

**Soo TSA**

**Species At Risk (SAR) Database Version 2.7**

**Training and User's Manual 2008-09**

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**31 March 2009**

# **SAR Database Training Manual For the Soo TSA**

**For application of Version 2.7**

**31 March 2009**



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## **1.0 Introduction**

The Species at Risk (SAR) Database is a site-series based management tool developed specifically for the Biogeoclimatic Ecosystem Classification (BEC) variants within a particular Timber Supply Area (TSA). The key functions of the database are

- 1) to alert forest planners and operators of the potential locations of Species at Risk (SAR) within specific BEC variants, within a TSA of interest, and
- 2) to provide habitat management guides specific to that particular variant within the selected TSA.

The potential occurrence of a SAR within a particular variant is established through the identification of that species' habitat capability (terrain) and suitability (forest cover or grassland characteristics, depending on the species). If the unique suite of requisite features are present, the management tool provides the user with a set of cover features that should be retained and how (partial cut vs clearcut with reserves, WTP or reserve design, access development, etc). The SAR database is designed to facilitate habitat management for SAR at the cutblock level; landscape planning is not addressed, although the database could be a facilitating component to a landscape planning process.

SAR included in the database in 2008-09 were those specified by the Federal government Species At Risk Act (SARA) Schedule 1, as well as the Provincial government's Identified Wildlife Management Strategy (IWMS 2004) and Section 7 Notices, under the provincial legislation, Forest and Range Practices Act (FRPA).

The database has been structured so that it can provide both detailed information for office use and summarized information in the form of a field card. The processes of accessing the detailed information and printing field cards has been automated by programming the SAR database into a user-friendly model in MS Access.

### **1.1 Background and Rationale**

The final piece of federal legislation regarding species at risk was passed in 2004. The federal Species At Risk Act (SARA) requires provincial governments to provide the mechanism to manage Schedule 1 listed species at risk. The British Columbia provincial government's response to the federal legislation was to improve the existing Identified Wildlife Management Strategy; the upgrade was released June 1, 2004 and is referred to as IWMS 2004 and is a policy document. Since the release of IWMS 2004, Section 7 Notices for specific Schedule 1 SAR have been released by the provincial government under the Forest and Range Protection Act (FRPA). Section 7 Notices provide the management framework for each Forest District for a particular SAR within a landscape context; each SAR listed has a quota for impact to the Timber Harvest Land Base (THLB) as well as number of Wildlife Habitat Areas (WHA) where essentially little or no timber harvest activity is permitted.



## 2.0 Soo TSA BEC Variants

The SAR database was completed for the Biogeoclimatic Ecosystem Classification (BEC) variants that occur within the Soo TSA. Table 1 lists the BEC variants incorporated into the Soo TSA SAR Database.

Table 1. BEC variants in the Soo TSA and applied to the SAR database.

CWH dm	ESSF mw	IDF ww	MH mm 1
CWH ds 1			MH mm 2
CWH ms 1			
CWH vm1			
CWH vm 2			

## 3.0 Soo TSA Species at Risk

Table 2 lists the species that were included in the 2008-09 SAR database version for the Soo TSA.

Bandtailed Pigeon	Green Heron	Pine Grosbeak, <i>carlottae</i> subspecies
Barn Swallow	Grizzly Bear	Red-legged frog
Coastal Tailed Frog	Keen's Myotis	Spotted Owl
Double-crested Cormorant	Mabled Murrelet	Townsend's Big-eared Bat
Fisher	Pacific Watershrew	Western Screech Owl, <i>kennicottii</i> subspecies
Gopher Snake, <i>deserticola</i> subspecies	Peregrine Falcon, <i>anatum</i> subspecies	Wolverine, <i>luscus</i> subspecies
Great Blue Heron, <i>fannini</i> subspecies		

### 3.1 SAR Database Species Characteristics

The SAR database is best applied to wildlife species with habitat requirements at the cutblock level, rather than larger ranging species whose life requisites depend on a landscape scale.

All SAR should still be considered at the landscape level to ensure population sustainability through dispersal, since the SAR database does not address features at this scale and only provides guides for the cutblock level.



## 4.0 SAR Database Function

### 4.1 Key Objectives for the SAR database

- Biogeoclimatic (BEC variant) unit as the key search entity
- Identification of Wildlife Habitat Areas (WHA's)
- Field card extraction on search result
- Digital image link capability ('built in', not yet available)

### 4.2 Database Structure

Table 3 shows the database structure, including each field and its definition. The SAR database is BEC variant-based, so that all queries depend on selecting a BEC variant within a particular TSA, not a SAR, although other queries are possible, if desired.

Database Mode: Office/Field Card	Database Section	Variable (Database Field)	Variable Definition
Office	Species at Risk General Information	Species at Risk	English and Latin names for a species that has at the very least been provincially Blue-listed, and may also be listed in Schedule 1 under SARA, and may also occur in IWMS 2004.
		Provincial Status	Provincial rank of either Blue or Red-listed. Blue-listed species are not immediately threatened, but of concern due to characteristics that make them particularly sensitive to human activities or natural events (MSRM 2002). Red-listed species have been legally designated as Endangered or Threatened under the Wildlife Act, are extirpated, or are candidates for such designation (MSRM 2002).
		TSA	Timber Supply Area. As of 31 March 2006 the database includes SAR for Soo, Soo, Merritt, and Okangan TSAs.
		BEC Unit	Biogeoclimatic Ecosystem Classification Unit. Wherever possible, the variant was applied; the subzone is the broadest unit permitted. The 'un'-designated subzone refers to an undifferentiated subzone (D. Lloyd pers. comm.).



