

MSDI Open Forum

Data Discovery

Introduction

- Discovery of data is important
- It is prominent in descriptions of SDI:
 - The SDI provides a basis for spatial **data discovery**, evaluation, and application for users and providers within all levels of government, the commercial sector, the non-profit sector, academia and by citizens in general (The SDI Cookbook)*
- Standardisation is important
- Searching should be made easy for users

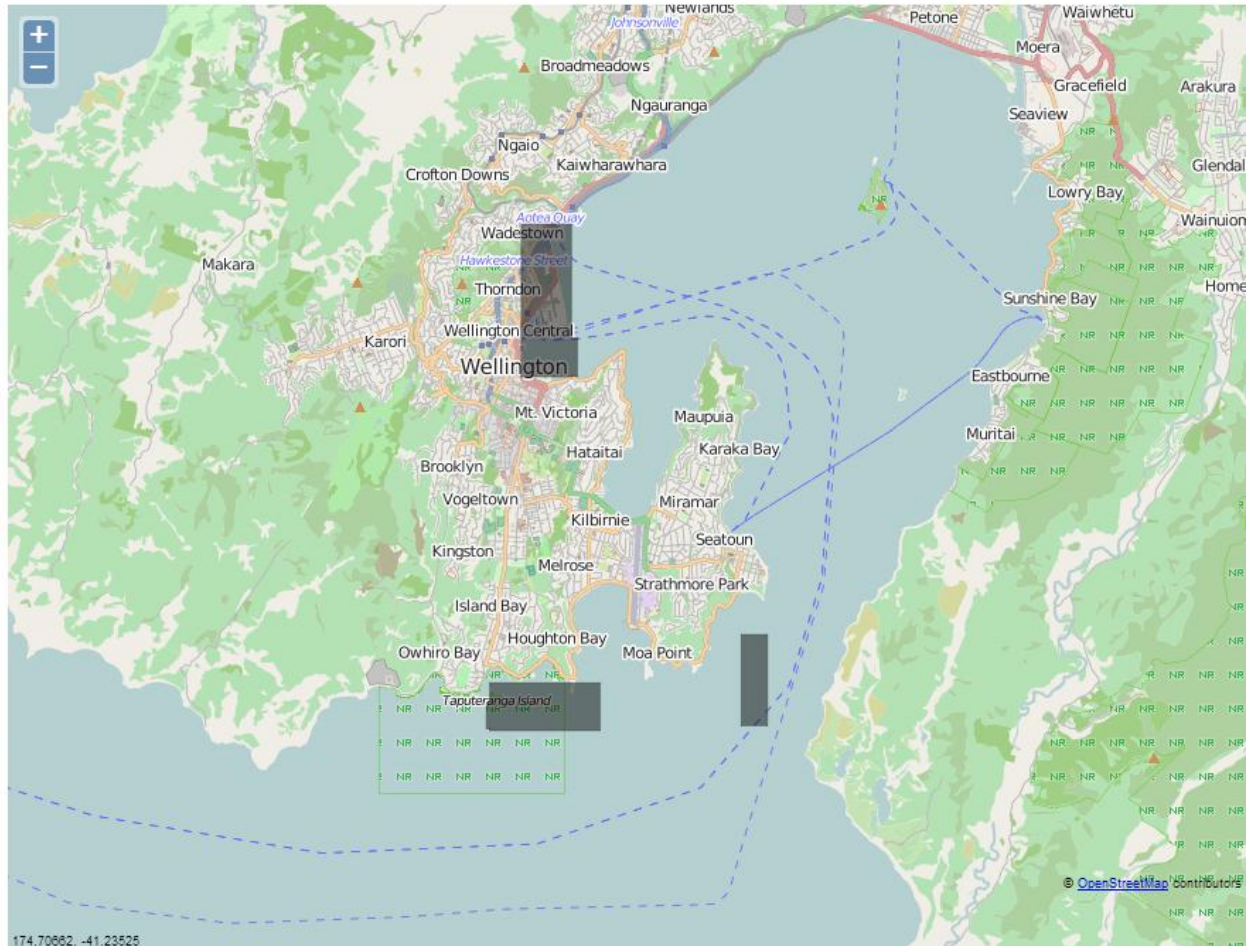
Discovery to download workflow

- Search
- Review
 - Optional – look at full metadata
 - Optional – look at graphic of data
- Download

