

# Fossil Management Framework Consultation Summary Report October 2010

## Background

Public consultation on the Fossil Management Framework (the Framework) was launched on May 3, 2010 by the Ministry of Agriculture and Lands (MAL) and concluded July 2, 2010. Notification of the consultation was provided through a public announcement, media release and newspaper advertisement in the Vancouver Sun.

The purpose of the consultation was to solicit feedback from stakeholder groups and the public on the Framework elements that address the use and protection of fossils.

The Framework consultation documents included background information and questions to solicit input. Most documents also included a proposal for discussion, which is included in this summary report as reference. The report summarizes opinions and comments contributed by respondents, and does not necessarily represent the views of the Province of British Columbia.

The information is summarized by the following topics:

- Fossil Collection and Use;
- Custodianship;
- Fossil Definition;
- Export;
- Impact Prevention;
- Information Management;
- Legislative Authority;
- Protection of Significant Fossils;
- Protection of Significant Fossil Sites;
- Reporting Fossil Discoveries; and
- Other Comments.

The feedback received will be used to inform the implementation of the Framework.

## Fossil Collection & Use

### *Government Proposals for Comments:*

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#### **For fossil collection on Crown land:**

##### **Recreational surface collection**

Recreational collecting of common fossils will be recognized as an acceptable use of Crown land. Surface collecting (confined to the loose surface of the land) will be permitted on Crown land where exclusive rights have not been granted. Recreational collection would not be permitted in parks, ecological reserves and protected areas, or lands under the jurisdiction of the Ministry of Environment.

Surface collectors would be allowed to engage in the surface collecting of the types of fossils that are common at the site in reasonable quantities without permits for non-commercial purposes.

“Reasonable quantities” would be considered to be amounts that do not deplete or jeopardize the scientific heritage and education values of a site. Surface collecting of vertebrate skeletal fossils or trace material and tracks would not be allowed. When unusual or rare specimens are discovered or when small quantities of fossils are present at a site, amateur collectors will be encouraged to report the findings to the appropriate institution to determine if they are significant.

##### **Scientific collection**

Permits will be required to collect for scientific or educational purposes. Scientific collecting could be permitted on unencumbered Crown land and all Crown land over which non-exclusive surface rights have been issued, provided that the collecting activity is not incompatible with the surface rights already issued.

Collecting for scientific or educational purposes would not be limited to common fossils but would include the collection of significant fossils (such as vertebrate skeletal fossils and fossil tracks). The use of mechanized equipment would be allowed to collect fossils for scientific purposes.

### **Commercial collection and use**

Commercial collection and use requires regulation to prevent unnecessary destruction of sites and to recover scientific information. A rent or royalty regime will ensure the Province receives a fair return for the removal of a Crown resource. Commercial use may include such activities as adventure tourism and commercial collecting for the sale of the fossils themselves.

Commercial collection and use of fossils, if allowed, would only be permitted on unencumbered Crown land, and Crown land over which non-exclusive rights have been issued, provided that the commercial use is not an incompatible use with the rights already issued.

Permits and licences would be issued similar to other permits and licences issued on Crown land under the *Land Act*. Applications for permits or licences of occupation for commercial uses under the *Land Act* will be reviewed based on their merits. The applicant will be required to provide at their own cost an assessment of proposed fossil sites, conducted by a qualified professional, to determine their scientific significance and their sensitivity to disturbance by the proposed commercial activities. Tenure terms and conditions for approved applications may specify that the tenure holder has no ownership rights to the fossils, may not damage the fossil site and may not sell the fossils.

### **General Comments:**

- The focus of the collection guidelines should be on defining surface collection and non-surface collection of fossils as opposed to specifying who is collecting (amateur, research, commercial).
- Flexible guidelines are needed to facilitate last minute decisions to be made in the field.
- Fossil collectors should be responsible for not over-collecting to avoid depletion of the resource and for reporting rare or important fossils, or sites that may need protection.

