

## | Memorandum

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Date: September 11<sup>th</sup>, 2009

To: Altamont Scientific Review Committee

cc: Gina Bartlett and Sandra Rivera

From: Jesse Schwartz, Doug Leslie, Steve Citron-Pousty, and Diana Roberts

Subject: **Altamont Database Background Materials**

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### Overview

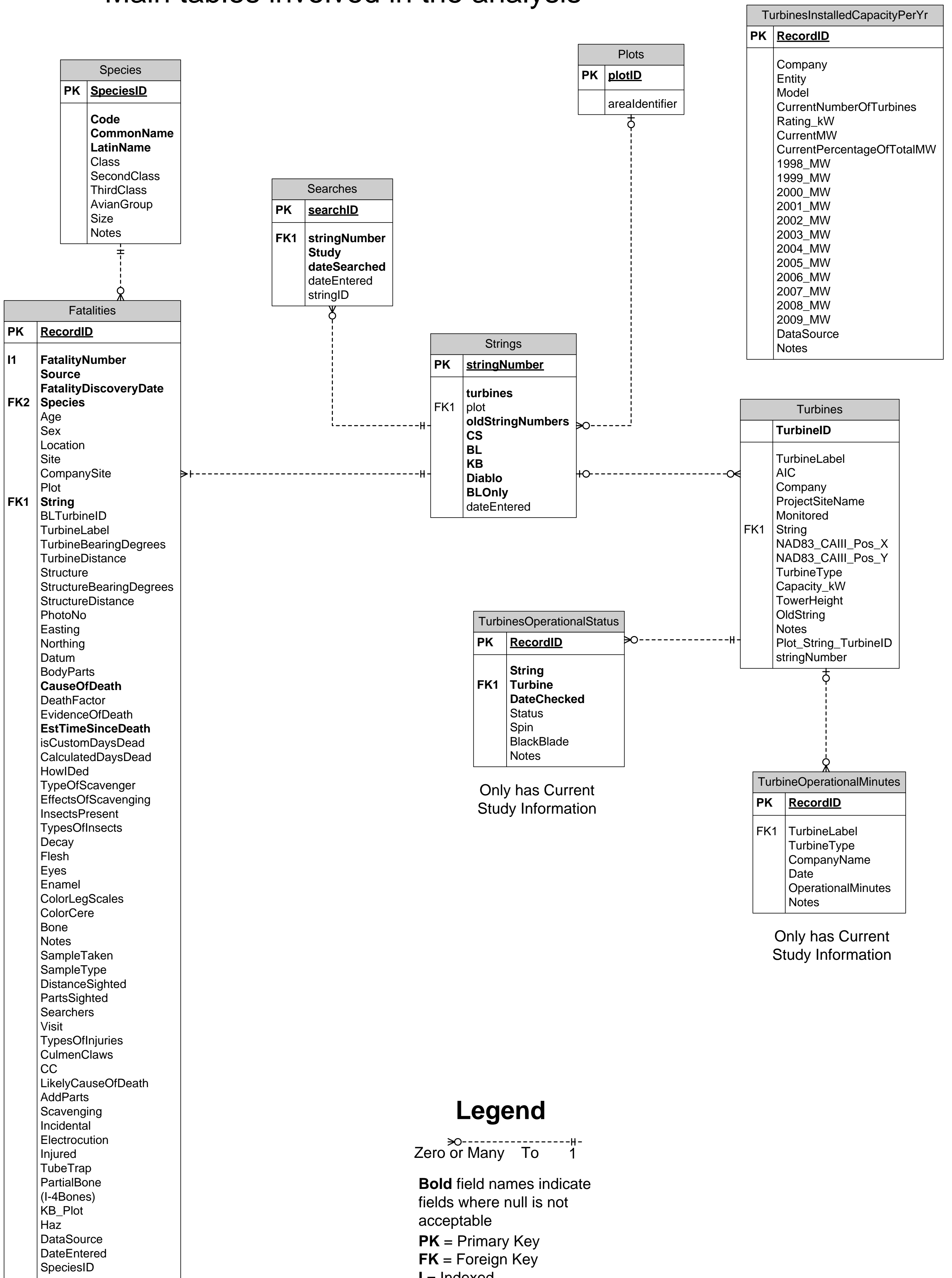
The Altamont Scientific Review Committee, Monitoring Team, and others will engage in a data discovery workshop the morning of September 17<sup>th</sup>, 2009. This document includes background material for the workshop intended to help the participants fully orient to the Altamont database, and to facilitate peer review of its structure and content. We have assembled a variety of types of information presented with increasing technical detail to allow participants from various technical backgrounds to examine and discover the database structure and function.

Some of the SQL content may be difficult to follow for some readers, while others might find it easy to digest. Regardless, our exploration and discovery of the data on September 17<sup>th</sup> will be primarily a visual exercise. We will walk the participants through this content, and will explain the SQL included herein in detail. In addition we will be providing participants with tabular outputs from the database, and we will expose tabular summaries of the content via the web services. Finally, we will also develop a method for users to make direct access to the data via Microsoft Excel and Access. We look forward to receiving edits comments on this content prior to the 17<sup>th</sup>, and are hopeful that the content will help participants prepare for the discovery session.

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# Main tables involved in the analysis



Where AddParts <> 'True'

AllFatalities	
<b>RecordID</b>	
FatalityNumber	
Source	
Incidental	
FatalityDiscoveryDate	
CalculatedDaysDead	
CalculatedMidpointDeathDate	
Month	
Quarter	
Year	
StudyPeriod	
Year.Mo	
<b>LatinName</b>	
<b>CommonName</b>	
AvianGroup	
Size	
Age	
Sex	
Location	
Site	
CompanySite	
Plot	
String	
TurbineLabel	
TurbineBearingDegrees	
TurbineDistance	
Structure	
StructureBearingDegrees	
StructureDistance	
CauseOfDeath	
DeathFactor	
PhotoNo	
BodyParts	
Easting	
Northing	
Datum	
Injured	
AddParts	