		Likelihood of Occurrence in BEC Unit	<p>Risk of a particular SAR occurring in a particular BEC variant was assessed as follows;</p> <ol style="list-style-type: none"> <li>1. Low – rare species may be classed as such; or less than about 25% chance of occurrence if suitable habitat features are present.</li> <li>2. Low-moderate – less than 50-50, &gt;25%.</li> <li>3. Moderate – generally a 50-50 chance of occurrence if suitable habitat features are present.</li> <li>4. moderate-high – better than 50-50, up to about 75% chance of occurrence if suitable habitat features are present.</li> <li>5. high - &gt;75%, or good chance of occurrence if suitable habitat features are present.</li> </ol> <p>Risk assessment was based directly on IWMS 2004 documentation where possible, expert opinion, or in some rare cases estimated based on information available and author experience; peer review was sought in latter situations.</p>
		WHA Location	Wildlife Habitat Area Location as designated by Ministry of Environment.
		WHA Status	Status of Wildlife Habitat Area Locations as either proposed or confirmed as per quotas for WHA noted in Section 7 Notices for each Forest District. Where possible or necessary, status was confirmed with the relevant Species at Risk Biologist (J Surgenor for Soo, Merritt, and Soo TSAs; O. Dyer for Soo TSA).
		SAR Locations	Records of species locations requested from and provided by Conservation Data Centre (CDC).
		SAR Specialist Contact	Name of the biologist who is recognized as a particular species expert as a result of their research and other work associated with that species. The name is intended to provide a contact should specific consultation become necessary.
Field Card (Feature Identifiers)	<b>Habitat Capability</b>	Site series (talus, rock outcrop, xeric, sub-xeric, mesic, sub-hygric, hygric)	Qualitative soil moisture regime classification rather than quantitative numeric value assigned for the range of soil moisture characteristics defined for each variant within the Biogeoclimatic Ecosystem Classification System.
Office		Elevation range min (m)	Minimum elevation in meters a SAR is expected/has been documented to occur at.
		Elevation range max (m)	Maximum elevation in meters a SAR is expected/has been documented to occur at.
Field Card (Feature Identifiers)		Critical aspect 1	Any aspect that may have high capability or is absolutely required by a particular SAR is defined as South (S), South-East (SE), South-West (SW), West (W), East (E), North (N), North-East (NE), North-West (NW).



		Critical aspect 2	As above, although an aspect of secondary importance
		Slope range	Where possible, a quantitative value of the range of slope a SAR either requires, prefers, or will tolerate was provided; for most SAR, such detailed information is often not yet available.
		Key microsite topo features (define: ridge, bench, cliff, valley bottom, mid-slope, etc)	Key micro-site topographic features required or preferred by a particular SAR, where available.
	<b>Habitat Suitability</b>	Structural stage (PEM variable; Ref: Standard for Terrestrial Ecosystem Mapping)	Predictive Ecosystem Mapping (PEM) variable of classified stages (1-7) of forest structure defined by both age and stand structure. The reference is <i>Standard for Terrestrial Ecosystem Mapping</i> . A copy of the table can be found in Appendix 1.
		Structural stage modifier (PEM variable; Ref: Standard for Terrestrial Ecosystem Mapping)	As above, this variable further describes stand structure, specifically canopy layer. Definitions are included in the table in Appendix 1.
		Vet Component	Yes or No entry defines whether a veteran tree component is necessary for a particular species habitat in a particular variant.
		Age Class	Forest Cover Inventory Age Class required by a particular species in a stand within a particular variant.
		Lead Species	Forest Cover Inventory Lead Species required by a particular species in a stand within a particular variant.
		Co-dominant Species	Forest Cover Inventory Co-dominant Species required by a particular species in a stand within a particular variant.
		Sub-dominant Species	Forest Cover Inventory Sub-dominant Species required by a particular species in a stand within a particular variant.
Crown Closure		Forest Cover Inventory Percent Crown Closure required by a particular species in a stand within a particular variant.	
<b>Detailed Species Biology</b>	Home Range Size	Home range area in hectares for a particular species within a particular variant if available in IWMS 2004	
	Movement/Dispersal	The amount of area (ha) or distance (m) a species can be expected to move within a particular variant, where information is available; movement typically refers to dispersal from its original nest or birth/rearing site, but can also refer to intra or inter-seasonal movements.	
<b>Office</b>			