### **Surface Collection:**

- The focus should be on categories of fossils that cannot be collected.
- Vertebrate skeletal fossils, tracks and traces should be restricted not only from surface collection, but from commercial collection as well.
- Consideration should be given to removing the word “common” from surface fossil collecting as there is little agreement as to what “common” means and it may be misinterpreted to mean “not important”.
- Surface collecting, whether undertaken by amateurs or professionals, should be allowed without a permit.

### **Recreational/Amateur Collection:**

- The professional community has limited resources and relies on amateurs to find good quality specimens that can contribute to science.
- The quality of paleontological research would be greatly impacted if amateur paleontologists were limited to surface collection without the use of hand tools.

- A way to achieve the objective without a blanket prohibition on sampling rock outcrop would be to licence reputable amateur societies.
- Have clear definitions of what fossil groups and amounts can be collected and what must be left untouched and reported to appropriate authorities.
- “Recreational surface collection” should be renamed “surface collection” so that surface collection can be completed by anyone.
- A third category of educational collecting should be added.
- Recreational collecting should not require a permit.

#### **Research and Scientific Collection:**

- Permitting of researchers should not be limited to a specific collecting event, rather permits should extend over multiple years.
- Research permits should only be obtained by paleontologists (with an MSc degree or higher), or graduate students affiliated with an academic institution and/or supervised by a paleontologist who meets specific requirements.
- Data on locations should not be released to the public.
- Materials collected under a scientific permit should go to a recognized repository with an agreement that the material cannot be sold, traded or disposed of without the permission of the Province.
- A BC institution with acceptable standards for curation of specimens, particularly type specimens, should be the first priority as a repository, other Canadian institutions secondary as appropriate.
- Fees for research permits should not be required as a means to encourage research.
- The permit process should be simple and online.

#### **Commercial Collection:**

- Under no circumstances should commercial extraction of fossils be allowed.
- Non-extractive commercial use that promote the scientific, educational and heritage value of fossils should be encouraged.
- Commercial permits should require rigorous processing, scientific input and monitoring conditions.

#### **General Permitting:**

- Any permitting required under the Framework should be captured in existing processes to avoid duplication.
- A committee should be set up to evaluate permit applications.

#### **Quantities for Collection:**

- Set maximum fossil size for surface collection (e.g. 30cm) or maximum depth over which fossils must be reported to the appropriate designated authority.
- In the case of microfossil spot collections, ½ kg surface samples may be spot-collected up to a maximum depth of 30 cm (spot samples are occasional samples that are collected and processed to check and see if a sample site contains microfossils).
- It would be arbitrary to set a specific number of specimens, surface area or depth when collecting fossils; a best practices approach to collecting is recommended.
- Restricting surface collection of some vertebrate skeletal components to fewer than 30 cm is inappropriate. For example leaving rare fossils and small vertebrate remains at the surface makes them subject to weathering and erosion. In most cases they would be better preserved if collected and reported to experts within an appropriate time period (e.g. 1-3 months).

## Custodianship

### *Government Proposal for Comments:*

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Custodianship of fossils applies to the amateur collection of common fossils such as plants and invertebrates in reasonable quantities for recreational purposes.

Custodians may retain fossils in their possession as long as they do not sell them, export them from the province without permission and are prepared to donate them to provincial or Canadian institutions for scientific or educational purposes if requested.

Standards for custodians of fossils will be established to ensure that fossils are available for display, education and scientific study and enjoyment. Standards will include possession responsibilities, storage standards, record keeping and ownership transfer requirements.

Proposed storage standards to be considered include:

- Attaching accurate records (detailed locality description, the collector name, date of collection and field number) either directly on the specimen or using a coded system keyed to a database.
- Ensuring specimens and their data are kept dry.
- Protecting fragile specimens before storage.

The Province may consider the transfer of ownership of fossils to custodians where the custodians can document the fossils in the collection and, upon provincial review, the fossils are deemed to be common and not of scientific or educational value to the Province.