**WHERE** (FatalityDiscoveryDate > '5/6/1998')  
**AND**  
(FatalityDiscoveryDate < '11/01/2008')

**WHERE** (Incidental **IS NULL OR** Incidental = 'False')  
**AND**  
(Injured **IS NULL OR** Injured = 'False')

**WHERE** (CauseOfDeath = '1') **OR**  
(CauseOfDeath = '6') **OR**  
(CauseOfDeath = '7')

AllFata1s1_BetweenDates
<b>RecordID</b>

AllFata1s2_NotIncidental
<b>RecordID</b>

AllFata1s3_TurbineRelatedFatalities
<b>RecordID</b>

**WHERE** (CalculatedDaysDead <= 90)

AllFata1s4_MaxCarcassAgeLessThan90Days
<b>RecordID</b>

**WHERE** (TurbineDistance <= 125)

AllFata1s5_SearchRadiusLessThan125m
<b>RecordID</b>

**WHERE** (FatalityDiscoveryDate > '10/31/2007')  
**AND**  
(FatalityDiscoveryDate < '11/01/2008')

AllFata1s6_InPeriodNov2007ThruOct2008
<b>RecordID</b>

**WHERE** (Source <> 'WRRS')  
**AND**  
(Source <> 'WRRS Baseline')

FINISHED

AllFata1s7_NotWRRSOrWRRSBaseline	
<b>RecordID</b>	
FatalityNumber	
<b>Source</b>	
Incidental	
FatalityDiscoveryDate	
CalculatedDaysDead	
CalculatedMidpointDeathDate	
Month	
Quarter	
Year	
StudyPeriod	
Year.Mo	
<b>LatinName</b>	
<b>CommonName</b>	
AvianGroup	
Size	
Age	
Sex	
Location	
Site	
CompanySite	
Plot	
String	
TurbineLabel	
TurbineBearingDegrees	
TurbineDistance	
Structure	
StructureBearingDegrees	
StructureDistance	
CauseOfDeath	
DeathFactor	
PhotoNo	
BodyParts	
Easting	
Northing	
Datum	
Injured	

## Dates

### Function DateToMonth Definition for Month Column

```
ALTER function [dbo].[DateToMonth] (@DateInput as datetime) returns nchar(10)
as
begin

declare @result as nchar(10)
declare @month as int
SET @month = month(@DateInput)
if @month = 1
    SET @result = 'January'
else if @month = 2
    SET @result = 'February'
else if @month = 3
    SET @result = 'March'
else if @month = 4
    SET @result = 'April'
else if @month = 5
    SET @result = 'May'
else if @month = 6
    SET @result = 'June'
else if @month = 7
    SET @result = 'July'
else if @month = 8
    SET @result = 'August'
else if @month = 9
    SET @result = 'September'
else if @month = 10
    SET @result = 'October'
else if @month = 11
    SET @result = 'November'
else if @month = 12
    SET @result = 'December'
else
    SET @result = 'ERROR!'

return @result

end
```

### Function DateToSeason Definition for Quarter Column

```
ALTER function [dbo].[DateToSeason] (@DateInput as datetime) returns nchar(6)
as
begin

declare @result as nchar(6)
declare @month as int
SET @month = month(@DateInput)
if @month > 0 and @month < 4
    SET @result = 'Winter'
else if @month >= 4 and @month < 6
    SET @result = 'Spring'
else if @month >= 6 and @month < 9
    SET @result = 'Summer'
else if @month >= 9 and @month <= 12
    SET @result = 'Fall'
else
    SET @result = 'ERROR!'

return @result

end
```

### Function DateToStudyPeriod Definition for StudyPeriod Column

```
ALTER function [dbo].[DateToStudyPeriod] (@DateInput as datetime) returns
nchar(8)
as
begin

declare @result as nchar(8)
if @DateInput >= '01/01/2005' and @DateInput < '10/01/2007'
    SET @result = 'Study'
else if @DateInput >= '03/01/1998' and @DateInput < '06/01/2003'
    SET @result = 'Baseline'
else
    SET @result = 'Out'

return @result

end
```

### Function DateToYYYYMM Definition for Year Column

```
ALTER function [dbo].[DateToYYYYMM] (@DateInput as datetime) returns nchar(7)
as
begin

declare @result as nchar(7)
SET @result = Convert(varchar(7), @DateInput, 102)
return @result

end
```

## Species

### SQL Create Statement for Table Species

```
CREATE TABLE [dbo].[Species](
    [SpeciesID] [int] IDENTITY(0,1) NOT NULL,
    [Code] [char](4) COLLATE SQL_Latin1_General_CP1_CI_AS NOT NULL,
    [CommonName] [nvarchar](250) COLLATE SQL_Latin1_General_CP1_CI_AS NOT
NULL,
    [LatinName] [nvarchar](250) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
    [Class] [char](4) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
    [SecondClass] [char](4) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
    [ThirdClass] [char](4) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
    [AvianGroup] [nchar](100) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
    [Size] [char](10) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
    [Notes] [text] COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
    CONSTRAINT [PK_Species] PRIMARY KEY CLUSTERED
(
    [SpeciesID] ASC
)WITH (PAD_INDEX = OFF, IGNORE_DUP_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY] TEXTIMAGE_ON [PRIMARY]

GO
```

## Fatalities

### Data Dictionary

The table below describes the fields that appear in the Fatalities table. The data in the Fatalities table come from several data sources. Baseline (BL), Current Study (CS), (KB), and Wildlife Reporting and Response System (WRRS) represent distinct programs with different field methods and different data tracking protocols, but similar goals in terms of documenting turbine related avian mortality.

To make it possible to compare mortality among these programs, the field data have been synthesized into a common format that allows analysis over data from multiple sources as a whole. The common format is represented in the columns and data types in the table below. Many fields, such as **Date** and **Species**, convert easily into the common format, while others, such as **Decay** and **CauseOfDeath**, are more subtle and thus have required more post-processing of field data for reliable valid conversion.

All data fields that are essential to basic mortality calculations and analysis (*Level 1 data*) have been standardized with common values, enumerated below in the Data Description column. Some of these fields are required to have a non-NULL value and are noted as such, for instance **CauseOfDeath**. Other fields, both fields with standardized common values and fields with unconstrained values (all of these are *Level 2 data* and thus not essential to analysis) contain can contain a NULL value.

Note that some BL records are noted as having only NULL values for some fields, as shown in the Notes column. There are a number of reasons that these fields may contain only NULL values. The field could have been created for data collected in CS study but not in the BL study or, under WRRS protocol, the information may not have been standardized and coded, or the information may be shared among multiple fields (such as comments and notes). The null status of these Level 2 data fields does not suggest that BL or WRRS has no information for these fields, but only that we did not extract, code, and standardize this Level 2 data that would not directly affect the analysis.



