```
In [2]:  import pandas as pd
         Complete_HWC_Data = pd.read_csv("/Users/nerdbear/Downloads/Complete_HWC_Data.csv", index
```

/var/folders/78/3r21nl395mjd2cmmsq2qzh_00000gn/T/ipykernel_49151/3578068924.py:2: DtypeW
arning: Columns (20) have mixed types. Specify dtype option on import or set low_memory=
False.
  Complete_HWC_Data = pd.read_csv("/Users/nerdbear/Downloads/Complete_HWC_Data.csv", ind
ex_col=0)

```
In [11]:  Complete_HWC_Data.head()
```

Out[11]:

	UniqueID	Incident Number	Incident Date	Field Unit	Protected Heritage Area	Incident Type	Latitude Public	Longitude Public	Wi
0	BAN2010-0003.3	BAN2010-0003	2010-01-01	Banff Field Unit	Banff National Park of Canada	Human Wildlife Interaction	51.161093	-115.593386	
1	BAN2010-0003.2	BAN2010-0003	2010-01-01	Banff Field Unit	Banff National Park of Canada	Human Wildlife Interaction	51.161093	-115.593386	
2	BAN2010-0003.1	BAN2010-0003	2010-01-01	Banff Field Unit	Banff National Park of Canada	Human Wildlife Interaction	51.161093	-115.593386	
3	JNP2010-0011.1	JNP2010-0011	2010-01-01	Jasper Field Unit	Jasper National Park of Canada	Rescued/Recovered/Found Wildlife	53.139120	-117.964219	
4	JNP2010-0015.1	JNP2010-0015	2010-01-01	Jasper Field Unit	Jasper National Park of Canada	Attractant	53.050492	-118.073612	

5 rows × 170 columns

```
In [19]:  #Data types for attributes in columns 0-20 are listed below.
          #All attributes in columns 21-170 are the encoded binary categories of Activity Type and

          Complete_HWC_Data[Complete_HWC_Data.columns[0:20]].dtypes
```

Out[19]:
```
UniqueID                        object
Incident Number                 object
Incident Date                   object
Field Unit                      object
Protected Heritage Area         object
Incident Type                   object
Latitude Public                 float64
Longitude Public                float64
Within Park                     object
Total Staff Involved            float64
Total Staff Hours               float64
Species Common Name             object
Sum of Number of Animals        float64
Animal Health Status            object
Cause of Animal Health Status   object
Animal Behaviour                object
Reason for Animal Behaviour     object
```

```
              Animal Attractant                    object
              Deterrents Used                       object
              Animal Response to Deterrents         object
              dtype: object
```

In [50]: `Complete_HWC_Data[Complete_HWC_Data.columns[0:11]].describe(include='object')`

Out[50]:

	UniqueID	Incident Number	Incident Date	Field Unit	Protected Heritage Area	Incident Type	Within Park
count	73658	73658	73658	73658	73658	73658	73618
unique	73658	64258	4299	19	35	9	2
top	BAN2010-0003.3	BAN2013-1151	2021-05-26	Jasper Field Unit	Banff National Park of Canada	Human Wildlife Interaction	Yes
freq	1	11	96	25982	27030	48673	72755

In [52]: `Complete_HWC_Data[Complete_HWC_Data.columns[11:20]].describe(include='object')`

Out[52]:

	Species Common Name	Animal Health Status	Cause of Animal Health Status	Animal Behaviour	Reason for Animal Behaviour	Animal Attractant	Deterrents Used	Animal Response to Deterrents
count	73655	41485	13197	45675	26138	24820	19544	10502
unique	322	9	17	23	17	21	26	10
top	Black Bear	Healthy	Collision	Presence - Wildlife Exclusion Zones	Habituation	Vegetation (natural)	Noise - Voice	Retreat - Run
freq	20898	25719	5752	17003	15559	9661	2474	4686

In [28]: `Complete_HWC_Data[Complete_HWC_Data.columns[0:20]].describe()`

Out[28]:

	Latitude Public	Longitude Public	Total Staff Involved	Total Staff Hours	Sum of Number of Animals
count	73624.000000	73624.000000	73658.000000	73658.000000	73655.000000
mean	51.484498	-114.770930	1.477789	2.331069	2.728776
std	1.900213	9.784865	1.055412	14.361819	14.389458
min	41.902015	-140.297738	0.000000	0.000000	0.000000
25%	51.168223	-118.063343	1.000000	0.500000	1.000000
50%	51.286676	-116.165634	1.000000	1.000000	1.000000
75%	52.872448	-115.551471	2.000000	2.000000	1.000000
max	73.998028	-52.637169	32.000000	2400.000000	2000.000000