### *General Comments:*

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- The proposed custodianship requirements are adequate.
- Custodianship requirements must be clear and simple in order to avoid administrative burden that will defeat the goal of reporting.

### *Reporting Collections:*

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- Existing collections should be reported (as was done in Alberta) as a means to distinguish collections made prior to and after the implementation of the Framework.
- It would be appropriate for the Province to appoint at minimum one paleontologist for collectors to report to, ideally there could be three paleontologists, and for each region (coast, southern interior, north).
- A list of BC institutions (universities, museums, etc) that are recognized repositories and their areas of interest should be established, each type will have its own collection and storage issues.

### Storage Standards:

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- The list of proposed storage standards are too vague to be of guidance to someone who may not have the background training in fossil collections management.
- In addition to detailed locality data, the collector should also record whether the fossil was found in place (*in situ*) or not.
- The Framework should provide direction on custodial requirements for public institutions (not just requirements for amateur custodianship).
- Guidelines for physical storage should be developed in consultation with experienced paleontological collections managers.

### Other Custodianship Points to Consider:

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- Requests for examination by experts (accessibility is important to the scientific community).
- How loan agreements will be set up.
- If institutions will have permission for destructive analysis (e.g. radio carbon dating).
- Trading fossils between collectors.
- What happens when a collector moves from BC to another part of Canada or outside of Canada?
- Situations where individuals holding fossils do not wish to take on the custodianship role.
- The practice of paleontological societies providing children with common or low quality fossil fragments at educational events.
- Limits on the number of fossils an individual can have (not recommended).

## Fossil Definition

### Government Proposal for Comments:

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#### **Proposed definitions:**

“Fossil” (or “paleontological resource”) means any remains or traces, including casts and moulds, of biological organisms that lived in the geological past, or evidence of their activity, that are preserved in rock or unconsolidated sediments; but does not include:

- a) minerals as defined in the *Mineral Tenure Act*, including limestone and dolomite, when used for industrial purposes;
- b) coal, petroleum or natural gas; or
- c) human remains or artifacts.

“Fossil site” means any locality on the ground containing a fossil or fossils.

### General Comments:

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- The proposed definition is quite thorough.
- The term “geological past” that is used in the definition is preferable to trying to set a specific time frame as there is no standard agreed upon minimum time as to what establishes a fossil.

### Gaps/Concerns with Proposed Definition:

- A portion of the proposed definition as stated “includes traces....or biological organisms or evidence of their activity” could include large volumes of sedimentary rock with evidence of burrowing or other bioturbation, and it would be a large and generally fruitless task to report and photograph every sample with such features.
- Disagreement with exclusion of minerals as defined by the *Mineral Tenure Act*, as sedimentary rocks/minerals containing such resources may also contain important or rare fossils.
- Microfossils, whose study requires the use of a microscope, should be exempt from the fossils controlled by the Framework as there are no visible remains, no commercial interest, the sample size is small and the resource is unlimited.
- Alberta uses multi-cellular in its definition to exclude microfossils such as foraminifers, diatoms.

## Export

### Government Proposal for Comments:

#### **Proposed export process:**

The fossil export process will include two components: (1) a provincial permitting process for export of fossils outside British Columbia and (2) a protocol agreement with the federal government to provide the Province with a formal role in the federal export process.

A provincial permit would be required for the temporary, long term or permanent export of fossils from British Columbia. The Province also has the ability to add terms and conditions to *Land Act* dispositions to restrict export and sale of fossils. Where a qualified researcher already holds a research permit, permission to export may be included as a condition in the research permit and a separate export permit will not be required. Applications for export permits will be reviewed, and permissions granted in consultation with paleontological experts.

Where non-Canadian researchers are sponsored by a provincial or Canadian researcher, the research permit to the sponsoring researcher may allow the export of fossils from the Province to a non-Canadian institution for the duration of the studies being undertaken. The research permit will specify what fossils must be returned (i.e. all type specimens) to the province and what fossils (if any) may be retained by the non-Canadian institution.