Field Name	Data Description	Notes
Species	<p>Four-letter code for the species of the fatality.  Valid species codes are present in the Species table.  Only these codes can be entered into this table.  Do not allow nulls. This field is required. If this field is left blank, this record is not valid.</p>	
Age	<p>Age of the fatality at death.  <b>adult</b>  <b>juvenile</b>  <b>immature</b>  <b>nestling</b>  <b>unknown</b>  <i>NULL</i>  Allow nulls.</p>	
Sex	<p>Sex of fatality, if known.  <b>male</b>  <b>female</b>  <b>unknown</b>  <i>NULL</i>  Allow nulls.</p>	
Location	<p>Quadrants of the Altamont Pass Wind Resource Area study area, North/East, North/West, South/East, South/West , assigned by WEST at start of the study.  Allow nulls.</p>	<p>Only value shown in BL data is <i>NULL</i>.</p>
Site	<p>General location within APWRA where fatality was found, assigned by field crew, usually the gate by which the fatality was accessed.  Allow nulls.</p>	

Field Name	Data Description	Notes
CompanyName	Name of company that owns and operates the turbine where the fatality was found. AC AIC ALTECH DIABLO WINDS DIFWIND IX DIFWIND VII GB PATTERSON PASS SANTA CLARA TAXVEST TRES VAQUEROS VENTURE VIKING WEG NULL Allow nulls.	
Plot	Search plot or block, assigned by WEST at start of study. Allow nulls.	
String	A unit of search. All turbines within a string are searched during a search. Allow nulls.	Most strings are composed of turbines of only one company.
BLTurbineID	Turbine identifier for Baseline data, assigned by researcher Smallwood. Allow nulls.	This field contains NULL values for all records with Source other than Baseline or WRRS Baseline.
TurbineLabel	Turbine identifier (not unique because some FPL turbines have the same identifier as Patterson Pass turbines). Allow nulls.	
TurbineBearingDegrees	Bearing from turbine to fatality. Allow nulls.	
TurbineDistance	Distance of fatality location from nearest turbine. Units are in meters. Allow nulls.	
Structure	Type and/or identification of non-turbine structure if it was nearer to the fatality than the nearest turbine. Allow nulls.	Only value shown in BL data is <i>NULL</i> .

Field Name	Data Description	Notes
StructureBearingDegrees	Bearing of fatality location from nearest structure (if structure was identified). Allow nulls.	Only value shown in BL data is <i>NULL</i> .
StructureDistance	Distance of fatality location from nearest structure (if structure was identified). Units are in meters. Allow nulls.	Only value shown in BL data is <i>NULL</i> .
PhotoNo	Photo identification. Allow nulls.	
Easting	UTM easting. Allow nulls.	Only value shown in BL data is <i>NULL</i> .
Northing	UTM northing. Allow nulls.	Only value shown in BL data is <i>NULL</i> .
Datum	Datum of UTM coordinate is NAD 27 if left blank. Allow nulls. Default value 'NAD 27'.	Only value shown in BL data is <i>NULL</i> .
BodyParts	Body parts of fatality found. Allow nulls.	
CauseOfDeath	Cause of death, if it can be deduced/ascertained. <b>1 (Blade strike/turbine collision)</b> <b>2 (Electrocution)</b> <b>3 (Line strike)</b> <b>4 (Predation)</b> <b>5 (Other [not turbine related])</b> <b>6 (Unknown)</b> <b>7 (Other [turbine related])</b> <i>NULL</i> Do not allow nulls.	
DeathFactor	(A) Further specification and variation of the cause of death. OR (B) Further documentation of the cause of death. The letters have a different meaning, depending on which CauseOfDeath they are attached to. See Notes below for further description. <sup>1</sup> Allow nulls.	Only value shown in BL data is <i>NULL</i> .

Field Name	Data Description	Notes
EvidenceOfDeath	<p>Information that indicates how and/or why the bird died.</p> <p>In many records, this includes a combined code of CauseOfDeath/DeathFactor.</p> <p>Allow nulls.</p>	<p>Only value shown in BL data is <i>NULL</i>.</p>
EstTimeSinceDeath	<p>Field crew estimate of range of days since bird fatality at time of find.</p> <p>Do not allow nulls.</p>	<p>Values in BL dataset are integers. Values in CS and WRRS datasets are ranges. Each study has its own metrics for time ranges:</p> <p><b><u>BL</u></b>  0, 1, 2, ... intermittent</p> <p><b><u>WRRS Baseline</u></b>  &lt;4 days  &lt;7 days  &lt;14 days  &lt;30 days  &gt;30 days  unknown</p> <p><b><u>WRRS</u></b>  &lt;1 day  &lt;3 days  &lt;4 days  &lt;7 days  &lt;14 days  &lt;30 days  &gt;30 days  unknown</p> <p><b><u>CS</u></b>  0-3 days (fresh)  4-7 days  0-30 days  &lt;30 days  &gt;30 days  aged  injured  unknown</p> <p><b><u>KB</u></b>  0-2 days  3-7 days</p>

Field Name	Data Description	Notes
		4-7 days <30 days >30 days 0-90 days aged injured unknown
IsCustomDaysDead	True or false. True if the CalculatedDaysDead value is not based on rules using EstTimeSinceDeath, Decay, and Flesh. Instead, the CalculatedDaysDead value was based on professional evaluation using all information in the record. [At time of writing, Brian Karas of the MTeam performed the custom evaluation.] Allow nulls.	Only value shown in BL data is <i>NULL</i> .
CalculatedDaysDead	A point estimate for the number of days between the discovery of the carcass and the fatality date. The point estimate is based on rules using EstTimeSinceDeath, Decay, and Flesh, calculated by the database function KBackDateCalc. CalculatedDaysDead is calculated only for data in the CS and KB datasets. Allow nulls.	Only value shown in BL data is <i>NULL</i> .
HowIDed	How the species of the fatality was identified (e.g., plumage, bone length). Allow nulls.	Only value shown in BL data is <i>NULL</i> .
TypeOfScavenger	Type of scavengers, if any. <b>vertebrate</b> <b>invertebrate</b> <b>unclear</b> <b>n/a</b> <b>NULL</b> The value <b>vertebrate</b> can include the presence of invertebrate scavengers. The value <b>n/a</b> means that there is no material present that could be scavenged. Allow nulls.	Only value shown in BL data is <i>NULL</i> .

Field Name	Data Description	Notes
EffectsOfScavenging	Condition of carcass attributable to scavengers. For records with Source = Baseline, this field assesses the extent of scavenging. Values are “no evidence of scavenging,” “arthropods only,” “some scavenging,” “extensive scavenging.” Allow nulls.	
InsectsPresent	Most records are true or false for this field. A few WRRS records are “N/A” or “unk” for this field. Allow nulls.	
TypesOfInsects	Types of insects observed, if present. Allow nulls.	Only value shown in BL data is <i>NULL</i> .
Decay	Indicates state of decay. <b>fresh</b> <b>feathers and flesh</b> <b>flesh and bone</b> <b>bone and feathers</b> <b>bone</b> <b>feather spot</b> <i>NULL</i> Allow nulls.	Only value shown in BL data is <i>NULL</i> .
Flesh	Indicates condition of flesh. <b>fresh</b> <b>gooey</b> <b>dried</b> <b>n/a</b> <i>NULL</i> The value n/a is used if no flesh is present. Allow nulls.	Only value shown in BL data is <i>NULL</i> .
Eyes	Indicates condition of eyes. <b>round, fluid filled</b> <b>sunken</b> <b>dried</b> <b>empty, skull</b> <b>no head</b> <i>NULL</i> Allow nulls.	Only value shown in BL data is <i>NULL</i> .

