COLLEGE of APPLIED BIOLOGY
BRITISH COLUMBIA

ASSOCIATION OF
BC FOREST PROFESSIONALS

Managing Species at Risk in British Columbia
Guidance for Resource Professionals

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Guidance

Contents

A Message from the Joint ABCFP/CAB Committee

In 2007, the College of Applied Biology of BC and the Association of BC Forest Professionals signed a Memorandum of Understanding (MOU) which, in part, sets down cooperation in areas of practice overlap between the definitions of "applied biology" and the "practice of professional forestry." The MOU called for the establishment of a Joint Committee, which convened its inaugural meeting November 21, 2007, to promote dialogue and cooperation between the two organizations.

The MOU directs the Joint Committee to act in an advisory capacity to the respective councils using, if necessary, the resources of experts and staff to participate in committee deliberations. The Joint Committee proposes solutions to issues arising between the organizations and pursues joint initiatives of common interest. One initiative of the Joint Committee is the development of guidance documents to assist members in exercising their judgement in professional practice. The documents are intended to be general enough to have broad application to members of both professional organizations and specific enough to serve as good practice advisories in particular situation. Guidance documents are based on a combination of common sense and professional planning aimed at improving stewardship and minimizing practice risk. As such, they provide members with advice on how to conduct practice related activities, and supplement members' expertise.

While guidance documents are not binding, members should be able to provide a clear rationale as to why they chose, in a particular situation, to deviate from the procedure/approach set out.

Summary

British Columbia has a very diverse topography and climate making it rich in flora and fauna. Many species are at risk of extirpation and where the risk is increased as a result of land and resource use, resource professionals have an obligation to assess the risk and recommend actions to mitigate adverse impacts.

Using professional judgement to ensure sound stewardship of land and resources involves the consideration of:

- legislation
- policy
- court decisions
- public interest

- current scientific information
- field observations, and
- professional obligations.

The challenges are considerable: scientific knowledge is usually limited; fluctuating economic conditions can complicate judgement; legislation and policy tend to lag behind scientific knowledge; and management plans can be incomplete or not provide adequate guidance. Nevertheless, the increasing numbers of species listed as at risk require that resource professionals respond to changes, including those involving human population pressures, societal expectations and responsibilities associated with professional reliance.

Federal and provincial legislation and regulations, including those regulating resource professionals, require professional advice or management activities be prescribed that complement the recovery or adequate protection of species at risk to a level where they are no longer at risk. However, there is inconsistency in the legislation, particularly relating to conservation of habitat of species at risk when land and resource management practices occur outside the forest and range context. Resource professionals should give balanced advice or exercise extra care in prescribing activities that may damage species at risk or the habitats upon which they depend.

Most resource professionals are not expected to have expert knowledge about species at risk, but all are expected to be aware of those species likely to occur in areas affected by their professional advice. They are also expected to maintain a good working knowledge of local species' vulnerabilities and of suitable management practices to mitigate adverse impacts. If they are not well informed, they should consult professionals who do have that knowledge. A team approach is a good indicator of diligence.

Particularly in the context of land and resource use activities with a moderate to high risk of harm to species at risk or their habitats, resource professionals are expected to:

- be reasonably informed of species in the areas affected by their advice or activities
- be reasonably informed of the requirements to conserve such species
- consult with other professionals if additional information about such species is necessary
- assess risk to such species from proposed professional advice or activities

- be informed of all relevant legal requirements concerning stewardship of species at risk;
- advise or suggest alternatives, including those that complement legal requirements if necessary, that may mitigate impacts on species at risk, and
- propose that their professional associations advocate for change if laws or policies appear to conflict with sound stewardship of species at risk.

The Context – Species at Risk in BC

British Columbia has a diverse physiography and sixteen distinct climates resulting in exceptionally rich flora and fauna. Three-quarters of Canada's mammal species occur in British Columbia, and more than twenty are found nowhere else in Canada. There are some 1200 species of vertebrates in BC, including almost 150 mammals, 500 birds, 500 fish, 20 reptiles and 20 amphibians. There are also 50,000 invertebrates, including 35,000 insects.[1] There are 3,000 plants, 1,000 mosses and 1,500 lichens plus algae and fungi. Despite this richness, there is concern, both internationally and locally, about the loss of species and ecosystems.

Many land and resource use activities can harmfully alter these species' habitats and thus influence their populations. If most land and resource use is to be sustainable, species and ecosystems have to be managed sensitively. If their numbers decline or population threats increase, species can become "at risk." For this report, "species at risk" includes species, subspecies[2] or ecosystems that are extirpated, endangered, threatened or of special concern. A species at risk is "extirpated" when it has become locally extinct; that is, no longer exists in the wild in British Columbia, but does occur elsewhere. A species at risk is "endangered" if it is facing imminent extirpation or extinction. It is "threatened" if it is likely to become endangered if limiting factors are not reversed. Finally, a species at risk is "of special concern" when it is particularly sensitive to human activities but not threatened.