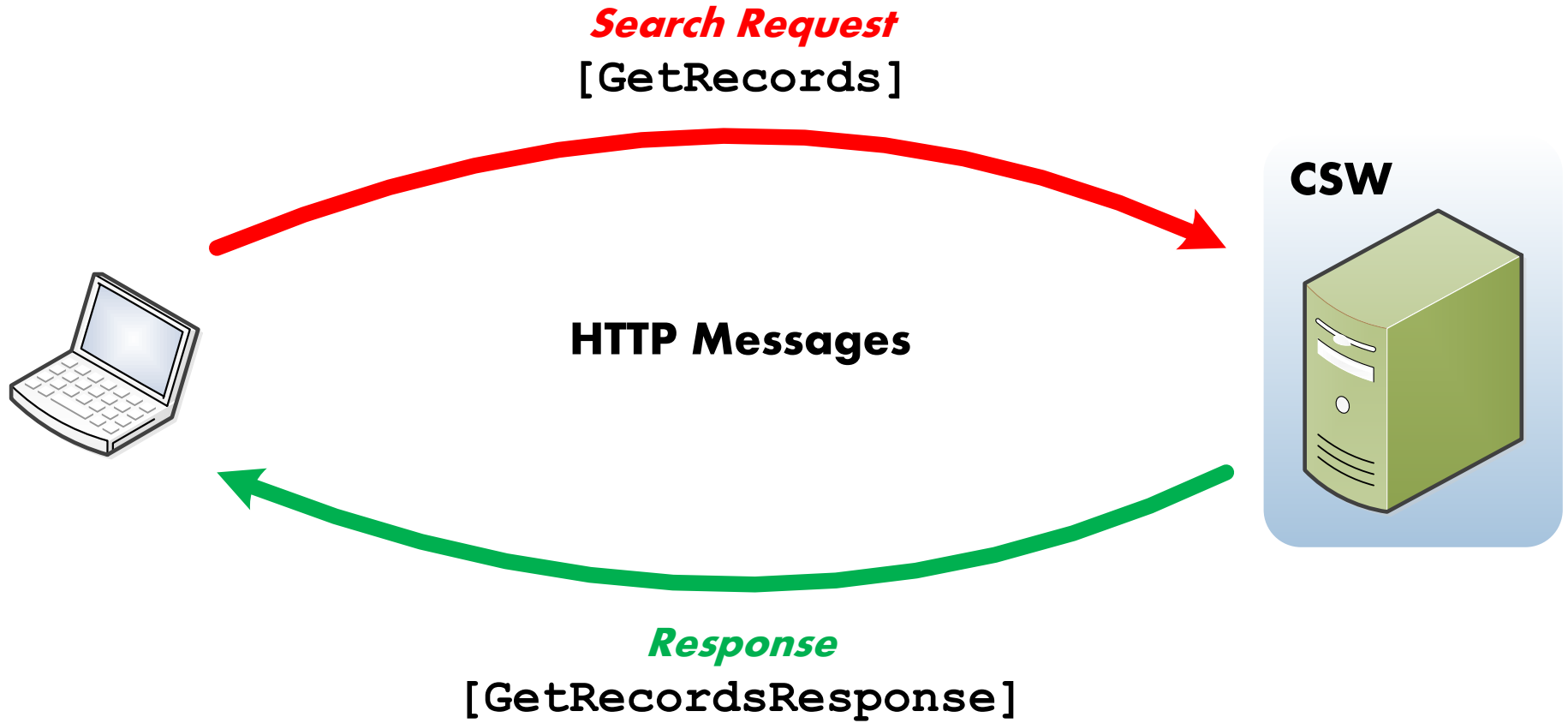
- The workflow may:
 - Be implemented in a web application
 - Be integrated in a desktop application

