

# Fishing Trip Data

## A Proposed XML Data Standard

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## ***Fishing Trip Data – A Proposed XML Data Standard***

### **Why Standardize Fishing Trip Data?**

Fisheries management and related organizations around the world are implementing new conservation-based programs and regulations. These initiatives require a substantial increase in the amount of information that must be collected so that conservation data can be tracked and regulations can be enforced.

As fisheries organizations implement changes, they may benefit from sharing information in order to gauge their progress and work on mutual issues that have to be addressed. The sharing of data will be greatly facilitated through standardized formatting.

In order to enforce conservation requirements (e.g. catch quotas), the timely collection of data is crucial. Many jurisdictions are addressing this need by implementing systems to allow fishing vessels to submit data concerning fishing trips in electronic format. These systems are often referred to as “electronic logbooks”, “e-logbooks”, or “e-logs”.

As expertise is developed in e-logs and the implementation of new regulations and requirements, a standard format will allow experts to make their knowledge available to many organizations, allowing those organizations to implement improvements to their systems faster and at a lower cost.

There are various sets of data that could be standardized and shared between fishery management groups apart from fishing trip data. Fish stock assessments, fishing quotas, and seafood processing information are examples of such data. Standardization of these data sets is beyond the scope of this document. Fishing trip data is of great importance as it provides a window into the quantity of aquatic life being harvested from the oceans and other bodies of water, which forms the basis of the urgent conservation initiatives now taking place around the world.

### **Why XML?**

Extensible Markup Language (XML) has emerged as a widely-adopted standard for the exchange and formatting of data. Advantages of XML include its simplicity and the ease with which a person with limited technical knowledge can read and understand the raw XML data. As such, XML is largely self-documenting, which makes it relatively simple to debug invalid data. For these reasons, the proposed fishing trip data standard is based upon XML.

The main downside of XML is that it is verbose, resulting in larger file sizes for the same data relative to other data exchange formats. The following table illustrates the differences between XML and another data format, using a catch record as an example:

#### **XML Format**

```
<catch>
  <species code>HAL</species code>
  <fao_species_code>HAP</fao_species_code>
  <species_name>Pacific Halibut</species_name>
  <weight>68</weight>
```

#### **Comma-Separated Values Format**

```
"HAL","HAP","Pacific Halibut","68",
"5","Y","Y","RET","Retained"
```

```
<quantity>5</quantity>
<marketable>Y</marketable>
<legal>Y</legal>
<utilization_code>RET</utilization_code>
<utilization_name>Retained</utilization_name>
</catch>
```

The advantage of XML is that the “data dictionary” is built-in. With a format such as CSV (comma-separated values), the data is only meaningful if the dictionary is known. The data dictionary would indicate that the first value in the CSV list is the species code, the second value is the FAO code, the third value is the name of the species, the fourth value is the weight, and so on. If a person reads the CSV file and is not familiar with the dictionary, much of the data will be meaningless. Even with knowledge of the dictionary, the CSV file is much harder to read.

The advantage of the CSV file is that it takes up less space and can be transmitted faster by electronic means. Such advantages are of greater importance when data is sent over slower connections such as a satellite link to a vessel at sea. There are, however, ways to reduce the size of the XML data, which will be discussed later in this document.

One of the greatest advantages of XML is that it is “extensible”. Every fishery in every country is going to need to track data that is unique. For instance, using the previous catch example, suppose that a fishery management organization needed to track the life stage of the catch (e.g. “Adult” or “Juvenile”). To accommodate this, the XML file could simply include the data inside a “life\_stage” tag (e.g. `<life_stage>Adult</life_stage>`). The tag and its content could appear anywhere inside the `<catch>` node. When the XML file is provided to a different organization, the life\_stage tag will not be recognized and will simply be ignored. By comparison, it would be problematic to include the additional data field in the CSV file without requiring the data recipient to make programming changes. It is this flexibility that makes the XML format so useful and widespread.

If you are not familiar with the XML format and would like more information, an excellent tutorial can be found at: <http://www.w3schools.com/xml/default.asp>.

## Contributing to this Standard via FisheryStandards.org

FisheryStandards.org serves as a central hub for fisheries professionals to create, discuss, and develop fisheries management standards in the areas of data, terminology, and methodology.

This document, along with electronic copies of sample .xml files and the schema (.xsd file) for the fishing trip data standard are available to the public at the FisheryStandards.org website (<http://www.fisherystandards.org>).

A key component of the website is a set of discussion forums. A group of forums has been created for the proposed fishing trip data standard. Forums have been established for overall discussion, and forums that match each major section of this document have also been set-up.

Readers of this document who also have a background in fisheries, fisheries management, or fisheries data are invited to contribute to the standards put forward on

FisheryStandards.org. Such contributions will be used to develop the fishing trip data standard and other fisheries management standards.

### **Target Recipients and Uses of Proposed XML Data**

The proposed XML format is intended for use by organizations that collect, analyze, and report on fishing activity from various sources. The target organizations may include the following:

- **Government Departments - Regional:** Regional fisheries ministries/departments may collect, analyze, and report on trip data from a variety of trips and fisheries that it administers.
- **Government Departments – National:** Fishing trip data may be submitted to a national governmental body for compilation, analysis, and reporting at a nationwide level.
- **External Governments:** Data regarding specific fisheries may be shared between governments that have reciprocal treaties in place.
- **International Oversight Organizations:** The European Union and the United Nations' Food and Agriculture Organization are examples of organizations that oversee fisheries on an international and global level.
- **Conservation/Environmental Groups:** The World Wildlife Fund is an example of a group that monitors fishing activity and its impact on the global environment.
- **Scientific Research Groups:** Fishing trip data may be of great value to researchers who are conducting scientific studies of fishing activity and its impact on ecosystems.

### **Other Fishery Data Standards**

Outside of any standards proposed or established by FisheryStandards.org, several organizations have already established or are actively pursuing standards for fisheries data. They include the United Nations Food and Agriculture Organization (Worldwide), the European Commission (EU), ICES (Europe), and AFMA (Australia).

#### **FAO: Fishery Codes**

The Food and Agriculture Organization of the United Nations has put a great deal of time and effort into the establishment of international standards for fishing-related code data. For example, codes have been set-up for a huge number of species as well as ocean areas, gear types, vessel types, and much more.

The FAO stores its fisheries code information in a database known as "FIGIS" (Fisheries Global Information System). An interface is available at:

<http://www.fao.org/figis/servlet/RefServlet>. It can be used to look-up and browse through the codes and their corresponding descriptions and other data.

Since the FAO codes are a de-facto international standard, their use is recommended and is provided for in the fishing trip data format proposed in this document. At the same time, the use of local codes is also accommodated by the proposed standard. For example, when dealing with species, a <species\_code> element is provided for locally understood codes, and an <fao\_species\_code> element is also provided. For organizations that use the FAO codes as their regular species codes, both elements would contain the same value.

**European Commission: E-Logbooks**

The European Commission has introduced regulations requiring all European Union member nations to submit fishing logbook data electronically, with the first phase of implementation to take place in January, 2010.

E-logbook requirements can be found on the fisheries website of the European Commission at: [http://ec.europa.eu/fisheries/cfp/control\\_enforcement/ers\\_en.htm](http://ec.europa.eu/fisheries/cfp/control_enforcement/ers_en.htm).

Specific XML file layout data can be found at:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:295:0003:0019:EN:PDF>.

**ICES: Data Format for Sampling, Landings, and Effort**

The International Council for the Exploration of the Sea (ICES) coordinates and promotes marine research on oceanography, the marine environment, the marine ecosystem, and on living marine resources in the North Atlantic.

In July, 2009, ICES published a paper: "Definition of Standard Data-Exchange Format for Sampling, Landings, and Effort Data from Commercial Fisheries", which defines an XML format for fisheries data. The format is described in the paper's executive summary as follows:

*A data format for sampling, landings, and effort data from commercial fisheries is defined and suggested as a standard for the exchange of data between partners in the community of fishery research, advice, and management of the Northeast Atlantic, including the Mediterranean and Black seas.*

The report can be accessed at: <http://www.ices.dk/pubs/crr/crr296/CRR%20296.pdf>.

**AFMA: E-Logbooks**

The Australian Fisheries Management Authority (AFMA) is introducing electronic logbooks as an alternative method for the reporting of catch and effort by fishers. The AFMA has published its e-log specifications (based upon the XML format) in order to facilitate the development of e-log software by third-party vendors.

The specifications are available at:

[http://www.afma.gov.au/industry/logbooks/guide\\_vendors.htm](http://www.afma.gov.au/industry/logbooks/guide_vendors.htm)

## ***Details of Proposed XML Format***

This section of the document provides a description of each major node in the proposed format. Since the proposed format is only a proposal and will be subject to changes based upon feedback, “discussion points” are introduced in this section. Discussion points will revolve around questions and ideas for feedback. When feedback results in suggested changes to the proposed format, such changes may be implemented based upon a consensus of participants.

## **Overall XML Document Format**

The XML document uses version 1.0 of XML and UTF-8 encoding. An individual XML document consists of data at the fishing **trip** level. As such, the top-level element is <trip>.

The proposed format stores all data within elements – Element attributes are not used. Element names are verbose as their purpose is to be self-explanatory. The use of attributes and shorter element names has been avoided for the sake of simplicity in understanding the raw data in the XML file.

The sample file and sections in this document contain elements that may be redundant, depending upon the target systems. For example, it may not be necessary to accompany each species code with the species name if the target system’s database contains the codes and descriptions and looks up the incoming codes to ensure their validity. It is up to the system planners and developers to decide whether to include such elements. This document includes the potentially redundant elements so that they are fully documented.

## **Core Elements for Minimal Reporting**

The amount of data included in a trip document will vary depending upon the data required by the target organization and privacy/security concerns of the submitting organization.

At a minimum, a trip document should convey information that answers the following questions:

- What was caught?
- How much of it was caught?
- When was it caught?
- Which general area was it caught in?

Any further information might be excluded due to confidentiality concerns. For example:

- Who caught it? Information such as vessel name, skipper name, or licence could personally identify the skipper or fishers and their success at the business of fishing.

- Which *specific* location was it caught in? This could reveal secret fishing spots to the detriment of fishers who are aware of those places and the species that inhabit those areas.
- How was it caught (gear types)? Revealing the gear (or combinations of gear) could reveal secret fishing technique information.

As each element is discussed in this document, it will be marked as “Core Data” if it must be included in the data for *any* trip.

### Discussion Points:

- *What would be a good, easily remembered name for the proposed standard? How about “FTML” – Fishing Trip Markup Language (pronounced “fitmel”)? Alternative suggestions are welcome!*
- *<trip> was chosen as the top-level element because a trip defines a discreet set of fishing activity. A trip does not have to be the voyage of a vessel. It could also define a visit to the shoreline by land (e.g. for clam digging, collection of seaweed, diving, etc.). Is “trip” the best top-level element name? If not, what are the alternatives?*
- *Should a single XML document be able to contain more than one trip (in which case the top-level element would be “<trips>” or “<trip\_list>”)? The disadvantage is that a single document could be huge, making parsing and validation a lengthy process and making the identification and correction of errors more difficult.*
- *Are there compelling reasons to store some of the data in element attributes rather than solely within the element tags? If so, what are they?*
- *Are the element names too verbose? Is it worth sacrificing simplicity in order to save space? Why?*
- *Some element names are used repeatedly under different parent elements. For example, <species\_code> and <species\_name> are sub-elements of <target\_species>, <retainable\_bycatch\_species>, and <catch> (which itself may be a sub-element of <activity\_catch\_list> or <offloaded\_catch>). Is this acceptable, or is it considered to be better practice to uniquely name such elements, based upon their parent node(s)?*
- *Is the correct XML terminology used throughout this document?*

## <submitting\_body> Node

**Note:** Submitting Body is the first of each major “node” to be covered in this document. To get an understanding of each node’s context in an XML fishing trip document, please refer to the sample files in appendices A and B.