This paper provides guidance to resource professionals (including associated technologists and technicians) practising, coordinating or advising on land and resource management activities that may impinge on the habitats of species at risk. However, answers to the question of what a resource professional's responsibilities are when managing or developing resources involving species at risk or their habitats are complex. Answering this question requires the application of professional judgement, involving the consideration of legislation, policy, court

1 BC Ministry of Environment website, February 2009 - http://www.env.gov.bc.ca/wld/bio.htm. For a very detailed assessment on the state of biological diversity in BC as of 2008, see "Taking Nature's Pulse: The Status of Biodiversity in BC", at http://www.biodiversitybc.org.

2 Grouping other than species are assessed and ranked, including ecological community. For this document, the term "species" is used to cover species, subspecies, variety or geographically or genetically distinct populations.

decisions, the public interest, current scientific information, field observations and professional obligations. In BC's results-based regulatory regime, there is particularly strong reliance on resource professionals to address stewardship[3] of land and resources.

The challenges associated with stewardship are considerable. For species at risk, scientific knowledge is usually limited, and fluctuating economic conditions can complicate the balancing of stewardship's social and environmental factors. Legislation and policy tend to lag behind scientific knowledge and often are not detailed enough to provide effective guidelines or recommendations necessary for conservation or habitat management. Government may lack the capacity to deliver what legislation appears to require in terms of species at risk. Management plans can be incomplete or not provide adequate guidance. At times, society's concern for a species at risk can be at odds with both scientific knowledge and government direction. Nevertheless, issues surrounding species at risk continue to grow in significance as human pressures on land and resources increase and societal expectations evolve and resource professionals must respond to such change.

Change in Human Population: Increasing population and consumption impose greater demands on the land base. Even with increased attention to sustainability and stewardship of land and resources, the habitat needed to maintain many species, particularly those in population centres such as the Fraser Valley, south-eastern Vancouver Island and the Okanagan is shrinking and putting populations under greater stress. Recovery of species at risk requires maintaining or improving the most critical habitats for these species.

Change in Societal Expectations: Changing societal expectations affect land and resource management. At present there is an increased concern about losses—loss of species, loss of site productivity, loss of present and future options, loss of economic opportunities, and loss of local participation and influence in decision making. These expectations are expressed through an increasing number and variety of international, federal and provincial mechanisms. International mechanisms dealing with the loss of species include the *Convention on Biological Diversity*, a 1992 treaty signed by Canada and almost 200 other countries. The Convention concerns the conservation of biological diversity and the sustainable use of its components. In 2002, the parties to the Convention decided to reduce significantly the current rate of biodiversity loss at the global, regional and national levels by 2010. This target was subsequently endorsed by the World Summit on Sustainable Development and the

3 Stewardship is described by the Association of Professional Biologists of BC as "care and management of ecosystems to ensure a continued flow of ecological goods and services to nature and humans". The Association of BC Forest Professionals defines it as "care of natural resources taking into consideration the values of the landowners and society", involving the application of ecological understanding and an ethical responsibility to the land and people. See websites http://www.apbbc.bc.ca/files/PoS%20final.pdf and http://www.abcfp.ca/regulating_the_profession/documents/guideline-practice-standards.pdf.

United Nations General Assembly.

There are also international restrictions on trade and traffic in endangered species, such as the *Convention on International Trade in Endangered Species of Flora and Fauna* (CITES). Nationally, Canada's federal, provincial and territorial ministers responsible for wildlife agreed upon an Accord for the Protection of Species at Risk in 1996, defining basic principles of conservation as well as some commitments to protect species at risk. Under the Accord, the ministers recognized intergovernmental cooperation is crucial to the conservation and protection of species at risk and complementary legislation and programs essential to provide effective protection for species at risk and their habitats across the country.

Beyond intergovernmental agreements, the primary federal mechanism to manage species at risk is the *Species at Risk Act* (SARA) of 2002. Although most provinces have specific stand-alone legislation to protect species at risk, BC does not. Here, an often-confusing array of agencies, legislation, regulation and policy guides the conservation of species at risk, their habitats and ecosystems at risk. Government guidance is incomplete, so BC resource professionals can have a strong influence on sustaining the province's native species at risk over the long term.

Change in Responsibilities Associated with Professional Reliance: The focus of land and resource management is to manage land and water as ecosystems, to sustain biological diversity, and to manage natural resources. Resource professionals provide advice and carry out activities in that regard. They are bound by the statutes that establish their self-governing professions, such as the *Foresters Act* and *College of Applied Biology Act* and regulated by the bylaws, rules and codes of ethics of their professions. Professionals are further guided by policies and guidance documents.

