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How to determine when to hire a consultant and when it is appropriate to do work in-house

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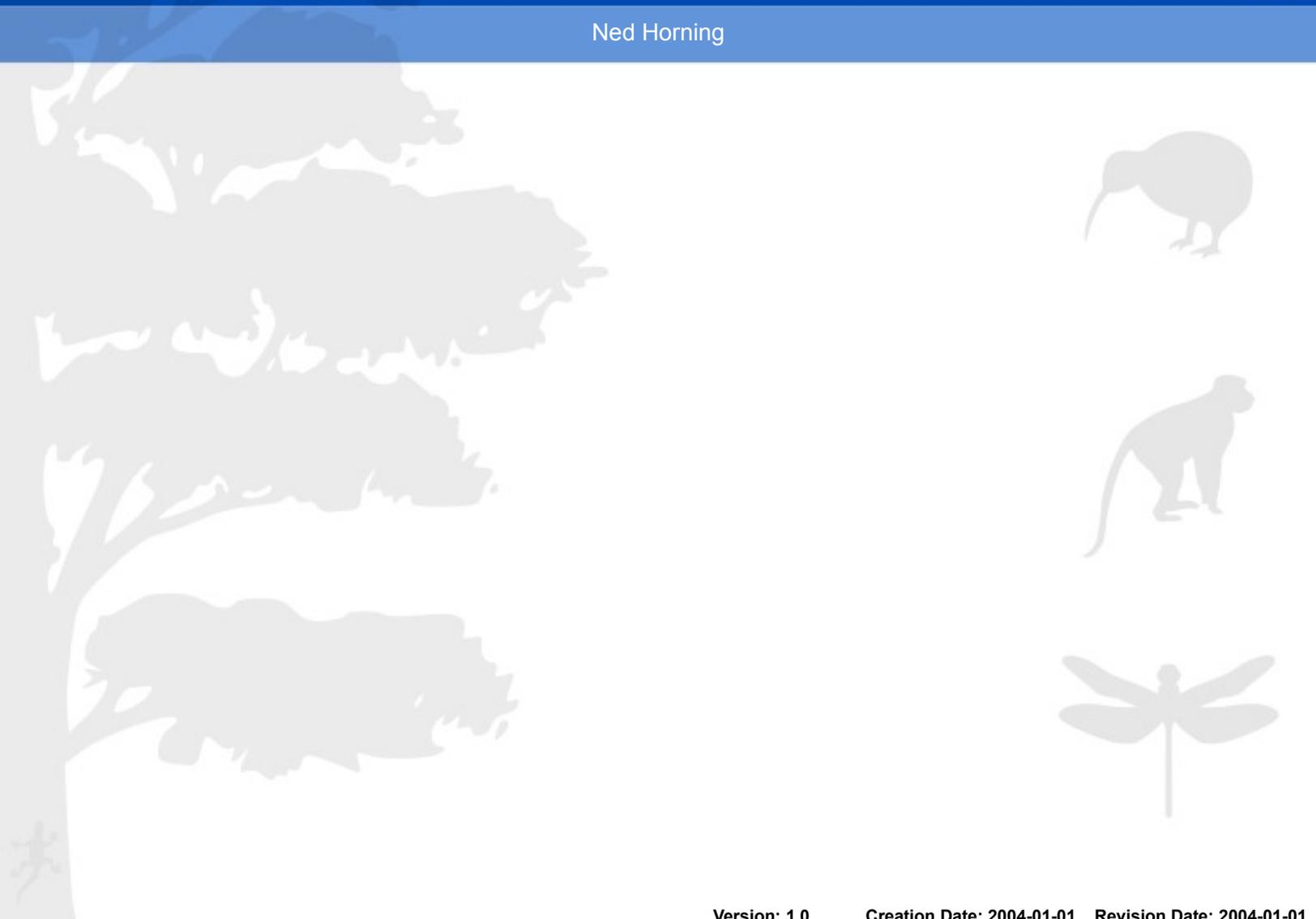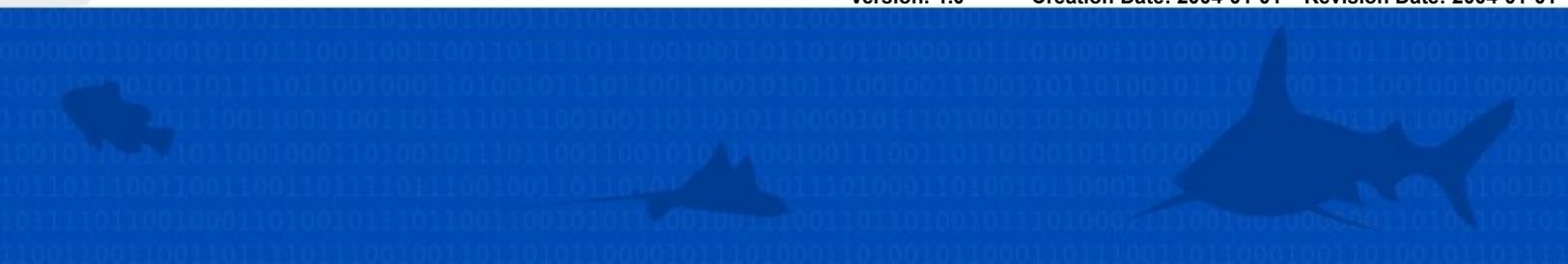
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How to determine when to hire a consultant and when it is appropriate to do work in-house

Deciding on the most effective way to move forward with a project involving remote sensing can be a challenging task. This is particularly true for a small organization without dedicated remote sensing specialists. A number of parameters must be evaluated to determine the most cost effective way to move forward in the short and the long term. This guide addresses the issues confronting a manager in this situation and provides insight into the thought process an organization can use to decide what kind of work should be hired out and when it makes sense to do work internally. It should help managers decide when training or investment in hardware/software resources makes sense and when it's better to have someone else do the work.