**Purpose:** To identify the country and organization that is submitting the trip data, as well as the person(s) to contact for administrative or technical issues.

### Elements with Values:

Parent Node	Element Name	Description	Mandatory*
<submitting_body>	<trip_submitter_id>	A value that uniquely identifies the submitting organization to the target system. Used in conjunction with <trip_number> to uniquely identify the trip.	Yes Core Data
<submitting_body>	<country>	Container for sub-elements that indicate the code and name of the country of the submitting body.	No
<country>	<country_code>	Contains the two-letter ISO 3166 standard country code	No
<country>	<country_name>	Country Name	No <sup>1</sup>
<submitting_body>	<submitting_body_name>	Name of submitting organization.	No
<submitting_body>	<region_name>	Name of submitting organization’s regional office that is providing the trip data.	No
<submitting_body>	<administrative_contact>	Container for sub-elements regarding the administrative contact person.	No
<administrative_contact>	<name>	Name of contact person in the organization for administrative purposes.	No
<administrative_contact>	<email>	Administrative contact’s email address	No
<administrative_contact>	<phone>	Administrative contact’s telephone number in any format	No
<administrative_contact>	<address>	Administrative contact’s address in any format	No
<administrative_contact>	<fax>	Administrative contact’s fax number in any format	No
<submitting_body>	<technical_contact>	Container for sub-elements regarding the technical contact person.	No
<technical_contact>	<name>	Name of contact person in the organization for technical purposes.	No
<technical_contact>	<email>	Technical contact’s email address	No
<technical_contact>	<phone>	Technical contact’s telephone number in any format	No
<technical_contact>	<address>	Technical contact’s address in any format	No
<technical_contact>	<fax>	Technical contact’s fax number in any format	No

\* Elements shown as mandatory are required only if the target system does not already have knowledge of the submitting party and cannot derive the information based upon the <trip\_submitter\_id> element value.

<sup>1</sup> Country name is not required if the target system can derive the country name from the <country\_code> value.

### Discussion Points:

- *Should any additional contact information be required?*
- *Contact name, phone, address, and fax do not have specific formatting requirements as they are just for informational purposes. Does this have any potentially serious negative consequences?*

### Example:

```
<submitting_body>
  <trip_submitter_id>55555</trip_submitter_id>
  <country>
    <country_code>OC</country_code>
    <country_name>Oceanica</country_name>
  </country>
  <submitting_body_name>Oceanica Department of Fisheries</submitting_body_name>
  <region_name>Western Region</region_name>
  <administrative_contact>
    <name>Pearl Neptune</name>
    <email>pearl.neptune@fisheries.gov.oc</email>
    <phone>+99 (999) 999-9999</phone>
    <address>P.O. Box 99, Main Post Office, Capital City, Oceanica, 9999</address>
    <fax>+99 (999) 111-1111</fax>
  </administrative_contact>
  <technical_contact>
    <name>Pearl Neptune</name>
    <email>pearl.neptune@fisheries.gov.oc</email>
    <phone>+99 (999) 999-9999</phone>
    <address>P.O. Box 99, Main Post Office, Capital City, Oceanica, 9999</address>
    <fax>+99 (999) 111-1111</fax>
  </technical_contact>
</submitting_body>
```

## <header> Node

**Purpose:** To provide top-level “parent” data for the trip.

### Elements with Values:

Parent Node	Element Name	Description	Mandatory
<header>	<trip_number>	A number that, in combination with <trip_submitter_id> uniquely identifies the trip.	Yes Core Data
<header>	<trip_revision_number>	A sequential number signifying the version of the trip data. <sup>1</sup>	Yes Core Data
<header>	<trip_completed>	Contains “Y” if trip is completed, or “N” if not. <sup>2</sup>	Yes Core Data
<header>	<trip_approval_code>	If the submitting organization issues an approval number or code when a vessel or fisher has been “cleared” to make the trip, that number/code may be recorded here.	No
<header>	<unit_of_measure_list>	Container for sub-elements that indicate the units of measure indicated by various numbers in the XML document	Yes Core Data
<unit_of_measure_list>	<weight_units>	Indicates the units of measure for weight elements in the document. Value must be “kilograms”, “pounds”, “tonnes” (1,000 kilograms.) or “tons” (2,000 pounds.).	Yes Core Data
<unit_of_measure_list>	<speed_units>	Units of measure for speed-related elements (e.g. <tow_speed>). Value must be “kph”, “mph”, or “knots”.	No <sup>3</sup>
<unit_of_measure_list>	<length_units>	Units of measure for length-related elements (e.g. <gear_line_length>). Must be “metres”, “meters”, or “feet”.	No <sup>3</sup>
<unit_of_measure_list>	<depth_units>	Units of measure for depth-related elements (e.g. <tow_start_depth>). Must be “metres”, “meters”, “feet”, or “fathoms”.	No <sup>3</sup>
<unit_of_measure_list>	<mesh_units>	Units of measure for mesh size elements (e.g. <gear_mesh_size>). Must be “centimetres”, “centimeters”, or “inches”.	No <sup>3</sup>
<header>	<fishery_list>	Container for <fishery> sub-element(s).	Yes Core Data
<fishery_list>	<fishery>	Container for sub-elements that identify the fishery/fisheries for which	Yes Core Data

		the trip is taking place.	
<fishery>	<fishery_id>	A unique identifier for the fishery. May be used in conjunction with <trip_submitter_id> to uniquely identify the fishery.	Yes Core Data
<fishery>	<fishery_name>	Name of the fishery.	No <sup>4</sup>
<fishery>	<season_id>	A unique identifier for the fishing season. May be used in conjunction with <trip_submitter_id> to uniquely identify the season.	No
<fishery>	<season_name>	Name of the season (e.g. "2010 Herring Fishery")	No <sup>5</sup>
<fishery>	<season_start_date>	The date on which the applicable season opened.	No
<fishery>	<season_end_date>	The date on which the applicable season closed.	No <sup>6</sup>
<fishery>	<target_species_list>	Container for sub-elements that identify the species that are targeted by the fishery.	No <sup>7</sup>
<target_species_list>	<target_species>	Container for sub-elements that provide information about a target species.	No <sup>7</sup>
<target_species>	<species_code>	Submitting organization's unique code for the species.	No <sup>8</sup>
<target_species>	<fao_species_code>	FAO standard code for the species.	No <sup>8</sup>
<target_species>	<species_name>	The common name of the species.	No <sup>8,9</sup>
<retainable_bycatch_species_list>	<fishery>	Container for list of non-target species that may be retained within the current fishery (if applicable).	No <sup>10</sup>
<retainable_bycatch_species>	<retainable_bycatch_species_list>	Container for sub-elements that provide information about a retainable bycatch species.	No <sup>10</sup>
<retainable_bycatch_species>	<species_code>	Submitting organization's unique code for the species.	No <sup>8,10</sup>
<retainable_bycatch_species>	<fao_species_code>	FAO standard code for the species.	No <sup>8,10</sup>
<retainable_bycatch_species>	<species_name>	The common name of the species.	No <sup>8,10</sup>
<fishery>	<fishery_licence> or <fishery_license>	Container for sub-elements that provide information about the licence issued under the current fishery for the current trip. This node and its elements also allow U.S. spelling "license".	No <sup>11</sup>
<fishery_licence> or <fishery_license>	<licence_id> or <license_id>	Unique identifier for the licence. May be used in conjunction with <trip_submitter_id> to	No <sup>11</sup>

		uniquely identify the licence.	
<fishery_licence> or <fishery_licence>	<licence_number> or <license_number>	Number or code that is printed on the licence to identify it. May be same as <licence_id>	No <sup>12</sup>
<fishery_licence> or <fishery_licence>	<licence_issue_name> or <license_issue_name>	Name of the person or company to whom the licence was issued.	No <sup>12</sup>
<fishery_licence> or <fishery_licence>	<licence_type_name> or <license_type_name>	Name of the licence type (e.g. Rockfish Longline).	No <sup>12</sup>
<header>	<vessel>	Container for sub-elements that provide information about the vessel that is carrying-out the trip	No <sup>13</sup>
<vessel>	<vessel_id>	Unique identifier for the vessel. May be used in conjunction with <trip_submitter_id> to uniquely identify the vessel.	No <sup>13</sup>
<vessel>	<hull_id>	Identification markings on the hull of the vessel.	No <sup>14</sup>
<vessel>	<vessel_name>	Name of the vessel.	No <sup>14</sup>
<vessel>	<owner_name>	Name of the individual, company, or group that owns the vessel.	No <sup>14</sup>
<header>	<master>	Container for sub-elements that identify the master (skipper) of the vessel for the trip.	No <sup>15</sup>
<master>	<master_id>	Unique identifier for the master. May be used in conjunction with <trip_submitter_id> to uniquely identify the master.	No <sup>15</sup>
<master>	<master_name>	Full name of the master of the vessel.	No <sup>16</sup>

**<sup>1</sup> Trip Revision Number Notes:**

The <trip\_revision\_number> should be a sequential number. The first time that an organization submits a trip, the trip revision number should be set to 1. When the target organization's system receives a new trip document, it should search for any existing trips in its database where the <trip\_submitter\_id> and <trip\_number> values match the new trip. If no matches are found, the new trip is inserted (after passing validation). If one or more existing trips are found, the system determines the highest revision number of matching existing trips. The system will then compare the highest existing revision number with the new one. If the new revision number is greater than the highest previous revision number, the new version of the trip is inserted, otherwise, an error will be returned. Procedures for dealing with trip revision errors should be established and agreed upon between the submitting and target organizations.

<sup>2</sup> If <trip\_completed> has a value of "Y", the trip is considered to be flagged as completed. This means that the trip has landed and offloaded and no further data is expected. This allows for partially incomplete trips to be received (e.g. fishing is currently underway). Later revisions will contain further trip data and the final revision will be flagged as completed. The submitting and target organizations need to agree upon and establish rules regarding whether new revisions may be accepted for trips that have already been flagged as completed. The target organization's system should enforce such rules.

<sup>3</sup> Each unit of measure element is required if the document includes related elements. For example, if the trip involves trawling and the <gear> node of the document includes the <tow\_speed> element, then the <speed\_units> element must be present and contain an accepted value.

<sup>4</sup> The <fishery\_name> element is not required if the target system can derive the fishery name from the <fishery\_id> value.

<sup>5</sup> The <season\_name> element is required if the target system cannot derive the value from <season\_id>.

<sup>6</sup> Should be provided if a <season\_start\_date> has been provided, but may be excluded if the season end date is not known at the time when the trip data was submitted. The season end date may not be known if the fishery continues until a set amount of catch or effort has been attained.

<sup>7</sup> Required if target species are included in the document.

<sup>8</sup> Wherever a group of three species-related tags are found, to indicate a combination of species code, FAO, species code, and species name, the following rules apply:

a) The species code element is provided for local codes that may be used to identify individual species. The code for each species may vary from one organization to another. If uniform codes are required from various organizations, use of the FAO species code element is suggested.

b) FAO species codes are standardized, three-character unique identifiers from the United Nations Food and Agriculture Organization's FIGIS database. FIGIS does not include all species. Many non-marketable incidental bycatch species are excluded. If there is no FIGIS code for the species, the element should contain a "0" (zero) and a value must be provided for the species code element.

c) The species name element is required if the target system cannot derive the value from the species code or FAO species code elements.

<sup>9</sup> The <species\_name> element is required if the target system cannot derive the value from <species\_code> or <fao\_species\_code>.

<sup>10</sup> Required if retainable bycatch species are included in the document.

<sup>11</sup> Required only if the licence is to be identified. These elements may be excluded due to privacy concerns.

<sup>12</sup> Required only if the licence is to be identified and the target system cannot derive <licence\_number>, <licence\_issue\_name>, and <licence\_type\_name> from <licence\_id>.