If the export for research is outside of Canada, the sponsoring permit holder will be the exporter and must also comply with the requirements of the Canada *Cultural Property Export and Import Act*.

Limitations on the export of fossils from commercial operations would be specified as part of the commercial use authorization.

A protocol agreement, to be negotiated with Heritage Canada, would ensure that applications for fossil export permits from Canada are not accepted without appropriate provincial review and permits.

### General Comments:

- All fossils being exported should be done so under permit, and no fossils should be exported for sale or other commercial purposes.
- The provincial export process should include the absolute ability of the Province to deny the export of fossils, particularly for sale and the ability to seize such fossils without compensation if it is believed to be in the provincial interest.

### Export Permits:

- Export permits should be free, as are federal export permits.
- Permanent export by researchers working under permit should include a provision requiring that the collections must be for accession by a recognized institution and not to be held in private collections or offered for sale.
- In assessing permits for the export of fossils designated as type specimens, the following should be considered:
  - No restrictions should impact the ability of BC institutions to collaborate with other institutions outside of the province.
  - Paratypes may be distributed to various repositories as reference specimens for examination.
  - Export permits could require the Province to be notified of a change in status e.g. designating a specimen as a type.

### Gaps/Concerns with Proposed Process:

- Large volumes of fossils may be subdivided into units that fall under the price or weight limits defined by the Framework and exported in such a manner.
  - To address this, limits by weight/price should be cumulative over a set period,
- The *Cultural Property Export and Import Act* has serious flaws with respect to fossils:
  - The current regulated fossils under the *Cultural Property Export and Import Act* should be reviewed before the Province considers using the same criteria.
  - Export of any type of fossil should not be based on type of fossil (e.g. vertebrate, invertebrate, plant), weight or quantity – it should be based on scientific, heritage and educational significance or the potential for significance.
- Fossil valuation on the free market is determined largely by non-experts on the basis of demand by the public, which typically has little relevance to the scientific, educational and heritage values of a fossil.

### Other Points to Consider:

- Export of fossils or small parts of fossils for destructive scientific testing (e.g. isotope dating) may be required.
- Core samples and other geological samples should not be considered in the same category as primary fossils and their export should not be regulated under the Framework unless there are exceptional circumstances or impact assessments that have been undertaken.
- For fossils part of an existing institutional collection, the institution is primarily responsible for the disposition of its fossil collection and needs to be able to lend specimens for research:
  - A provincial permit could accompany the institution's own loan agreement.

- To secure safe return of fossil by an agreed date, may be desirable to post a bond/security that could be used to cover expenses for return/retrieval of fossils, or refunded if safely returned by agreed date.
- There may be cases where permanent trades of fossils between institutions should be permitted.

## Impact Prevention

### Government Proposal for Comments:

Crown land is available for a wide range of purposes by way of application to the Province. All applications, including those for an Environmental Assessment Certificate, identify the intended use and provide details of the proposed activities. Terms and conditions may be added to address specific issues identified through the processing of an application. In some cases additional information and studies, such as impact assessments, may be required as part of the application process to adequately assess impacts to Crown resources.

A paleontological impact assessment may be required following an evaluation of the following criteria:

- The proposed project impacts sedimentary or volcanic-type rock location.
  - Rationale: Fossils are found in sedimentary rocks and some volcanic-type rocks.
  - Fossils in an area are usually restricted to a specific rock formation or to highly specific and limited exposures.
- The proposed project impacts a high fossil potential area.
  - Rationale: High fossil potential areas can be identified by examining the known fossil site density or the potential to yield important fossils. According to fossil experts, about 10% of the province is likely to have a high fossil potential.
  - Although the distribution of fossil resources within British Columbia is not thoroughly understood, known site concentrations have been found on Vancouver Island, the Queen Charlotte Islands, in the Princeton-Merritt-Kamloops area, in southeastern and northeastern British Columbia and the Central Interior Plateau.