Field Name	Data Description	Notes
Enamel	<p>Indicates presence of enamel on remains and the condition of the enamel if present.</p> <p><b>n/a</b> <b>culmen</b> <b>claws</b> <b>culmen/claws</b> <b>NULL</b></p> <p>Allow nulls.</p>	<p>Only value shown in BL data is <i>NULL</i>.</p>
ColorLegScales	<p>Indicates presence of leg scales condition of the leg scales if present.</p> <p><b>n/a</b> <b>original</b> <b>partially bleached</b> <b>bleached</b> <b>NULL</b></p> <p>Allow nulls.</p>	<p>Only value shown in BL data is <i>NULL</i>.</p>
ColorCere	<p>Indicates presence of cere condition of cere if present.</p> <p><b>n/a</b> <b>original</b> <b>partially bleached</b> <b>bleached</b> <b>NULL</b></p> <p>Allow nulls.</p>	<p>Only value shown in BL data is <i>NULL</i>.</p>
Bone	<p>Indicates presence of bone condition of bone if present.</p> <p><b>red</b> <b>yellow</b> <b>white (bleached)</b> <b>NULL</b></p> <p>Allow nulls.</p>	<p>Only value shown in BL data is <i>NULL</i>.</p>
Notes	<p>Additional information recorded by field crew or added later (e.g., to cross-check with WRRS records).</p> <p>Allow nulls.</p>	<p>For Baseline, this field is a concatenation of <b>Comment</b> and <b>Comment2</b> from the original SPSS data.</p>
SampleTaken	<p>Indicates whether sample was taken for isotope or DNA analysis.</p> <p>Allow nulls.</p>	<p>Only value shown in BL data is <i>NULL</i>.</p>

Field Name	Data Description	Notes
SampleType	Indicates type of sample was taken. Allow nulls.	Only value shown in BL data is <i>NULL</i> .
DistanceSighted	Allow nulls.	Only value shown in BL data is <i>NULL</i> .
PartsSighted	Allow nulls.	Only value shown in BL data is <i>NULL</i> .
Searchers	Initials of searchers that found and recorded the fatality. Allow nulls.	Only value shown in BL data is <i>NULL</i> .
Visit	Allow nulls.	Only value shown in BL data is <i>NULL</i> .
TypesOfInjuries	Injuries, if any, noted by field crew. Allow nulls.	Only value shown in BL data is <i>NULL</i> .
CulmenClaws	Whether enamel is present on culmen or claws, or both. Allow nulls.	Only value shown in BL data is <i>NULL</i> .
CC		Only value shown in BL data is <i>NULL</i> .
LikelyCauseOfDeath	If information about the fatality clearly indicates why the fatality occurred, the cause of death is stated here. Allow nulls.	<b>LikelyCauseOfDeath</b> could be generated from Baseline SPSS data by concatenating <b>turbcaus</b> + <b>cause</b> . It was not generated for the current generation of data.
AddParts	Boolean. True if find is an additional part of a fatality that has previously been found. Allow nulls.	Only value shown in BL data is <i>NULL</i> .
Scavenging	Boolean. True if this bird is used for a scavenging trial. Allow nulls.	Only value shown in BL data is <i>NULL</i> .
Incidental	Boolean. True if the bird is found other than during a standard scheduled search. Allow nulls.	In BL dataset, this value is based on Report as recorded in SPSS data. For all Report = Incidental/ NREL, Incidental = True.
Electrocution	Boolean. True if the fatality was caused by electrocution. This information could be supported by information in the Notes field or in another comment field. Allow nulls.	In BL dataset, this value is based on CauseOfDeath which was assessed from a range of factors. For all records with CauseOfDeath=2, Electrocution = True.

Field Name	Data Description	Notes
Injured	Boolean. True if the bird, when detected, was alive and injured but not dead. This information could be supported by information in the Notes field or in another comment field in the table. Allow nulls.	In BL dataset, this value is based on Finding recorded in SPSS data. For all Finding = Injured bird, Injured = True.
TubeTrap	Boolean. True if the fatality is entrapment in a tube structure turbine. Allow nulls.	Only value shown in BL data is <i>NULL</i> .
PartialBone	Boolean. True if the fatality finding includes only partial bones. Allow nulls.	Only value shown in BL data is <i>NULL</i> .
[1-4Bones]	Boolean. True if the fatality finding includes only one to four bones. Allow nulls.	Only value shown in BL data is <i>NULL</i> .
KB_Plot	Boolean. True if the fatality is detected at a KB plot during the KB study. Allow nulls.	Only value shown in BL data is <i>NULL</i> .
Haz	Boolean. True if the fatality is detected at a hazardous turbine removal site. Allow nulls.	Only value shown in BL data is <i>NULL</i> .
DateEntered	Date the record was entered into the database. Value is entered automatically. Allow nulls.	User cannot enter or change the value.

Death Factor.

## Fatality Table Creation Statement

```

CREATE TABLE [dbo].[Fatalities](
  [RecordID] [int] IDENTITY(1,1) NOT NULL,
  [FatalityNumber] [nvarchar](14) COLLATE SQL_Latin1_General_CP1_CI_AS NOT
NULL,
  [Source] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NOT NULL,
  [FatalityDiscoveryDate] [datetime] NOT NULL,
  [Species] [nvarchar](4) COLLATE SQL_Latin1_General_CP1_CI_AS NOT NULL,
  [Age] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  [Sex] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  [Location] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  [Site] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  [CompanySite] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS
NULL,
  [Plot] [int] NULL,
  [String] [float] NULL,
  [BLTurbineID] [int] NULL,
  [TurbineLabel] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS
NULL,
  [TurbineBearingDegrees] [int] NULL,
  [TurbineDistance] [float] NULL,
  [Structure] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  [StructureBearingDegrees] [int] NULL,
  [StructureDistance] [float] NULL,
  [PhotoNo] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  [Easting] [int] NULL,
  [Northing] [int] NULL,
  [Datum] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  [BodyParts] [nvarchar](max) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  [CauseOfDeath] [int] NOT NULL,
  [DeathFactor] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS
NULL,
  [EvidenceOfDeath] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS
NULL,
  [EstTimeSinceDeath] [nvarchar](255) COLLATE
SQL_Latin1_General_CP1_CI_AS NOT NULL,
  [isCustomDaysDead] [bit] NULL,
  [CalculatedDaysDead] [int] NULL,
  [HowIDed] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  [TypeOfScavenger] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS
NULL,
  [EffectsOfScavenging] [nvarchar](255) COLLATE
SQL_Latin1_General_CP1_CI_AS NULL,
  [InsectsPresent] [bit] NULL,
  [TypesOfInsects] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS
NULL,
  [Decay] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  [Flesh] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  [Eyes] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  [Enamel] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  [ColorLegScales] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS
NULL,
  [ColorCere] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,