Discovery

- 1 - 10 of 21
- Area3-7101 240kHz-Taputerang**
Bathymetry acquired during Shallow Survey 2012
 - EM2040 NIWA Wharves and por**
Bathymetry acquired during Shallow Survey 2012
 - HMNZS Wellington and Taputerang**
Bathymetry acquired during Shallow Survey 2012
 - Area2-7101 240kHz-Wellington I**
Bathymetry acquired during Shallow Survey 2012
 - HMNZS Wellington Wreck Surve**
Bathymetry acquired during Shallow Survey 2012
 - EM2040 NIWA Wharves and por**
Bathymetry acquired during Shallow Survey 2012
 - Wharves and Port Infrastructure**
Bathymetry acquired during Shallow Survey 2012
 - Barrett Reef Depth**
Bathymetry acquired during Shallow Survey 2012



Interaction on searching



GetRecordsResponse

GetRecordsResponse

Record

Record

Record

...

```
<csw:Record>  
  <dc:identifier>d44bfb70-9924-46ab-9f6e-cea235cec2d1</dc:identifier>  
  <dc:title>Area3-7101 240kHz-Taputeranga Nature Reserve 1m</dc:title>  
  <dct:abstract>Bathymetry acquired during Shallow Survey 2012</dct:abstract>  
  <ows:BoundingBox crs="urn:ogc:def:crs:EPSG::4326">  
    <ows:LowerCorner>-41.354698181152344 174.77072143554688</ows:LowerCorner>  
    <ows:UpperCorner>-41.35067468136549 174.79173233546317</ows:UpperCorner>  
  </ows:BoundingBox>  
</csw:Record>
```


GetRecordsResponse

MD_Metadata

MD_Metadata

MD_Metadata

...

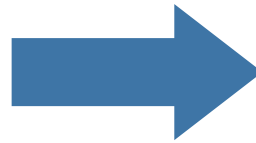
```

</gmd:MD_Distribution>
  <gmd:distributionInfo>
    <gmd:MD_Distribution>
      <gmd:distributionFormat>
        <gmd:MD_Format>
          <gmd:name gco:nilReason="missing"/>
          <gmd:version gco:nilReason="missing"/>
        </gmd:MD_Format>
      </gmd:distributionFormat>
      <gmd:transferOptions>
        <gmd:MD_DigitalTransferOptions>
          <gmd:onLine>
            <gmd:CI_OnlineResource>
              <gmd:linkage>
                <gmd:URL>http://jrapaportws.caris.priv/sfs/services/ows/wcs/shallo
              </gmd:linkage>
              <gmd:protocol>
                <gco:CharacterString>OGC:WCS-1.1.0-http-get-coverage</gco:Characte
              </gmd:protocol>
            </gmd:CI_OnlineResource>
          </gmd:onLine>
        </gmd:MD_DigitalTransferOptions>
      </gmd:transferOptions>
    </gmd:MD_Distribution>
  </gmd:distributionInfo>
</gmd:MD_Metadata>

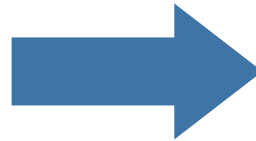
```

Innovation

The CSW standard type



An extension to the CSW type to include more properties



Discovery Record

```
<csw:Record>
  <dc:identifier>d44bfb70-9924-46ab-9f6e-cea235cec2d1</dc:identifier>
  <dc:title>Area3-7101 240kHz-Taputeranga Nature Reserve 1m</dc:title>
  <dct:abstract>Bathymetry acquired during Shallow Survey 2012</dct:abstract>
  <ows:BoundingBox crs="urn:ogc:def:crs:EPSG::4326">
    <ows:LowerCorner>-41.354698181152344 174.77072143554688</ows:LowerCorner>
    <ows:UpperCorner>-41.35067468136549 174.79173233546317</ows:UpperCorner>
  </ows:BoundingBox>
</csw:Record>
```