Professional accountability supports professional reliance, allowing clients, employers and other professionals to accept and rely upon the decisions and advice of resource professionals. However, professional reliance also entails a responsibility to understand and comply with all applicable laws, not just those pertaining to species at risk. In particular, the laws that regulate the professions must be kept in mind.

Resource professionals must maintain a current state of knowledge on species at risk sufficient for the professional to advise on sustainable stewardship of lands, resources and ecosystems. If they cannot do that they must recognize a need to retain another professional with the necessary expertise in specific species at risk. A team approach is often the best way to deal with complexities and uncertainties associated with management of species at risk.

Legal and Regulatory Framework

In BC, a complex mix of federal and provincial laws and policies pertain to species at risk and their habitats. At a minimum, resource professionals must comply with all applicable laws.

The legal process for designation of species and ecosystems at risk has three steps. First, experts assess the biological status of specific species and ecosystems and place them in risk categories.[4] That is followed by recommendations to government to formally designate specific species or ecosystems as being at risk. These first two steps are based on the best available information and current science, without consideration of the social or economic implications of conservation. Socioeconomic factors are brought into the process at the third step: designation of a species or ecosystem into an at-risk category under specific legislation via a cabinet-level political decision.

One provincial and one national body carry out the first two steps - assessing biological status of species, placing them into risk categories and recommending candidates for legal designation. Provincially, the Conservation Data Centre (CDC) is a department of the Ministry of Environment. If there are sufficient data, the CDC places species into similar risk groups commonly known as red, blue or yellow lists. Red-listed species include those species or subspecies eligible for listing as extirpated, endangered or threatened in BC.[5] Table 1 shows the numbers as of early 2009. The CDC has classified over 700 BC species as red-listed, including 91 species of wildlife (for this report, the vertebrates - amphibians, reptiles, birds and mammals). The CDC does not make laws about managing or conserving species at risk or their habitats, but is a database that can inform government decisions on legal designation of species at risk. The BC *Wildlife Act* has the mechanism to designate endangered and threatened species. However, of the 91 species recommended as eligible by the CDC, only four have been designated – three endangered and one threatened (Table 1). The lack of a provincial *Species At Risk Act* results in management occurring through several statutes; thus resource professionals are required to track such information and its implications.

In BC, species at risk pertinent to forest or range practices can also be identified under the *Forest and Range Practices Act* (FRPA) and the *Private Managed Forest Land Act* (PMFLA). Currently 85 species at risk are listed under FRPA, including 56 species of wildlife (vertebrates); see Table 1. A subset of 38 of those species at risk

4 For many species, including invertebrates, lichens, fungi and non-vascular plants, too little is known even to assess status for risk categories.

5 For simplicity, this section focuses on endangered and threatened species plus species eligible for such designation to illustrate the legal framework. Similar considerations apply to extirpated species and species of special concern.

is also listed under PMFLA. Unlike the *Wildlife Act*, FRPA also provides measures to mitigate forest and range use impacts on habitats of species at risk and plant communities.

Table 1[6]
Species Listed and Designated as Endangered or Threatened in BC

Organism	CDC[7]	Wildlife Act	FRPA	COSEWIC	SARA
Plants[8]	792	0	17	63	54
Animals	190	4	65	78	70
Inverts/Insects	66	0	5	11	15
Fish	33	0	4	20	11
Amphibians	5	0	8	6	6
Reptiles	7	0	3	5	5
Birds	46	2	33	19	15
Mammals	33	2	12	17	18
TOTALS	**982**	**4**	**82**	**141**	**124**

The second body determining the biological status of species is national. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC)[9] determines the national status of flora and fauna and assesses species as endangered or threatened. COSEWIC has 141 BC species as suitable for listing as either threatened or endangered, including almost 50 species of wildlife (amphibians, reptiles, birds and mammals). Once a species is identified by COSEWIC as being at risk, the federal cabinet must decide whether to add it to a schedule to the *Species at Risk Act* (SARA). As shown in Table 1, there are 124 BC species at risk listed under SARA, including 44 wildlife species. SARA requires the federal, provincial and territorial governments to take steps to prevent the extinction or extirpation of species at risk. Strategies, with species-specific goals and recovery objectives, must be developed for endangered and threatened species, followed by action plans to implement the recovery strategy. In terms of the federal legislation, while SARA protects migratory birds and aquatic species and their "residences" (e.g. – a nest or burrow), most habitat is beyond federal management authority. Whereas most land, water and vegetation

6 These numbers will change from time to time, so professionals should consult the original sources. At the time of writing, those were: CDC at http://www.env.gov.bc.ca/atrisk/toolintro.html; *Wildlife Act* at http://www.bclaws.ca/Recon/content/site?id=freeside&xsl=/Recon/template/toc.xsl/group-W/; FRPA at http://www.env.gov.bc.ca/wld/frpa/species.html; COSEWIC at http://www.cosewic.gc.ca/eng/sct1/searchform_e.cfm; and SARA at http://www.sararegistry.gc.ca/default_e.cfm.