	Habitat Features - Security	One of three critical life requisites: habitat required by a particular species within a particular variant to remain concealed from its predators and/or competitors.
	Habitat features - nesting/breeding	One of three critical life requisites: habitat required by a particular species within a particular variant for breeding and/or nesting.
	Habitat features - foraging	One of three critical life requisites: habitat required by a particular species within a particular variant for either hunting prey and/or browsing vegetation.
	Habitat Threats	Specific impacts and their causes that threaten habitat feature(s) necessary for one of the three critical life requisites (foraging, security, breeding) of a particular species within a particular variant.
	Disturbance Threats	Specific impacts and their causes that disturb, interrupt, or terminate the activities of one of the three life requisites (foraging, security, breeding) of a particular species within a particular variant.
	GWM (General Wildlife Measures)-Access	General Wildlife Measures defined in IWMS regarding access (road construction, traffic, etc) either immediately outside a WHA boundary or within a buffer where limited management activity is permitted.
	GWM-Havesting and silviculture	General Wildlife Measures defined in IWMS regarding harvesting and silviculture either immediately outside a WHA boundary or within a buffer where limited management activity is permitted.
	GWM-Pesticides	General Wildlife Measures defined in IWMS regarding pesticide use either immediately outside a WHA boundary or within a buffer where limited management activity is permitted.
	GWM-Range	General Wildlife Measures defined in IWMS regarding livestock activity either immediately outside a WHA boundary or within a buffer where limited management activity is permitted.
	GWM-Recreation	General Wildlife Measures defined in IWMS regarding recreation activity either immediately outside a WHA boundary or within a buffer where limited management activity is permitted.

Field Card (Retention)	<b>Management Guide</b>	Additional Management Considerations	Any additional information regarding habitat needs or necessary management that cannot be addressed by any other database variable (field); sometimes a more detailed explanation to facilitate understanding of field entries for a particular species within a particular variant.
	Clear cut or partial cut	The 'best' harvest option has been selected based on available information for a particular species within a particular variant; either a clear cut with wildlife tree patches (WTP) and/or reserves will be defined as best as possible with the information available, or a partial cut that will be defined as single tree or patch retention, and/or with opening size defined where possible.	
	Wildlife Tree Class (Ref: Biodiversity Guidebook)	Wildlife Tree Classes (1-9) as defined in Appendix 6 of the Biodiversity Guidebook that are required for retention to meet the life requisite habitat needs of a particular species within a particular variant.	
	Single tree retention species	Preferred species to be retained during block layout within a particular variant based on/estimated from habitat features necessary for a particular species' life requisites.	
	Single tree retention size [DBH limit or range in cm]	Preferred diameter size (cm) of single trees that should be retained during block layout within a particular variant based on/estimated from habitat features necessary for a particular species' life requisites.	
	Buffer area around single tree (radius in meters) or stream (m or ha)	The radius (m), or distance from the single tree selected for retention and the outer limit of its buffer to ensure windfirmness and/or provide security for a particular species within a particular variant; if riparian, the width of the riparian forest adjacent to the water's edge that should be retained in a particular variant.	
	Patch retention size (ha) (ie: WTP or retention area of some sort)	The size (ha) of the reserved forested area within a cutblock within a particular variant, pending available information for a particular species to meet the habitat needs of its life requisites. Where information was insufficient, a size range or lower area limit for Wildlife Tree Patches (WTPs) or other reserves is estimated.	



		Stand structure for retention	A brief, simple description, based on available information, of the forest structure expected to be retained within a particular variant based on/estimated from habitat features necessary for a particular species' life requisites.
		Stand density for retention	A standardized, brief description of stand density expected to be retained in a forest reserve, WTP, etc, within a particular variant, based on/estimated from habitat features necessary for a particular species' life requisites.
		Key stand features for retention	Any specific stand feature that should be retained, not already defined by existing database fields, that is needed for one of the three life requisites of a particular species within a particular variant.
		Patch species retention	If a patch of trees, rather than a single tree, has been selected as the best estimated means to retain life requisite habitat features of a particular species, this would be that species' preferred tree species within a particular variant.
Office	References	Reference(s) Cited	For most species entered into the database, Identified Wildlife Management Strategy (IWMS) 2004 provided the most recent species accounts and management criteria that were used. Other articles, sources of information are listed here were relevant.

### 4.3 SAR Locations and Risk Assessment in the Soo TSA

CDC records are often masked for security and are not necessarily current for all species. Therefore, in most cases a risk assessment was required to determine the likelihood of a SAR presence within a particular variant based on the criteria shown in Table 3. In the office mode, the database provides a likelihood assessment of presence.

### 4.4 Generating Field Cards

A Field Card can be generated for a particular BEC variant as part of the navigation results. A print function will generate a formatted Field Card Report from the result of the navigation/search (BEC variant within a particular TSA).



#### **4.5 Database Deployment**

The SAR database application has been developed as a standalone read only application, that for this fiscal year will be distributed either by CD or downloaded from an FTP site. It must be installed on the hard drive of the computer it will be used on, and the current version requires MS Access to be present on that computer.

#### **4.6 Database Upgrades**

The SAR database will display the date of most recent upgrade. Nearing the anniversary date of the last update (30 days), an exception window will be displayed as a reminder to upgrade the SAR database. The following message will appear:

Information in this database is continually being researched and updated.  
The current SAR database source date is {database date}.  
Please Contact Astrid van Woudenberg to request a SAR database update.

### **5.0 Due Diligence: Forest Professional Observations of SAR**

If a Species at Risk is observed in the field, it should be reported to the Conservation Data Centre. A standardized form for observations is available on CDC web site (<http://www.env.gov.bc.ca/cdc/contribute.html>).

If field guides are to be used to identify SAR in a site, they should not be used in isolation, unless identification is made by a qualified professional biologist. Rather, field guides can be used in conjunction with the database. Guides typically indicate broad habitat types and seasonal periods a species can be expected to be observed in. The SAR database will provide detailed critical habitat features that can be identified in the field to facilitate SAR identification. As well, government should be called upon to address information gaps where distribution and range of SAR occur.