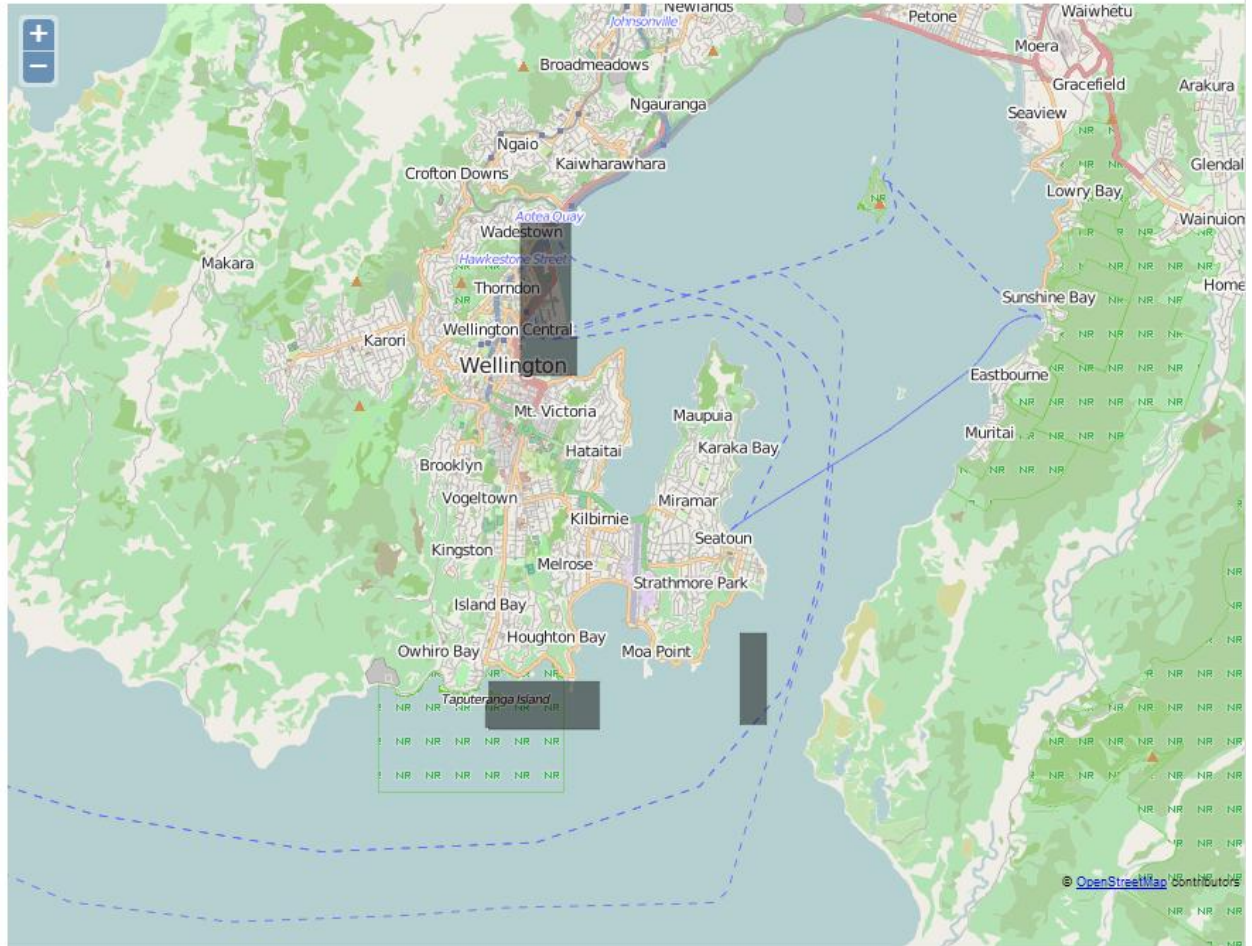
```
<dsc:DiscoveryRecord>
  <dc:identifier>d44bfb70-9924-46ab-9f6e-cea235cec2d1</dc:identifier>
  <dc:title>Area3-7101 240kHz-Taputeranga Nature Reserve 1m</dc:title>
  <dct:abstract>Bathymetry acquired during Shallow Survey 2012</dct:abstract>
  <ows:BoundingBox crs="urn:ogc:def:crs:EPSG::4326">
    <ows:LowerCorner>-41.354698181152344 174.77072143554688</ows:LowerCorner>
    <ows:UpperCorner>-41.35067468136549 174.79173233546317</ows:UpperCorner>
  </ows:BoundingBox>
  <dsc:Link protocol="OGC:WCS-1.1.0-http-get-coverage">...</dsc:Link>
  <dsc:Link protocol="http://www.opengis.net/wcs/1.1/describeCoverage">...</dsc:Link>
</dsc:DiscoveryRecord>
```

