TERRESTRIAL ECOSYSTEM MAPPING UPDATES

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1.0 Introduction

Islands Trust has assembled Terrestrial Ecosystem Mapping (TEM) data from several projects that cover the Trust area. This includes CDF Zone (including Saltspring Island subproject) mapping completed in 2008 (Madrone), Howe Sound mapping completed in 2009 (Madrone), and Parks Canada Southern Gulf Islands mapping completed in 2007 (B.A. Blackwell & Associates). This data has been translated and merged into a standardized database for Islands Trust planning applications. ("TEM_SEM" database).

The objectives of this project addressed two issues associated with the above data:

1. map the small islets and islands not previously captured in the original TEM mapping.

2. review the public feedback comments received from review of TEM map products, and adjust existing TEM data where warranted.

2.0 Approach

2.1 Island Mapping

A spatial database containing all the islets/islands requiring mapping was obtained from Islands Trust. This was derived from the provincial TRIM data and as such, included some minor inaccuracies in shoreline locations, particularly for small islets. These were left unadjusted to be consistent with the original CDF Zone mapping project.

Digital orthophotos for the majority of the islands was obtained from Islands Trust. These included flights from 2002, 2006, 2007, 2008, and 2009. This was the primary source of imagery used for mapping. Since the majority of the islands were small and with limited relief, the 2D ortho imagery was of sufficient quality to conduct TEM mapping. A number of islands were not covered by the ortho coverages. For these areas, we used a combination of sources, including the airphotos from the original TEM mapping projects where available, the Bing Maps ArcMap add-on showing "aerial" coverage, the Winchelsea Conservation Covenant baseline documentation, and photos of Ballenas Island from *marinas.com* and *privateislandsonline.com* websites.

Mapping was done in a Personal Geodatabase feature class in ArcMap 9.3. Polygons were delineated where required, and attributes entered directly in the attribute table. Some clusters of islets were encountered that were included in multipart polygons. These were "exploded" into component islands prior to mapping. Mapping was consistent with the CDF Zone data, including the resolution and map legend. Once the mapping was completed, an error checking routine was done on the attribute table using a series of queries in Access. This ensured polygon components summed to 100%, fields were filled where required, and correct field codes were used. The data structure

used was consistent with the original TEM_SEM database. The supplemental fields derived by Islands Trust from the TEM attributes were left empty, to be processed with the appropriate algorithm at a later data.

2.2 Public Feedback

Public feedback items were included in a spreadsheet provided by Islands Trust. Each of these items was reviewed in conjunction with the original mapped airphotos from the CDF Zone and Parks Canada projects. For the Howe Sound area, the Purview 3D models used in the original mapping were obtained and reviewed using the PurVIEW ArcGIS Desktop in ArcMap 9.3.

Each feedback item was reviewed to determine whether they are appropriate for the scale of the original inventory, if they are ecologically appropriate and if they are visible and mappable. Where they were deemed appropriate, revisions were made to the attribute database and polygon linework as required in the TEM_SEM data. A new field was added which indicated the type of change made to the data. All polygons that had a documented change were exported into a separate feature class that formed the deliverable item. A record was kept for each item in the feedback spreadsheet indicating whether or not a change was made, and a brief description of what was changed or why changes were not warranted.

For North Pender Island, the issues to review were locations of water/wetland features identified by the Pender Island Conservancy Association and Pender Islands Trust Protection Society (PICA). A shape file containing spatial data for these features was obtained from Islands Trust. A separate feature class was created that contains numbered polygons around the assessed items. These can be referenced to the itemized comments in the feedback spreadsheet. Very small features identified as single locations were beyond the original mapping resolution and not reviewed.

3.0 Results

The deliverable GIS items consist of three feature classes in a Personal Geodatabase (*IslandsTrust_TEM_completion_Feb6_2011.mdb*). These include:

Islands_NOTEM_Data: mapped islands/islets with TEM data

Feedback_polygons: polygons extracted from TEM_SEM which have been adjusted according to feedback comments. The CHANGE field indicates the type of change made (ATT=attributes only, PO=polygon only, PA=polygon and attributes)

PICA_checks: numbered polygons around water features in PICA data that can be cross-referenced to comments in the feedback spreadsheet.

An overview synopsis of the results are shown in Tables 1 and 2..

Table 1. Summary of mapped island polygons.

Polygon component 1	Polygon Type		Number of polygons
Site series mapcode	Compound	Simple	
BE	1	1	2
DA	14	6	20
DC	1	1	2
DS	4	4	8
FC	1		1
GO	9	2	11
HK	1		1
HM	1		1
LM	1	1	2
MU		3	3
RA		2	2
RO	20	288	308
RS	1		1
SC	1	1	2
Total	**55**	**309**	**364**

Table 2. Summary of original and changed feedback items.

Island Area	Number of issue items	Number changed	Comment
Denman	4	4	
Gabriola	7	0	
Mayne	1	0	
Galiano Edits	6	6	
Thetis Edits	1	1	
S. Pender	8	0	
Lasqueti	4	1	
Bowen	9	4	
Gambier	14	2	
Hornby	1	0	
North Pender	26	0	PICA water