```

```
[Bone] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,  
[Notes] [nvarchar](max) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,  
[SampleTaken] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS  
NULL,  
[SampleType] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,  
[DistanceSighted] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS  
NULL,  
[PartsSighted] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS  
NULL,  
[Searchers] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,  
[Visit] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,  
[TypesOfInjuries] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS  
NULL,  
[CulmenClaws] [int] NULL,  
[CC] [int] NULL,  
[LikelyCauseOfDeath] [nvarchar](255) COLLATE  
SQL_Latin1_General_CP1_CI_AS NULL,  
[AddParts] [bit] NULL,  
[Scavenging] [bit] NULL,  
[Incidental] [bit] NULL,  
[Electrocution] [bit] NULL,  
[Injured] [bit] NULL,  
[TubeTrap] [bit] NULL,  
[PartialBone] [bit] NULL,  
[(I-4Bones)] [bit] NULL,  
[KB_Plot] [bit] NULL,  
[Haz] [bit] NULL,  
[DataSource] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,  
[DateEntered] [datetime] NULL,  
CONSTRAINT [PK_Fatalities] PRIMARY KEY CLUSTERED  
(  
    [RecordID] ASC  
) WITH (PAD_INDEX = OFF, IGNORE_DUP_KEY = OFF) ON [PRIMARY]  
) ON [PRIMARY]
```