Discovery

caris

shallow

- 1 - 10 of 21
- Area3-7101 240kHz-Taputerang**
Bathymetry acquired during Shallow Survey 2012
 - EM2040 NIWA Wharves and por**
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Bathymetry acquired during Shallow Survey 2012
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Bathymetry acquired during Shallow Survey 2012
 - Barrett Reef Depth**
Bathymetry acquired during Shallow Survey 2012



Present data as HTML

<http://data.gov.uk/dataset/2002-09-27-ministry-of-defence-fountain-lake-safety-of-navigation>

The screenshot shows the Data.gov.uk website interface. At the top, there is a search bar and navigation links for Home, Data, Apps, and Interact. Below this is a green navigation bar with links for Datasets, Map Search, Data Requests, Publishers, Public Roles & Salaries, OpenSpending, Spend Reports, and Site Analytics. The main content area displays the dataset title '2002-09-27 - Ministry of Defence - Fountain Lake - Safety of navigation' with a breadcrumb trail: Home / Datasets / 2002-09-27 - Ministry of Defence - Fountain Lake - Safety of navigation. Below the title, it states 'Published by United Kingdom Hydrographic Office. Licensed under OGL Open Government Licence.' and shows an openness rating of five stars. The 'Responsible Party' is listed as 'Data Archive Centre (custodian); Royal Navy (originator)'. A 'Mapping' section features the 'uk location' logo. The 'DATASET EXTENT' section provides the following coordinates: Latitude: 50.8147° to 50.8114° and Longitude: -1.1029° to -1.0940°. A map below shows the location of Fountain Lake near Portsmouth, with labels for Gosport, Portsmouth, Portsea, Fratton, North End, and Hilsea. The map includes road markers for A27 and M275.

DATA.GOV.UK Beta
Opening up Government

Search for data...

Home Data Apps Interact

Datasets Map Search Data Requests Publishers Public Roles & Salaries
OpenSpending Spend Reports Site Analytics

Home / Datasets / 2002-09-27 - Ministry of Defence - Fountain Lake - Safety of navigation

2002-09-27 - Ministry of Defence - Fountain Lake - Safety of navigation

Published by United Kingdom Hydrographic Office. Licensed under **OGL** Open Government Licence.
Openness rating: ☆☆☆☆☆

Responsible Party: Data Archive Centre (custodian); Royal Navy (originator)

UKHO Bathymetry - IHO Sea: English Channel - 21. Survey Start: 2002-09-16. Survey End: 2002-09-27. Principal Vessel: Not Known. Primary Instrument Type: Echosounder - single beam. Primary Navigation Type: GPS.

Mapping |

DATASET EXTENT

Latitude: 50.8147° to 50.8114°
Longitude: -1.1029° to -1.0940°


Contains Ordnance Survey data (c) Crown copyright and database right [2012]. Contains Royal Mail data (c) Royal Mail copyright and database right [2012]. Contains bathymetry data by GEBCO (c) Copyright [2012]. Contains data by Land & Property Services (Northern Ireland) (c) Crown copyright [2012].