### Paleontological Assessments & Oversight:

- Paleontological assessments should be undertaken anywhere there is potential for fossiliferous rocks in the area of proposed development.
- It should be the proponent's responsibility to provide information on geology, stratigraphy, nature and type of the fossils and suggestion to avoid or mitigate impacts.
- Qualified paleontologists should carry out paleontological assessments.
- Having a qualified paleontologist on-site during excavations would be ideal, but cost and availability of paleontologists to conduct site monitoring may be an issue.
- Recommendations from paleontological assessments should be site and use specific.

- If a large list of potential impacts exists for a given project, the onus should be on the proponent to remove items from the list through baseline or exploratory studies.
- Industry should have flexibility to develop site specific plans within overall government objectives.
- A good fossil management plan is one that:
  - Acknowledges the likelihood that activities will have impacts on fossil resources prior to the activity taking place by completing a paleontological assessment;
  - Has a plan in place to report finds; and
  - Has plan in place to mitigate the impact on fossil resources.

#### **Discovery of Fossils at Project Sites:**

- Fossils found during the course of work would be reported to a qualified paleontologist who is a specialist in the particular field.
- An appropriate response to the identification of high fossil potential on site would be project specific, but would generally include a rapid evaluation, and if required, extraction to preserve the scientific, heritage and educational values of the fossils and to minimize the impact on industry.
- Development should be halted for a period of time to allow for greater assessment if a rare or unusual fossil is identified.
- If rare or important fossils are discovered, agreements for site usage many need to be established.
- Any fossils collected during paleontological assessment should be placed in an appropriate provincial repository.
- Identification of new and important fossil sites by industry could be supported by incentives, which would also compensate for the cost of site delay.

#### **Fossil Distribution & Potential:**

- Ideas for how to represent fossil distribution and potential in BC include:
  - Existing geological maps show the extent of rock formations known to be rich in fossil material;
  - Existing reports could be supplemented with a literature search and subsequent reports; and
  - Fossil location data from BC institutions, paleontological experts and paleontological societies.
- There are many potential problems with mapping high fossil potential, and the effort required to produce the maps may fall short of the utility of the product due to information that may be generalized too broadly.
- Industry is supportive of identifying fossil potential areas across BC as they are discovered, but there would have to be some clarity on what the potential impacts to new and existing projects would be.

#### **Other Points to Consider:**

- Oil and gas activities subject to the Framework should include projects that involve major excavations at the surface; drilling should be an exempted activity due to its small scale and inability to detect or maintain intact fossils.
- The proposed criteria *“The proposed project impacts sedimentary or volcanic-type rock location”* is over simplified as there are only three rock types and most mine projects are found in the two listed types; virtually all mine development projects would meet this criteria.

- Paleontological impact assessments could hinder concerted scientific study of important horizons if it is made an across the board requirement for all prolific fossil horizons.

## Information Management

### *Government Proposal for Comments:*

The ultimate source of data about new fossil discoveries is the information first recorded by the collector in the field. This is commonly referred to as primary data. Without this information, fossils are valuable only as artifacts as there is no potential for scientific study, exhibit or education.

A paleontological data capture and storage system will be developed from existing fossil data from a variety of sources. Standard data requirements will be established specifying the type of information collectors should be recording when collecting fossils.

Fossil collectors should maintain a record of the date, locality, number and type of fossils collected. Collectors are encouraged to report the fossils collected annually to assist in building a provincial fossil database.

### *Provincial Database:*

- A provincial database should be coordinated by the Province with selected museums or institutions who have the capability for the maintenance of such databases.
- There should be an overall coordinator for a provincial database and the Province should consider the hiring of a Provincial Paleontologist for this responsibility.
- There should be a consistent data format and consistent site numbering.
- Regional museums or institutions could be set up to collect and enter data.
- Once in a provincial database, how will the information be protected from Access to Information requests from the general public?
- Institutions with long standing history of collecting and extensive collections should continue to maintain their own data management system, but collaborate and share data with other agencies.
- List of information to be captured in unified database seems fine.

