

AECO's Fauna Registration Project

A feasibility study
Author Morten Jørgensen
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Background

The Norwegian Environmental Authorities have in Prop I S (2011-2012) and the "Government's platform" stated that "research, mapping, monitoring, statistical overviews and various forms of reporting, will be developed to ensure that we have the knowledge we need most and use it in an efficient and constructive way". At the same time is better knowledge of climate and environment deemed necessary to meet new climatic and environmental challenges and the government has stated that research and monitoring in the polar regions should be given high priority.

In connection with the preparation of the "Management Plan for Eastern Svalbard Nature Reserves" a number of areas, particularly in relation to fauna registrations where there is lack of knowledge, were identified. The Governor of Svalbard therefore gave different environmental institutions assignments that would help to close knowledge gaps. But the reports that came out of the missions referred to deficient or obsolete knowledge of especially flora and fauna distributions. This would also be the situation in other areas of Svalbard.

AECO represents a potentially significant source in regards to observations, registration and monitoring in Svalbard, especially when it comes to fauna sightings. During the summer season AECO's members operate over large areas of the archipelago where they, often as the only ones, are in position to make observations and recordings that have the potential of benefitting research, management and others. With some 20 ships and dozens of potential observers, AECO members represent a unique opportunity to continuously and new knowledge.

Many of AECO members already work as sources of information, both for local authorities, scientists and others. Observations of safety-significant, changes related to cultural heritage, dead animals - such as dead whales which attracts large number polar bears, traffic in conflict with the law and other random observations are reported continuously, primarily to governments. Such observations are useful, but perhaps less important for research and knowledge-needs related to knowledge-based management

Fauna-observations are reported in different ways to different recipients. Several of AECO's members have for years contributed to a project run by the Norwegian Polar Institute with continuous reporting of marine mammals. Some members have collaborated with Longyearbyen Feltbiologisk Forening (LOFF) and reported bird sightings. Others have followed the old tradition of sending fauna reports to the Governor of Svalbard. All these reports are basically manually forms, usually in Excel or Word table format (as the recipient has prepared). The data collected and reported might benefits single projects only as they are not registered in databases available to the public.

In this project AECO wants to clarify both how current registrations works, who the recipients are, how the data is used - and not least - what will it take to exploit the resource AECO members' presence and ability to observations and records represent, and make it useful for the public. With "for the public", we mean that the data is made available to all researchers who might have interest, managers and the general public, where this is not in conflicts with other considerations. The project also aims at revealing which requirements observers must meet, and possibly how the observations can quality-assured.

The overall objective is that the knowledge access that AECO represents in this context is used in the best possible way. The project also includes examining the existing established systems and databases available, to understand how they can be used to record and communicate the observations made. It is also a goal that the project will examine the possible future organizing of the information flow, including who could be receiving, processing and registering the data the cruise operators can deliver. In other words, how fauna registration can be organized in the future. It is not an objective for this project to develop new databases. We assume that data can be handled by already existing databases.

AECO's members already provide data, but do not automatically have access to these data. To ensure our own access is also part of the objectives for the project, but not for commercial use. In consultation processes the industry needs this kind of information, as authorities and other stakeholders need it. The same applies to the preparation of guidelines and operational planning. If there are special considerations, we need access to such information - and an opportunity to contribute to actions to prevent negative impact.

We have chosen to organize the project as a feasibility study, conscious that the conclusions of the project are not given. If the feasibility study concludes that there right premises are in place to establish new routines and systems, enter into partnership and become registrars in databases, we expect that there will be a need to move forward into a new phase, possibly a test phase and possibly in collaboration with institutions or persons this project has revealed as potential partners. Otherwise, if the pilot project reveals that the bases are not in place for continuation, the project ends with the feasibility study.

Work

AECO engaged Morten Jørgensen to carry out work on this project. Morten Jørgensen is a naturalist with decades of experience as expedition leader world-wide, included polar regions. Morten Jørgensen's previous occupancies include being in charge of staff and staff routines onboard cruise vessels. He has had a long dialogue with e.g. Norwegian Polar Institute in connection with fauna observation that he has been involved in.

Morten Jørgensen was engaged to:

1. Investigate present routines members have for registration of fauna-observations.
2. Investigate AECO member's motivation to contribute to this project.
3. Consider if established operator(s) routines can work as template for collective routines.
4. Speak with other collectors and experts to investigate opportunities and challenges.
5. Establish contact with Artsdatabanken and discuss AECO's potential contributions and technical solutions.
6. Propose a solution for "AECO fauna registration system"
7. Consider if finances are needed to launch such a routine/system – alternatively in a project period – and consider a budget.