#### **5.1 Government Contacts and Websites**

**Government contacts responsible for SAR in the Soo TSA are:**

IWMS Regional Contacts



Greg George  
10470 - 152nd St.  
Surrey BC V3R 0Y3  
Phone: 604-582-5212  
Fax: 604-930-7119  
e-mail: [greg.george@gov.bc.ca](mailto:greg.george@gov.bc.ca)

**Important government websites:**

Conservation Data Centre  
[www.env.gov.bc.ca/cdc](http://www.env.gov.bc.ca/cdc)

BC Species and Ecosystem Explorer (database for checking SAR status and relevant reports)  
<http://srmapps.gov.bc.ca/apps/eswp/search.do>

Identified Wildlife Management Strategy Home Page  
(Environmental Stewardship Division, Ministry of Environment)  
<http://www.env.gov.bc.ca/wld/identified/index.html>

- to check Wildlife Habitat Area (WHA) status (approved or pending)  
[http://www.env.gov.bc.ca/cgi-bin/apps/faw/wharesult.cgi?search=show\\_approved](http://www.env.gov.bc.ca/cgi-bin/apps/faw/wharesult.cgi?search=show_approved)



## **6.0 References Cited**

British Columbia Ministry of Sustainable Resource Management. 2002. One fish, two fish, red fish, blue fish. Species ranking in British Columbia.

British Columbia Ministry of Water, Land and Air Protection. 2004. Accounts and Measures for Managing Identified Wildlife. Version 2004. Biodiversity Branch, Identified Wildlife Management Strategy, Victoria, B.C.



**Appendix 1. Structural Stages and Modifiers (PEM variables from Standards for Terrestrial Ecosystem Mapping)**

Structural Stage		Stand Composition	
Code	Structural Stage	Code	Description
1	Sparse/Bryoid		
2	Herb		
2d	Dwarf Shrub		
3	Shrub/Herb	3a	Low Shrub
3b	Tall Shrub	<b>Structural Stage Modifiers</b>	
4	Pole/Sapling	s	single-storied
5	Young Forest (generally 40-80 years but may begin as early as age 30, depending on tree species and ecological conditions.)	t	two-storied
6	Mature Forest (ESSFdk is Group A, 80-140 yrs).	m	multistoried
7	Old Forest (ESSFdk is Group A, >140 yrs).	i	irregular
		h	shelterwood

**Notes:**










# SAR – Species At Risk

User's Manual

Version 1.0

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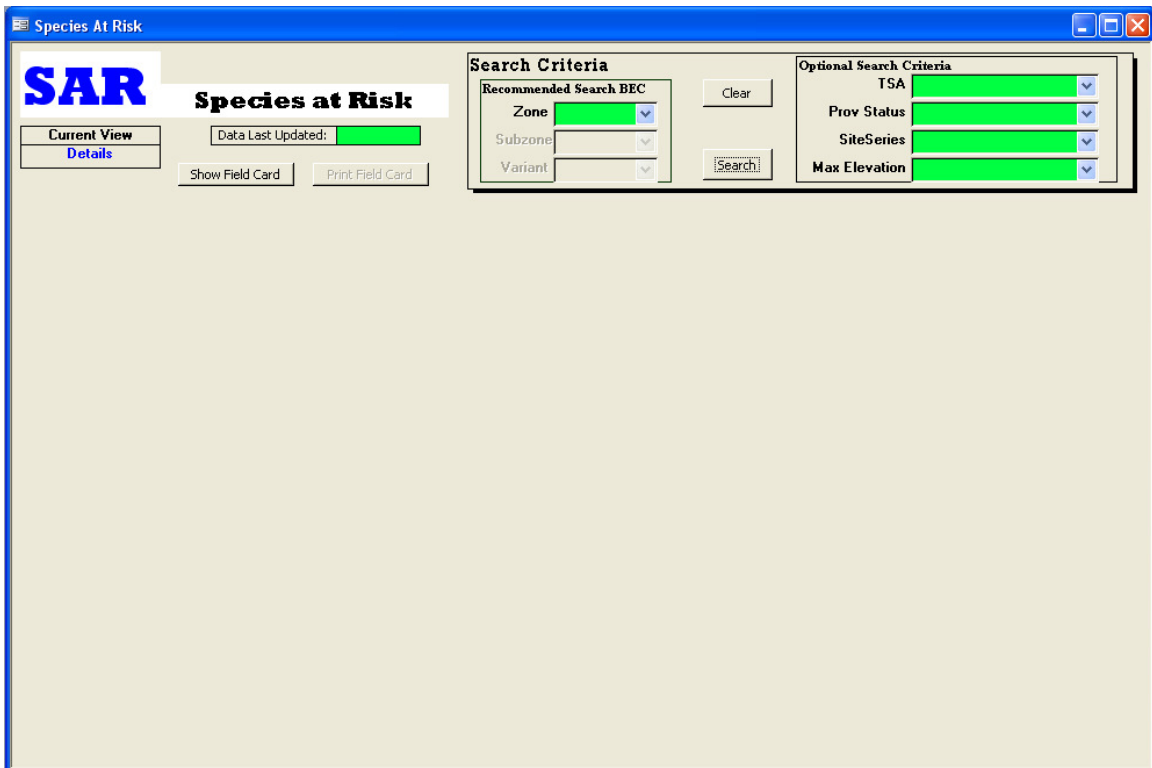
## Overview

Cascadia Natural Resource Consultants (Cascadia) in cooperation with Tolko Industries Ltd. Heffley Creek division and Canfor have developed a Species at Risk (SAR) database application to assist licensees in the Soo, Merritt and Soo TSA's make informed decisions regarding sensitive wildlife habitats and Species at Risk during strategic and operational planning exercises.