## Days Dead Calculations

```
SET @TimeSinceDeath = RTRIM(@TimeSinceDeath)
SET @Flesh = RTRIM(@Flesh)
SET @Decay = RTRIM(@Decay)

DECLARE @midpoint as int

SELECT @midpoint =
    CASE
        /* the range for this should be 0-3 days */
        WHEN @TimeSinceDeath = '0-3 days (fresh)' AND @Flesh = 'Fresh' THEN 2
        /* the range for this should be 0-3 days */
        WHEN @TimeSinceDeath = '0-3 days (fresh)' AND @Flesh = 'gooey' THEN 2
        /* the range for this should be 0-3 days */
        WHEN @TimeSinceDeath = '0-3 days (fresh)' AND @Flesh = 'N/A' THEN 2

        /* the range for this should be 3-7 days */
        WHEN @TimeSinceDeath = '3-7 days' AND @Flesh = 'Fresh' THEN 5
        /* the range for this should be 3-7 days */
        WHEN @TimeSinceDeath = '3-7 days' AND @Flesh = 'dried' THEN 5

        /* the range for this should be 4-7 days */
        WHEN @TimeSinceDeath = '4-7 days' AND @Flesh = 'Fresh' THEN 5
        /* the range for this should be 4-7 days */
        WHEN @TimeSinceDeath = '4-7 days' AND @Flesh = 'gooey' THEN 5

        /* the range for this should be > 90 days */
        WHEN @TimeSinceDeath = 'aged' AND @Flesh = 'N/A' THEN -99
        /* the range for this should be > 90 days */
        WHEN @TimeSinceDeath = 'aged' AND @Flesh = 'dried' THEN -99

        /* the range for this should be N/A days */
        WHEN @TimeSinceDeath = 'N/A' THEN -99

        /* the range for this should be 0 - 90 days */
        WHEN @TimeSinceDeath = 'unknown' AND @Decay = 'Feather spot' THEN 45
```

```
/* the range for this should be 30 - 90 days */
WHEN @TimeSinceDeath = 'unknown' AND @Flesh = 'dried' THEN 60
/* the range for this should be 30 - 60 days */
WHEN @TimeSinceDeath = 'unknown' AND @Flesh = 'gooey' THEN 45
/* the range for this should be > 90 days */
WHEN @TimeSinceDeath = 'unknown' AND @Flesh = 'Feather spot' AND @Decay = 'Bone' THEN -99
/* the range for this should be 0 - 90 days */
WHEN @TimeSinceDeath = 'unknown' AND @Flesh = 'N/A' AND @Decay = 'Feather spot' THEN 45

/* the range for this should be 1 day */
WHEN @TimeSinceDeath = '1' AND @Flesh = 'Fresh' THEN 1

/* the range for this should be 8-30 days */
WHEN @TimeSinceDeath = '<30 days' AND @Flesh = 'gooey' THEN 19
/* the range for this should be 8-30 days */
WHEN @TimeSinceDeath = '<30 days' AND @Flesh = 'dried' THEN 19
/* the range for this should be 8-30 days */
WHEN @TimeSinceDeath = '<30 days' AND @Flesh = 'N/A' THEN 19
/* the range for this should be 0-30 days */
WHEN @TimeSinceDeath = '<30 days' AND @Flesh = 'Feather spot' THEN 15

/* the range for this should be 0-14 days */
WHEN @TimeSinceDeath = '<14 days' AND @Flesh = 'N/A' THEN 7
/* the range for this should be 0-3 days */
WHEN @TimeSinceDeath = '<3 days' AND @Flesh = 'Fresh' THEN 2
/* the range for this should be 8-30 days */
WHEN @TimeSinceDeath = '<30 days' AND @Flesh = 'gooey' THEN 19
/* the range for this should be 8-30 days */
WHEN @TimeSinceDeath = '<30 days' AND @Flesh = 'N/A' THEN 19

/* the range for this should be > 90 days */
WHEN @TimeSinceDeath = '>30 days' AND @Flesh = 'N/A' AND @Decay = 'Bone' THEN -99
/* the range for this should be 30-90 days */
WHEN @TimeSinceDeath = '>30 days' AND @Flesh = 'N/A' AND @Decay = 'Feather spot' THEN 60
/* the range for this should be 31-60 days */
```

```
WHEN @TimeSinceDeath = '>30 days' AND @Flesh = 'gooey' THEN 45
/* the range for this should be 30-90 days */
WHEN @TimeSinceDeath = '>30 days' AND @Flesh = 'dried' THEN 60
/* the range for this should be 31-90 days */
WHEN @TimeSinceDeath = '>30 days' AND @Flesh = 'Feather spot' THEN 60

/** Brian did another big batch for combinations that shouldn't show up */
/* the range for this should be 8-30 days*/
WHEN @TimeSinceDeath = '<30 days' AND @Flesh = 'NULL' AND @Decay = 'Feather spot' THEN 19
/* the range for this should be 8-30 days*/
WHEN @TimeSinceDeath = '<30 days' AND @Flesh = 'NULL' AND @Decay = 'Feathers and flesh'
THEN 19

/* the range for this should be 8-30 days*/
WHEN @TimeSinceDeath = '<30 days' AND @Flesh = 'NULL' AND @Decay = 'Flesh and bone' THEN
19

/* the range for this should be 8-30 days*/
WHEN @TimeSinceDeath = '<30 days' AND @Flesh = 'NULL' AND @Decay = 'NULL' THEN 19
/* the range for this should be 30-90 days*/
WHEN @TimeSinceDeath = '>30 days' AND @Flesh = 'N/A' AND @Decay = 'Feathers and flesh'
THEN 60

/* the range for this should be 30-90 days*/
WHEN @TimeSinceDeath = '>30 days' AND @Flesh = 'N/A' AND @Decay = 'unknown' THEN 60
/* the range for this should be > 90 days*/
WHEN @TimeSinceDeath = '>30 days' AND @Flesh = 'NULL' AND @Decay = 'Bone' THEN -99
/* the range for this should be 30-90 days*/
WHEN @TimeSinceDeath = '>30 days' AND @Flesh = 'NULL' AND @Decay = 'Feather spot' THEN 60
/* the range for this should be 30-90 days*/
WHEN @TimeSinceDeath = '>30 days' AND @Flesh = 'NULL' AND @Decay = 'NULL' THEN 60
/* the range for this should be 0-3 days */
WHEN @TimeSinceDeath = '0-3 days (fresh)' AND @Flesh = 'dried' AND @Decay = 'Feathers and
flesh' THEN 2

/* the range for this should be 0-3 days */
WHEN @TimeSinceDeath = '0-3 days (fresh)' AND @Flesh = 'dried' AND @Decay = 'Flesh and
bone' THEN 2

/* the range for this should be 0-3 days */
WHEN @TimeSinceDeath = '0-3 days (fresh)' AND @Flesh = 'dried' AND @Decay = 'Fresh' THEN
```

```
2
/* the range for this should be 0-3 days */
WHEN @TimeSinceDeath = '0-3 days (fresh)' AND @Flesh = 'NULL' AND @Decay = 'none' THEN 2
/* the range for this should be 0-3 days*/
WHEN @TimeSinceDeath = '0-3 days (fresh)' AND @Flesh = 'NULL' AND @Decay = 'NULL' THEN 2
/* the range for this should be 0-30 days*/
WHEN @TimeSinceDeath = '0-30 days' AND @Flesh = 'gooey' AND @Decay = 'Feather spot' THEN
15
/* the range for this should be 0-30 days*/
WHEN @TimeSinceDeath = '0-30 days' AND @Flesh = 'N/A' AND @Decay = 'd' THEN 15
/* the range for this should be 0-30 days*/
WHEN @TimeSinceDeath = '0-30 days' AND @Flesh = 'N/A' AND @Decay = 'Feather spot' THEN
15
/* the range for this should be 0-30 days*/
WHEN @TimeSinceDeath = '0-30 days' AND @Flesh = 'NULL' AND @Decay = 'Feather spot' THEN
15
/* the range for this should be 4-7 days*/
WHEN @TimeSinceDeath = '4-7 days' AND @Flesh = 'dried' AND @Decay = 'Bone and feathers'
THEN 6
/* the range for this should be 4-7 days*/
WHEN @TimeSinceDeath = '4-7 days' AND @Flesh = 'dried' AND @Decay = 'Feather spot' THEN 6
/* the range for this should be 4-7 days*/
WHEN @TimeSinceDeath = '4-7 days' AND @Flesh = 'dried' AND @Decay = 'Feathers and flesh'
THEN 6
/* the range for this should be 4-7 days*/
WHEN @TimeSinceDeath = '4-7 days' AND @Flesh = 'dried' AND @Decay = 'Flesh and bone' THEN
6
/* the range for this should be 4-7 days*/
WHEN @TimeSinceDeath = '4-7 days' AND @Flesh = 'dried' AND @Decay = 'Fresh' THEN 6
/* the range for this should be 4-7 days*/
WHEN @TimeSinceDeath = '4-7 days' AND @Flesh = 'dried' AND @Decay = 'N/A' THEN 6
/* the range for this should be 4-7 days*/
WHEN @TimeSinceDeath = '4-7 days' AND @Flesh = 'N/A' AND @Decay = 'Bone and feathers'
THEN 6
/* the range for this should be 4-7 days*/
WHEN @TimeSinceDeath = '4-7 days' AND @Flesh = 'N/A' AND @Decay = 'Feather spot' THEN 6
/* the range for this should be 4-7 days*/
```

```
WHEN @TimeSinceDeath = '4-7 days' AND @Flesh = 'N/A' AND @Decay = 'Feathers and flesh'
THEN 6

/* the range for this should be 4-7 days*/
WHEN @TimeSinceDeath = '4-7 days' AND @Flesh = 'N/A' AND @Decay = 'N/A' THEN 6
/* the range for this should be 4-7 days*/
WHEN @TimeSinceDeath = '4-7 days' AND @Flesh = 'N/A' AND @Decay = 'NULL' THEN 6
/* the range for this should be 4-7 days*/
WHEN @TimeSinceDeath = '4-7 days' AND @Flesh = 'NULL' AND @Decay = 'Feathers and flesh'
THEN 6

/* the range for this should be 4-7 days*/
WHEN @TimeSinceDeath = '4-7 days' AND @Flesh = 'NULL' AND @Decay = 'NULL' THEN 6
/* the range for this should be > 90 days*/
WHEN @TimeSinceDeath = 'aged' AND @Flesh = 'NULL' AND @Decay = 'Bone' THEN -99
/* the range for this should be > 90 days*/
WHEN @TimeSinceDeath = 'aged' AND @Flesh = 'NULL' AND @Decay = 'Bone and feathers' THEN
-99

/* the range for this should be > 90 days*/
WHEN @TimeSinceDeath = 'aged' AND @Flesh = 'NULL' AND @Decay = 'NULL' THEN -99
/* the range for this should be 0 days*/
WHEN @TimeSinceDeath = 'injured' THEN 0
/* the range for this should be > 90 days*/
WHEN @TimeSinceDeath = 'unknown' AND @Flesh = 'N/A' AND @Decay = 'Bone' THEN -99
/* the range for this should be 30-90 days*/
WHEN @TimeSinceDeath = 'unknown' AND @Flesh = 'N/A' AND @Decay = 'Feathers and flesh'
THEN 60

/* the range for this should be > 90 days*/
WHEN @TimeSinceDeath = '> 1 month' AND @Flesh = 'N/A' AND @Decay = 'Bone and feathers'
THEN 60

/* the range for this should be 30 - 90 days*/
WHEN @TimeSinceDeath = 'unknown' AND @Flesh = 'N/A' AND @Decay = 'Bone and feathers' THEN
60

/* the range for this should be > 90 days*/
WHEN @TimeSinceDeath = 'aged' THEN -99

/*We didn't match any criteria and this is a problem */
```

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```
        ELSE -99999  
    END
```