<sup>13</sup> Required only if the vessel is to be identified. These elements may be excluded due to privacy concerns. Exclude these elements for trips that have no vessel (e.g. fishing from shore).

<sup>14</sup> Required only if the vessel is to be identified and the target system cannot derive <hull\_id>, <vessel\_name>, and <owner\_name> from <vessel\_id>.

<sup>15</sup> Required only if the master is to be identified. These elements may be excluded due to privacy concerns. Exclude these elements for trips that have no vessel (e.g. fishing from shore).

<sup>16</sup> Required only if the master is to be identified and the target system cannot derive <master\_name> from <master\_id>.

### **Discussion Points:**

- *Is there agreement on how trip revision numbers should be handled (see "Trip Revision Number Notes" in the footnotes below the preceding table). If not, what changes or other methods for handling revisions are suggested?*
- *Should unit of measure element values be set to standard abbreviations instead of full words (e.g. "m" instead of "metres" and "kts" instead of "knots")? If so, which abbreviations should be used?*

- *Regarding units of measure, they have been defined under the <header> node to avoid repetition. Should these elements be moved into their applicable sections and associated with the elements that they apply to? For example, in the <gear> node, should the <tow\_speed> element be followed by <tow\_speed\_units>? Alternatively, if it is decided that element attributes should be used, should the units be an attribute (e.g. <tow\_speed units="knots">2.1</tow\_speed>)?*

### Example:

```

<header>
  <trip_number>1</trip_number>
  <trip_revision_number>1</trip_revision_number>
  <trip_completed>Y</trip_completed>
  <trip_approval_code>83157</trip_approval_code>
  <unit_of_measure_list>
    <weight_units>kilograms</weight_units>
    <speed_units>knots</speed_units>
    <length_units>metres</length_units>
    <depth_units>metres</depth_units>
    <mesh_units>centimetres</mesh_units>
  </unit_of_measure_list>
  <!-- START FISHERY LIST -->
  <fishery_list>
    <fishery>
      <fishery_id>999</fishery_id>
      <fishery_name>General Trawl</fishery_name>
      <season_id>888</season_id>
      <season_name>2010</season_name>
      <season_start_date>2010-04-01</season_start_date>
      <season_end_date>2010-10-01</season_end_date>
      <target_species_list>
        <target_species>
          <species_code>HAL</species_code>
          <fao_species_code>HAP</fao_species_code>
          <species_name>Pacific Halibut</species_name>
        </target_species>
        <target_species>
          <species_code>SDF</species_code>
          <fao_species_code>DGX</fao_species_code>
          <species_name>Spiny Dogfish</species_name>
        </target_species>
        <target_species>
          <species_code>YER</species_code>
          <fao_species_code>RRV</fao_species_code>
          <species_name>Yelloweye Rockfish</species_name>
        </target_species>
        <target_species>
          <species_code>CPR</species_code>
          <fao_species_code>SJF</fao_species_code>
          <species_name>Copper Rockfish</species_name>
        </target_species>
        <target_species>
          <species_code>SBF</species_code>
          <fao_species_code>SAB</fao_species_code>
          <species_name>Sablefish</species_name>
        </target_species>
        <target_species>
          <species_code>HAD</species_code>

```

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    <fao_species_code>HAD</fao_species_code>
    <species_name>Haddock</species_name>
  </target_species>
  <target_species>
    <species_code>SKT</species_code>
    <fao_species_code>SKX</fao_species_code>
    <species_name>Skate</species_name>
  </target_species>
  <target_species>
    <species_code>LSL</species_code>
    <fao_species_code>LEM</fao_species_code>
    <species_name>Lemon Sole</species_name>
  </target_species>
  <target_species>
    <species_code>DSL</species_code>
    <fao_species_code>MIP</fao_species_code>
    <species_name>Dover Sole</species_name>
  </target_species>
</target_species_list>
<retainable_bycatch_species_list>
  <retainable_bycatch_species>
    <species_code>NCD</species_code>
    <fao_species_code>CDZ</fao_species_code>
    <species_name>Northern Cod</species_name>
  </retainable_bycatch_species>
  <retainable_bycatch_species>
    <species_code>POC</species_code>
    <fao_species_code>OQF</fao_species_code>
    <species_name>Pacific Octopus</species_name>
  </retainable_bycatch_species>
</retainable_bycatch_species_list>
<fishery_licence>
  <!-- fishery_licence section may not be provided depending upon privacy concerns -->
  <licence_id>456456</licence_id>
  <licence_number>GF-456456-2010</licence_number>
  <licence_issue_name>John Highliner</licence_issue_name>
  <licence_type_name>Mixed Groundfish Trawl</licence_type_name>
</fishery_licence>
</fishery>
<fishery>
  <fishery_id>972</fishery_id>
  <fishery_name>Rockfish Longline</fishery_name>
  <season_id>554</season_id>
  <season_name>2010</season_name>
  <season_start_date>2010-04-01</season_start_date>
  <season_end_date>2010-05-15</season_end_date>
  <target_species_list>
  <target_species>
    <species_code>HAL</species_code>
    <fao_species_code>HAP</fao_species_code>
    <species_name>Pacific Halibut</species_name>
  </target_species>
  <target_species>
    <species_code>SDF</species_code>
    <fao_species_code>DGX</fao_species_code>
    <species_name>Spiny Dogfish</species_name>
  </target_species>
  <target_species>
    <species_code>YER</species_code>
    <fao_species_code>RRV</fao_species_code>
    <species_name>Yelloweye Rockfish</species_name>
  </target_species>
</target_species_list>

```

```

<target_species>
  <species_code>CPR</species_code>
  <fao_species_code>SJF</fao_species_code>
  <species_name>Copper Rockfish</species_name>
</target_species>
<target_species>
  <species_code>QBR</species_code>
  <fao_species_code>SGF</fao_species_code>
  <species_name>Quillback Rockfish</species_name>
</target_species>
<target_species>
  <species_code>TGR</species_code>
  <fao_species_code>RNV</fao_species_code>
  <species_name>Tiger Rockfish</species_name>
</target_species>
<target_species>
  <species_code>CHR</species_code>
  <fao_species_code>RVN</fao_species_code>
  <species_name>China Rockfish</species_name>
</target_species>
<target_species>
  <species_code>LST</species_code>
  <fao_species_code>SJZ</fao_species_code>
  <species_name>Longspine Thornyhead</species_name>
</target_species>
<target_species>
  <species_code>SST</species_code>
  <fao_species_code>SJU</fao_species_code>
  <species_name>Shortspine Thornyhead</species_name>
</target_species>
</target_species_list>
<retainable_bycatch_species_list>
<retainable_bycatch_species>
  <species_code>BON</species_code>
  <fao_species_code>BZX</fao_species_code>
  <species_name>Bonito</species_name>
</retainable_bycatch_species>
<retainable_bycatch_species>
  <species_code>LNG</species_code>
  <fao_species_code>LIN</fao_species_code>
  <species_name>Ling</species_name>
</retainable_bycatch_species>
<retainable_bycatch_species>
  <species_code>CGE</species_code>
  <fao_species_code>CGZ</fao_species_code>
  <species_name>Conger Eel</species_name>
</retainable_bycatch_species>
<retainable_bycatch_species>
  <species_code>GTU</species_code>
  <fao_species_code>SCF</fao_species_code>
  <species_name>Greenland Turbot</species_name>
</retainable_bycatch_species>
</retainable_bycatch_species_list>
<fishery_licence>
  <!-- fishery_licence section may not be provided depending upon privacy concerns -->
  <licence_id>998877</licence_id>
  <licence_number>LL-998877-2010</licence_number>
  <licence_issue_name>John Highliner</licence_issue_name>
  <licence_type_name>Rockfish Longline</licence_type_name>
</fishery_licence>
</fishery>
</fishery_list>

```

```
<!-- END FISHERY LIST -->
<!-- START VESSEL - May not be provided depending upon privacy concerns -->
<vessel>
  <vessel_id>12345</vessel_id>
  <hull_id>14K 98765</hull_id>
  <vessel_name>My Boat</vessel_name>
  <owner_name>Oceanica Harvesters Ltd.</owner_name>
</vessel>
<!-- END VESSEL -->
<!-- START MASTER - May not be provided depending upon privacy concerns -->
<master>
  <master_id>54321</master_id>
  <master_name>John Highliner</master_name>
</master>
<!-- END MASTER -->
</header>
```

**<departure> Node**

**Purpose:** To record the starting port and date for the trip and additional information as required.

**Elements with Values:**

Parent Node	Element Name	Description	Mandatory
<departure>	<port_code>	Code to uniquely identify the port that was closest to the place from which the trip started.	Yes Core Data
<departure>	<port_name>	The name of the port that is identified by <port_code>	No <sup>1</sup>
<departure>	<departure_date>	The date when the trip started.	Yes Core Data
<departure>	<departure_time>	The time of day when the trip started.	No – Exclude if departure time is not recorded.
<departure>	<crew_count>	The number of crew on board when the trip started.	No
<departure>	<observer_onboard>	Set value to “Y” if one or more independent individuals are onboard to monitor the trip. If not, set to “N”.	No
<departure>	<observer_list>	Container for list of observers.	No <sup>2</sup>
<observer_list>	<observer>	Container for sub-elements that identify an individual observer.	No <sup>2</sup>
<observer>	<observer_id>	Unique identifier for an independent observer. May be used in conjunction with <trip_submitter_id> to uniquely identify the observer.	No <sup>2</sup>
<observer>	<observer_name>	The full name of the observer.	No <sup>2,3</sup>
<departure>	<electronic_monitoring_onboard>	Set value to “Y” if trip is monitored electronically.	No
<departure>	<em_equipment_approval_code>	If electronic monitoring equipment must be inspected or certified prior to start of trip and if an inspection or certification code is issued, it may be recorded here.	No
<departure>	<expected_return>	Sub-node for information about the place and date for the end of the trip.	No
<expected_return>	<port_code>	Code to uniquely	No

		identify the port that the skipper expects to return to at the end of the trip.	
<expected_return>	<port_name>	The name of the port that is identified by <port_code>	No <sup>1</sup>
<expected_return>	<offload_location_id>	Uniquely identifies the offload location (e.g. company dock) where the initial offload of catch will take place.	No
<expected_return>	<offload_location_name>	The name of the offload location that is identified by <offload_location_id>	No <sup>4</sup>
<expected_return>	<expected_return_date>	The date when the trip is expected to end.	No
<expected_return>	<expected_fishing_area_list>	Sub-node for list of areas in which the skipper anticipates fishing.	No <sup>5</sup>
<expected_fishing_area_list>	<expected_fishing_area>	Container for sub-elements that identify an expected fishing area	No <sup>5</sup>
<expected_fishing_area>	<fao_major_area_id>	FAO standard code for the major global area in which the expected fishing area is located.	No <sup>6</sup>
<expected_fishing_area>	<area_id>	Uniquely identifies the area in which the skipper expects fishing to take place.	No <sup>5</sup>
<expected_fishing_area>	<area_name>	Name of the expected fishing area.	No <sup>7</sup>

<sup>1</sup> The <port\_name> is required if the target system cannot derive it from <port\_id>.

<sup>2</sup> Required only if <observer\_onboard> is set to "Y" and information is to be recorded for individual observers.

<sup>3</sup> The <observer\_name> is required if the target system cannot derive it from <observer\_id>.

<sup>4</sup> The <offload\_location\_name> is required if the target system cannot derive it from <offload\_location\_id>.

<sup>5</sup> Required only if information is to be recorded for expected fishing areas.

<sup>6</sup> <fao\_major\_area\_id> is a standardized identifier from the United Nations Food and Agriculture Organization's FIGIS database.

<sup>7</sup> The <area\_name> element is required if the target system cannot derive the value from the <area\_id> of the expected fishing area.

## Discussion Points:

*No discussion points currently identified*

**Example:**