Unfortunately there is no magic formula or a standard response that works for all situations. This guide provides a series of questions that should be addressed when deciding on how to proceed on a remote sensing project and it weighs different options, detailing the advantages and disadvantages of each.

Do the work in-house or contract out?

The first question that comes to mind is; should the work be done in-house or should it be contracted out? If the resources are on hand and are available it probably makes sense to use in-house resources for the project. This assumes that the manager making this decision knows the capabilities and limitations of the in-house staff. If this is not the case it may make sense to hire someone to evaluate the capacity of the staff to see if the project requirements can be effectively met using in-house resources.

If the resources are not available in-house it becomes necessary to evaluate the options of: contracting the work, training existing staff, hiring someone to do the work, or a combination of these. Many organizations cannot justify hiring a full time remote sensing specialist because they do not have enough work to justify the expense of hiring someone with that level of expertise, experience, and purchasing the necessary hardware and software. One solution is to share an expert with other organizations either formally or informally. For example some of the larger conservation organizations have remote sensing experts on their staff and smaller organizations do not. These organizations can work out financial or in-kind agreements to foster this sort of collaboration.

To address the training option it is helpful to know what can be expected from different levels of training. All too often people are sent out for training to become proficient in using remote sensing methods but return to their jobs without sufficient experience to adequately conduct the necessary tasks. With remote sensing training one can learn a lot in a relatively short period of time but to get a thorough knowledge of remote sensing a long term education investment must be made. Although many of the methods necessary to apply remote sensing technology are not difficult to learn there is no substitute for experience for designing and overseeing a remote sensing project.

Many of the short-term (less than one month) remote sensing courses are geared to train people to conduct some of the simpler tasks common on most remote sensing projects.

People trained with these skills and guided by a remote sensing expert can be very effective at conducting remote sensing projects. The author has witnessed a number of instances when people with some remote sensing training but not much experience or expert oversight conducted a project and after a significant effort produced a product that was effectively unusable. This leads to an option of hiring a consultant or making an arrangement with an organization such as a University to help design and oversee the project. With this arrangement someone with extensive training and experience can make sure the project is on track while less experienced people conduct much of the time consuming work and gain valuable .experience. The key point here is that there is no substitute for experience and if sufficient experience is not available in-house it would be wise to explore options for including experienced personnel in the project.

Training

If a decision is made to train staff, is it better to have the training in-house or away from the office? In the past there was a trend to emphasize the importance of in-house training using the reasoning that it is critical that the training address real-life issues confronted by the trainee. This should certainly be considered but there are downsides to in-house training including office distractions and a less controlled environment. The chances of the training working as planned are higher when the trainer is in an environment that they are familiar with and have complete control over. All too often when training is taken on the road usability issues pop up that can interrupt and delay training. These include the wrong operating system installed on the computers, software conflicts, power issues, and the lack of necessary hardware.

Another issue related to training courses has to do with the focus of the course. If a decision is made to send staff off for training how does one decide on the type of training? The thematic focus is important. If you are interested in using remote sensing for land cover classification you would want a course that included that as an area of study. The type of available remote sensing courses varies widely from introductory to specialized. If you were training to become a remote sensing expert you should expect to complete a collage level course and acquire significant experience in the domain where you plan to work. On the other hand if you are interested in using remote sensing as a tool to compliment your knowledge in your particular area of expertise an introductory course is more appropriate.

Traditional introductory remote sensing courses tend to focus on learning the physics and algorithm (software) details of remote sensing with a focus on land cover classification. These courses tend to be scaled down versions of college level courses and students often come away feeling a bit overwhelmed and not sure where to start. Another approach is to start by focusing on learning what can and cannot be done using remotely sensed data and how to acquired imagery for your area of interest and then visualize the imagery. As the student become more interested in expanding their remote sensing skills more in-depth courses can be taken. It is important to request a course syllabus and discuss the course with students who have taken the course.

Consultants

If you decide to use a consultant, how do you go about finding an appropriate one?

Consultant organizations can range from one-person shops run out of their home to large corporations. Although there are lists of possible consultants available on the Internet and from various organizations, finding the right match for your project and budget constraints can require a lot of work. From the authors experience, learning from other's experiences is the most reliable source of information for finding a reliable consultant. It is helpful to talk to colleagues that have used consultants for similar projects to get their feedback. If this isn't practical then request a list of previous clients from perspective consultants and talk to the clients to see if their needs were met and try to get a feel if it is likely that the relationship between the consultant and your organization will be compatible.

When drawing up a contract with a consultant it is important to clearly define specifications for the products you want to be delivered. Because of the inherent conflict of interest is may be best to seek outside help (perhaps another consultant or an experienced colleague) to draft the specifications and, equally important, a plan to verify that the specification requirements have been met. All to often a task is completed and months or years down the line it becomes evident that the products produced for a project are not sufficient to meet the goals which the project was designed around.

With a little work and some correspondence with colleagues it is possible to make a good decision about moving forward with a remote sensing project.