GOSPORT PORTSMOUTH
Portsea Fratton Fratton
North End Hilsea
A27 M275

In different ways...

http://portal.oceannet.org/search/full/catalogue/ukho.ac.uk_MEDIN_2.3_e3fdc658-627c-3603-a787-9fb7fd470c7b.xml

Working together
to improve access and stewardship of marine data



MEDIN
marine environmental
data & information network

about us | joining MEDIN | subscribe to Marine Data Newsletter | contact us | site map

Search

- home
- data discovery portal
- online data by theme
- data submission
- marine data standards
- library

Metadata: 2002-09-27 - Ministry of Defence - Fountain Lake - Safety of navigation

Overview

Abstract: UKHO Bathymetry - IHO Sea: English Channel - 21. Survey Start: 2002-09-16. Survey End: 2002-09-27. Principal Vessel: Not Known. Primary Instrument Type: Echosounder - single beam. Primary Navigation Type: GPS.

Data holder: Data Archive Centre

Online resource present: ●

Use constraints:

- Open Government Licence. Not to be used for navigation. Acknowledgement of Originator/Owner as source is required.

Details

Details for the metadata are as follows:

You are searching for...
everything in the catalogue.
6087 results returned in 1.29 seconds.
[View the catalogue](#) or [Edit this search](#).

Download

The metadata is available for downloading in the following formats:


- [MEDIN format](#) (CSV)
- [MEDIN format](#) (XML version 2.3.1)
- [Dublin Core format](#) (XML)
- [GCMD DIF format](#) (XML version 9.4)

This metadata complies with [INSPIRE](#) and [GEMINI 2](#) standards.


Add your own record [here](#).

A [light version](#) of the portal is available for mobile and other limited browsers.

Geographic Extent



The metadata covers the following areas:
- [-1.1029576°W, -1.094006°E](#)
[50.8147439°N, 50.8114631°S](#)

 KML

Unique resource identifier (info)	RSDRA2006000360205
Abstract (info)	UKHO Bathymetry - IHO Sea: English Channel - 21. Survey Start: 2002-09-16. Survey End: 2002-09-27. Principal Vessel: Not Known. Primary Instrument Type: Echosounder - single beam. Primary Navigation Type: GPS.
Resource locator	http://aws2.caris.com/sfs/services/ows/wcs/UKHO_WCS?

HTML – lost in transformation

- Designed for presentation
- Structured data are often converted to HTML
- Meaning of the data is masked

Metadata content model (ISO 19115 / ISO 19139)

```
<gmd:title>  
  <gco:CharacterString>HMNZS Wellington and Taputeranga Reserve Survey_05m </gco:CharacterString>  
</gmd:title>
```

HTML

```
<tr valign="top">  
  <td class="RowHeader">Title:</td>  
  <td class="RowText">HMNZS Wellington and Taputeranga Reserve Survey_05m</td>  
</tr>
```


Present data in different ways

<http://data.gov.uk/api/2/rest/package/2002-09-27-ministry-of-defence-fountain-lake-safety-of-navigation>

```
a048-22a744ead872", "type": "organization", "id": "465afad4-effd-46ec-af28-d212e2bb9140", "name": "united-kingdom-hydrographic-office"}, "name": "2002-09-27-ministry-of-defence-fountain-lake-safety-of-navigation", "isopen": false, "notes_rendered": "<p>UKHO Bathymetry - IHO Sea: English Channel - 21. Survey Start: 2002-09-16. Survey End: 2002-09-27. Principal Vessel: Not Known. Primary Instrument Type: Echosounder - single beam. Primary Navigation Type: GPS.</p>", "url": null, "ckan_url": "http://data.gov.uk/dataset/2002-09-27-ministry-of-defence-fountain-lake-safety-
```