```
<departure>
  <port_code>OCFWC</port_code>
  <port_name>Farewell Cove, Oceanica</port_name>
  <departure_date>2010-04-15</departure_date>
  <departure_time>06:15:00</departure_time>
  <crew_count>10</crew_count>
  <observer_onboard>Y</observer_onboard>
  <observer_list>
    <observer>
      <observer_id>98467</observer_id>
      <observer_name>Ken Eagleeye</observer_name>
    </observer>
  </observer_list>
  <electronic_monitoring_onboard>Y</electronic_monitoring_onboard>
  <em_equipment_approval_code>394324</em_equipment_approval_code>
  <expected_return>
    <port_code>OCFWC</port_code>
    <port_name>Farewell Cove, Oceanica</port_name>
    <offload_location_id>86453</offload_location_id>
    <offload_location_name>Farewell Cove Dockyards</offload_location_name>
    <expected_return_date>2010-04-17</expected_return_date>
  </expected_return>
  <expected_fishing_area_list>
    <expected_fishing_area>
      <fao_major_area_id>77</fao_major_area_id>
      <area_id>546</area_id>
      <area_name>6P</area_name>
    </expected_fishing_area>
    <expected_fishing_area>
      <fao_major_area_id>77</fao_major_area_id>
      <area_id>887</area_id>
      <area_name>7Q</area_name>
    </expected_fishing_area>
  </expected_fishing_area_list>
</departure>
```

## <catch\_log> Node

**Purpose:** To record catch data from the skipper logbook, the observer log, or electronic monitoring.

### Elements with Values:

Parent Node	Element Name	Description	Mandatory
<catch_log>	<log_type>	Identifies the type of log used. Value may be "SKIPPER", "OBSERVER", or "ELECTRONIC MONITORING".	Yes Core Data
<catch_log>	<activity_list>	Container for a list of activities recorded in the logbook.	Yes Core Data
<activity_list>	<activity>	Sub-node for information about a specific set of activity in the logbook. See <activity_type>.	Yes Core Data
<activity>	<activity_type>	See section named " <i>Details Regarding &lt;activity_type&gt; and &lt;activity_type_count&gt;</i> " below this table.	Yes Core Data
<activity>	<activity_type_count>	See section named " <i>Details Regarding &lt;activity_type&gt; and &lt;activity_type_count&gt;</i> " below this table.	Yes Core Data
<activity>	<licence_id>	The ID of the fishing licence that the activity applies to. Must match a <licence_id> value from the <fishery_licence> node under the <header> node.	No
<activity>	<gear>	Sub-node for information about the gear used for the activity.	No
<gear>	<gear_code>	Standardized code for the type of gear used. Since the FAO has defined codes for generalized gear types, it is recommended that the FAO codes be used.	No
<gear>	<gear_name>	Name for the type of gear used.	No <sup>1</sup>
<gear>	<gear_mesh_size>	Indicates the size of mesh in fishing nets. Used only for trawl, seine, or other fisheries that use nets. Data must be numeric and reflect the unit of measure previously defined by the <mesh_units> element in the <header> section.	No
<gear>	<tow_speed>	Indicates the average speed at which gear was towed. Used only for trawl, troll, or other fisheries in which the vessel is in motion during fishing. Data must be	No

		numeric and reflect the unit of measure previously defined by the <speed_units> element in the <header> section.	
<gear>	<tow_heading>	Indicates the general direction in which gear was towed. Used only for fisheries in which the vessel is in motion during fishing. Data must be numeric and indicate a general compass heading in degrees.	No
<gear>	<tow_start_depth>	Indicates the depth of the water when the gear was first lowered. Used only for trawl, troll, or other fisheries in which the gear is towed by the vessel. Data must be numeric and reflect the unit of measure previously defined by the <depth_units> element in the <header> section.	No
<gear>	<tow_end_depth>	Indicates the depth of the water when the gear was raised at the end of the activity. Used only for trawl, troll, or other fisheries in which the gear is towed by the vessel. Data must be numeric and reflect the unit of measure previously defined by the <depth_units> element in the <header> section.	No
<gear>	<gear_line_length>	Indicates the length of line used. Only applies to gear such as longlines. Data must be numeric and reflect the unit of measure previously defined by the <length_units> element in the <header> section.	No
<gear>	<gear_hook_type_code>	A code that identifies the type of hook used. Only applies to gear that uses fishing hooks.	No
<gear>	<gear_hook_type_name>	The name of the type of hook used (e.g. "J-Hook", "Circle Hook", etc.). Only applies to gear that uses fishing hooks.	No <sup>2</sup>
<gear>	<gear_hook_size>	An indication of the size of hook used. Only applies to gear that uses fishing hooks	No
<gear>	<gear_hook_count>	A count of the number of hooks used. Only applies to gear that uses multiple fishing hooks (e.g. longline).	No
<gear>	<bait_species_code>	Submitting organization's unique code for the species	No <sup>3</sup>

		used as bait. Applies only to gear that uses bait.	
<gear>	<fao_bait_species_code>	FAO standard code for the species used as bait. Applies only to gear that uses bait.	No <sup>3</sup>
<gear>	<bait_species_name>	The common name of the species used as bait. Applies only to gear that uses bait.	No <sup>3</sup>
<activity>	<activity_start_date>	The date on which when the activity started.	Yes Core Data
<activity>	<activity_start_time>	The time of day when the activity started.	No – Exclude if activity start time is not recorded.
<activity>	<activity_end_date>	The date on which when the activity ended.	No
<activity>	<activity_end_time>	The time of day when the activity ended.	No
<activity>	<activity_start_latitude>	The geographical position at which the activity started, in degrees of latitude.	No
<activity>	<activity_start_longitude>	The geographical position at which the activity started, in degrees of longitude.	No
<activity>	<activity_end_latitude>	The geographical position at which the activity ended, in degrees of latitude.	No
<activity>	<activity_end_longitude>	The geographical position at which the activity ended, in degrees of longitude.	No
<activity>	<fao_major_area_id>	FAO standard code for the major global area in which the activity took place.	Yes <sup>4</sup> Core Data
<activity>	<activity_fishing_area_id>	An ID (local to the submitting organization) that identifies a fishing area in which the activity took place.	Yes <sup>4</sup> Core Data
<activity>	<activity_fishing_area_name>	The name of the fishing area that is identified by the <activity_fishing_area_id> element.	No <sup>5</sup>
<activity>	<activity_catch_list>	Container for a list of catch that resulted from the activity.	Yes <sup>6</sup> Core Data
<activity_catch_list>	<activity_catch>	Container for sub-elements that provide information about a species that was caught. <b>Note:</b> <i>If a species is caught and the utilization of that species varies (e.g. if some is retained and some is released), a separate &lt;catch&gt; node must exist for each combination of species and utilization.</i>	Yes <sup>6</sup> Core Data
<activity_catch>	<species_code>	Submitting organization's unique code for the species	Yes <sup>3,6</sup> Core Data

		that was caught.	
<activity_catch>	<fao_species_code>	FAO standard code for the species that was caught.	Yes <sup>3,6</sup> Core Data
<activity_catch>	<species_name>	The common name of the species that was caught.	No <sup>3</sup>
<activity_catch>	<weight>	The weight of the species when caught.	Yes <sup>6,7</sup> Core Data
<activity_catch>	<quantity>	The quantity (number of organisms) that were caught.	Yes <sup>6,7</sup> Core Data
<activity_catch>	<marketable>	If the caught species is marketable (e.g. a commercial species in useable condition), set the value to "Y", otherwise use a value of "N".	No
<activity_catch>	<legal>	If the caught species can be legally retained on the current trip/licence, set the value to "Y", otherwise set the value to "N".	No
<activity_catch>	<utilization_code>	A standard code indicating utilization of the catch. Codes to be determined. <sup>7</sup>	Yes <sup>6</sup> Core Data
<activity_catch>	<utilization_name>	A description of the utilization of the catch that is identified by the <utilization_code>. <sup>7</sup>	No <sup>9</sup>
<activity>	<activity_recovered_tag_list>	Container for a list of tags (e.g. for scientific tracking) that were recovered from caught fish.	No
<activity_recovered_tag_list>	<recovered_tag>	Container for sub-elements that provide information about a recovered tag.	No
<recovered_tag>	<tag_code>	The unique number or code that is printed on or stored in the recovered tag.	No
<recovered_tag>	<species_code>	Submitting organization's unique code for the species for which the tag was recovered.	No <sup>3</sup>
<recovered_tag>	<fao_species_code>	FAO standard code for the species for which the tag was recovered.	No <sup>3</sup>
<recovered_tag>	<species_name>	The common name of the species for which the tag was recovered.	No <sup>3</sup>

<sup>1</sup> The <gear\_name> element is required if the target system cannot derive the value from the <gear\_code> element.

<sup>2</sup> The <gear\_hook\_type\_name> element is required if the target system cannot derive the value from the <gear\_hook\_type\_code> element.

<sup>3</sup> Wherever a group of three species-related tags are found, to indicate a combination of species code, FAO, species code, and species name, the following rules apply:

a) The species code element is provided for local codes that may be used to identify individual species. The code for each species may vary from one organization to another. If uniform codes are required from various organizations, use of the FAO species code element is suggested.

b)FAO species codes are standardized, three-character unique identifiers from the United Nations Food and Agriculture Organization's FIGIS database. FIGIS does not include all species. Many non-marketable incidental bycatch species are excluded. If there is no FIGIS code for the species, the element should contain a "0" (zero) and a value must be provided for the species code element.

c)The species name element is required if the target system cannot derive the value from the species code or FAO species code elements.

<sup>4</sup>The area in which fishing took place is of key importance. As such, the data must include either the <fao\_major\_area\_id> or <activity\_fishing\_area\_id> element. Note: FAO major area ID is a standardized identifier from the United Nations Food and Agriculture Organization's FIGIS database.

<sup>5</sup>The <activity\_fishing\_area\_name> element is required if the target system cannot derive the value from the <activity\_fishing\_area\_id> element.

<sup>6</sup>The <activity\_catch\_list> element and indicated sub-elements are required if the <activity\_type> is such that fishing took place and species were caught.

<sup>7</sup> A <weight> or <quantity> element or both must be provided. If one of the two elements is provided, the other does not have to be (subject to the rules of the submitting and target organizations).

<sup>8</sup> Suggested utilization names/descriptions:

- RET – Retained
- REB – Retained – Used as bait
- REC – Retained – Crew personal use
- RES – Retained for special use
- REL – Released/Discarded – Live
- DIS – Discarded – Dead

<sup>9</sup> The <utilization\_name> element is required if the target system cannot derive the value from the <utilization\_code> element.

### **Details Regarding <activity\_type> and <activity\_type\_count>**

At the time of writing, it is envisioned that activity types would include the following values: SET, TOW, DIVE, and TRIP. The activity type "TRIP" could relate to a fishery such as the harvesting of clams from a beach, which does not consist of the setting of gear. Since it would not be practical to record each hole dug in the sand, defining the activity type as the trip itself seems to make the most sense.

In regard to the activity type count, reporting requirements will dictate how this is used. In some fisheries (e.g. groundfish fisheries on Canada's west coast), logbook information must be kept for each individual set or tow. As such, if there were 20 sets in a trip, there will be 20 <activity> nodes and each will have an activity type count of one. By contrast, the European Commission requires logbook data to be submitted every 24 hours and details for each individual set or tow are not required. Under such rules, if there were 15 sets completed in 24 hours, the <activity\_type> would be "SET" and <activity\_type\_count> would be 15.

Activity types for start of trip/departure and offloads are not included as this information is provided in the <departure> and <offload> nodes.

### **Discussion Points:**

- *How should the catch\_log section be handled if circumstances prevented fishing activity from occurring and/or if the trip resulted in no catch whatsoever?*
- *Should the XML document be able to accommodate more than one catch log? For example, if the skipper and an observer each keep a log for the trip, should both logs be recorded? One drawback of doing this is that the logs will be recording the same fish. As such, target organizations may count the same logbook catch twice if there are two logbooks. For the sake of simplicity, if there is more than one logbook for a trip, perhaps the submitting organization should include only the log that is determined to be the most correct.*
- *Should there be other logbook types defined in addition to “SKIPPER”, “OBSERVER”, and “ELECTRONIC MONITORING”?*
- *Since the FAO has defined a set of codes for gear (at a generalized, high-level), should these codes be used for <gear\_type>? More specific information regarding the gear used can be defined by the other elements in the <gear> node.*
- *In regard to sub-elements in the <gear> node, should the published standard include sub-elements other than <gear\_code> and <gear\_name>? It may be that there is too much variation from one fishery to another and too many different gear configurations to define the elements that may be used for each possible gear type (e.g. various types of trawl, longline, troll, seine, diving, etc.). If so, it may be best to allow each organization to extend the standard by defining its own elements for gear details beyond the basic type of gear.*
- *Should latitudes and longitudes be stored as decimal values with the hemisphere abbreviation appended (as shown in the table), or in separate elements for degrees, minutes, seconds, and hemisphere? What are the pros and cons of each alternative?*
- *For fisheries of the E.U., the European Commission requires the reporting of various other activity types other than those provided in this document (SET, TOW, DIVE, and TRIP). These include transfer of catch between vessels, shared gear, and/or holding pens, transshipments, entry, crossing, and exiting of certain fishing zones, inspections, processing, and more. Should any of these, or any other types of activities be added to the XML standard, or should the standard be kept simple, with organizations having the option to extend the standard through use of their own elements for other types of activity?*
- *Are the following utilization codes acceptable? Should additional codes be added?*
  - RET – Retained*
  - REB – Retained – Used as bait*
  - REC – Retained – Crew personal use*
  - RES – Retained for special use*
  - REL – Released/Discarded – Live*
  - DIS – Discarded – Dead*

- *Regarding the <activity\_recovered\_tag\_list> node and its sub-elements, does the recovery of tags represent a frequent enough event that it should be included in this XML data standard, or should it be excluded and left up to individual organizations to extend this standard through nodes/elements that they define themselves?*

**Example:**