### *Data Collection & Fields:*

- Guidelines for field records will lead to useful collections record.
- A standard information form is an unwelcome imposition on institutions that are forced to fit data into appropriate fields. Having key fields present would be acceptable.
- Prioritizing data and indicating required information would be useful:
  - Locality and provenance as high priority;
  - Contextual and stratigraphic as next priority; and
  - Remainder as useful information.
- Clarity and careful definition and selection of data fields is important (too many fields may overwhelm donors).

- Collectors are responsible for documenting the location of each fossil – a GPS reading and datum at a site is preferred and linking a location to a map feature is important.
- Location and collection date label information should be stored with each fossil.
- Field specimen sheets should be retained as primary documents and kept under secure conditions.

#### **Confidential Data:**

- It would not be appropriate to provide detailed locality information online due to the sensitivity of some fossil sites; it could be made available to researchers on a need-to-know basis.
- List of specimens/taxa collected by researchers constitute a work in progress until published and should not be released prior to publication and then in consultation with researcher and central repository.
- It should be up to each institution what, if any, information on fossils is made public.
- General location information (not exact location) could be available to the public to encourage exploration that may lead to new discoveries.

#### **Other Considerations:**

- Some form of information management standards should be developed for significant, privately maintained or amateur collections.
- The key is to establish a group of qualified individuals who would act as a resource to amateur collectors to ensure compliance and accurate identification of fossils.
- A website managed by paleontology students could provide a forum for collectors and would encourage discussion and the exchange of knowledge.

## **Legislative Authority**

#### **General Comments:**

- The Framework should clarify if there is any consideration of using the *Ministry of Lands Parks and Housing Act*.
- What may constitute an offence, and what the consequences are for the offences, should be considered in terms of what is enforceable.
- Laws will need to be communicated broadly to the public to express the types of violations and consequences.

## Protection of Significant Fossils

### *Government Proposal for Comments:*

#### **Proposed definition of significant fossils:**

One element of the Framework is to enhance protection for significant fossils and fossil sites in British Columbia in order to protect their scientific, natural heritage and educational values. To achieve this it is necessary to consider what constitutes a “significant fossil”.

“Significant Fossils” include:

- Skull or pieces of skull anatomy;
- Bone bed (a concentrated accumulation of bones, teeth, etc);
- Articulated whole specimen or articulated parts of a specimen such as a limb;
- Fossils in formations that normally do not contain fossils or in which fossils are extremely rare;
- Particular fossils that, by virtue of their geographic location, are rare; or
- Fossils that have never been found previously in a particular formation.

### *General Comments:*

- The proposed definition of significant fossils is problematic in that the identification of skulls or pieces of skull anatomy, and fossils in certain formations or previously unknown in a geographic location would generally be beyond the abilities of commercial dealers and amateur collectors to identify.
- The significance of fossils cannot be established until it is examined by somebody familiar with the particular category of fossil.
- At this stage in BC most fossils could be considered significant as few institutions have enough macrofossils or individual fossils to consider them abundant (some studies such as population diversity and paleoenvironment research require a large number of available specimens).

### *Definition of Significant Fossils:*

- Fossils can be significant for different reasons in different contexts.
- The following should be added to the list of significant fossils:
  - Invertebrates;
  - Plant fossils;
  - Ichnofossils (e.g. trackways, feeding traces or other evidence of behavior);
  - Community assemblages;
  - Better preserved specimens or specimens with unique characteristics (e.g. size) of an already described taxon;
  - Any fossil found outside of its previously known extent;
  - Previously unknown stages of development;
  - Fossils from rare or unusual stratigraphic horizons;
  - Fossils from fossil sites with extremely limited extent;

- Fossil-rich intervals that contain many fossils within a small or restricted interval; and
- Any fossil, upon the recommendation of a Provincial Paleontologist (or a paleontological advisory committee) that is designated under the *Heritage Conservation Act*.