```
    RETURN @midpoint
```

```
END
```

### SQL Select Statement for AllFatalities View

```
SELECT
dbo.Fatalities.RecordID,
dbo.Fatalities.FatalityNumber,
dbo.Fatalities.Source,
dbo.Fatalities.Incidental,
dbo.Fatalities.FatalityDiscoveryDate,
dbo.Fatalities.CalculatedDaysDead,
DATEADD(day, - dbo.Fatalities.CalculatedDaysDead, dbo.Fatalities.FatalityDiscoveryDate) AS
    CalculatedMidpointDeathDate,
dbo.DateToMonth(dbo.Fatalities.FatalityDiscoveryDate) AS Month,
dbo.DateToSeason(dbo.Fatalities.FatalityDiscoveryDate) AS Quarter,
SUBSTRING(dbo.DateToYYYYMM(dbo.Fatalities.FatalityDiscoveryDate), 1, 4) AS Year,
dbo.DateToStudyPeriod(dbo.Fatalities.FatalityDiscoveryDate) AS StudyPeriod,
dbo.DateToYYYYMM(dbo.Fatalities.FatalityDiscoveryDate) AS [Year.Mo],
dbo.Fatalities.Species,
dbo.Species.LatinName,
dbo.Species.CommonName,
dbo.Species.AvianGroup,
dbo.Species.Size,
dbo.Fatalities.Age,
dbo.Fatalities.Sex,
dbo.Fatalities.Location,
dbo.Fatalities.Site,
```

```
dbo.Fatalities.CompanySite,  
dbo.Fatalities.Plot,  
dbo.Fatalities.String,  
dbo.Fatalities.BLTurbineID,  
dbo.Fatalities.TurbineLabel,  
dbo.Fatalities.TurbineBearingDegrees,  
dbo.Fatalities.TurbineDistance,  
dbo.Fatalities.Structure,  
dbo.Fatalities.StructureBearingDegrees,  
dbo.Fatalities.StructureDistance,  
dbo.Fatalities.CauseOfDeath,  
dbo.Fatalities.DeathFactor,  
dbo.Fatalities.PhotoNo,  
dbo.Fatalities.BodyParts,  
dbo.Fatalities.Easting,  
dbo.Fatalities.Northing,  
dbo.Fatalities.Datum,  
dbo.Fatalities.Injured,  
dbo.Fatalities.AddParts  
FROM    dbo.Fatalities INNER JOIN dbo.Species ON dbo.Fatalities.Species =  
        dbo.Species.Code  
WHERE   (dbo.Fatalities.AddParts IS NULL) OR(dbo.Fatalities.AddParts = 'False')  
ORDER BY dbo.Fatalities.FatalityDiscoveryDate
```

## Searches

### Data Dictionary for Table Searches

**Table 2. Table Searches Data Dictionary**

Field Name	Data Description	Notes
StringID	Primary key (unique identifier). Do not allow nulls.	Automatically numbered. User cannot enter or change the value.
String	The number of the string that was searched. Each string is searched completely within one day. The Strings table contains further details on strings. Do not allow nulls.	
Study	Study for which the search was conducted. Values are <b>BL</b> <b>CS</b> <b>DL</b> <b>KB</b> Do not allow nulls.	BL = Baseline CS = Current Study DL = Diablo KB = KB
DateSearched	Date on which the search was conducted. Do not allow nulls.	
DateEntered	Date that the record was entered into the database table. Allow nulls.	Automatically assigned by the database.



## SQL Create Statement for Table Searches

```
CREATE TABLE [dbo].[Searches](
    [searchID] [int] IDENTITY(1,1) NOT NULL,
    [String] [float] NOT NULL,
    [Study] [nvarchar](50) COLLATE SQL_Latin1_General_CP1_CI_AS NOT NULL,
    [dateSearched] [datetime] NOT NULL,
    [dateEntered] [datetime] NULL CONSTRAINT [DF_searches_dateEntered]
DEFAULT (getdate()),
    CONSTRAINT [PK_dbo.searches] PRIMARY KEY CLUSTERED
(
    [searchID] ASC
)WITH (PAD_INDEX = OFF, IGNORE_DUP_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]
```

## SQL Select Statement for Calculating Search Interval

```
SELECT
    searchID,
    String,
    dbo.PrevSearchDate(String, dateSearched) AS PreviousDateSearched,
    dateSearched AS CurrentDateSearched,
    dateSearched - CAST(dateSearched - dbo.PrevSearchDate(String, dateSearched) AS int)
/ 2 AS IntervalDate,
    CAST(dateSearched - dbo.PrevSearchDate(String, dateSearched) AS float) AS Interval,
    MONTH(dateSearched - CAST(dateSearched - dbo.PrevSearchDate(String,
dateSearched) AS int) / 2) AS Month,
    YEAR(dateSearched - CAST(dateSearched - dbo.PrevSearchDate(String, dateSearched)
AS int) / 2) AS Year,
    CAST(YEAR(dateSearched - CAST(dateSearched - dbo.PrevSearchDate(String,
dateSearched) AS int) / 2) AS varchar) + '.' + CAST(MONTH(dateSearched -
CAST(dateSearched - dbo.PrevSearchDate(String, dateSearched) AS int) / 2) AS varchar) AS
[Year.Month],
    dbo.YearQuarter(dateSearched - CAST(dateSearched - dbo.PrevSearchDate(String,
dateSearched) AS int) / 2) AS Quarter
FROM    dbo.Searches
WHERE   (CAST(dateSearched - dbo.PrevSearchDate(String, dateSearched) AS float) IS NOT
NULL)
```

## Function for Determining Previous Search Date

```
ALTER FUNCTION [dbo].[PrevSearchDate]
(
    -- Add the parameters for the function here
    @String int,
    @SearchDate datetime
)
RETURNS datetime
AS
BEGIN
    -- Declare the return variable here
    DECLARE @Result datetime
    SET @Result=null
    -- Add the T-SQL statements to compute the return value here
    DECLARE myCursor CURSOR FOR
        -- Changed StringNum to String 8/5/09 dcr
        Select TOP (1) String, DateSearched
            -- Changed dbo.Searches to dbo.Searches 8/5/09 dcr
            FROM         dbo.Searches
            WHERE String=@String and DateSearched<@SearchDate
            ORDER BY DateSearched desc