```

<catch_log>
  <log_type>SKIPPER</log_type>
  <activity_list>
    <activity>
      <activity_type>TOW</activity_type>
      <activity_type_count>1</activity_type_count>
      <licence_id>456456</licence_id>
      <gear>
        <gear_code>TB</gear_code>
        <gear_name>Bottom Trawl</gear_name>
        <gear_mesh_size>20</gear_mesh_size>
        <tow_speed>2.1</tow_speed>
        <tow_heading>217</tow_heading>
        <tow_start_depth>30</tow_start_depth>
        <tow_end_depth>32</tow_end_depth>
      </gear>
      <activity_start_date>2010-04-16</activity_start_date>
      <activity_start_time>10:00:00</activity_start_time>
      <activity_end_date>2010-04-16</activity_end_date>
      <activity_end_time>12:43:00</activity_end_time>
      <activity_start_latitude>30.1234N</activity_start_latitude>
      <activity_start_longitude>140.4321W</activity_start_longitude>
      <activity_end_latitude>30.129N</activity_end_latitude>
      <activity_end_longitude>140.4299W</activity_end_longitude>
      <fao_major_area_id>77</fao_major_area_id>
      <activity_fishing_area_id>546</activity_fishing_area_id>
      <activity_fishing_area_name>6P</activity_fishing_area_name>
      <activity_catch_list>
        <activity_catch>
          <species_code>HAL</species_code>
          <fao_species_code>HAP</fao_species_code>
          <species_name>Pacific Halibut</species_name>
          <weight>68</weight>
          <quantity>5</quantity>
          <marketable>Y</marketable>
          <legal>Y</legal>
          <utilization_code>RET</utilization_code>
          <utilization_name>Retained</utilization_name>
        </activity_catch>
        <activity_catch>
          <species_code>HAL</species_code>
          <fao_species_code>HAP</fao_species_code>
          <species_name>Pacific Halibut</species_name>
          <weight>17</weight>
          <quantity>6</quantity>
          <marketable>Y</marketable>
          <legal>N</legal>
          <utilization_code>REL</utilization_code>
          <utilization_name>Released/Discarded - Live</utilization_name>
        </activity_catch>
        <activity_catch>
          <species_code>SDF</species_code>

```

```

    <fao_species_code>DGX</fao_species_code>
    <species_name>Spiny Dogfish</species_name>
    <weight>52</weight>
    <quantity>23</quantity>
    <marketable>Y</marketable>
    <legal>Y</legal>
    <utilization_code>RET</utilization_code>
    <utilization_name>Retained</utilization_name>
  </activity_catch>
  <activity_catch>
    <species_code>SDF</species_code>
    <fao_species_code>DGX</fao_species_code>
    <species_name>Spiny Dogfish</species_name>
    <weight>8</weight>
    <quantity>1</quantity>
    <marketable>N</marketable>
    <legal>Y</legal>
    <utilization_code>DIS</utilization_code>
    <utilization_name>Discarded - Dead</utilization_name>
  </activity_catch>
  <activity_catch>
    <species_code>YER</species_code>
    <fao_species_code>RRV</fao_species_code>
    <species_name>Yelloweye Rockfish</species_name>
    <weight>2</weight>
    <quantity>1</quantity>
    <marketable>Y</marketable>
    <legal>Y</legal>
    <utilization_code>REC</utilization_code>
    <utilization_name>Retained - Crew personal use</utilization_name>
  </activity_catch>
  <activity_catch>
    <species_code>NCD</species_code>
    <fao_species_code>CDZ</fao_species_code>
    <species_name>Northern Cod</species_name>
    <weight>7</weight>
    <quantity>1</quantity>
    <marketable>Y</marketable>
    <legal>Y</legal>
    <utilization_code>REB</utilization_code>
    <utilization_name>Retained - Used as bait</utilization_name>
  </activity_catch>
</activity_catch_list>
<activity_recovered_tag_list>
  <recovered_tag>
    <tag_code>XR52353</tag_code>
    <species_code>HAL</species_code>
    <fao_species_code>HAP</fao_species_code>
    <species_name>Pacific Halibut</species_name>
  </recovered_tag>
</activity_recovered_tag_list>
</activity>
<activity>
  <activity_type>SET</activity_type>
  <activity_type_count>1</activity_type_count>
  <licence_id>456456</licence_id>
  <gear>
    <gear_code>LL</gear_code>
    <gear_name>Longline</gear_name>
    <gear_line_length>50</gear_line_length>
    <gear_hook_type_code>J</gear_hook_type_code>
    <gear_hook_type_name>J-Hook</gear_hook_type_name>
  </gear>
</activity>

```

```
<gear_hook_size>15/0</gear_hook_size>
<gear_hook_count>143</gear_hook_count>
<gear_depth>48</gear_depth>
<bait_species_code>NCO</bait_species_code>
<fao_bait_species_code>CDZ</fao_bait_species_code>
<bait_species_name>Northern Cod</bait_species_name>
</gear>
<activity_start_date>2010-04-16</activity_start_date>
<activity_start_time>14:32:00</activity_start_time>
<activity_end_date>2010-04-16</activity_end_date>
<activity_end_time>17:05:00</activity_end_time>
<activity_start_latitude>30.1563N</activity_start_latitude>
<activity_start_longitude>141.002W</activity_start_longitude>
<activity_end_latitude>30.199N</activity_end_latitude>
<activity_end_longitude>140.987W</activity_end_longitude>
<fao_major_area_id>77</fao_major_area_id>
<activity_fishing_area_id>546</activity_fishing_area_id>
<activity_fishing_area_name>6P</activity_fishing_area_name>
<activity_catch_list>
<activity_catch>
  <species_code>GTU</species_code>
  <fao_species_code>SCF</fao_species_code>
  <species_name>Greenland Turbot</species_name>
  <weight>30</weight>
  <quantity>42</quantity>
  <marketable>Y</marketable>
  <legal>Y</legal>
  <utilization_code>RET</utilization_code>
  <utilization_name>Retained</utilization_name>
</activity_catch>
<activity_catch>
  <species_code>HAL</species_code>
  <fao_species_code>HAP</fao_species_code>
  <species_name>Pacific Halibut</species_name>
  <weight>107</weight>
  <quantity>5</quantity>
  <marketable>Y</marketable>
  <legal>Y</legal>
  <utilization_code>RET</utilization_code>
  <utilization_name>Retained</utilization_name>
</activity_catch>
<activity_catch>
  <species_code>BON</species_code>
  <fao_species_code>BZX</fao_species_code>
  <species_name>Bonito</species_name>
  <weight>16</weight>
  <quantity>3</quantity>
  <marketable>Y</marketable>
  <legal>Y</legal>
  <utilization_code>RET</utilization_code>
  <utilization_name>Retained</utilization_name>
</activity_catch>
<activity_catch>
  <species_code>KCR</species_code>
  <fao_species_code></fao_species_code>
  <species_name>Kelp Crab</species_name>
  <weight>0</weight>
  <quantity>1</quantity>
  <marketable>N</marketable>
  <legal>N</legal>
  <utilization_code>REL</utilization_code>
  <utilization_name>Released/Discarded - Live</utilization_name>
</activity_catch>
</activity_catch_list>
</activity>
```