In [53]:
```python
pd.set_option('display.max_rows', 100)
ActivityTypeSums = Complete_HWC_Data[Complete_HWC_Data.columns[21:121]].sum()
ActivityTypeSums
```

Out[53]:
```
Activity Type_Backpacking - Multiday Trips              524.0
Activity Type_Beach Recreation                         623.0
Activity Type_Biking / Walking                           1.0
Activity Type_Boating - Coastal/Marine                  33.0
Activity Type_Boating - Commercial                      13.0
Activity Type_Boating - Motorized Pleasure Craft        56.0
```

```
Activity Type_Bush Party                                                         2.0
Activity Type_Camping - Backcountry                                            759.0
Activity Type_Camping - Frontcountry                                          5618.0
Activity Type_Camping - Huts and Lodges                                        320.0
Activity Type_Camping - Winter Frontcountry                                     16.0
Activity Type_Camping-Frontcountry                                               2.0
Activity Type_Canoeing - Flatwater                                              43.0
Activity Type_Canoeing - Swiftwater                                             15.0
Activity Type_Canyoneering                                                       2.0
Activity Type_Climbing - Mountaineering                                          3.0
Activity Type_Climbing - Technical Rock                                          6.0
Activity Type_Climbing - Waterfall  Ice                                          4.0
Activity Type_Commercial Transportation Operation                              143.0
Activity Type_Cycling                                                          119.0
Activity Type_Cycling - Mountain Biking                                        199.0
Activity Type_Cycling - Road/Shared Path                                       333.0
Activity Type_Cycling - Winter                                                   3.0
Activity Type_Docking - TINP Only                                                2.0
Activity Type_Dog Walking                                                      596.0
Activity Type_Dogsledding                                                        2.0
Activity Type_Domestic Residence Activity                                      493.0
Activity Type_Driving                                                        25407.0
Activity Type_Field Sports                                                     112.0
Activity Type_Fishing                                                           49.0
Activity Type_Flight - HETS                                                      1.0
Activity Type_Flight - Hang-gliding/Parapenting                                  3.0
Activity Type_Flight - Helicopter                                                5.0
Activity Type_Flight - Sightseeing/Site Access                                   4.0
Activity Type_Golfing                                                         1598.0
Activity Type_Heritage Activity - Bird Watching                                 30.0
Activity Type_Heritage Activity - History Activities                            84.0
Activity Type_Heritage Activity - Photography and Art                          165.0
Activity Type_Heritage Activity - Sightseeing                                  415.0
Activity Type_Heritage Activity - Wildlife Observation                         723.0
Activity Type_Hiking                                                             6.0
Activity Type_Hiking / Walking                                                5672.0
Activity Type_Hiking/Walking                                                     9.0
Activity Type_Horse Riding - Day Trip                                          137.0
Activity Type_Horse Riding - Multiday                                           14.0
Activity Type_Ice Skating                                                        4.0
Activity Type_Kayaking - Coastal                                                12.0
Activity Type_Kayaking - Flatwater                                              16.0
Activity Type_Kayaking - Swiftwater                                              2.0
Activity Type_Mooring                                                            1.0
Activity Type_Niking / Walking                                                   1.0
Activity Type_Not Applicable                                                     5.0
Activity Type_Orienteering / Geocaching                                          1.0
Activity Type_Other                                                            425.0
Activity Type_Paddleboarding - Coastal                                           1.0
Activity Type_Paddleboarding - Flatwater                                        13.0
Activity Type_Park Operations                                                 4196.0
Activity Type_Park Ops  - Avalanche Forecasting                                  5.0
Activity Type_Park Ops - Avalanche Control                                       5.0
Activity Type_Park Ops - Search and Rescue                                       2.0
Activity Type_Park Ops - Training                                                5.0
Activity Type_Picknicking / BBQ                                                  2.0
Activity Type_Picnicking / BBQ                                                 562.0
Activity Type_Picnicking/BBQ                                                     9.0
Activity Type_Playground Activities                                             29.0
Activity Type_Rafting - Flatwater                                                5.0
Activity Type_Rafting - Swiftwater                                               6.0
Activity Type_Railway                                                         3212.0
Activity Type_Research - Scientific/Social                                      73.0
Activity Type_Resource Harvesting - Hunting                                      1.0
Activity Type_Resource Harvesting - Hunting/Fishing/Gathering/Trapping          43.0
Activity Type_Roller Sports                                                      7.0
```

```
           Activity Type_Running - Road                                            42.0
           Activity Type_Running - Trail                                           80.0
           Activity Type_Sail Sports - Wind / Kite Surfing                          1.0
           Activity Type_Scrambling                                                 3.0
           Activity Type_Sightseeing                                                1.0
           Activity Type_Skiing - Crosscountry                                     62.0
           Activity Type_Skiing/Boarding - Backcountry                             39.0
           Activity Type_Skiing/Boarding - Ski Resort In Bounds                    51.0
           Activity Type_Skiing/Boarding - Ski Resort Out of Bounds                 3.0
           Activity Type_Sledding/Tobogganning                                      7.0
           Activity Type_Snowmobiling                                               1.0
           Activity Type_Snowshoeing                                               10.0
           Activity Type_Special Event - Participative Audience                    18.0
           Activity Type_Special Events - Passive Audience                         12.0
           Activity Type_Stakeholder Operations                                  3219.0
           Activity Type_Surfing                                                    7.0
           Activity Type_Swimming - Cliff Jumping                                   1.0
           Activity Type_Swimming - Coastal                                         1.0
           Activity Type_Swimming - Facilities                                     12.0
           Activity Type_Swimming - Flat Water                                     24.0
           Activity Type_Swimming - Swiftwater                                      9.0
           Activity Type_Townsite Activity                                      12972.0
           Activity Type_Tram/Ski Lift/Gondola                                     37.0
           Activity Type_Tubing / River Drifting                                    2.0
           Activity Type_Unknown                                                  165.0
           Activity Type_Via-Ferrata                                                1.0
           Activity Type_Wiking / Walking                                           1.0
           Activity Type_nan                                                     6290.0
           dtype: float64
```

