

# India Assam Database Design

## 1 Introduction

The database has been designed to enable illegal activities, sighting of various species of animals, animal mortalities and patrol logs to be recorded.

The central table is tblPatrol. Associated with each record in this table will be a series of patrol's events or movements. Each patrol event/movement record will be a location indicator. The location may be defined by either a "Place Name" or by "GPS Reading". If required, any number of sightings of animals (inc detected mortalities) and/or any number of illegal activities may be associated with a single patrol movement. If none of these are defined than the record is assumed to be position log of the patrol at that point in time.

The option for recording the sighting of individually recognisable animals will be added at a later date.

The entity relationship diagram for the database is shown in **Figure 1**.

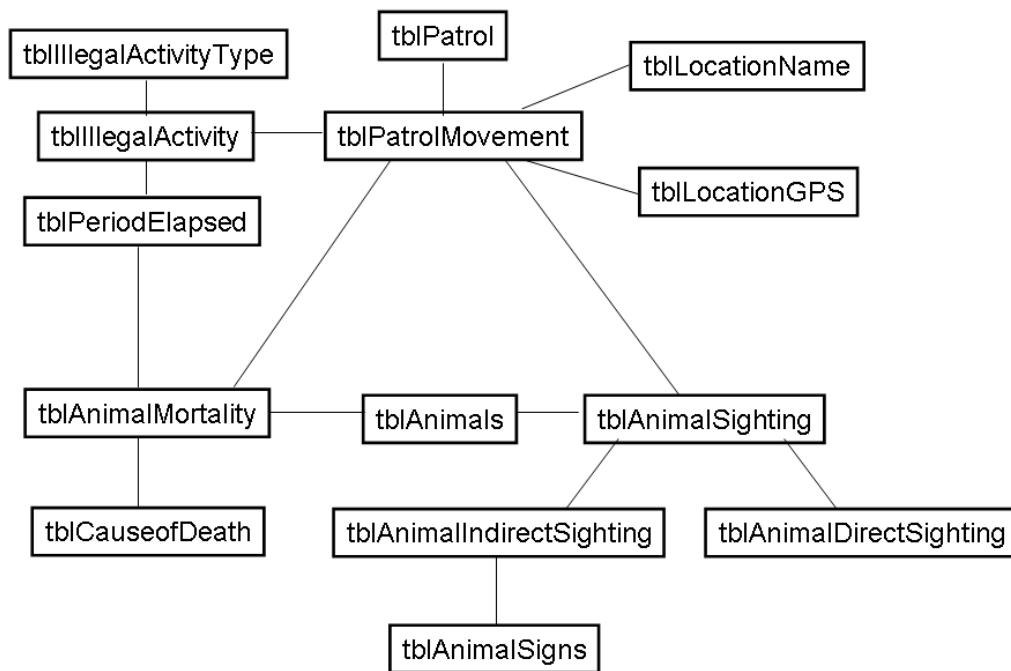


Figure 1: Entity relationship diagram.

## 2 Table Definitions

### 2.1 *tblPatrol*

This table is used to define a patrol. It will be associated with patrol movement entries made in the "PatrolMovement" table.

Field Name	Type	Description
ID	Integer	Primary key. Unique number to define the area.
Date	Date/Time	Date the patrol occurred.
tblParkRange_ID	Integer	Foreign key. Identifies the Park Range
tblPatrolMethod_ID	Integer	Foreign key. Identifies the Patrol Method
tblPatrolType_ID	Integer	Foreign key. Identifies the Patrol Type
NoPersons_armed	Integer	Number of armed staff on patrol
NoPersons_unarmed	Integer	Number of unarmed staff on patrol
StartTime	Date/Time	Start time of patrol
EndTime	Date/Time	End time of patrol

### 2.2 *tblParkRange*

This table is used to define the park ranges used in the "tblPatrol".

Field Name	Type	Description
ID	Integer	Primary key. Unique number to define the range.
Range	String(50)	50 character string to define the park range name.

### 2.3 *tblPatrolMethod*

This table is used to define the different methods of patrol used in the "tblPatrol".

Field Name	Type	Description
ID	Integer	Primary key. Unique number to define the patrol method.
Method	String(50)	50 character string to define the patrol method.

### 2.4 *tblPatrolType*

This table is used to define the different types of patrols used in the "tblPatrol".

Field Name	Type	Description
ID	Integer	Primary key. Unique number to define the patrol type.
Type	String(50)	50 character string to define the patrol type.

## 2.5 *tblPatrolMovement*

This table is used to define each patrol movement. Associated with this table is an entry in one of the "PatrolLocation" tables. If required, any number of poaching signs, any number of mortalities and any number of animal direct & indirect sightings may be associated with a single patrol movement.

Field Name	Type	Description
ID	Integer	Primary Key. Identifies the patrol movement.
tblPatrol_ID	Integer	Foreign key. The patrol that this record belongs to.
Time	Date/Time	Time patrol movement occurred.

## 2.6 *tblPatrolPlaceName*

The location for a patrol movement can be defined by either a place name or by a GPS reading. If a place name is used to define a patrol movement's location then an entry will be made in this table.

Field Name	Type	Description
tblPatrolMovement_ID	Integer	Primary key from tblPatrolMovements. The patrol movement that this location name belongs to.
tblPlaceName_ID	Integer	Foreign key. Link to the name defining the patrols location.

## 2.7 *tblPlaceName*

This table is used to define the place names that can be used to define the location of a patrol movement.