7 The CDC listing, unlike the other columns, includes extirpated organisms which are included in the CDC "red-listed" category.

8 Although lichens are not "plants", they and plant communities are included in the plants category for simplicity.

9 See http://www.cosewic.gc.ca/eng/sct0/index_e.cfm#sar.

is administered by the provincial governments the federal law applies only to the habitat of species at risk on scattered federally-administered lands such as airports, national parks, Indian Reserves and military bases. Only if a province's laws do not effectively protect SARA-listed species would SARA's safety net provisions be invoked thus enabling federal government intervention.

British Columbia's laws can be linked with and take SARA requirements into account. Although basic amendments to do that were passed for the *Wildlife Act* some years ago, they have not been brought into force. Given the limited application of the *Wildlife Act* and the limited habitat influence of SARA, the primary legal instrument in BC to conserve the habitat of species at risk is FRPA. Most species at risk affected by forest or range management are included in the province's Identified Wildlife Management Strategy (IWMS).[10] The needs of those identified wildlife are met through a combination of land use objectives, habitat set-asides and restrictions on practices and activities.

In summary, some federal and provincial legislation and regulations - reflecting various international treaties - oblige resource professionals (to the extent the relevant factors relate to land and resource management and are under control of those professionals) to provide professional advice or prescribe management activities complementing the recovery or adequate protection of species at risk.[11] There is some inconsistency in the legislation, particularly relating to conservation of habitat of species at risk when land and resource management practices occur outside the forest and range context (e.g. – mining, power production, agriculture, oil and gas, urban development, etc.). Resource professionals need to pay special attention in the non-forest sectors. They should give balanced advice or exercise extra care in prescribing activities that may further compromise species at risk or their essential habitats. There are factors affecting species at risk that lie beyond the control of resource professionals; examples include global and regional climate change, reductions in genetic diversity, disease and pollution.

Other Considerations

a) Knowledge and Information

Resource-related activities can affect species through habitat loss, degradation and fragmentation, changes in the frequency, magnitude and nature of natural ecological disturbances, interrupted succession processes and increased access. The limiting factors on a population depend on the characteristics of the species, but may also

10 See http://www.env.gov.bc.ca/wld/frpa/iwms/iwms.html.

11 Note that low population numbers are not the only criterion for designating species at risk; they can be designated due other criteria such as to being on the edge of the species range or vulnerability to significant threats such as oil spills.

vary for one species from place to place. Sometimes those factors are amenable to management (e.g. deactivating roads when land use activities are completed, scheduling activities at times or seasons when a species at risk is absent or least vulnerable); sometimes they are less so (e.g. winter severity, human density).

While the mechanisms causing population declines are generally understood for many species at risk, the knowledge doesn't exist for all species and/or is often incomplete. Previously accepted population trends may be questioned as survey methods and statistical analyses improve over time. Therefore, a resource professional will have to assess the degree of risk associated with a decision as follows:

1. Determine the likelihood of a negative or adverse effect on a species at risk. The resource professional must consider which species are likely to occur in the area, along with their habitat requirements and sensitivities. Species at risk in the immediate area may be displaced or habitat may be altered or fractured by land and resource use activities. The resource professional should examine, detail and quantify the specific nature of each potential impact, then rank the likelihood of each potential adverse effect. Likelihood can be categorized as low, moderate or high.

2. Determine the potential consequences of an adverse effect on a species at risk if it does materialize. Consequence depends on the vulnerability of the "at risk" element to the potential adverse effects of the decision or activity. Concerns identified as "what could happen" are further assessed to determine their potential effects on the species at risk. Potential consequences include adverse effects on the organism and on associated ecosystems, socio-economic impacts and other consequences. For assessment purposes, consequences can be categorized as low, moderate or high.

Management objectives for some species at risk on private managed forest land are described in the *Private Managed Forest Land Act* and include critical wildlife habitat in order to facilitate the long term protection of that habitat. There are usually no management objectives for species at risk on other private lands, but fauna in particular are public resources that happen to inhabit private lands. Resource professionals should make extra efforts to ensure land and resource developers on private land are aware of the concerns for any species at risk likely to be affected. Although the risk may be assessed differently because the focus is more on the consequences to the landowner, the approach should be the same, whether the landowner is private or public.