<http://www.ukho.gov.uk/inspire/metadata/e3fdc658-627c-3603-a787-9fb7fd470c7b.xml>

```
▼<gmd:MD_Metadata xmlns:gmd="http://www.isotc211.org/2005/gmd" xmlns:gmx="http://www.isotc211.org/2005/gmx"
  xmlns:gml="http://www.opengis.net/gml/3.2" xmlns:gco="http://www.isotc211.org/2005/gco"
  xmlns:xlink="http://www.w3.org/1999/xlink">
  ▼<gmd:fileIdentifier>
    <gco:CharacterString>e3fdc658-627c-3603-a787-9fb7fd470c7b</gco:CharacterString>
  </gmd:fileIdentifier>
  ▼<gmd:language>
    <gmd:LanguageCode codeList="http://www.loc.gov/standards/iso639-2/" codeListValue="eng">eng</gmd:LanguageCode>
  </gmd:language>
  ▼<gmd:hierarchyLevel>
    <gmd:MD_ScopeCode codeList="http://standards.iso.org/iso/19139/resources/codelist/gmxCodeLists.xml#MD_ScopeCode"
      codeListValue="dataset">dataset</gmd:MD_ScopeCode>
  </gmd:hierarchyLevel>
  ▼<gmd:contact>
    ▼<gmd:CI_ResponsibleParty>
      ▼<gmd:organisationName>
        <gco:CharacterString>Data Archive Centre</gco:CharacterString>
```

microdata

- Provides a way of weaving meaning into HTML
- Applications can parse it and understand data
- An example is Schema.org
- A microdata vocabulary used by search engines
- Used to provide rich snippets in search results

[Chuck's Awesome Poutine Recipe - Food Network Canada](#)



www.foodnetwork.ca/recipe/chucks...poutine/11311/ ▼

★★★★★ Rating: 3.7 - 76 reviews - 55 mins

Chuck Hughes' twist on a French Canadian classic is sure to cure any savoury craving.

[Beer Steamed Mussels Recipe - Food Network Canada](#)



www.foodnetwork.ca/recipe/beer-steamed-mussels/6300/ ▼

★★★★★ Rating: 3.6 - 16 reviews - 30 mins

2 pounds P.E.I. mussels, bearded and scrubbed well to remove dirt (908 grams). ¼ cup butter (60 ml). 1 large sweet onion, sliced. 2 cloves garlic, finely sliced.

Demonstrator

<http://demo.caris.com/discover/index.html>

caris

Discover - Bathymetry

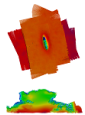
Title:

Bathymetry Data Catalogue

Description:

Catalogue of Bathymetry collected for Shallow Survey 2012. Sourced from Land Information New Zealand data. Crown Copyright Reserved. Further information: Original source data supplied for use in the following exercises is used with permission from Shallow Survey 2012. Source data was supplied to Shallow Survey 2012 by the following manufacturers: Applied Acoustics, GeoAcoustics, Kongsberg, Reson, and R2 Sonic. ENCs, GeoTIFFs and HCRF format charts are provided by Land Information New Zealand (LINZ).

Datasets



[Patch Test Data over HMNZS South Seas_05m](#)

[HMNZS Wellington and Taputeranga Reserve Survey_05m](#)

caris

[Go to data catalogue](#)

Title:

HMNZS Wellington and Taputeranga Reserve Survey_05m

Description:

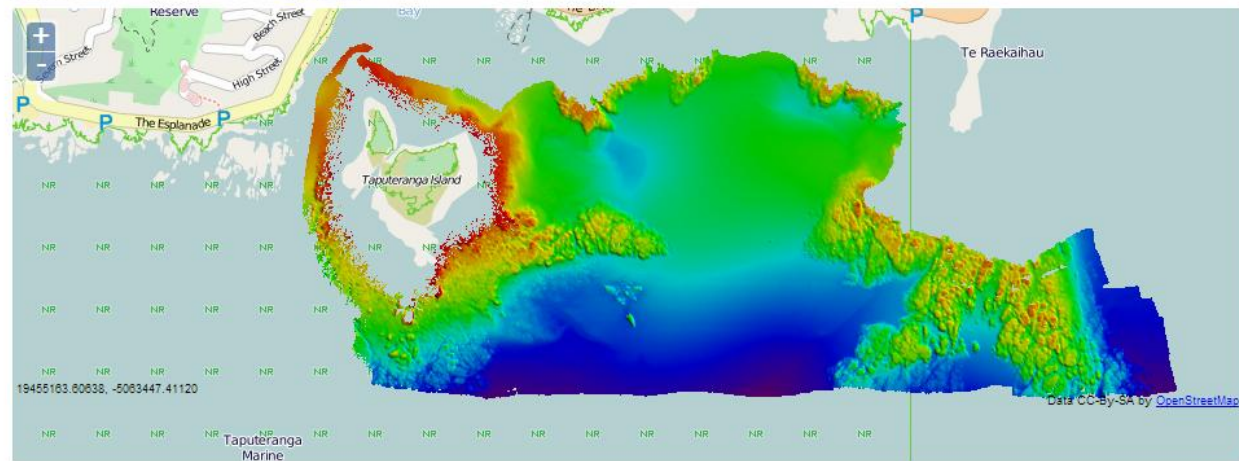
Bathymetry collected for Shallow Survey 2012. Sourced from Land Information New Zealand data. Crown Copyright Reserved. Further information: Original source data supplied for use in the following exercises is used with permission from Shallow Survey 2012. Source data was supplied to Shallow Survey 2012 by the following manufacturers: Applied Acoustics, GeoAcoustics, Kongsberg, Reson, and R2 Sonic. ENCs, GeoTIFFs and HCRF format charts are provided by Land Information New Zealand (LINZ).