```
</activity_catch>  
</activity_catch_list>  
</activity>  
</activity_list>  
</catch_log>
```

## <offload\_list> Node

**Purpose:** To record all offloads/sales of catch for the current trip. Depending upon the fishery and jurisdiction, offloads may be monitored by independent observers or may be recorded on sales slips (sometimes referred to as “fish tickets”). For purposes of this section, the terms “offload”, “sales slip” and “fish ticket” are considered to be synonymous.

### Elements with Values:

Parent Node	Element Name	Description	Mandatory
<offload_list>	<offload>	Sub-node for information about a specific offload of catch.	Yes Core Data
<offload>	<licence_id>	The ID of the fishing licence that the offload applies to. Must match a <licence_id> value from the <fishery_licence> node under the <header> node.	No
<offload>	<port_code>	Code to uniquely identify the port where the catch was offloaded.	No
<offload>	<port_name>	The name of the port that is identified by <port_code>	No <sup>1</sup>
<offload>	<offload_location_id>	Code to uniquely identify the location where the catch was offloaded (e.g. name of dock or processing plant).	No
<offload>	<offload_location_name>	The name of the offload location that is identified by <offload_location_id>	No <sup>1</sup>
<offload>	<buyer_id>	Code to uniquely identify the buyer that purchased the catch (e.g. the name of the seafood processing company).	No
<offload>	<buyer_name>	The name of the buyer that is identified by <buyer_id>	No <sup>1</sup>
<offload>	<sales_slip_id>	If the offload is recorded on a sales slip/fish ticket, contains the unique ID/serial number printed on the slip/ticket.	No
<offload>	<offloader_id>	Code to uniquely identify the person or company that removed the catch (may be same as buyer).	No
<offload>	<offloader_name>	The name of the offloader that is identified by <offloader_id>	No <sup>1</sup>
<offload>	<final_offload>	Value set to “Y” if all catch has been removed from the vessel/fisher upon completion of the current offload. Otherwise, set value to “N”.	Yes Core Data
<offload>	<offload_start_date>	The date on which when the offload commenced.	Yes Core Data
<offload>	<offload_start_time>	The time of day when the offload commenced.	No – Exclude if offload start time is not recorded.
<offload>	<offload_end_date>	The date on which when the offload was completed.	No
<offload>	<offload_end_time>	The time of day when the offload	No

		was completed.	
<offload>	<offload_catch_list>	Container for a list of catch that was offloaded	Yes Core Data
<offload_catch_list>	<offload_catch>	Container for sub-elements that provide information about a species that was caught. <b>Note:</b> <i>If a species is caught and associated data for that species varies in terms of state or form, a separate &lt;catch&gt; node must exist for each combination of species, state, and form.</i>	Yes Core Data
<offload_catch>	<species_code>	Submitting organization's unique code for the species that was offloaded.	Yes <sup>2</sup> Core Data
<offload_catch>	<fao_species_code>	FAO standard code for the species that was offloaded.	Yes <sup>2</sup> Core Data
<offload_catch>	<species_name>	The common name of the species that was offloaded.	No <sup>2</sup>
<offload_catch>	<state_code>	Standard code indicating the state of the catch. <sup>3</sup>	No
<offload_catch>	<state_name>	Name of the state that is identified by <state_code>	No <sup>1</sup>
<offload_catch>	<form_list>	Container for list of forms (presentation) that apply to the current catch entry.	No
<form_list>	<form>	Container for elements that identify the form(s) for the current catch entry.	No
<form>	<form_code>	Standard code indicating a form (presentation) of the current catch entry. <sup>4</sup>	No
<form>	<form_name>	Name of the form that is identified by <form_code>.	No <sup>1</sup>
<offload_catch>	<weight>	The weight of the species when offloaded.	Yes <sup>5</sup> Core Data
<offload_catch>	<quantity>	The quantity (number of organisms) that were offloaded.	Yes <sup>5</sup> Core Data
<offload_catch>	<conversion_factor>	A number that is applied as a factor to convert fish in the current state and form(s) into live fish weight.	No

<sup>1</sup> "Name" elements are required if the target system cannot derive the name from the associated "code" or "id" element that precedes it.

<sup>2</sup> Wherever a group of three species-related tags are found, to indicate a combination of species code, FAO, species code, and species name, the following rules apply:

a) The species code element is provided for local codes that may be used to identify individual species. The code for each species may vary from one organization to another. If uniform codes are required from various organizations, use of the FAO species code element is suggested.

b) FAO species codes are standardized, three-character unique identifiers from the United Nations Food and Agriculture Organization's FIGIS database. FIGIS does not include all species. Many non-marketable incidental bycatch species are excluded. If there is no FIGIS code for the species, the element should contain a "0" (zero) and a value must be provided for the species code element.

c) The species name element is required if the target system cannot derive the value from the species code or FAO species code elements.

<sup>3</sup> Suggested state codes (used by the European Commission):

ALI	Alive
BOI	Boiled
DRI	Dried
FRE	Fresh
FRO	Frozen
SAL	Salted

<sup>4</sup> Suggested form codes (subset of those used by the European Commission). See discussion points.

CLA	Claws only
FIL	Filletted
FIN	Finned*
GIL	Gilled*
GUT	Gutted
HEA	Headed
JAP	Japanese cut
LVR	Liver only
OTH	Other
ROE	Roe(s) only
SAD	Salted dry
SAL	Salted wet light
SKI	Skinned
SUR	Surimi
TAL	Tails only
TLD	Tailed
TNG	Tounge only
TUB	Tube only (squid)
WHL	Whole fish
WNG	Wings only

\*Not included in European Commission list as separate codes.

<sup>5</sup> A <weight> or <quantity> element or both must be provided. If one of the two elements is provided, the other does not have to be (subject to the rules of the submitting and target organizations).

### Discussion Points:

- *How should offload data be handled if the trip resulted in no catch whatsoever?*
- *Are the European Commission product state codes acceptable? Should additional codes be added?*
- *The European Commission product form codes include codes that represent combinations of other codes. For example, the code "GUS" represents gutted, headed, and skinned forms in combination. The problem with this approach is that all possible combinations cannot be represented without having hundreds of codes. The proposed standard allows for any combinations of single form codes with each form code represented by an individual <form> node within the <form\_list> node for each offloaded catch entry. Using the example of fish that is gutted, headed, and skinned, three separate form codes would be used ("GUT", "HEA", and "SKI"). This provides maximum flexibility. One possible drawback may be in applying conversion factors to various combinations. This should be discussed.*

### Example:

<offload\_list>

```

<offload>
  <licence_id>456456</licence_id>
  <port_code>OCFWC</port_code>
  <port_name>Farewell Cove, Oceanica</port_name>
  <offload_location_id>86453</offload_location_id>
  <offload_location_name>Farewell Cove Dockyards</offload_location_name>
  <buyer_id>6913</buyer_id>
  <buyer_name>Oceanica Seafood Consortium</buyer_name>
  <sales_slip_id>A-13287</sales_slip_id>
  <offloader_id>29429</offloader_id>
  <offloader_name>Oceanica Transport Company</offloader_name>
  <final_offload>N</final_offload>
  <offload_start_date>2010-04-17</offload_start_date>
  <offload_start_time>14:20:00</offload_start_time>
  <offload_end_date>2010-04-17</offload_end_date>
  <offload_end_time>15:35:00</offload_end_time>
  <offload_catch_list>
    <offload_catch>
      <species_code>HAL</species_code>
      <fao_species_code>HAP</fao_species_code>
      <species_name>Pacific Halibut</species_name>
      <state_code>FRO</state_code>
      <state_name>Frozen</state_name>
      <form_list>
        <form>
          <form_code>WHL</form_code>
          <form_name>Whole</form_name>
        </form>
      </form_list>
      <weight>65</weight>
      <quantity>5</quantity>
      <conversion_factor>1.05</conversion_factor>
    </offload_catch>
    <offload_catch>
      <species_code>SDF</species_code>
      <fao_species_code>DGX</fao_species_code>
      <species_name>Spiny Dogfish</species_name>
      <state_code>FRE</state_code>
      <state_name>Fresh</state_name>
      <form_list>
        <form>
          <form_code>GUT</form_code>
          <form_name>Gutted</form_name>
        </form>
      </form_list>
      <weight>47</weight>
      <quantity>24</quantity>
      <conversion_factor>1.1</conversion_factor>
    </offload_catch>
  </offload_catch_list>
</offload>
<offload>
  <licence_id>998877</licence_id>
  <port_code>OCFWC</port_code>
  <port_name>Farewell Cove, Oceanica</port_name>
  <offload_location_id>88754</offload_location_id>
  <offload_location_name>Bob's Wharf</offload_location_name>
  <buyer_id>6927</buyer_id>
  <buyer_name>Bob's Rockfish</buyer_name>
  <sales_slip_id></sales_slip_id>
  <offloader_id>29429</offloader_id>
  <offloader_name>Oceanica Transport Company</offloader_name>

```

```

<final_offload>Y</final_offload>
<offload_start_date>2010-04-17</offload_start_date>
<offload_start_time>18:19:00</offload_start_time>
<offload_end_date>2010-04-17</offload_end_date>
<offload_end_time>18:57:00</offload_end_time>
<offload_catch_list>
  <offload_catch>
    <species_code>GTU</species_code>
    <fao_species_code>SCF</fao_species_code>
    <species_name>Greenland Turbot</species_name>
    <state_code>FRE</state_code>
    <state_name>Fresh</state_name>
    <form_list>
      <form>
        <form_code>GUT</form_code>
        <form_name>Gutted</form_name>
      </form>
      <form>
        <form_code>HEA</form_code>
        <form_name>Headed</form_name>
      </form>
    </form_list>
    <weight>27</weight>
    <quantity>41</quantity>
    <conversion_factor>1.12</conversion_factor>
  </offload_catch>
  <offload_catch>
    <species_code>HAL</species_code>
    <fao_species_code>HAP</fao_species_code>
    <species_name>Pacific Halibut</species_name>
    <state_code>ALI</state_code>
    <state_name>Alive</state_name>
    <form_list>
      <form>
        <form_code>WHL</form_code>
        <form_name>Whole</form_name>
      </form>
    </form_list>
    <weight>107</weight>
    <quantity>5</quantity>
    <conversion_factor>1</conversion_factor>
  </offload_catch>
  <offload_catch>
    <species_code>BON</species_code>
    <fao_species_code>BZX</fao_species_code>
    <species_name>Bonito</species_name>
    <state_code>ALI</state_code>
    <state_name>Alive</state_name>
    <form_list>
      <form>
        <form_code>WHL</form_code>
        <form_name>Whole</form_name>
      </form>
    </form_list>
    <weight>16</weight>
    <quantity>3</quantity>
    <conversion_factor>1</conversion_factor>
  </offload_catch>
</offload_catch_list>
</offload>
</offload_list>

```

## Appendix A – Fully-expanded sample file for completed trip

The following is a sample XML file that represents a complete trip. The sample is based upon the assumptions that no data is being withheld due to privacy concerns and that the target system has no knowledge of the meaning of code data, so accompanying descriptions are provided throughout. As such, the file is a “fully expanded” version.

The size of the following sample file is 23,171 bytes. By contrast, if the file is not fully expanded and includes only the minimum required data (see sample file in Appendix B), the file size is reduced to 5,305 bytes.

```
<?xml version="1.0" encoding="UTF-8"?>
<trip xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="http://www.fisherystandards.org/docs/fishing_trip.xsd">
  <!-- START SUBMITTING BODY -->
  <submitting_body>
    <trip_submitter_id>55555</trip_submitter_id>
    <country>
      <country_code>OC</country_code>
      <country_name>Oceanica</country_name>
    </country>
    <submitting_body_name>Oceanica Department of Fisheries</submitting_body_name>
    <region_name>Western Region</region_name>
    <administrative_contact>
      <name>Pearl Neptune</name>
      <email>pearl.neptune@fisheries.gov.oc</email>
      <phone>+99 (999) 999-9999</phone>
      <address>P.O. Box 99, Main Post Office, Capital City, Oceanica, 9999</address>
      <fax>+99 (999) 111-1111</fax>
    </administrative_contact>
    <technical_contact>
      <name>Pearl Neptune</name>
      <email>pearl.neptune@fisheries.gov.oc</email>
      <phone>+99 (999) 999-9999</phone>
      <address>P.O. Box 99, Main Post Office, Capital City, Oceanica, 9999</address>
      <fax>+99 (999) 111-1111</fax>
    </technical_contact>
  </submitting_body>
  <!-- END SUBMITTING BODY -->
  <!-- START TRIP HEADER -->
  <header>
    <trip_number>1</trip_number>
    <trip_revision_number>1</trip_revision_number>
    <trip_completed>Y</trip_completed>
    <trip_approval_code>83157</trip_approval_code>
    <unit_of_measure_list>
      <weight_units>kilograms</weight_units>
      <speed_units>knots</speed_units>
      <length_units>metres</length_units>
      <depth_units>metres</depth_units>
      <mesh_units>centimetres</mesh_units>
    </unit_of_measure_list>
  <!-- START FISHERY LIST -->
  <fishery_list>
    <fishery>
      <fishery_id>999</fishery_id>
      <fishery_name>General Trawl</fishery_name>
      <season_id>888</season_id>
      <season_name>2010</season_name>
    </fishery>
  </fishery_list>
</trip>
```

```
<season_start_date>2010-04-01</season_start_date>
<season_end_date>2010-10-01</season_end_date>
<target_species_list>
  <target_species>
    <species_code>HAL</species_code>
    <fao_species_code>HAP</fao_species_code>
    <species_name>Pacific Halibut</species_name>
  </target_species>
  <target_species>
    <species_code>SDF</species_code>
    <fao_species_code>DGX</fao_species_code>
    <species_name>Spiny Dogfish</species_name>
  </target_species>
  <target_species>
    <species_code>YER</species_code>
    <fao_species_code>RRV</fao_species_code>
    <species_name>Yelloweye Rockfish</species_name>
  </target_species>
  <target_species>
    <species_code>CPR</species_code>
    <fao_species_code>SJF</fao_species_code>
    <species_name>Copper Rockfish</species_name>
  </target_species>
  <target_species>
    <species_code>SBF</species_code>
    <fao_species_code>SAB</fao_species_code>
    <species_name>Sablefish</species_name>
  </target_species>
  <target_species>
    <species_code>HAD</species_code>
    <fao_species_code>HAD</fao_species_code>
    <species_name>Haddock</species_name>
  </target_species>
  <target_species>
    <species_code>SKT</species_code>
    <fao_species_code>SKX</fao_species_code>
    <species_name>Skate</species_name>
  </target_species>
  <target_species>
    <species_code>LSL</species_code>
    <fao_species_code>LEM</fao_species_code>
    <species_name>Lemon Sole</species_name>
  </target_species>
  <target_species>
    <species_code>DSL</species_code>
    <fao_species_code>MIP</fao_species_code>
    <species_name>Dover Sole</species_name>
  </target_species>
</target_species_list>
<retainable_bycatch_species_list>
  <retainable_bycatch_species>
    <species_code>NCD</species_code>
    <fao_species_code>CDZ</fao_species_code>
    <species_name>Northern Cod</species_name>
  </retainable_bycatch_species>
  <retainable_bycatch_species>
    <species_code>POC</species_code>
    <fao_species_code>OQF</fao_species_code>
    <species_name>Pacific Octopus</species_name>
  </retainable_bycatch_species>
</retainable_bycatch_species_list>
<fishery_licence>
```