Findings for points 1-3:

Two questionnaires were created to investigate the first three points above – one was aimed at AECO's members, the other at AECO's field staff. Of 20 Full & Provisional AECO members, 17 of which operate in Svalbard & Greenland, 11 replied to the first questionnaire. 25 AECO field guides replied to the second one.

Of the replying 11 members, 7 have some sort of established FR routine.

The variation between these routines is considerable. There is variation regarding geographical areas covered, species covered, details recorded and forms used, and there is variation regarding whether the routines are mandatory or voluntary, whether there is quality control applied to the data, and whether the data is submitted anywhere.

The 7 members with some kind of current FR routine, plus an additional 3 replying members, are interested in participating in an AECO initiated, systematic, collective, trial FR routine. Only one of the replying members neither has a routine nor would consider establishing or participating in one. It should be noted that there was no response from nearly half the members.

The 10 members that are positively inclined towards a collective, systematic, trial FR routine all have various areas of concern regarding how the routine would be established, or they have desires to provide input into establishing the routine. The concerns were:

- a. Concerns about added costs for the companies, putting more tasks on the companies' office personnel or field staff, and diverting staff's attention from the main tasks in the field. Some however on the contrary found that FR would help enhance field staff skills.
- b. Concerns about ownership of and access to the data, whether the data is of good enough quality to be used by the end receivers, and getting feedback and "products" from the end receivers.

Several members voiced a desire to provide input regarding:

- a. The configuration of the forms to be used in an FR routine, with a comment from one that the forms should be easy to use, uniform for the whole industry, and also consistent with the end users' needs.
- b. Possible cost and labour needs of an FR routine.
- c. Ownership of, end receivers of, and feedback from end receivers of data.

The greatest division was apparent in the question whether FR should be mandatory or voluntary, with half of the FR positive members opting for each solution.

Among field staff, the support for a mandatory, systematic, AECO-initiated FR routine was overwhelming. It should be noted that the majority of the replies came from guides within one company where such a mandatory routine has been in place for a few years. A noteworthy finding was that a great percentage of the replying field guides had positively altered their attitude towards FR - and towards mandatory FR - after having experienced such a routine first-hand. The greatest

concern voiced by field staff was a lack of sufficient feedback from the end receivers, and about half said that they find FR somewhat demanding and time-consuming.

Given the spread in current routines, there is probably no routine within any member company that can directly be exported to other companies. The most obvious needs, for the establishing of a collective, systematic, trial FR routine, are to:

- a. Decide which AECO members will participate.
- b. Decide whether it shall be mandatory or voluntary.
- c. Define what geographical areas and what species must be recorded.
- d. Create forms that clearly indicate what data must be included for each record.
- e. Decide how and by whom the data shall be recorded, collected, quality controlled, collated and submitted.
- f. Establish where to submit the data (end receivers).
- g. Establish what shall apply to the data regarding ownership, access, use and feedback.

Findings for points 4-5:

In addition to the internal discussions among AECO members, there have been communications about AECO's FR ambitions with several potential end receivers, notably the Norwegian Polar Institute (NPI), the Norwegian Artsdatabanken (ADB) and Arctic Council: Conservation of Arctic Flora and Fauna (CAFF).

The majority of the data collected by AECO's replying members is from Svalbard, with a minor addition of data from Greenland (as well as even less from Iceland and none from other Arctic areas) (data collected in Antarctica or elsewhere in the World is not considered here). The replying members with a current submitting routine submit their marine mammal data to the marine mammals sightings database run by the NPI, whereas only a few submit bird data to ADB. Only one member mentioned an end receiver of Greenlandic data (mammals and birds). None said they submit Icelandic data, nor data of any other species besides marine mammals and birds.

Given this history of FR data collection and submission, it has been argued within AECO that a trial FR routine should probably consist of the following components:

- a. A handful of dedicated and willing companies (rather than everyone).
- b. Collecting of data primarily from Svalbard (rather than pan-Arctic).
- c. Recording of marine mammal data on a form provided by / developed with NPI.
- d. Recording of bird data on a form provided by / developed with ADB.
- e. Submitting of data from Svalbard to NPI and ADB.
- f. Specification of realistic expectations regarding ownership, access, use and feedback.
- g. Analysis of the routine after three years.

CAFF is the biodiversity working group of the Arctic Council. It consists of national representatives from the eight Arctic Council member states, representatives of indigenous peoples' organizations and Arctic Council observer countries and organizations. CAFF is intended to serve to cooperate

on species and habitat management and utilization and to facilitate more knowledgeable decision-making, and to help develop common responses on issues of importance for the Arctic ecosystem.