Field Name	Type	Description
ID	Integer	Primary key. Unique number to define the location.
Name	String(50)	50 character string to define the place name.
tblParkRange_ID	Integer	Foreign key. Identifies the Park Range

## 2.8 *tblPatrolLocationGPS*

The location for a patrol movement can be defined by either a place name or by a GPS reading. If a GPS measurement is used to define a patrol movement's location then an entry will be made in this table.

Field Name	Type	Description
tblPatrolMovement_ID	Integer	Foreign key. The patrol movement that this GPS location belongs to.
Latitude	Long	GPS latitude (Degrees, Minutes, Seconds)
Longitude	Long	GPS longitude (Degrees, Minutes, Seconds)

## 2.9 *tblIllegalActivity*

This table enables any number of illegal activities to be associated with a patrol movement.

Field Name	Type	Description
ID	Integer	Primary key. Unique number to define the record.
tblPatrolMovement_ID	Integer	Foreign key. Identifies the patrol movement
tblIllegalActivityType_ID	Integer	Foreign key. Identifies the Illegal Activities (normally signs)
tblPeriodElapsed_ID	Integer	Foreign key. Identifies the period elapsed
Details	Memo	Notes / Details field
Action	Memo	What action was undertaken on the illegal activity

## 2.10 *tblIllegalActivityType*

This table lists the different types of "illegal activities".

Field Name	Type	Description
ID	String	Primary key. Uniquely identifies the illegal activity.
IllegalActivityType	String(50)	A 50 character string to describe the illegal activity.

## 2.11 *tblPeriodElapsed*

This table lists the categories of Period Elapsed.

Field Name	Type	Description
ID	String	Primary key. Uniquely identifies the category.
PeriodElapsed	String(50)	A 50 character string to describe the Period Elapsed category.

## 2.12 *tblAnimalSighting*

There can be any number of animal sighting records associated with a patrol movement. A sighting record is used to define animal mortality or animal (direct / indirect) sighting. The type of record the entry defines is determined by the value of the field called "SightingType". If animal carcasses are detected then these are recorded in a table called "tblAnimalMortality". If animals are seen then these are recorded in a table called "tblAnimalDirectSighting". If animal signs are seen then these are recorded in a table called "tblAnimalIndirectSighting".

Field Name	Type	Description
ID	Integer	Primary key. Uniquely identifies the animal sighting record.
tblPatrolMovement_ID	Integer	Foreign key. Identifies the patrol movement the sighting record belongs to.
tblAnimal_ID	Integer	Foreign key. Identifies the animal species the sighting record belongs to.
SightingType	Integer	Identifies what the sighting record represents:

		0 = animal direct sighting; 1 = animal indirect sighting; 2 = mortality.
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### 2.13 *tblAnimal*

This table is used to define the list of relevant animal species.

Field Name	Type	Description
ID	Integer	Primary key. Unique number to define the animal species.
Scientific Name	String(50)	Scientific name of the species.
Assamese Name	String(50)	Assamese name of the species.
Bodo Name	String(50)	Bodo name of the species.
Image	String(256)	Path to a photograph of the animal.
Notes	Memo	Allows some notes to be associated with the species.

### 2.14 *tblAnimalDirectSighting*

This table stores relevant data on animals seen at a "patrol movement".

Field Name	Type	Description
ID	Integer	Primary key. Unique number to define the animal direct sighting record.
tblAnimalSighting_ID	Integer	Foreign key. Identifies the animal sighting record.
NoOfAdults	Integer	Number of adult animals seen.
NoOfYoung	Integer	Number of young animals seen
NoOfMales	Integer	Number of male animals seen
NoOfFemales	Integer	Number of female animals seen
NoOfUnknownSex	Integer	Number of animals seen of undetermined sex
Notes	Memo	Relevant notes field

### 2.15 *tblAnimalIndirectSighting*

This table stores relevant data on animal signs seen at a "patrol movement".

Field Name	Type	Description
ID	Integer	Primary key. Unique number to define the indirect sighting record.
tblAnimalSighting_ID	Integer	Foreign key. Identifies the animal sighting record.
tblAnimalSign_ID	Integer	Foreign key. Identifies the animal sign.
Notes	Memo	Relevant notes field

### 2.16 *tblAnimalSign*

This table lists the different signs of animals.

Field Name	Type	Description
ID	String	Primary key. Uniquely identifies the animal sign.
Cause	String(50)	A 50 character string to describe the cause of death.

### 2.17 *tblAnimalMortality*

This table stores relevant data on animal mortalities.

Field Name	Type	Description
ID	Integer	Primary key. Unique number to define the animal mortality record
tblAnimalSighting_ID	Integer	Foreign key. Identifies the animal sighting record.
NoOfAdults	Integer	Number of adult animals dead
NoOfYoung	Integer	Number of young animals dead
NoOfMales	Integer	Number of male animals dead
NoOfFemales	Integer	Number of female animals dead
NoOfUnknownSex	Integer	Number of animals of undetermined sex dead
tblPeriodElapsed_ID	Integer	Foreign key. Identifies the period elapsed since death
tblCauseOfDeath_ID	Integer	Foreign key. Identifies the apparent cause of death
ReasonsFoStatingrCauseOfDeath	Memo	Reasons for stating cause of death
PartsRecovered	Memo	Parts recovered

### 2.18 *tblCauseOfDeath*

This table lists the causes of animal mortalities.

Field Name	Type	Description
ID	String	Primary key. Uniquely identifies the record.
Cause	String(50)	A 50 character string to describe the cause of death.