Identifier:

e9dad1b0-205f-363f-9b16-9fec420df715

Download:

[GeoTIFF](#)



Discover - Bathymetry

Microdata – Schema.org

```
<div itemprop="spatial" itemscope itemtype="http://schema.org/Place">
  <div itemprop="geo" itemscope itemtype="http://schema.org/GeoCoordinates">
    <meta itemprop="latitude" content="-41.3507875"/>
    <meta itemprop="longitude" content="174.7848215"/>
  </div>
  <div itemprop="geo" itemscope itemtype="http://schema.org/GeoShape">
    <meta itemprop="box" content="174.771582 -41.35544 174.771582 -41.346135 174.798061 -41.346135
174.798061 -41.35544 174.771582 -41.35544"/>
  </div>
</div>
```

```
<tr valign="top">
  <td class="RowHeader">Title:</td>
  <td class="RowText" itemprop="name">HMNZS Wellington and Taputeranga Reserve Survey_05m</td>
</tr>
<tr valign="top">
  <td class="RowHeader">Description:</td>
  <td class="RowText" itemprop="description">Bathymetry collected for Shallow Survey 2012. Sourced from
Land Information New Zealand data. Crown Copyright Reserved. Further information: Original source data
supplied for use in the following exercises is used with permission from Shallow Survey 2012. Source data
was supplied to Shallow Survey 2012 by the following manufacturers: Applied Acoustics, GeoAcoustics,
Kongsberg, Reson, and R2 Sonic. ENC's, GeoTiffs and HCRF format charts are provided by Land Information
New Zealand (LINZ).
  </td>
</tr>
```

Structured data testing tool

<http://www.google.com/webmasters/tools/richsnippets>

Extracted structured data

Item

type:	http://schema.org/dataset
property:	
keywords:	bathymetry
keywords:	elevation
catalog:	<i>Item 1</i>
name:	HMNZS Wellington and Taputeranga Reserve Survey_05m
description:	Bathymetry collected for Shallow Survey 2012. Sourced from Land Information New Zealand data. Crown Copyright Reserved. Further information: Original source data supplied for use in the following...
distribution:	<i>Item 2</i>
spatial:	<i>Item 3</i>

Item 1

type:	http://schema.org/datacatalog
property:	
url:	Go to data catalogue

Summing up

- Adherence to standards is important
- It is possible to innovate on the standards
- This can bring benefits to users
 - Smoothing workflows
- Consider also discovery workflows using the infrastructure of the web

References

Description	URL
microformats	http://microformats.org/
microdata	http://microformats.org/wiki/microdata
Schema.org	http://schema.org/
Enabling web search	http://geospatial.blogs.com/geospatial/2009/10/foss4g-open-source-georest-project-announced.html
Nanaimo Property Search	http://maps.nanaimo.ca/data/property/
The SDI Cookbook	http://www.gsdidocs.org/GSDIWiki/index.php/Chapter_1#Spatial_Data_Infrastructures

caris[®]
www.caris.com