Table 2 is a simple example showing the combination of likelihood and consequences to produce risk categories.

Table 2
Risk Assessment Grid

Likelihood \ Consequences	High	Moderate	Low
High	Very High	High	Moderate
Moderate	High	Moderate	Low
Low	Moderate	Low	Very Low

Where the risk is assessed as low, it may be appropriate to express an opinion or make a recommendation where much remains unknown. Where the decision holds a high degree of risk, that risk should be stated. It may be appropriate to declare an opinion or recommendation cannot be formed because of insufficient information. Alternatively, a clear written rationale for recommending or carrying out justifiable practices that incur a moderate to high risk of harm to species at risk will demonstrate due diligence.

For those species for which land and resource uses are a significant risk factor, the vulnerability is likely to involve one or more components of their life cycle (e.g. food, shelter, the ability to disperse or take cover, increased predator access). There will be recovery strategies, status reports and action plans available for some species at risk. Such documents are used by government to set priorities and appropriate management actions for both species and ecosystems of conservation concern. Government programs will also provide useful information. For example, the BC Species and Ecosystem Explorer allows access to such documents.[12] The BC government's "Conservation Framework" offers a science-based procedure to determine priorities and the most appropriate management actions for species and ecosystems of conservation concern.[13]

The scale at which the balancing of values should occur will depend on the particulars of the species at risk - its population, habitat needs, sensitivity to land and resource use practices and opportunities to mitigate or compensate for impacts. Another factor to balance is the species' standing as a stable or declining population. Species may have low but relatively stable populations. These require careful attention, but offer more options than species which have low and declining populations, requiring special attention and efforts.

Legislation, recovery strategies and management plans all require time, funding and political will. Recovery strategies or management recommendations are usually based on the best information at the time of writing, and new information on species at risk can make existing recommendations in recovery plans or management plans

12 See http://www.env.gov.bc.ca/atrisk/toolintro.html.

13 See http://www.env.gov.bc.ca/conservationframework.

out-of-date or even inappropriate. There are also considerable time lags between when issues or new knowledge is identified and when legislation and planning changes are made in response.

Resource professionals, by virtue of the stewardship provisions of their enabling statutes, should provide professional advice that complements the recovery or adequate protection of species at risk. That advice may require professional judgement to supplement what is set out in law.

Given the evolving and sometimes incomplete guidance available from laws and plans, what knowledge should a professional acquire? Most resource professionals are not expected to have expert knowledge about species at risk, but all are expected to make themselves aware of species at risk likely to occur in areas affected by their professional advice. They are also expected to maintain a good working knowledge of local species' vulnerabilities and of suitable management practices to mitigate adverse impacts, through a combination of continuing education and examination of readily-available information such as species recovery plans. If they are not well informed, they should consult a professional who does have that knowledge; reliance on another professional is a strong indicator of due diligence.

b) Public Interest

Many different publics - ranging from global constituencies to local communities - use a wide range of natural resources provided and supported by land, water, grasslands and forests. They also often attach very different values and weights to them. The *College of Applied Biology Act* and *Foresters Act* are both public interest statutes with a duty to serve and protect the public interest. However, public interest is a varied and complex subject. The public interest can be transient, fully or inadequately informed. There can be differences between public opinion, public expectation and public interest. These factors make it extremely difficult for a resource professional to accurately identify the overall "public interest." Nevertheless, the professions and the individual professionals discharge their public interest obligations in many ways, such as ensuring the competency of members, demonstrating practice independence, and meeting the principles of stewardship.

Given our democratic processes, resource professionals may assume laws and policies tend to reflect the will of the people.[14] However, that assumption is not always appropriate. While law and policy do provide important direction, legislation frequently lags behind changing public expectations and does not reflect new knowledge. It can also lag behind court judgements challenging existing legislation or policy or their application. In other cases, important issues lack legislative

14 Well-designed public opinion surveys can help to identify gaps between laws, policies and public preferences. For example, see Harshaw, H.W. (2008). British Columbia Species at Risk Public Opinion Survey 2008: Final technical report. Vancouver, BC: University of British Columbia Collaborative for Advanced Landscape Planning.

guidance. Where a species is at high risk, supplementing government direction by application of professional judgement may be necessary.