```

<!-- fishery_licence section may not be provided depending upon privacy concerns -->
<licence_id>456456</licence_id>
<licence_number>GF-456456-2010</licence_number>
<licence_issue_name>John Highliner</licence_issue_name>
<licence_type_name>Mixed Groundfish Trawl</licence_type_name>
</fishery_licence>
</fishery>
<fishery>
<fishery_id>972</fishery_id>
<fishery_name>Rockfish Longline</fishery_name>
<season_id>554</season_id>
<season_name>2010</season_name>
<season_start_date>2010-04-01</season_start_date>
<season_end_date>2010-05-15</season_end_date>
<target_species_list>
<target_species>
<species_code>HAL</species_code>
<fao_species_code>HAP</fao_species_code>
<species_name>Pacific Halibut</species_name>
</target_species>
<target_species>
<species_code>SDF</species_code>
<fao_species_code>DGX</fao_species_code>
<species_name>Spiny Dogfish</species_name>
</target_species>
<target_species>
<species_code>YER</species_code>
<fao_species_code>RRV</fao_species_code>
<species_name>Yelloweye Rockfish</species_name>
</target_species>
<target_species>
<species_code>CPR</species_code>
<fao_species_code>SJF</fao_species_code>
<species_name>Copper Rockfish</species_name>
</target_species>
<target_species>
<species_code>QBR</species_code>
<fao_species_code>SGF</fao_species_code>
<species_name>Quillback Rockfish</species_name>
</target_species>
<target_species>
<species_code>TGR</species_code>
<fao_species_code>RNV</fao_species_code>
<species_name>Tiger Rockfish</species_name>
</target_species>
<target_species>
<species_code>CHR</species_code>
<fao_species_code>RVN</fao_species_code>
<species_name>China Rockfish</species_name>
</target_species>
<target_species>
<species_code>LST</species_code>
<fao_species_code>SJZ</fao_species_code>
<species_name>Longspine Thornyhead</species_name>
</target_species>
<target_species>
<species_code>SST</species_code>
<fao_species_code>SJU</fao_species_code>
<species_name>Shortspine Thornyhead</species_name>
</target_species>
</target_species_list>
<retainable_bycatch_species_list>

```

```

    <retainable_bycatch_species>
      <species_code>BON</species_code>
      <fao_species_code>BZX</fao_species_code>
      <species_name>Bonito</species_name>
    </retainable_bycatch_species>
    <retainable_bycatch_species>
      <species_code>LNG</species_code>
      <fao_species_code>LIN</fao_species_code>
      <species_name>Ling</species_name>
    </retainable_bycatch_species>
    <retainable_bycatch_species>
      <species_code>CGE</species_code>
      <fao_species_code>CGZ</fao_species_code>
      <species_name>Conger Eel</species_name>
    </retainable_bycatch_species>
    <retainable_bycatch_species>
      <species_code>GTU</species_code>
      <fao_species_code>SCF</fao_species_code>
      <species_name>Greenland Turbot</species_name>
    </retainable_bycatch_species>
  </retainable_bycatch_species_list>
  <fishery_licence>
    <!-- fishery_licence section may not be provided depending upon privacy concerns -->
    <licence_id>998877</licence_id>
    <licence_number>LL-998877-2010</licence_number>
    <licence_issue_name>John Highliner</licence_issue_name>
    <licence_type_name>Rockfish Longline</licence_type_name>
  </fishery_licence>
</fishery>
</fishery_list>
<!-- END FISHERY LIST -->
<!-- START VESSEL - May not be provided depending upon privacy concerns -->
<vessel>
  <vessel_id>12345</vessel_id>
  <hull_id>14K 98765</hull_id>
  <vessel_name>My Boat</vessel_name>
  <owner_name>Oceanica Harvesters Ltd.</owner_name>
</vessel>
<!-- END VESSEL -->
<!-- START MASTER - May not be provided depending upon privacy concerns -->
<master>
  <master_id>54321</master_id>
  <master_name>John Highliner</master_name>
</master>
<!-- END MASTER -->
</header>
<!-- END TRIP HEADER -->
<!-- START TRIP DEPARTURE -->
<departure>
  <port_code>OCFWC</port_code>
  <port_name>Farewell Cove, Oceanica</port_name>
  <departure_date>2010-04-15</departure_date>
  <departure_time>06:15:00</departure_time>
  <crew_count>10</crew_count>
  <observer_onboard>Y</observer_onboard>
  <observer_list>
    <observer>
      <observer_id>98467</observer_id>
      <observer_name>Ken Eagleeye</observer_name>
    </observer>
  </observer_list>
  <electronic_monitoring_onboard>Y</electronic_monitoring_onboard>

```

```

<em_equipment_approval_code>394324</em_equipment_approval_code>
<expected_return>
  <port_code>OCFWC</port_code>
  <port_name>Farewell Cove, Oceanica</port_name>
  <offload_location_id>86453</offload_location_id>
  <offload_location_name>Farewell Cove Dockyards</offload_location_name>
  <expected_return_date>2010-04-17</expected_return_date>
</expected_return>
<expected_fishing_area_list>
  <expected_fishing_area>
    <fao_major_area_id>77</fao_major_area_id>
    <area_id>546</area_id>
    <area_name>6P</area_name>
  </expected_fishing_area>
  <expected_fishing_area>
    <fao_major_area_id>77</fao_major_area_id>
    <area_id>887</area_id>
    <area_name>7Q</area_name>
  </expected_fishing_area>
</expected_fishing_area_list>
</departure>
<!-- END TRIP DEPARTURE -->
<!-- START CATCH LOG -->
<catch_log>
  <log_type>SKIPPER</log_type>
  <activity_list>
    <activity>
      <activity_type>TOW</activity_type>
      <activity_type_count>1</activity_type_count>
      <licence_id>456456</licence_id>
      <gear>
        <gear_code>TB</gear_code>
        <gear_name>Bottom Trawl</gear_name>
        <gear_mesh_size>20</gear_mesh_size>
        <tow_speed>2.1</tow_speed>
        <tow_heading>217</tow_heading>
        <tow_start_depth>30</tow_start_depth>
        <tow_end_depth>32</tow_end_depth>
      </gear>
      <activity_start_date>2010-04-16</activity_start_date>
      <activity_start_time>10:00:00</activity_start_time>
      <activity_end_date>2010-04-16</activity_end_date>
      <activity_end_time>12:43:00</activity_end_time>
      <activity_start_latitude>30.1234N</activity_start_latitude>
      <activity_start_longitude>140.4321W</activity_start_longitude>
      <activity_end_latitude>30.129N</activity_end_latitude>
      <activity_end_longitude>140.4299W</activity_end_longitude>
      <fao_major_area_id>77</fao_major_area_id>
      <activity_fishing_area_id>546</activity_fishing_area_id>
      <activity_fishing_area_name>6P</activity_fishing_area_name>
      <activity_catch_list>
        <activity_catch>
          <species_code>HAL</species_code>
          <fao_species_code>HAP</fao_species_code>
          <species_name>Pacific Halibut</species_name>
          <weight>68</weight>
          <quantity>5</quantity>
          <marketable>Y</marketable>
          <legal>Y</legal>
          <utilization_code>RET</utilization_code>
          <utilization_name>Retained</utilization_name>
        </activity_catch>
      </activity_catch_list>
    </activity>
  </activity_list>
</catch_log>

```

```

<activity_catch>
  <species_code>HAL</species_code>
  <fao_species_code>HAP</fao_species_code>
  <species_name>Pacific Halibut</species_name>
  <weight>17</weight>
  <quantity>6</quantity>
  <marketable>Y</marketable>
  <legal>N</legal>
  <utilization_code>REL</utilization_code>
  <utilization_name>Released/Discarded - Live</utilization_name>
</activity_catch>
<activity_catch>
  <species_code>SDF</species_code>
  <fao_species_code>DGX</fao_species_code>
  <species_name>Spiny Dogfish</species_name>
  <weight>52</weight>
  <quantity>23</quantity>
  <marketable>Y</marketable>
  <legal>Y</legal>
  <utilization_code>RET</utilization_code>
  <utilization_name>Retained</utilization_name>
</activity_catch>
<activity_catch>
  <species_code>SDF</species_code>
  <fao_species_code>DGX</fao_species_code>
  <species_name>Spiny Dogfish</species_name>
  <weight>8</weight>
  <quantity>1</quantity>
  <marketable>N</marketable>
  <legal>Y</legal>
  <utilization_code>DIS</utilization_code>
  <utilization_name>Discarded - Dead</utilization_name>
</activity_catch>
<activity_catch>
  <species_code>YER</species_code>
  <fao_species_code>RRV</fao_species_code>
  <species_name>Yelloweye Rockfish</species_name>
  <weight>2</weight>
  <quantity>1</quantity>
  <marketable>Y</marketable>
  <legal>Y</legal>
  <utilization_code>REC</utilization_code>
  <utilization_name>Retained - Crew personal use</utilization_name>
</activity_catch>
<activity_catch>
  <species_code>NCD</species_code>
  <fao_species_code>CDZ</fao_species_code>
  <species_name>Northern Cod</species_name>
  <weight>7</weight>
  <quantity>1</quantity>
  <marketable>Y</marketable>
  <legal>Y</legal>
  <utilization_code>REB</utilization_code>
  <utilization_name>Retained - Used as bait</utilization_name>
</activity_catch>
</activity_catch_list>
<activity_recovered_tag_list>
  <recovered_tag>
    <tag_code>XR52353</tag_code>
    <species_code>HAL</species_code>
    <fao_species_code>HAP</fao_species_code>
    <species_name>Pacific Halibut</species_name>
  </recovered_tag>
</activity_recovered_tag_list>

```