    OPEN myCursor
    FETCH NEXT FROM myCursor INTO @String,@Result

    CLOSE myCursor
    DEALLOCATE myCursor

    -- Return the result of the function

    RETURN @Result
END
```

## Turbines

### SQL Create Statement for Table Turbines

```
CREATE TABLE [test].[Turbines(  
  [TurbineLabel] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS  
NULL,  
  [AIC] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,  
  [Company] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,  
  [ProjectSiteName] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS  
NULL,  
  [Monitored] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,  
  [String] [float] NULL,  
  [NAD83_CAIII_Pos_X] [float] NULL,  
  [NAD83_CAIII_Pos_Y] [float] NULL,  
  [TurbineType] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS  
NULL,  
  [Capacity_kW] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS  
NULL,  
  [TowerHeight] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS  
NULL,  
  [oldString] [float] NULL,  
  [Notes] [text] COLLATE SQL_Latin1_General_CP1_CI_AS NULL,  
  [Plot_String_TurbineID] [nvarchar](255) COLLATE  
SQL_Latin1_General_CP1_CI_AS NULL  
) ON [PRIMARY] TEXTIMAGE_ON [PRIMARY]
```

## Data Dictionary for Table Strings

Field Name	Data Description	Notes
StringID	Primary key (unique identifier). Do not allow nulls.	Automatically numbered. User cannot enter or change the value.
StringNumber	The number that identifies a specific group of turbines. The string is the basic unit of search at the Altamont Pass Wind Resource Area. One string is searched on one day. Most but not all strings contain turbines owned by only one company. String numbers are unique. Some strings have been searched in multiple studies, and some strings have been searched in only one study. Do not allow nulls.	String numbers for the CS study were reassigned in Summer 2009 to ensure that all strings were searched within one day.
Turbines	The turbines that are included in the string designated by the StringNumber. Turbines are described in more detail in the Turbines table. Do not allow nulls.	
Plot	The Plot that the string designated by the StringNumber appears in. Plots are listed in the Plots table. Allow nulls.	
OldStringNumbers	The old string number or numbers associated with the StringNumber before the string numbers were reassigned in Summer 2009. Do not allow nulls.	
CS	True if the string was searched during the Current Study; False is not. Do not allow nulls.	
BL	True if the string was searched during the Baseline Study; False is not. Do not allow nulls.	
KB	True if the string was searched during the KB Study; False is not. Do not allow nulls.	
Diablo	True if the string was searched during the Diablo Study; False is not. Do not allow nulls.	
BLOnly	True if the string was searched only during the Baseline Study; False is not. Do not allow nulls.	

Field Name	Data Description	Notes
DateEntered	Date that the record was entered. Allow nulls.	Automatically assigned by the database.

### SQL Create Statement for Table Strings

```
CREATE TABLE [dbo].[Strings](
    [stringID] [int] IDENTITY(1,1) NOT NULL,
    [stringNumber] [float] NOT NULL,
    [turbines] [nvarchar](max) COLLATE SQL_Latin1_General_CP1_CI_AS NOT
NULL,
    [plot] [int] NULL,
    [oldStringNumbers] [nvarchar](max) COLLATE SQL_Latin1_General_CP1_CI_AS
NOT NULL,
    [CS] [bit] NOT NULL,
    [BL] [bit] NOT NULL,
    [KB] [bit] NOT NULL,
    [Diablo] [bit] NOT NULL,
    [BLOnly] [bit] NOT NULL,
    [dateEntered] [datetime] NULL CONSTRAINT [DF_new_strings_dateEntered]
DEFAULT (getdate()),
    CONSTRAINT [PK_new_strings] PRIMARY KEY CLUSTERED
(
    [stringID] ASC
)WITH (PAD_INDEX = OFF, IGNORE_DUP_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]
```

## SQL Create Statement for Table Plots

```
CREATE TABLE [dbo].[Plots](
    [plotID] [int] IDENTITY(1,1) NOT NULL,
    [areaIdentifier] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS
NULL,
    CONSTRAINT [PK_Plots] PRIMARY KEY CLUSTERED
(
    [plotID] ASC
)WITH (PAD_INDEX = OFF, IGNORE_DUP_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]
```



## Megawatt Capacity

### SQL Create Statement for Table Operational Status

```
CREATE TABLE [sensitive].[TurbinesOperationalStatus](
  [RecordID] [int] IDENTITY(1,1) NOT NULL,
  [String] [float] NOT NULL,
  [Turbine] [nvarchar](20) COLLATE SQL_Latin1_General_CP1_CI_AS NOT NULL,
  [DateChecked] [smalldatetime] NOT NULL,
  [Status] [nvarchar](20) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  [Spin] [nvarchar](20) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  [BlackBlade] [nvarchar](20) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  [Notes] [nvarchar](max) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  CONSTRAINT [PK_TurbinesOperationalStatus] PRIMARY KEY CLUSTERED
(
  [RecordID] ASC
)WITH (PAD_INDEX = OFF, IGNORE_DUP_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY]
```



## SQL Create Statement for Table Operational Minutes

```
CREATE TABLE [sensitive].[TurbineOperationalMinutes](
    [RecordID] [int] IDENTITY(1,1) NOT NULL,
    [TurbineLabel] [nvarchar](50) COLLATE SQL_Latin1_General_CP1_CI_AS
NULL,
    [TurbineType] [nvarchar](50) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
    [CompanyName] [nvarchar](50) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
    [Date] [smalldatetime] NULL,
    [OperationalMinutes] [int] NULL,
    [Notes] [text] COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
    CONSTRAINT [PK_TurbineOperationalMinutes2] PRIMARY KEY CLUSTERED
(
    [RecordID] ASC
)WITH (PAD_INDEX = OFF, IGNORE_DUP_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY] TEXTIMAGE_ON [PRIMARY]
```



## SQL Create Statement for Table Installed Capacity

```
CREATE TABLE [sensitive].[TurbinesInstalledCapacityPerYr](
  [RecordID] [int] IDENTITY(1,1) NOT NULL,
  [Company] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  [Entity] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  [Model] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  [CurrentNumberOfTurbines] [float] NULL,
  [Rating_kW] [float] NULL,
  [CurrentMW] [float] NULL,
  [CurrentPercentageOfTotalMW] [float] NULL,
  [1998_MW] [float] NULL,
  [1999_MW] [float] NULL,
  [2000_MW] [float] NULL,
  [2001_MW] [float] NULL,
  [2002_MW] [float] NULL,
  [2003_MW] [float] NULL,
  [2004_MW] [float] NULL,
  [2005_MW] [float] NULL,
  [2006_MW] [float] NULL,
  [2007_MW] [float] NULL,
  [2008_MW] [float] NULL,
  [2009_MW] [float] NULL,
  [DataSource] [nvarchar](255) COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  [Notes] [text] COLLATE SQL_Latin1_General_CP1_CI_AS NULL,
  CONSTRAINT [PK_TurbinesInstalledCapacityPerYr] PRIMARY KEY CLUSTERED
(
  [RecordID] ASC
)WITH (PAD_INDEX = OFF, IGNORE_DUP_KEY = OFF) ON [PRIMARY]
) ON [PRIMARY] TEXTIMAGE_ON [PRIMARY]
```

---