A resource professional should attempt to factor in the public interest [15], although it will often be more practical and pragmatic to assume public interest supports sound stewardship of land and resources, particularly species at risk. That assumption is supported by the laws that regulate resource professions. It is a legislated purpose of the College of Applied Biology to uphold the principles of stewardship of aquatic and terrestrial ecosystems and biological resources.[16] Similarly, a legislated object of the Association of BC Forest Professionals (ABCFP) is to advocate for and uphold principles of stewardship of forests, forest lands, forest resources and forest ecosystems.[17]

c) Professional Role

What is the resource professional's role when legislation, science and perceived public expectations do not align? The *Foresters Act* and *College of Applied Biology Act* require the professional organizations to hold members accountable for their professional judgement and activities by ensuring the competence, independence and integrity of all members and that all persons practising those professions are accountable to the public and their organizations. Their bylaws, rules and codes of ethics offer guidance on how resource professionals must approach species at risk. For example, the forest professionals' Bylaw 11 (code of ethics) requires that forest professionals practise and advocate good forest stewardship based on sound ecological principles. The bylaws also state that, where a member believes a practice is detrimental to good stewardship, the professional should promptly advise the person responsible for the detrimental practice and, if the matter is not resolved, inform the association. Similarly, the code of ethics of the College of Applied Biology Rules requires members to report or act to forestall any undertaking profoundly detrimental to the sound management and conservation of biological resources.[18] The phrase "profoundly detrimental" is not defined, but would likely include actions that significantly impair the sustainable management of a biological resource, threaten biological diversity or impair species at risk.

Each resource professional must rely on his or her individual judgement– (free of personal bias) to determine sound stewardship of species at risk. On occasion, resource professionals will encounter situations where satisfying legislation and

15 The ABCPF paper, Interpreting the Publics' Interests, provides some guidance; see http://www.abcfp.ca/regulating_the_profession/documents/guideline-public-interest.pdf.

16 *College of Applied Biology Act*, S.B.C.2002, c. 68, s. 3(2)(a)(ii).

17 *Foresters Act* S.B.C. 2003, c. 19, S. 4(2)(B).

18 See http://www.cab-bc.org/files/Code%20of%20Ethics%209colour.pdf.

established objectives will not result in what they judge to be sound stewardship. They must inform their employer/client of a conflict and suggest alternatives, but must not unilaterally add to a client's or employer's legal obligations, and must seek the consent of a client or employer before undertaking or committing to additional activities. A regulatory agency will decide on what is to be done, but the resource professional must provide, and act on, sound advice.

d) Summary of Considerations for Species at Risk

Resource professionals are fully accountable for the quality and content of any plans or work they prepare, whether or not they are signed or sealed. They are also accountable for the results of their plans or work, including impact on species at risk. They should avail themselves of the best reasonably available information pertaining to species at risk and provide that information to the client or employer. Where a resource professional is not an expert on a particular matter, advice should be sought from other professionals who have the requisite expertise.

While it remains appropriate for most land and resource use decisions to be based on risk assessments, the diligence required increases when:

- species at risk are involved, and
- the risk facing the species or its habitat increases.

Each resource professional must also decide how to respond if his or her concerns about poorly justified impacts on species at risk are not adequately addressed. At a minimum, a professional should ensure an objection is recorded on file. In more extreme cases, professionals should seek the support of their professional association in citing professional obligations to justify declining to implement a decision likely to do serious harm to a species at risk. The ABCFP or APB should assist and support professionals in such a situation.

Professionals Working Together

Different professions may bring different perspectives to bear on mitigation of impacts to species at risk, and working together, bringing in additional expertise as required, can develop and deliver balanced and valuable professional advice. Here are the steps that will help these professionals in their dealings with species at risk:

a) Keep Informed of Species at Risk in Your Area

- Understand the distribution, basic biology, life history, and unique ecological characteristics of any species at risk in the area being managed. Seek out available tools to assist in managing species at risk, such as SARA listings, FRPA's Identified Wildlife Management Strategy, COSEWIC and CDC lists, and any relevant recovery strategies, action plans, status reports or policy

directions. This baseline information is required to assess the need for additional expertise.

- Identify any legislative direction applicable to those species, recognizing the limitation of both the current understanding of the ecology of the species and our ability to predict the scale of impact. Most land and resource use practices tend to affect habitat, so special attention should be paid to the habitat requirements of species at risk in the affected area. If more detailed knowledge of biological and ecological characteristics is required consult with a professional who has the required knowledge or build an inter-disciplinary team of professionals.

b) Keep Informed of New Knowledge

- Consider and evaluate new emerging information, engaging an expert on a particular species at risk as necessary.

- Continuing education is the most practical way to keep reasonably informed, whether through documents such as IWMS species accounts and recovery plans, a professional association, a local educational institution or through conferences and symposia.

- For some species or ecosystems at risk, provincial, regional or local conservation programs and recovery teams are developing recovery and management plans. Contacting a recovery team will provide current information; if a species at risk is of particular concern in a professional's area, the professional could offer to participate on a recovery team, both to keep informed of recovery efforts and to help ensure land and resource use practices contribute to recovery efforts.