CAFF is in the process of developing and/or participating in several mechanisms for biodiversity monitoring, including the participation of and contributions from NGO's and industries. One of these is called ABDS (Arctic Biodiversity Data Service – www.abds.is), another is the SIN (Seabird Information Network - <http://axiom.seabirds.net/maps/circumpolar-seabirds>). One aim of these databases is to draw on already existing national databases, to consolidating the vast amount of disaggregated data across all Arctic sub-regions and biomes.

There are ongoing communications between AECO and CAFF, also about fauna data collection and registration. CAFF could be a potential future end receiver of FR data. In November 2014, the Arctic Council is planning an Arctic Biodiversity Symposium in Norway, in which AECO's participation would create a natural forum for continuation of the dialogue. At this stage, AECO and CAFF are in agreement that it is premature to consider CAFF as an end receiver during a trial routine. The geographical coverage area, communications contact points, data forms, data formats, ownership, access, use and feed-back expectations are all discussion points that will continue to be on the agenda in communications between AECO and CAFF.

ADB - Artsdtabaken

-is currently the obvious end receiver of AECO's Svalbard bird data. Georg Bangjord (the validator for Svalbard and Jan Mayen of the bird module of artsobservationer.no) has said: "It is important that all precise location species observations are entered into databases open for searches by managers, scientists and other interested parties. If they are entered into "artsobservationer.no", they will be visible as data in "artsobservationer" and as maps in "artskart". "Artskart" pulls on data from more than 40 databases in Norway and will in the future be the most important resource for biological diversity in Norway." (my translation from Norwegian).

ADB is in the process of creating an English version of their online bird database (artsobservationer.no/fugler), expected ready sometime late in 2014 (at which point it will also include mammals). Additionally, Vidar Bakken has created a programme (an Access base) that will allow data to be registered off-line (i.e. on board AECO vessels) for later easy uploading into artsobservationer.no. This programme can be translated into English and modified to suit AECO needs, pending an agreement between NPI and Vidar Bakken about the use of their map over Svalbard (Svalbardkartet) including place-names (see budget).

Until this is in place, and it has been established how and by whom data can be uploaded, the procedure for bird data under a trial FR routine should be:

- a. On each voyage, a guide must record birds according to an agreed form.
- b. In each company, a routine must be established for collection of the data forms.
- c. In AECO, a contact point for further collection, collating and initial quality control of the data must be established.

- d. The AECO contact point submits the data directly to ADB for further quality control and eventual inclusion in the database.

There is currently a backlog of data submitted in previous years to ADB, that has not been uploaded into the database, and this could initially also be the fate of some of the future data. One of the goals of the trial FR routine is to work with ADB in ensuring that historical as well as future data is registered in the database. Georg Bangjord has offered to oversee the entering of the backlogged data (see budget).

Feedback and end receivers “products” from ADB are not forthcoming. ADB is a user-based database, and it has no resources to promise individual feedback or specific outcomes. But the submitted data is “owned” by the submitter, accessible by the public (apart from certain sensitive data on threatened or vulnerable species), and it is as such available to anyone for download and analysis.

Norwegian Polar Institute (NPI)

-is the obvious end receiver of Svalbard marine mammal data recorded by AECO. NPI already has a database for such data, already has a form for the recording of the data (which NPI will further improve), and already receives data from a number of AECO members. Therefore, a trial FR routine would consist of:

- a. On each voyage, a guide must record all marine mammals according to an agreed form (created by NPI).
- b. In each company, a routine must be established for collection of the data forms.
- c. In AECO, a contact point for further collection, collating and initial quality control of the data must be established.
- d. The AECO contact point submits the data directly to NPI for further quality control and eventual inclusion in the database.

NPI and AECO have agreed that end receiver feedback and “products” are necessary to ensure the continued flow of data from AECO members. NPI and AECO also agree that the submitted data is “owned” by the submitter, that AECO shall have complete access to its submitted data and additionally to NPI-produced summary presentations of the larger NPI database on an annual basis. Examples could be updated species maps, graphs or similar showing distributions, densities, etc. For AECO it is also important that data submitted by AECO is made available for the public. AECO and NPI agree to continue communications about further “products” resulting from the use of the data – these could be research “highlights”, but they could also be other products specifically requested by AECO members.