The application allows users to navigate through the custom SAR database and identify species at risk in by unique BEC zones and other criteria. Navigation results can be viewed in their entirety or as Field Card Reports of key SAR attributes for each BEC Variant in a TSA.

Cascadia Natural Resource Consultants have been identified as the initial data custodian for the SAR database and will be active in updating the SAR database annually for TSA users. To meet both of these needs the application is deployed two modes;

- Read only for the general user base and;
- Read / Write / Delete for the data custodian.



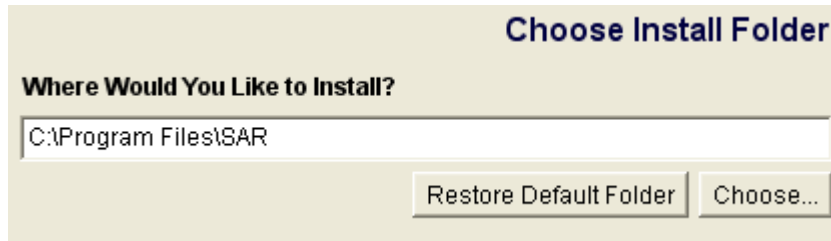
## Installation

The SAR v1.0 data base application is delivered in an installation package called **SAR\_Installer.exe**.

To install SAR v1.0:

1. Copy the SAR\_Installer.exe file to a location on your local machine
2. Double click the SAR\_Installer.exe and follow the prompts using the **Next** button  
Use the following settings for optimum installation.

### Install Location:



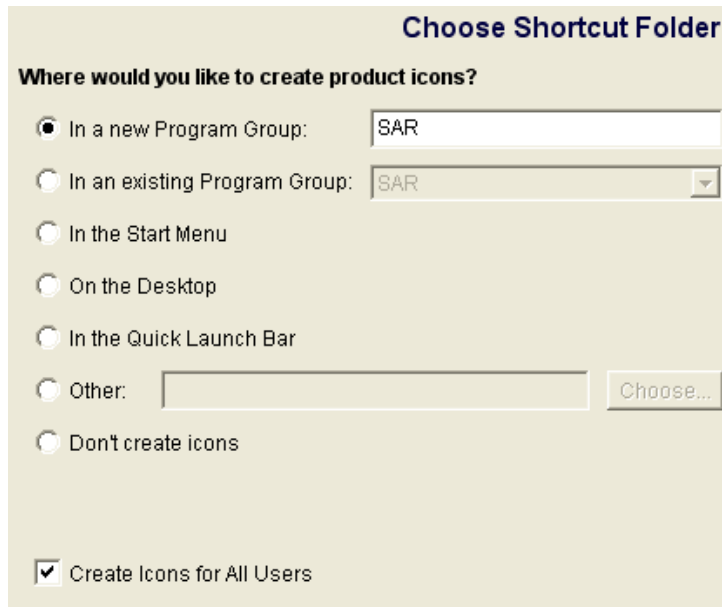
**Choose Install Folder**

Where Would You Like to Install?

C:\Program Files\SAR

Restore Default Folder Choose...

### Install Options:



**Choose Shortcut Folder**

Where would you like to create product icons?

In a new Program Group: SAR

In an existing Program Group: SAR

In the Start Menu

On the Desktop

In the Quick Launch Bar

Other: Choose...

Don't create icons

Create Icons for All Users

## System Requirements

Minimum Requirements:

- Operating System: Windows 2000 or better
- Applications: MSAccess 2000 or better

### **Replacing the MSAccess data store**

The initial install will load the v1.0 SAR data base to the same location the application was installed to. The database is called **SAR\_be.mdb**. Periodically the data custodian will release an updated SAR database. To update your SAR database copy the new **SAR\_be.mdb** to the location the application was installed to overwriting the previous database.

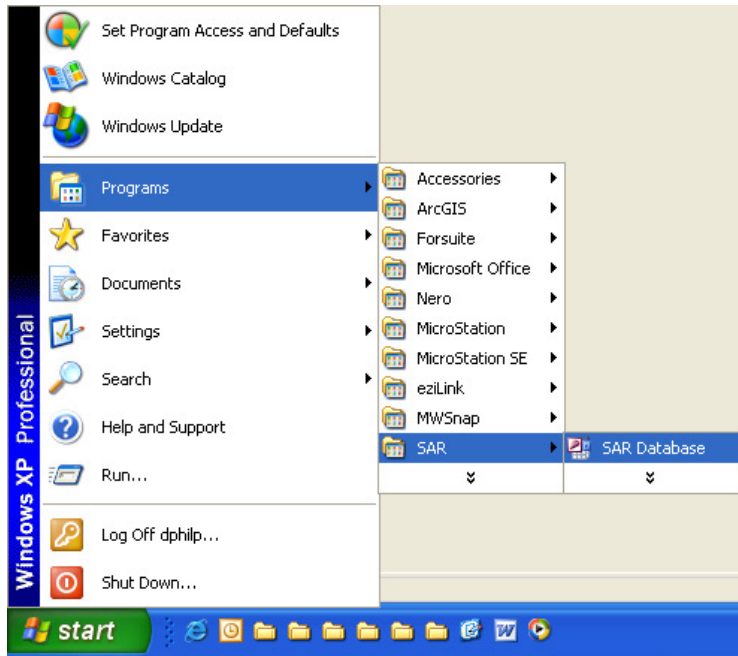
**Note:** Some users may want to archive the previous **SAR\_be.mdb** database prior to replacing it with the new database.