- Other sources of local knowledge may also be available, such as First Nations, consultants, field naturalists or university researchers.

c) Assess Practices to Meet Legislated Direction

- Legislated direction concerning species at risk does not come only from the *Wildlife Act*, *Forest and Range Practices Act* and *Species at Risk Act* and their regulations. The *Foresters Act* and *College of Applied Biology Act* have provisions that apply, as do a number of other more general instruments such as the federal *Fisheries Act* and BC's *Fish Protection Act* and *Private Managed Forest Land Act*. Much additional legislation is indirectly applicable, such as the *Water Act*, *Land Act*, *Environmental Management Act*, *Agricultural Land Commission Act* and others.

- When legislated direction is explicit, the resource professional must assess whether current or proposed management conforms to all applicable laws.

- There is also direction that is not law but is based in legislation, such as the recovery strategies for threatened and endangered species. These become particularly important because they incorporate the most current state of knowledge. If operational practices comply with the laws and are also consistent with a recovery strategy or action plan for species at risk, those practices can continue. The professional should advise the client or employer to also monitor and evaluate results over time. If the resource professional becomes aware that practices are not consistent with the strategy or plan, she or he must try to convince the employer or client of the merits of conforming. It may be appropriate, in confidence, to ask the professional association's support in suggesting a change in practices. The professional could advocate for an independent assessment of the effects of current practices on species at risk. If the evaluation shows that practices are out of alignment or likely to be inadequate or ineffective, changes should be recommended.

d) Evaluate Risk When There is No Direction

- If there is no recovery strategy/action plan for a species at risk, and no explicit direction from law or policy, the resource professional will have to rely on professional judgement based on current knowledge, supplemented with advice from a specialist or specialist team.

- If the risk of serious damage to species at risk is moderate to high, the professional should develop and consider lower risk options. Finding agreement on appropriate but practical management actions to halt or reverse downward population trends may be difficult. Species specialists may have different views from one another and advocate contrary prescriptions for the same species at risk. In addition to risk assessment (likelihood x consequences), the level of acceptable risk should consider the sensitivity of each affected species at risk. The lower the population numbers and the faster the rate of decline, the more risk-averse the land and resource use and management strategies should be.

e) Support Effective Monitoring and Adaptive Management

- When recommending a management strategy or land or resource use that could affect a portion of the range of a species at risk, the resource professional should also recommend an effective monitoring program to indicate whether the strategy is having the anticipated effect. Adaptive management strategies may then be required to mitigate the impacts. In addition, information and results from monitoring can help government, industry and academic institutions modify overall recovery strategies or test alternative management practices to mitigate adverse impacts on species at risk.

f) Advocate Sound Resource Stewardship

- Resource professionals and teams of specialists (government, licensees and consultants) work together within a legislated or policy framework to develop and carry out best management practices aimed at sustaining or improving the viability of species at risk. If results from monitoring indicate changes are necessary, resource professionals should, where possible, recommend alternative practices to meet the desired objectives.

- Resource professionals are also responsible to advocate for sound land and resource stewardship. Advocacy includes voicing concerns to employers and clients about any deviations they see from principles of sound stewardship, and seeking change when legislation or policy lags behind new knowledge. Professional associations such as the Association of BC Forest Professionals and the Association of Professional Biologists of BC are a source of information, assistance and support for professionals to advocate sound stewardship. In addition, those professional associations can themselves advocate for sound stewardship, particularly at the broad provincial or national scale and need to invoke their advocacy role when general public opinion or government policies run counter to sound stewardship.

Resource Professionals in Differing Roles

Resource professionals have differing opportunities and responsibilities relative to the management of species at risk depending on their particular roles, specialties or job functions. A typical organizational structure utilizes a team approach to land and resource use planning and activities:

- Co-ordinating registered professionals are responsible for ensuring all work and plans prepared under their direction are consistent with professional standards.

- Planners and managers provide direction and guidance to the coordinating professional.

- Field personnel must be trained to recognize how to detect and recognize species at risk or their habitat characteristics.

- Species professionals bring expertise in conservation of a particular species at risk and its habitats.

Here are some examples consistent with the team approach, often the best way to deal with complexities and uncertainties associated with management of species at risk.

1. A professional forester is asked to plan the removal of large, old, dead and dying Ponderosa pines in the southern Okanagan for operational safety reasons. Because white-headed woodpeckers nest in such trees, the forester must determine whether there are any local protected areas with such habitat and seek out available information, such as the species account in the Identified Wildlife Management Strategy. That information would identify many factors and parameters that should be considered, such as the woodpecker nesting and rearing season, so that removal of problem trees could be appropriately timed. A wildlife tree patch could protect nesting areas. However, given that this species is currently at the northern edge of its range and that much remains unknown, this would be a suitable situation for a team approach, consulting with a professional biologist with woodpecker expertise to jointly determine options and alternatives.