## Protection of Significant Fossil Sites

### Government Proposals for Comments:

#### **Proposed guidelines:**

A general protection of all fossils and fossil sites in the Province is not proposed. Rather the intent is to protect key fossil sites that have been deemed valuable at the provincial, national or international level. Protection of fossil sites may be undertaken where it can be demonstrated that such sites are significant based on their scientific, heritage and educational value, and more valuable to the Province than other activities that might otherwise occur on the site.

Protection of fossil sites may or may not require the exclusion of all other site uses. However protection of fossil sites may warrant enhanced or special management to conserve, or optimize the use of, the fossil values on the site.

A paleontological assessment could be required to evaluate the importance of a proposed significant paleontological site and the uniqueness of fossils found there. Referrals to affected parties are expected to take place before a decision to protect a fossil site is made.

#### **Proposed guidelines for site protection application:**

- Applications will be accepted by Front Counter BC.
- Application packages would need to include a site map, a description of the physical extent of the site and a paleontological assessment evaluating the scientific, heritage and educational importance of the site and the uniqueness of the fossils found there.

**Proposed guidelines for paleontological assessment:**

- A paleontological assessment would be undertaken to evaluate fossil sites proposed for protection. Assessments are required in order to evaluate the scientific, heritage and educational importance of the fossils, the uniqueness of the fossil site proposed for protection and its physical extent.
- Assessments are expected to be undertaken by the affected parties or as otherwise agreed by government and/or interested parties.
- Paleontological assessments could include information such as:
  - Location – GPS coordinates, 1:20,000 or 1:50,000 map, legal or metes and bounds description, land district and forest district.
  - Land Status – Crown or private land, existing resource or development tenures.
  - Description – physical and geological characteristics, area in hectares of the site, types of fossils, and proximity to any park or other protected area.
  - Justification – scientific, heritage and educational importance of the fossils, uniqueness of the fossil site, reference to pertinent scientific literature, support from recognized experts.
  - Recommendations for site use or constraints on activities.

**Adjudication process:**

Referrals are a formal mechanism to solicit written comments from agencies, groups and First Nations on an application. Ministry of Agriculture and Lands staff will review comments received and will consider the most appropriate protection instrument in consultation with provincial agencies. Ministry staff may recommend amendments to the proposal to address specific issues and concerns. Conditions may be added to the designation or the protection instrument so that to define permissible activities within the site and to define the type of activities that could be undertaken under various permits. If conditions or restrictions are under consideration, affected parties are expected to be consulted.

The timeframe required to complete the processing of an application varies depending on the amount of consultation required with other affected agencies.

**General Comments:**

- All fossil vertebrate material (body fossils and trace fossils) should have inherent protection.
- Measures to protect fossils must be developed with thoughtful consideration in order to ensure there are no negative impacts to new and existing industry projects.
- The process for protecting sites should be advertised and streamlined.

**Paleontological Assessments:**

- Determination of whether a paleontological assessment is required should be up to government.
- A paleontological sensitivity map of BC would be an excellent place to start.

### Other Considerations:

- Significant fossils found on Crown land already under tenure should not be a barrier to the protection of significant fossils.
- Many sites are a mix of mostly common fossils and an occasional significant fossil – is the intention to protect the whole site or just the significant fossils at the site?
- If a site receives protection, who would be the custodian responsible for its care and for site management/protection?
- Would existing significant sites be protected, or would they be “grandfathered in” and not afforded protection under the Framework?
- Will protective mechanisms for significant fossils and fossil sites apply on both Crown and private land? If applied to private land property owners should be given sufficient notice.
- What funding (Provincial or otherwise) will be made available to protect fossils and fossil sites?

## Reporting Fossil Discoveries

### Government Proposal for Comments:

#### **Proposed process for reporting fossil discoveries:**

Voluntary reporting of common fossils will continue. The reporting of significant fossils will become mandatory once legislative amendments allowing the designation of significant fossils has been passed. Refer to the “Protection of Significant Fossils” consultation document on this website for more information on significant fossils.