## SAR – Species At Risk

### Launching SAR

To open the SAR database:

1. Select the Windows Start Menu Programs Group
2. Select the **SAR Database** from the SAR Program Group



### Navigation

Navigation in the SAR database is contained in a single navigation interface. The interface contains standard windows controls for drop down selection, window scrolling, minimize, maximize and close.

### Searching the Database

#### Search Criteria

Searching for Species at Risk is achieved through primary and secondary or optional search criteria. The primary search criteria are BioGeoClimatic (BEC) zone, sub-zone and variant. The secondary search criteria are TSA, Species at Risk Provincial Status, Site Series and Maximum Elevation.

Search Criteria		Optional Search Criteria	
<b>Recommended Search BEC</b>		TSA	
Zone	<input type="text"/>	Prov Status	<input type="text"/>
Subzone	<input type="text"/>	SiteSeries	<input type="text"/>
Variant	<input type="text"/>	Max Elevation	<input type="text"/>
<input type="button" value="Clear"/>			
<input type="button" value="Search"/>			



**Note:** The data base has been modeled to allow only valid BEC zone, subzone and variant combinations.

### Retrieving all SAR Database Records

To Retrieve all SAR Records:

1. Select the **Search** button without selecting primary or optional search criteria

The screenshot shows a 'Search Criteria' dialog box with two main sections: 'Recommended Search BEC' and 'Optional Search Criteria'. The 'Recommended Search BEC' section includes dropdown menus for 'Zone', 'Subzone', and 'Variant'. The 'Optional Search Criteria' section includes dropdown menus for 'TSA', 'Prov Status', 'SiteSeries', and 'Max Elevation'. A 'Clear' button is located between the two sections, and a 'Search' button is located below the 'Recommended Search BEC' section. The 'Search' button is circled in red.

This search will return the entire contents of the database in a display grid

The screenshot shows the SAR Species at Risk application window. The window title is 'Species At Risk'. The main area displays a data grid with columns: Species, ProvStatus, TSA, BECUnitGroup, Likelihood, and Likelhood. The grid contains 19 rows of data for 'Interior' Western Screech-Owl (Otus Kennicottii macfarlanei). The search criteria dialog box is overlaid on the top right of the window, showing the same search options as in the previous screenshot. The 'Search' button in the dialog box is circled in red. At the bottom left of the application window, the text '936 Records' is displayed, which is also circled in red.

Species	ProvStatus	TSA	BECUnitGroup	Likelihood	Likelhood
"Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)	Red-listed	Kamloops	BCxh2, BCxw1, BCxw2	Low	
"Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)	Red-listed	Kamloops	ICHaw2	Unknown	?
"Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)	Red-listed	Kamloops	IDFdk1	Low	
"Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)	Red-listed	Kamloops	IDFdk2	Low	
"Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)	Red-listed	Kamloops	IDFdk3	Low	
"Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)	Red-listed	Kamloops	IDFaw1	Low	
"Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)	Red-listed	Kamloops	IDFaw2	Low	
"Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)	Red-listed	Kamloops	IDFxl1, IDFxl1a	Moderate	
"Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)	Red-listed	Kamloops	IDFxl2 (irregular)	Low	
"Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)	Red-listed	Kamloops	IDFxl (irregular)	Low	
"Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)	Red-listed	Kamloops	PPxl2	Low	
"Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)	Red-listed	Lillooet	IDFdk1	Moderate-High	
"Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)	Red-listed	Lillooet	IDFdk3	Moderate	
"Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)	Red-listed	Lillooet	IDFxl2 (irregular)	Low	
"Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)	Red-listed	Lillooet	IDFxl (irregular)	Low	
"Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)	Red-listed	Lillooet	PPxl2	Moderate-High	
"Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)	Red-listed	Merritt	BCxh1, BCxh2, BCxw1, BCxw2	Moderate	
"Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)	Red-listed	Merritt	IDFdk1	Moderate	
"Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)	Red-listed	Merritt	IDFdk2	Moderate	
"Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)	Red-listed	Merritt	IDFxl1, IDFxl1a	Moderate	

**Note:** The total number of records returned is displayed in the bottom left of the application window.

### Retrieving Selected SAR Database Records by Search Criteria

To retrieve selected SAR Records:

1. Select the desired Search Criteria using the dropdowns for Recommended Search BEC and Optional Search. Any combination of criteria can be used.