In [44]:
```python
ResponseTypeSums = Complete_HWC_Data[Complete_HWC_Data.columns[121:170]].sum()
ResponseTypeSums
```

Out[44]:
```
           Response Type_Assist Visitor                        253.0
           Response Type_Assist other Agency                   312.0
           Response Type_Assist other Field Unit                10.0
           Response Type_Attractant Management                 410.0
           Response Type_Aversive Conditioning                 147.0
           Response Type_Capture and transport to captivity     68.0
           Response Type_Clean Up                             1063.0
           Response Type_Close Area                           1030.0
           Response Type_Close Road                            198.0
           Response Type_Collar                                 36.0
           Response Type_Collect Sample                        598.0
           Response Type_Cull                                  179.0
           Response Type_Destroy Animal                        799.0
           Response Type_Disentangle                           133.0
           Response Type_Dispatch other Agency                 146.0
           Response Type_Disperse Wildlife Jam                3228.0
           Response Type_Dispose Carcass                      4931.0
           Response Type_Ear Tag                               154.0
           Response Type_Euthanize                             340.0
           Response Type_Evacuate Visitor                      122.0
           Response Type_Haze - Hard                          2764.0
           Response Type_Haze - Soft                         24470.0
           Response Type_Immobilize Animal                     113.0
           Response Type_Inform Visitor                       3052.0
           Response Type_Infrastructure modification           272.0
           Response Type_Investigate Incident               20110.0
           Response Type_Issue Prohibited Activity Order        32.0
           Response Type_Issue Restricted Activity Order        85.0
           Response Type_Issue Stop Work Order                   3.0
           Response Type_Leave on Landscape                   1001.0
           Response Type_Mark - paint                           86.0
           Response Type_Monitor                                 3.0
           Response Type_Monitor - Camera                      358.0
```

```
Response Type_Monitor - patrol                        10631.0
Response Type_Monitor - visitor and staff sighting     3736.0
Response Type_Necropsy                                  417.0
Response Type_No response required                      292.0
Response Type_Not Applicable                            336.0
Response Type_Refer incident to other agency            596.0
Response Type_Rehabilitate area                          27.0
Response Type_Relocate animal (s)                      2460.0
Response Type_Request assistance - other Agency         273.0
Response Type_Request assistance - police               212.0
Response Type_Traffic control                          2181.0
Response Type_Translocate                                35.0
Response Type_Trap or snare                            1544.0
Response Type_Unable to respond                         544.0
Response Type_Warning signs                            1480.0
Response Type_nan                                      2470.0
dtype: float64
```