An information handbook will be developed and will provide guidelines and training about fossils and their collection. The handbook will include: a list of regional and provincial experts to contact when fossils are discovered; the type of information to report (including location of the fossil, photograph of the fossil, details of the rock type where the fossil was found, and other fossil material associated with the find); and how to set aside a sample of the fossils for examination by experts. The handbook will emphasize that if an individual is unsure of whether the fossil they have discovered is common or significant, the best course of action is to follow the procedure for a significant fossil find and to submit the reporting information (e.g. location, photo, etc) to the appropriate contact.

### Who to Report Fossil Discoveries to:

- Fossil discoveries should be reported to an institution such as a local or regional museum.
- MAL and FCBC should be the central hub of information on known sites as well as the agencies to report new sites to and would then refer the information to a recognized expert.
- There needs to be a list developed and maintained of the experts and their institutions for each category of fossil to which these reports would be forwarded (list maintained by FCBC or MAL).

- Web pages, phone contacts and brochures are all good ways to make the information available and allow reporting of fossils.

#### **Reporting Process:**

- Voluntary reporting of fossil discoveries will need considerable coordination and development, as many smaller museums and institutions are not equipped to record the data given to them.
- Reporting should be required or strongly encouraged for sites from which any collections are made unless the site is commonly known.
- Proposed process should include mandatory reporting for any industrial or commercial activities
- Reporting should be made quick and easy (e.g. simple online form with a rapid response time to minimize interruption).
- Industrial operations should follow the same reporting process and industry leaders should be involved in developing the process.
- When fossils are found they should not be disturbed until they have been photographed and examined by a credentialed paleontologist (the use of the term “set aside” in this section could lead to the removal of the fossil which would destroy the context and perhaps the fossil).

#### **Reported Information:**

- Detailed photos will be key to identifying fossils found by amateur collectors.
- Fossil reporting should include the most precise location known (e.g. was it found *in situ* in rock or loose on the ground, the type of rock it was found in, or that is nearby) and the date it was collected.
- Other important information includes the name of the collector, type of fossil, rock formation, the approximate size and a photo.

#### **Other Considerations:**

- Response to fossil discoveries will need to be immediate.
- The Province will need to appoint and financially support fossil experts to receive fossil information/reports/discoveries, check the authenticity of the fossil discovery, assess the importance of the fossil, and receive the fossil (where appropriate) for donation.
- Incentives may encourage finders to report their discoveries.
- Incentives for reporting fossil discoveries could include:
  - Public or government recognition;
  - Fossil heritage awards;
  - Recognition list or plaque at museum;
  - Museum individual, family or annual pass; or
  - Industry credit system for reporting fossil discoveries.
- Incentives for reporting fossils may be a double-edged sword; monetary awards should be avoided and public acknowledgements could be dangerous for newly reported fossil locations.

## Other Comments

### Staffing & Resources:

- Does the Province have the capacity to bring the Framework into practical reality? Public institutions have limited capacity to accept additional collections without additional human and financial resources.
- Public institutions do not have adequate staff paleontologists to carry out the various evaluations and assessments implied by the Framework.
- There is a need to create a position for a professional paleontologist in the provincial government who would be responsible for the implementation of the Framework policies and for the day-to-day needs (e.g. reporting fossil discoveries).
- The Province may want to appoint an emergency fossil recovery team and reserve funding for when an important fossil or rare fossil is located.
- The Province should consider additional support to fossil research programs, incentives for donation of BC fossils to institutions and for such institutions to receive, catalogue and store the fossil donations.

### Other Considerations:

- The measures provided in the Framework should be periodically evaluated by a panel of experts for their utility and effectiveness and allow for revisions if necessary.
- Existing fossil claims should be honoured.
- The guiding principles of the Framework articulate priority for use of fossil resources, but there is no priority ranking for how use for fossil sites compares to other land uses such as mining.