**Search Criteria**

**Recommended Search BEC**

Zone: **BG** [v]  
Subzone: **xh** [v]  
Variant: [v]

**Optional Search Criteria**

TSA: **Kamloops** [v]  
Prov Status: [v]  
Site Series: [v]  
Max Elevation: **1100** [v]

Clear [b] Search [b]

2. Select the **Search** button. Results will be displayed in the display grid.

**SAR Species at Risk**

Current View: Details [b]  
Data Last Updated: 10-Apr-06 [b]  
Show Field Card [b] Print Field Card [b]

**Search Criteria**

**Recommended Search BEC**

Zone: **BG** [v]  
Subzone: **xh** [v]  
Variant: [v]

**Optional Search Criteria**

TSA: **Kamloops** [v]  
Prov Status: [v]  
Site Series: [v]  
Max Elevation: **1100** [v]

Clear [b] Search [b]

Drag a column header here to group by that column

Species	ProvStatus	TSA	BECUnitGroup	MaxElevation	Li
Great Basin Gopher Snake ( <i>Pituophis catenifer descerticola</i> )	Blue-listed	Kamloops	BGxh1, BGxh2, BGxh3, BCxw1, BCxw2	1100	
Short-eared Owl ( <i>Asio flammeus</i> )	Blue-listed	Kamloops	BGxh2	975	Mc
Western Small-footed Myotis ( <i>Myotis ciliolabrum</i> )	Blue-listed	Kamloops	BGxh2	800	Hs
► "Interior" Western Screech-Owl ( <i>Otus kennicottii macfarlanei</i> )	Red-listed	Kamloops	BGxh2, BCxw1, BCxw2	700	Lc

4 Records [b]

In the example above 4 records were returned meeting the selected criteria.

Note that the returned records include BEC zone and sub-zone as per the criteria. All variants were returned as well as there was no variant specified in the search.

### **Clearing a Search**

To clear a search:

1. Select the **Clear** button located on the Search Criteria panel.

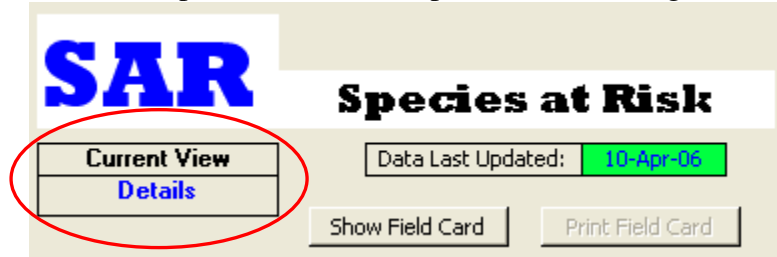
## Data Views

### Current View

The SAR data base applications can display database records in 2 modes;

- Details
- Field Card

The Details view displays all data columns for records displayed in current view. The SAR Field card view is a specific subset of the SAR database columns implemented to assist planners and biologists in the field.



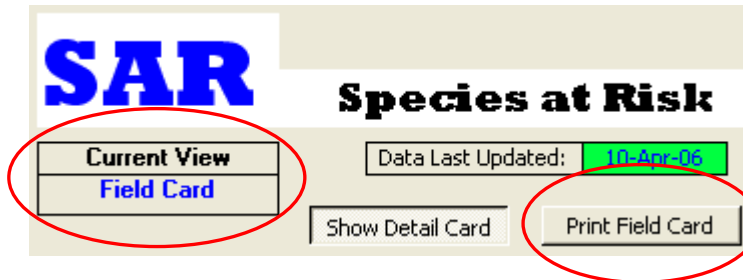
The Details view is the default display mode.

To switch to Field Card view:

1. Select **Show Field Card**

the Current View display will change to Field Card. Note that the Print Field Card Button becomes active.

**Note:** If a record in the grid has been selected prior to selecting Show Field Card, only the selected record will display in Field Card View.



To switch to Details view:

2. Select **Show Field Card**

the Current View display will change back to Details.

**Note:** Clearing the search and re-querying the SAR records will reset the current view to Details.

### Printing Field Card Reports

The Field Card view can be printed to a formatted report containing a single or multiple SAR record sets.

To print a single SAR record set:

1. Use the **Search** functionality to locate SAR records of interest
2. Use your left mouse button to select the record to print. The record can be selected anywhere in the grid
3. Select **Show Field Card** to switch to Field Card View  
The Current View display will change to Field Card and only the selected record will display.
4. Select **Print Field Card**  
See Appendix A for sample Field Card report

### Display Grid Properties

The Display Grid has three distinct properties for altering the data view

- Ascending Sort
- Column Order
- Drag and Drop Grouping

#### Ascending Sort

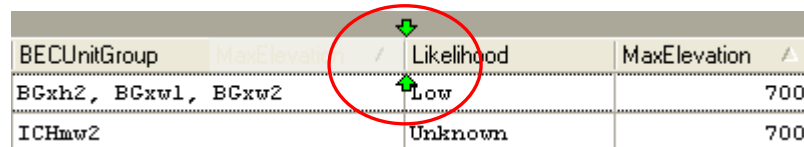
Each column can be sorted in an ascending alphabetical or numeric order. Only one column can be sorted. Sorts cannot be combined across columns  
To sort a column:

1. Use your left mouse button and single click a column header.

#### Column Order

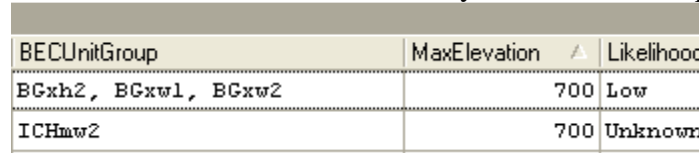
Column order can be modified by simply selecting the column header and moving it to a new location in the grid.

In the example below MaxElevation is currently selected for repositioning in the Grid. As your cursor drags the column header across the header portion of the grid yellow arrows appear at each location that will accept the column header placement.



