An on-line database for world-wide tracking of commercial whale watching and associated data collection programs

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ABSTRACT

An on-line database is being developed to facilitate the study of commercial whale watching world-wide. The project will solicit and archive data from registered users involved in whale watching operations and/or associated data collection programs. An online interface will encourage accurate data collection and provide a process by which scientists can gain access to the data. We anticipate that this database will be operational by 2010.

KEYWORDS: WHALEWATCHING

INTRODUCTION

There are currently few resources with which to systematically track the development of the commercial whale watching industry world-wide. Here we describe the development of an on-line database for tracking commercial whale watching operations and associated data collection programs. The intent of the project is to begin to collect basic information on whale watching effort and data in a standardized, user-friendly format. The project will solicit regular contributions from members of the commercial whale watching industry and associated data collection programs. In addition to basic data, it is expected to be flexible and scalable to allow directed investigations to be undertaken. This project received input from an intercessional e-mail group in early 2009 and seeks participation from other SC members. We anticipate this database to be operational in 2010.

ARCHITECTURE AND INTERFACE

The project will be implemented using a SQL database with web pages for the user interface (UI). To better enable security and performance of the application most of the logic will be implemented in the database system, with the web pages providing a thin layer for the user interface. Basic security and access to the data will be controlled by user accounts, with differing access permissions. The initial prototype will have a very simple UI, but the final application will have an easy to use UI that allows account holders to enter and modify their own information, as well as to query data according to their level of access. It will also be limited to an English language interface initially, but developed with the ability to expand to other languages.

Spatial data entry and queries are currently handled with four co-ordinate fields entered manually by the user. However, we hope to integrate the database with a mapping system such as Microsoft Virtual Earth to facilitate spatial data entry, lookup and reporting. Map-based visualisation is anticipated for areas of operation and species watched at various spatial and temporal scales.

The initial prototype will be running on Microsoft SQL Server 2008. While the system will be developed using MS Windows based technologies, every effort will be made to make it as generic as possible in case other system requirements are required for the final installation. The hardware & computer system resource requirements for this application are relatively minor in terms of data storage and CPU power. For the initial prototype we will be using the free edition of MS SQL Server (MS SQL Express) and this may meet the needs of the final application. The software requirements for the prototype are any MS OS with "MS Internet Information Services" and MS SQLExpress installed (either on the same machine or on separate machines).

INPUT DATA

Initially, the project will focus on commercial, vessel-based whalewatching programs, but may expand to non-commercial operations (such as researchers with paying participants), swim-with programs and aerial whalewatching. The following minimum information will be requested from users:

1) Name, affiliation(s) and current contact details of the registered user.

2) Name and contact details of whale watching company (or companies).

3) Basic details of whalewatching operations, by company and year. Data will include: a) species and category of encounter (target, common, rare), b) location of operations, c) number of vessels used, d) vessel length(s), e) number of passengers carried, f) start and end dates of season, g) number of trips, h) number of days of operation. Each will have a field that allows the user to differentiate between exact and approximated data.

4) Name and contact details of institutions or groups involved in data collection or use

5) Basic details of data collection program, by group and year. Data will include: a) affiliated whalewatching operation, b) collection start and end dates (if different from operator), c) species studied, d) category of person responsible for data collection, e) types of data collected and f) scientific products of program (publications, reports and theses).

Additional fields may be added as research interests emerge. The user will be prompted by e-mail to update their information annually, and to respond to new data requests.

DATA ACCESS

The public is expected to have access to basic summary statistics via the web, such as the number of registered users, operators, institutions and collection programs tracked by the database at a given time. A list of research products would also be publicly available and searchable by region, species, author, institution and whale watching company.

Registered users would have access to their own profile and entered data. We anticipate that users would be able to search for other registered users, whalewatching companies and institutions. They would be able to see their contact information, but would not have access to their data.

Each user must read and agree to a general data sharing agreement when applying for a user account. It is expected that users would request data by completing an on-line research proposal form. This would specify the goals, methods and data requested (by region, species, data type, etc). Requests would be forwarded by e-mail to one or more reviewers and then distributed to relevant users. If no objections to the research are received within a set period of time, then access will be granted to those data with a specific data use agreement

A database manager would have complete administrative access to the database.