6. Propose a solution for “AECO fauna registration system”

Based on the described findings, a trial FR routine project within AECO is suggested as follows:

- a. A three-year period is selected for the trial project. The Svalbard seasons of 2014-2016 are suggested. This allows for the routine to get well established, but also for reconsiderations to be applied after an initial period and a follow-up analysis.
- b. Five AECO members, who already have an FR routine and/or have expressed a strong interest in participating in a collective effort, are selected to contribute to the trial routine. Hurtigruten, Grand Espace, Lindblad, PolarQuest and Quark are suggested. Other members should be invited to participate if they wish. This ensures that only those with an interest in FR are tasked with it during a trial period. The suggested companies all either already have or approve of mandatory routines.
- c. Svalbard is selected as the area in which FR must take place. Contributions from other areas should be welcomed.
- d. All marine mammal species, and bird species specified on a separate list, are selected as the target FR groups. Additional species should be welcomed as well.
- e. NPI and ADB are selected as the end receivers of the marine mammal data respectively the bird data. Data from outside Svalbard should be welcomed and can be forwarded to relevant end receivers, but is not considered part of the project.
- f. Two forms shall be used for FR, one for marine mammals to be developed in cooperation with NPI, the other for birds in cooperation with ADB. This ensures that all participants submit data in similar forms and with similar content, and that those forms and contents are useful for the end receivers.
- g. AECO produces a brief protocol for the participating members, describing what is expected of them as part of their participation, and what they can expect in return. This will also describe how to fill in the forms and how and when to forward the forms.
- h. The involved members create a routine to ensure that FR takes place systematically on every voyage in Svalbard waters.
- i. The involved members create internal routines to ensure that the filled forms are collected within the company and forwarded to an AECO contact point.
- j. AECO contracts a contact point person to communicate with the participating members about the project, including producing the abovementioned protocol, collect and collate the forms, make a preliminary quality control of the data, forward the data to the end receivers, communicate further with NPI and ADB, and facilitate feedback and other “products” between the end receivers and AECO. This ensures that there are no additional costs for the participating members, and that the added tasks within the companies will be limited to the actual data registration in the field by field staff and to the collecting and forwarding of the forms by office personnel. Morten Jørgensen is suggested as contact point person.

- k. Under the presumption that ADB ensures that the plan to have a user-friendly English version of the website artsdatabanken.no/fugler moves forward, and that back-logged data already received from AECO members is entered and uploaded, and that an English translation of the mentioned Access base is made available to AECO, communications are maintained with ADB by the AECO contact point person about progress, possible problems, and feedback.
- l. Under the presumption that NPI ensures that an improved version of the marine mammals sightings form is produced, that AECO and the public has access to all AECO's submitted data, and that an agreed row of "products" (to be specified between NPI and AECO) are created and made available to AECO, communications are maintained with NPI by the AECO contact point person about progress, possible problems, and feedback.
- m. After the field season 2016, AECO analyzes the project with particular focus on whether members were satisfied with their participation (were costs, communications, benefits, feedback and "products" as expected, and were there problems with any aspect of the FR such as the mandatory nature or the added workload?), whether NPI and ADB were satisfied with data received and also whether they delivered as expected, whether to consider modifications to a potential continuation of the project, including whether to expand to other members, geographical areas, species groups, end receivers, etc.
- n. Funding for this three-year project is applied for, from the Svalbard Environmental Protection Fund, by AECO, including the funding of services and products directly related to the project, to be purchased from NPI and ADB (see below).

7. Financing a pilot-project

The following figures (excluding VAT) are suggested included in an application for a 3-year project period. The sum comes to NOK 900.000,- (or NOK 300.000,- / year) and covers expenses incurred through the involvement of three different cooperating parties.

AECO administration	= 112.500
Consultat (contracted contact person)	= 300.000
Travel/meetings	= 30.000
Norwegian Polar Institute	= 400.000
Artsdatabanken	= 48.500
Various	= 9.000
Total NOK:	= 900.000

Conclusions

A systematic fauna registration routine established within AECO in cooperation with receivers as Norwegian Polar Institute and Artsdatabanken is a win-win scenario. The benefits for scientific, managers and political are to be better able to monitor, manage and protect wildlife through the potential of contributions of quality data not obtainable through other means. This is turn, when used cleverly by scientists, politicians and managers, becomes a contribution to the protection of the Svalbard environment itself. AECO will feature as a relevant and important party to be considered in the continued efforts to sustain the environment, while allowing the general public access to and personal experiences in the wilderness. At the same time, the cooperation with scientific institutions and NGOs will secure concrete feedback and information flow both ways, which in turn can be used by AECO members and field staff to further develop the educational aspect of AECO activities, internally as well as in interaction with clients.

A continued development of a systematic fauna registration program in AECO thus contributes to a mapping of and monitoring of the Svalbard environment, as well as to enhancing the means with which to participate in educating about the state and trends of the environment – both main objectives of the Svalbard Environmental Protection Fund.

Systematic fauna registration clearly has the potential to contribute to knowledge about climate change and its effects, to contribute to the dissemination of the same knowledge, and through those contributions to contribute to making AECO tourism more sustainable.