BECUnitGroup	MaxElevation	Likelihood	MaxElevation
BGxh2, BGxw1, BGxw2		Low	700
ICHmw2		Unknown	700

MaxElevation has been successfully moved to a new position in the grid



BECUnitGroup	MaxElevation	Likelihood	MaxElevation
BGxh2, BGxw1, BGxw2	700	Low	
ICHmw2	700	Unknown	

To reposition a column in the grid:

1. Use your left mouse button to select the column header to move
2. Drag the column header to the new location as indicated by the yellow placement arrows
3. Release the mouse button

**Note:** Clearing the search and re-querying the SAR records will reset the column order to the default order.

**Drag and Drop Grouping**

Drag and Drop Grouping allows the data grid to be arranged in a summarized, hierarchical tree structure. This is an extremely powerful data viewing function that allows any data element in the SAR data base to become the focus or primary data element in view.

In the example below the Species, Likelihood and TSA have been grouped. This alters the grid view summarizing the columns. The species, “Interior Western Screech-Owl” appears once in the grid.

Species	Likelihood	TSA	
ProvStatus	BECUnitGroup	LikelihoodComment	WHALocation
Species : "Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)			
Species : Badger (Taxidea taxus)			
Species : Burrowing Owl (Athene cunicularia)			
Species : Coastal Tailed Frog (Ascaphus truei)			
Species : Fisher (Martes pennanti)			
Species : Flammulated Owl (Otus flammeolus)			

Double clicking a single species reveals the next group item, Likelihood. In this example there are four likelihood categories available indicating the there at least four distinct “Interior Western Screech-Owl” records in the SAR database.

Species	Likelihood	TSA	
ProvStatus	BECUnitGroup	LikelihoodComment	WHALocation
Species : "Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)			
Likelihood : Low			
Likelihood : Moderate			
Likelihood : Moderate-High			
Likelihood : Unknown			
Species : Badger (Taxidea taxus)			

Double clicking a likelihood indicator drills down further and reveals that the “Interior Western Screech-Owl” has a likelihood of being present in both the Soo and the Soo TSA.

ProvStatus	BECUnitGroup	LikelihoodComment	WHALocation
Species : "Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)			
Likelihood : Low			
Likelihood : Moderate			
Likelihood : Moderate-High			
TSA : Lillooet			
TSA : Okanagan			
Likelihood : Unknown			
Species : Badger (Taxidea taxus)			

The lowest level of the example grouping is TSA. Double clicking a TSA indicator reveals all remaining columns not included in the grouping.

ProvStatus	BECUnitGroup	LikelihoodComment	WHALocation	WHAStatus
Species : "Interior" Western Screech-Owl (Otus Kennicottii macfarlanei)				
Likelihood : Low				
Likelihood : Moderate				
Likelihood : Moderate-High				
TSA : Lillooet				
Red-listed	IDFdk1		None as per IWMS	
Red-listed	PPxh2		None as per IWMS	
TSA : Okanagan				
Likelihood : Unknown				
Species : Badger (Taxidea taxus)				

There is no limitation to the number or order of columns in the group. To create a Data Group:

1. Use your left mouse button to select the column header to group
2. Drag the column header to the drag and drop location in the grid



TSA	
Species	
▶	TSA : Kamloops
	TSA : Lillooet
	TSA : Merritt
	TSA : Okanagan

3. Release the mouse button
4. Repeat for the desired columns

**Note:** Clearing the search and re-querying the SAR records will remove the Data Group and reset the grid order to the default order.

### Database Version

#### Date last Updated

The Date Last Updated displays the last SAR Database edit date. Periodically the data custodian will release an updated SAR database. Once the update database has replaced the previous database the new date of the last database update will be displayed.

Data Last Updated: 10-Apr-06



## Appendix A. Field Card Report Example

**SAR**

**Species at Risk**

**FIELD CARD**

<b>BEC Unit Group</b> IDFdk1		
<b>Site series</b> Hygic, mesic, sub-hygic, sub-mesic	<b>Lead species</b> Act, A1, Fd	<b>Single tree retention size</b> > 30 cm dbh; with cavities if possible
<b>Critical aspect 1</b> N/A, Unknown	<b>Co-dominant species</b> Act, A1, Fd	<b>Buffer area around single tree</b> 5-12ha
<b>Critical aspect 2</b> N/A, Unknown	<b>Sub-dominant species</b> Act, A1, Fd	<b>Patch retention size</b> >2.5ha
<b>Slope range</b> Unknown	<b>Crown closure</b>	<b>Stand structure for retention</b> Local riparian forest structure, retain open woodland structure in adjacent upland
<b>Key microsite topo features</b>	<b>Clear cut or partial cut</b> Patch cut??	<b>Stand density for retention</b> Existing riparian forest density
<b>Structural stage</b> 6-7	<b>Wildlife tree class (Ref: Biodiversity Guidebook)</b> 2-6; particularly with cavities	<b>Key stand features for retention</b> Large diameter trees in riparian forest, including Act, A1, Ew and mixed conif-decid
<b>Age class</b> 5-9	<b>Single tree retention species</b> Act, A1, Ew, Fd, Lw, Py	<b>Patch species retention</b> Act, A1, Ew, Fd, Lw, Py
<b>Additional Management Considerations</b> Consider nesting requirements of Pileated and Northern Flickers since woodpecker holes are most commonly used for roosting; most occupied territories have at least 2 cavities (nesting & roosting)		
<b>Species</b> "Interior" Western Screech-Owl ( <i>Otus Kennicottii macfarlanei</i> )		

