hierarchy down to a more detailed keyword).
Blue = Low Priority Finding	Not Applicable
Green = No Findings /Issues	The element is provided and follows all applicable criteria specified in the best practices section above.

ARC Automated Checks

ARC uses the pyQuARC library for automated metadata checks. Please see the pyQuARC GitHub for more information.

Dialect Mappings

DIF 9 (Note: DIF-9 is being phased out and will no longer be supported after 2018)

DIF 10

Paleo_Date_Time is an optional element, and should only be provided if it is applicable to the dataset. The Paleo_Date_Time element may not be repeated (Cardinality: 0..1). Please note: This element falls under Temporal_Coverage in DIF 10.

UMM-C Element	DIF 10 Path	Type	Usable Valid Values	Constraints	Required in DIF 10?	Cardinality	Notes
PaleoTemporalCoverage /PaleoStartDate	Temporal_Coverage/Paleo_DateTime /Paleo_Start_Date	String			No	0..1	
PaleoTemporalCoverage /PaleoEndDate	Temporal_Coverage/Paleo_DateTime/Paleo_Stop_Date	String			No	0..1	
PaleoTemporalCoverage /ChronostratigraphicUnit/Eon	Temporal_Coverage/Paleo_DateTime/Chronostratigraphic_Unit/Eon	String	GCMD Chronostratigraphic Unit Eon Keywords	KMS controlled	Yes, if applicable	1	Providing Chronostratigraphic Units are optional. If included, the Eon must be provided at a minimum.
PaleoTemporalCoverage /ChronostratigraphicUnit/Era	Temporal_Coverage/Paleo_DateTime/Chronostratigraphic_Unit/Era	String	GCMD Chronostratigraphic Unit Era Keywords	KMS controlled	No	0..1	
PaleoTemporalCoverage /ChronostratigraphicUnit/Period	Temporal_Coverage/Paleo_DateTime/Chronostratigraphic_Unit/Period	String	GCMD Chronostratigraphic Unit Period Keywords	KMS controlled	No	0..1	
PaleoTemporalCoverage /ChronostratigraphicUnit/Epoch	Temporal_Coverage/Paleo_DateTime/Chronostratigraphic_Unit/Epoch	String	GCMD Chronostratigraphic Unit Epoch Keywords	KMS controlled	No	0..1	
PaleoTemporalCoverage /ChronostratigraphicUnit/Stage	Temporal_Coverage/Paleo_DateTime/Chronostratigraphic_Unit/Stage	String	GCMD Chronostratigraphic Unit Stage Keywords	KMS controlled	No	0..1	
PaleoTemporalCoverage /ChronostratigraphicUnit /Detailed_Classification	Temporal_Coverage/Paleo_DateTime/Chronostratigraphic_Unit /Detailed_Classification	String			No	0..1	

Example Mapping

DIF 10

```
<Temporal_Coverage>
  <Paleo_DateTime>
    <Paleo_Start_Date>340 mya</Paleo_Start_Date>
    <Paleo_Stop_Date>338 mya</Paleo_Stop_Date>
    <Chronostratigraphic_Unit>
      <Eon>PHANEROZOIC</Eon>
      <Era>PALEOZOIC</Era>
      <Period>CARBONIFEROUS</Period>
      <Epoch>MISSISSIPPIAN</Epoch>
    </Chronostratigraphic_Unit>
  </Paleo_DateTime>
</Temporal_Coverage>
```

UMM

```
PaleoTemporalCoverage: [
  {
    Start Date: "340 mya",
    End Date: "338 mya",
    Chronostratigraphic Unit: [
      {
        Eon: "PHANEROZOIC",
        Era: "PALEOZOIC",
            Period: "CARBONIFEROUS",
            Epoch: "MISSISSIPPIAN"
      }
    ]
  }
],
```

ECHO 10

Paleo Temporal Coverage does not map to ECHO 10.

UMM-C Element	ECHO 10 Path	Type	Constraints	Required in ECHO10?	Cardinality	Notes
Paleo Temporal Coverage	N/A	N/A	N/A	N/A	N/A	*Paleo Temporal Coverage does not map to ECHO10.*

ISO 19115-2 MENDS

Paleo Temporal Coverage currently does not map to ISO 19115-2 MENDS.

UMM-C Element	ISO 19115-2 MENDS Path	Type	Notes
Paleo Temporal Coverage	N/A	N/A	N/A

Example Mapping

ISO 19115-2 MENDS

```
N/A
```

UMM

```
N/A
```

ISO 19115-2 SMAP

Paleo Temporal Coverage currently does not map to ISO 19115-2 SMAP.

UMM-C Element	ISO 19115-2 SMAP Path	Type	Notes
Paleo Temporal Coverage	N/A	N/A	N/A

Example Mapping

ISO 19115-2 SMAP

```
N/A
```

UMM

```
N/A
```

UMM Migration

None

History

UMM Versioning

Version	Date	What Changed
1.15.5	12/3/2020	No changes were made for Paleo Temporal Coverage during the transition from version 1.15.4 to 1.15.5
1.15.4	9/18/2020	No changes were made for Paleo Temporal Coverage during the transition from version 1.15.3 to 1.15.4
1.15.3	7/1/2020	No changes were made for Paleo Temporal Coverage during the transition from version 1.15.2 to 1.15.3
1.15.2	5/20/2020	No changes were made for Paleo Temporal Coverage during the transition from version 1.15.1 to 1.15.2
1.15.1	3/25/2020	No changes were made for Paleo Temporal Coverage during the transition from version 1.15.0 to 1.15.1
1.15.0	2/26/2020	No changes were made for Paleo Temporal Coverage during the transition from version 1.14.0 to 1.15.0
1.14.0	10/21/2019	No changes were made for Paleo Temporal Coverage during the transition from version 1.13.0 to 1.14.0
1.13.0	04/11/2019	No changes were made for Paleo Temporal Coverage during the transition from version 1.12.0 to 1.13.0
1.12.0	01/22/2019	No changes were made for Paleo Temporal Coverage during the transition from version 1.11.0 to 1.12.0.
1.11.0	11/28/2018	No changes were made for Paleo Temporal Coverage during the transition from version 1.10.0 to 1.11.0.
1.10.0	05/02/2018	No changes were made to Paleo Temporal Coverage in the transition from UMM Version 1.9.0 to 1.10.0.
1.9.0		

ARC Documentation

Version	Date	What Changed	Author
1.0	05/04/2018	Recommendations/priority matrix transferred from internal ARC documentation to wiki space	Jeanne' le Roux