```

    </recovered_tag>
  </activity_recovered_tag_list>
</activity>
<activity>
  <activity_type>SET</activity_type>
  <activity_type_count>1</activity_type_count>
  <licence_id>456456</licence_id>
  <gear>
    <gear_code>LL</gear_code>
    <gear_name>Longline</gear_name>
    <gear_line_length>50</gear_line_length>
    <gear_hook_type_code>J</gear_hook_type_code>
    <gear_hook_type_name>J-Hook</gear_hook_type_name>
    <gear_hook_size>15/0</gear_hook_size>
    <gear_hook_count>143</gear_hook_count>
    <gear_depth>48</gear_depth>
    <bait_species_code>NCO</bait_species_code>
    <fao_bait_species_code>CDZ</fao_bait_species_code>
    <bait_species_name>Northern Cod</bait_species_name>
  </gear>
  <activity_start_date>2010-04-16</activity_start_date>
  <activity_start_time>14:32:00</activity_start_time>
  <activity_end_date>2010-04-16</activity_end_date>
  <activity_end_time>17:05:00</activity_end_time>
  <activity_start_latitude>30.1563N</activity_start_latitude>
  <activity_start_longitude>141.002W</activity_start_longitude>
  <activity_end_latitude>30.199N</activity_end_latitude>
  <activity_end_longitude>140.987W</activity_end_longitude>
  <fao_major_area_id>77</fao_major_area_id>
  <activity_fishing_area_id>546</activity_fishing_area_id>
  <activity_fishing_area_name>6P</activity_fishing_area_name>
  <activity_catch_list>
    <activity_catch>
      <species_code>GTU</species_code>
      <fao_species_code>SCF</fao_species_code>
      <species_name>Greenland Turbot</species_name>
      <weight>30</weight>
      <quantity>42</quantity>
      <marketable>Y</marketable>
      <legal>Y</legal>
      <utilization_code>RET</utilization_code>
      <utilization_name>Retained</utilization_name>
    </activity_catch>
    <activity_catch>
      <species_code>HAL</species_code>
      <fao_species_code>HAP</fao_species_code>
      <species_name>Pacific Halibut</species_name>
      <weight>107</weight>
      <quantity>5</quantity>
      <marketable>Y</marketable>
      <legal>Y</legal>
      <utilization_code>RET</utilization_code>
      <utilization_name>Retained</utilization_name>
    </activity_catch>
    <activity_catch>
      <species_code>BON</species_code>
      <fao_species_code>BZX</fao_species_code>
      <species_name>Bonito</species_name>
      <weight>16</weight>
      <quantity>3</quantity>
      <marketable>Y</marketable>
      <legal>Y</legal>

```

```

    <utilization_code>RET</utilization_code>
    <utilization_name>Retained</utilization_name>
  </activity_catch>
</activity_catch>
  <species_code>KCR</species_code>
  <fao_species_code></fao_species_code>
  <species_name>Kelp Crab</species_name>
  <weight>0</weight>
  <quantity>1</quantity>
  <marketable>N</marketable>
  <legal>N</legal>
  <utilization_code>REL</utilization_code>
  <utilization_name>Released/Discarded - Live</utilization_name>
</activity_catch>
</activity_catch_list>
</activity>
</activity_list>
</catch_log>
<!-- END CATCH LOG -->
<!-- START OFFLOAD LIST -->
<offload_list>
  <offload>
    <licence_id>456456</licence_id>
    <port_code>OCFWC</port_code>
    <port_name>Farewell Cove, Oceanica</port_name>
    <offload_location_id>86453</offload_location_id>
    <offload_location_name>Farewell Cove Dockyards</offload_location_name>
    <buyer_id>6913</buyer_id>
    <buyer_name>Oceanica Seafood Consortium</buyer_name>
    <sales_slip_id>A-13287</sales_slip_id>
    <offloader_id>29429</offloader_id>
    <offloader_name>Oceanica Transport Company</offloader_name>
    <final_offload>N</final_offload>
    <offload_start_date>2010-04-17</offload_start_date>
    <offload_start_time>14:20:00</offload_start_time>
    <offload_end_date>2010-04-17</offload_end_date>
    <offload_end_time>15:35:00</offload_end_time>
    <offload_catch_list>
      <offload_catch>
        <species_code>HAL</species_code>
        <fao_species_code>HAP</fao_species_code>
        <species_name>Pacific Halibut</species_name>
        <state_code>FRO</state_code>
        <state_name>Frozen</state_name>
        <form_list>
          <form>
            <form_code>WHL</form_code>
            <form_name>Whole</form_name>
          </form>
        </form_list>
        <weight>65</weight>
        <quantity>5</quantity>
        <conversion_factor>1.05</conversion_factor>
      </offload_catch>
      <offload_catch>
        <species_code>SDF</species_code>
        <fao_species_code>DGX</fao_species_code>
        <species_name>Spiny Dogfish</species_name>
        <state_code>FRE</state_code>
        <state_name>Fresh</state_name>
        <form_list>
          <form>

```

```

    <form_code>GUT</form_code>
    <form_name>Gutted</form_name>
  </form>
</form_list>
<weight>47</weight>
<quantity>24</quantity>
<conversion_factor>1.1</conversion_factor>
</offload_catch>
</offload_catch_list>
</offload>
<offload>
  <licence_id>998877</licence_id>
  <port_code>OCFWC</port_code>
  <port_name>Farewell Cove, Oceanica</port_name>
  <offload_location_id>88754</offload_location_id>
  <offload_location_name>Bob's Wharf</offload_location_name>
  <buyer_id>6927</buyer_id>
  <buyer_name>Bob's Rockfish</buyer_name>
  <sales_slip_id></sales_slip_id>
  <offloader_id>29429</offloader_id>
  <offloader_name>Oceanica Transport Company</offloader_name>
  <final_offload>Y</final_offload>
  <offload_start_date>2010-04-17</offload_start_date>
  <offload_start_time>18:19:00</offload_start_time>
  <offload_end_date>2010-04-17</offload_end_date>
  <offload_end_time>18:57:00</offload_end_time>
  <offload_catch_list>
    <offload_catch>
      <species_code>GTU</species_code>
      <fao_species_code>SCF</fao_species_code>
      <species_name>Greenland Turbot</species_name>
      <state_code>FRE</state_code>
      <state_name>Fresh</state_name>
      <form_list>
        <form>
          <form_code>GUT</form_code>
          <form_name>Gutted</form_name>
        </form>
        <form>
          <form_code>HEA</form_code>
          <form_name>Headed</form_name>
        </form>
      </form_list>
      <weight>27</weight>
      <quantity>41</quantity>
      <conversion_factor>1.12</conversion_factor>
    </offload_catch>
    <offload_catch>
      <species_code>HAL</species_code>
      <fao_species_code>HAP</fao_species_code>
      <species_name>Pacific Halibut</species_name>
      <state_code>ALI</state_code>
      <state_name>Alive</state_name>
      <form_list>
        <form>
          <form_code>WHL</form_code>
          <form_name>Whole</form_name>
        </form>
      </form_list>
      <weight>107</weight>
      <quantity>5</quantity>
      <conversion_factor>1</conversion_factor>
    </offload_catch>
  </offload_catch_list>
</offload>

```

```
</offload_catch>
<offload_catch>
  <species_code>BON</species_code>
  <fao_species_code>BZX</fao_species_code>
  <species_name>Bonito</species_name>
  <state_code>ALI</state_code>
  <state_name>Alive</state_name>
  <form_list>
    <form>
      <form_code>WHL</form_code>
      <form_name>Whole</form_name>
    </form>
  </form_list>
  <weight>16</weight>
  <quantity>3</quantity>
  <conversion_factor>1</conversion_factor>
</offload_catch>
</offload_catch_list>
</offload>
</offload_list>
<!-- END OFFLOAD LIST -->
</trip>
```

## Appendix B – Minimal data sample file for completed trip

The following is a sample XML file that represents the same trip that was represented in Appendix A.

The following sample assumes that the target system has full knowledge of the meaning of code data. As such, code descriptions or any other data that could be derived from codes is not included (e.g. the <submitting\_body> node only contains a <trip\_submitter\_id> element as the other submitting body information could be derived from value in <trip\_submitter\_id>).

The following sample also excludes information that may be subject to privacy concerns. As such, data regarding fishing licenses, vessels, skippers, gear used, etc. have not been provided. Instead, the sample file only provides enough information to answer these questions:

- What was caught?
- How much of it was caught?
- When was it caught (date only)?
- Which general area was it caught in?

The size of the following minimal data file is 5,305 bytes. By comparison, the fully expanded version of the file (in Appendix A) is 23,171 bytes.

```
<?xml version="1.0" encoding="UTF-8"?>
<trip xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="http://www.fisherystandards.org/docs/fishing_trip.xsd">

  <submitting_body>
    <trip_submitter_id>55555</trip_submitter_id>
  </submitting_body>

  <!-- START TRIP HEADER -->

  <header>

    <trip_number>1</trip_number>
    <trip_revision_number>1</trip_revision_number>
    <trip_completed>Y</trip_completed>

    <unit_of_measure_list>
      <weight_units>kilograms</weight_units>
    </unit_of_measure_list>

    <!-- START FISHERY LIST -->

    <fishery_list>

      <fishery>
        <fishery_id>999</fishery_id>
      </fishery>

      <fishery>
        <fishery_id>972</fishery_id>
      </fishery>


```

```
</fishery_list>

<!-- END FISHERY LIST -->

</header>

<!-- END TRIP HEADER -->

<!-- START TRIP DEPARTURE -->

<departure>

  <departure_date>2010-04-15</departure_date>

</departure>

<!-- END TRIP DEPARTURE -->

<!-- START CATCH LOG -->

<catch_log>

  <log_type>SKIPPER</log_type>

  <activity_list>

    <activity>

      <activity_type>TOW</activity_type>
      <activity_type_count>1</activity_type_count>

      <activity_start_date>2010-04-16</activity_start_date>
      <activity_end_date>2010-04-16</activity_end_date>

      <fao_major_area_id>77</fao_major_area_id>
      <activity_fishing_area_id>546</activity_fishing_area_id>

      <activity_catch_list>

        <activity_catch>
          <species_code>HAL</species_code>
          <weight>68</weight>
          <utilization_code>RET</utilization_code>
        </activity_catch>

        <activity_catch>
          <species_code>HAL</species_code>
          <weight>17</weight>
          <utilization_code>REL</utilization_code>
        </activity_catch>

        <activity_catch>
          <species_code>SDF</species_code>
          <weight>52</weight>
          <utilization_code>RET</utilization_code>
        </activity_catch>

        <activity_catch>
          <species_code>SDF</species_code>
          <weight>8</weight>
          <utilization_code>DIS</utilization_code>
        </activity_catch>

      </activity_catch_list>

    </activity>

  </activity_list>

</catch_log>
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<activity_catch>
  <species_code>YER</species_code>
  <weight>2</weight>
  <utilization_code>REC</utilization_code>
</activity_catch>

<activity_catch>
  <species_code>NCD</species_code>
  <weight>7</weight>
  <utilization_code>REB</utilization_code>
</activity_catch>

</activity_catch_list>

</activity>

<activity>

  <activity_type>SET</activity_type>
  <activity_type_count>1</activity_type_count>

  <activity_start_date>2010-04-16</activity_start_date>
  <activity_end_date>2010-04-16</activity_end_date>

  <fao_major_area_id>77</fao_major_area_id>
  <activity_fishing_area_id>546</activity_fishing_area_id>

  <activity_catch_list>

    <activity_catch>
      <species_code>GTU</species_code>
      <weight>30</weight>
      <utilization_code>RET</utilization_code>
    </activity_catch>

    <activity_catch>
      <species_code>HAL</species_code>
      <weight>107</weight>
      <utilization_code>RET</utilization_code>
    </activity_catch>

    <activity_catch>
      <species_code>BON</species_code>
      <weight>16</weight>
      <utilization_code>RET</utilization_code>
    </activity_catch>

    <activity_catch>
      <species_code>KCR</species_code>
      <weight>0</weight>
      <utilization_code>REL</utilization_code>
    </activity_catch>

  </activity_catch_list>

</activity>

</activity_list>

</catch_log>
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<!-- END CATCH LOG -->

<!-- START OFFLOAD LIST -->

<offload_list>

  <offload>
    <final_offload>N</final_offload>
    <offload_start_date>2010-04-17</offload_start_date>
    <offload_catch_list>
      <offload_catch>
        <species_code>HAL</species_code>
        <weight>65</weight>
      </offload_catch>
      <offload_catch>
        <species_code>SDF</species_code>
        <weight>47</weight>
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  </offload>

  <offload>
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    <offload_catch_list>
      <offload_catch>
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        <weight>27</weight>
      </offload_catch>
      <offload_catch>
        <species_code>HAL</species_code>
        <weight>107</weight>
      </offload_catch>
      <offload_catch>
        <species_code>BON</species_code>
        <weight>16</weight>
      </offload_catch>
    </offload_catch_list>
  </offload>

</offload_list>

<!-- END OFFLOAD LIST -->

</trip>
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