2. A professional biologist is hired to advise a developer on a housing, vineyard and golf course development across grassland with ponds. A call to the local Ministry of Environment office indicates the grassland/pond combination may be used by breeding Great Basin spadefoots. Spadefoots are difficult to detect, remaining hidden and quiet except for a few weeks in the spring, and it is now mid-summer. In this situation, the biologist would confirm that spadefoots are a threatened species under the *Species at Risk Act*, and that there is a draft recovery strategy. Little research has been done, and the recovery strategy identifies large knowledge gaps. Therefore, the biologist should consult a species at risk specialist to get the most up-to-date information on the species in the general area. The Great Basin spadefoot is also an IWMS species, and although IWMS is specifically applicable to forestry activities, some of the information could be of interest. All of that advice should be provided to the client. The biologist should recommend that, in the interim, the pond be managed with the expectation that spadefoots are using it. The developer could be encouraged to protect the pond itself, minimize disturbance during the breeding season and maintain or remediate riparian and aquatic habitats to a properly functioning condition.

3. A professional forester managing a mid-coast tree farm licence asks a professional biologist for advice on conserving foraging habitat for northern goshawk on the mid-coast. Although there is no legal requirement to conserve foraging habitat for this species at risk, very large foraging areas (>2,000 ha) are thought to be required. The biologist should seek out the information available - in this case, guidance in the IWMS species account would be helpful - and provide advice on the utility of areas set aside for other purposes such as old growth areas, ungulate winter ranges and wildlife habitat areas, supplemented by seasonal constraints on forest operations. This situation could benefit from a team approach, with the biologist working closely with the licensee's prescribing

forester to maximize mitigation of impacts and make the best use of practical options.

4. A professional forester is undertaking a prescription for harvesting timber under a tenure agreement on Crown forest land. Red-legged frogs occur within the broad geographic area of the tenure and a management strategy for red-legged frog habitat in this specific tenure area has been developed by a professional biologist and provided to the forest professional. The strategy sets out the components of critical habitat requiring protection and a method for harvest area delineation that will protect breeding sites. The forest professionals collecting data and undertaking the harvest layout process follow the management strategy and record their work consistent with the standard of diligence. The forest professionals each need to consider the harvest development relative to the red-legged frog habitat management strategy. Where the forest professionals are uncertain whether the harvest development will achieve the objectives for the frog habitat set out in the management strategy, they should consult a resource professional with the necessary expertise to address the concerns in a timely fashion to avoid dispersal.

5. A harvest treatment plan is in the early stages of development by a professional forester for a Crown forest tenure agreement. The entire tenure area lies within one biogeoclimatic subzone which has a provincially red-listed plant community. The plant community is protected in the tenure area by an order establishing legal land use objectives under the *Forest and Range Practices Act*. The forest professional can identify plant communities and the seral stages within the subzone and is also competent to assess the succession effects of the planned treatment. Prior to the completion of the planning, the professional forester documents the presence of various plant communities within the treatment area. This ecosystem and plant community inventory will help guide decision-making by the forest professional in developing treatment and conservation options for the tenure holder. The professional forester should ensure she is still reasonably informed on the specifics of the red- listed plant community; seek out current information; consult with other resource professionals regarding the plant community at risk and propose treatment alternatives that complement legal requirements and mitigate impacts on that plant community.

Conclusion

Society and its laws will continue to change in relation to land and resource use and management, including the conservation of species at risk. However, sustainable and careful management based on sound ecological principles will remain an underlying direction. Continuous learning is essential for all practising resource professionals, particularly in the area of species at risk conservation or recovery.

Professionals must be aware of emerging issues, species at risk that may occur in their geographic area, current and pending legislation, relevant court decisions, direction from legal objectives, and new research results if they are to develop good stewardship options. Developing professional teams, assessing levels of risk, recognizing the shifting burden of proof as species become less viable, and admitting imperfect knowledge will enable adaptive management and monitoring programs that improve the quality of decision making pertaining to the management and stewardship of species at risk. Sharing the reasoning behind recommended approaches and acknowledging knowledge limitations allows others to assess the soundness of a recommendation or decision.

In summary, resource professionals are expected to:

1. Be reasonably informed of species in the areas affected by their advice or activities, with reasonableness reflecting risk.

2. Be reasonably informed (again, reflecting risk) of the requirements to conserve such species.

3. Consult with other professionals when additional information about such species is necessary.

4. Assess risk to such species from proposed professional advice or activities;

5. Be informed of all relevant legal requirements concerning stewardship of species at risk.

6. Suggest alternatives, including those which complement legal requirements if necessary, that may mitigate impacts on species at risk.

7. Propose their professional associations advocate for change if laws or policies appear to conflict with sound stewardship of species at risk.

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