<?xml version="1.0" encoding="UTF-8"?>  
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified"  
 targetNamespace="http://www.usaha.org/xmlns/ecvi2" version="2.0"  
 xmlns="http://www.usaha.org/xmlns/ecvi2">  
   
 <!-- Change Log  
 08/30/2017: Initial draft of version 2.0 attempts to clone version 1 (labeled version 6.0?) with only minor tweaks.  
   
 -->  
 <xs:annotation>  
 <xs:documentation>Copyright © 2017 AAVLD/USAHA it is free for use. Submit suggested changes  
 to the maintainers at https://github.com/AAVLD-USAHA-ITStandards/eCVI  
 </xs:documentation>  
 </xs:annotation>  
   
 <xs:element name="eCVI">  
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 <xs:element ref="Veterinarian" minOccurs="1" maxOccurs="1"/>  
 <xs:element ref="MovementPurposes" minOccurs="1" maxOccurs="1"/>  
 <xs:element ref="Origin" minOccurs="1" maxOccurs="1"/>  
 <xs:element ref="Destination" minOccurs="1" maxOccurs="1"/>  
 <xs:element ref="Consignor" minOccurs="0" maxOccurs="1"/>  
 <xs:element ref="Consignee" minOccurs="0" maxOccurs="1"/>  
 <xs:element ref="Accessions" minOccurs="0" maxOccurs="1"/>  
 <xs:element ref="Animal" minOccurs="0" maxOccurs="unbounded"/>  
 <xs:element ref="GroupLot" minOccurs="0" maxOccurs="unbounded"/>  
 <xs:element ref="Attachment" minOccurs="0" maxOccurs="unbounded"/>  
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 <xs:attribute name="CviNumber" type="xs:string" use="required"/>  
 <xs:attribute name="IssueDate" type="xs:date" use="required"/>  
 <xs:attribute name="ExpirationDate" type="xs:date" use="required"/>  
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 <xs:attribute name="EntryPermitNumber" type="xs:string" use="optional"/>  
 </xs:complexType>  
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 <!-- END Document Element -->  
  
 <xs:element name="Veterinarian">  
 <xs:complexType>  
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 <xs:element name="Person" type="PersonType" minOccurs="1" maxOccurs="1"/>  
 <xs:element name="Address" type="AddressType" minOccurs="0" maxOccurs="1"/>  
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 <xs:enumeration value="sale"/>  
 <xs:enumeration value="pet"/>  
 <xs:enumeration value="breeding"/>  
 <xs:enumeration value="feeding"/>  
 <xs:enumeration value="grazing"/>  
 <xs:enumeration value="training"/>  
 <xs:enumeration value="slaughter"/>  
 <xs:enumeration value="medicalTreatment"/>  
 <xs:enumeration value="other"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:element>  
 </xs:sequence>  
 </xs:complexType>  
 </xs:element>  
  
 <!-- These are defined here as elements simply to make it easier to navigate   
 via Element list in some editors -->  
 <xs:element name="Origin" type="PremType"/>  
 <xs:element name="Destination" type="PremType"/>  
 <xs:element name="Consignor" type="ContactType"/>  
 <xs:element name="Consignee" type="ContactType"/>  
  
 <!-- Do these list wrappers add value? -->  
 <xs:element name="Accessions">  
 <xs:complexType>  
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 maxOccurs="unbounded"/>  
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 <xs:element ref="AnimalTags" minOccurs="1" maxOccurs="1"/>  
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 <xs:pattern value="(19|20)\d\d-(0[1-9]|1[012])-(0[1-9]|[12][0-9]|3[01])"/>  
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 </xs:attribute>  
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 <xs:attribute name="Breed" use="optional">  
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 <xs:pattern value="[A-Z]{2,3}"/>  
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 <xs:element name="GroupLot">  
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 <xs:attribute name="Unit" type="xs:string" use="optional" default="Number" />  
 <xs:attribute name="SpeciesCode" type="SpeciesCodeType" use="optional"/>  
 <xs:attribute name="Age" use="optional">  
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 <xs:pattern value="(19|20)\d\d-(0[1-9]|1[012])-(0[1-9]|[12][0-9]|3[01])"/>  
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 <xs:sequence>  
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 <xs:enumeration value="PDF Test Chart"/>  
 <xs:enumeration value="Other"/>  
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 <xs:attribute name="Comment" use="optional">  
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 <xs:maxLength value="250"/>  
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 <!-- END Top Level Elements -->  
  
 <!-- BEGIN Complex Reused Types -->  
 <xs:complexType name="PremType">  
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 <xs:element name="Address" type="AddressType" minOccurs="1" maxOccurs="1"/>  
 <xs:element name="ProgramStatus" type="ProgramStatusType" minOccurs="0"  
 maxOccurs="unbounded"/>  
 <xs:element name="Person" type="PersonType" minOccurs="1" maxOccurs="unbounded"/>  
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 </xs:complexType>  
  
 <xs:complexType name="ContactType">  
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 </xs:restriction>  
 </xs:simpleType>  
   
 <xs:complexType name="PersonType">  
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 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:pattern value="[0-9]{10}"/>  
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 </xs:simpleType>  
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 <xs:attribute name="Comment" type="xs:string" use="optional"/>  
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 <xs:simpleType>  
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 <xs:enumeration value="Unknown"/>  
 <xs:enumeration value="Landline"/>  
 <xs:enumeration value="Cellphone"/>  
 <xs:enumeration value="Fax"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:attribute>  
 </xs:complexType>  
  
 <xs:complexType name="AccessionType">  
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 <xs:choice>  
 <xs:element name="Laboratory" minOccurs="1" maxOccurs="1">  
 <xs:complexType>  
 <xs:sequence>  
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 <xs:element name="PremId" type="PremIdType" minOccurs="0" maxOccurs="1"/>  
 <xs:element name="Address" type="AddressType" minOccurs="0" maxOccurs="1"/>  
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 <xs:attribute name="AccessionDate" type="xs:date" use="required"/>  
 <xs:attribute name="AccessionNumber" type="xs:string" use="required"/>  
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 </xs:element>  
 <xs:element name="Field" minOccurs="1" maxOccurs="1">  
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 <xs:element name="Address" type="AddressType" minOccurs="0" maxOccurs="1"/>  
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 <xs:attribute name="AccessionDate" type="xs:date" use="required"/>  
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 </xs:choice>  
 </xs:sequence>  
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 <xs:complexType name="ProgramStatusType">  
 <xs:attribute name="Name" use="required">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:enumeration value="Bovine Tuberculosis"/>  
 <xs:enumeration value="Brucellosis (state)"/>  
 <xs:enumeration value="Brucellosis (herd)"/>  
 <xs:enumeration value="Johne’s (herd)"/>  
 <xs:enumeration value="NPIP (herd)"/>  
 <xs:enumeration value="Scrapie (herd)"/>  
 <xs:enumeration value="PRV (herd)"/>  
 <xs:enumeration value="PRV (area)"/>  
 <xs:enumeration value="Trichomoniasis (herd)"/>  
 <xs:enumeration value="EIA (herd)"/>  
 </xs:restriction>  
 </xs:simpleType>  
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 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:enumeration value="Free"/>  
 <xs:enumeration value="Modified Accredited"/>  
 <xs:enumeration value="Modified Advanced Accredited"/>  
 <xs:enumeration value="Other"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:attribute>  
 <xs:attribute name="ValueOther" type="xs:string" use="optional"/>  
 </xs:complexType>  
  
 <xs:complexType name="AddressType">  
 <xs:sequence>  
 <xs:element name="Line1" minOccurs="1" maxOccurs="1">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:maxLength value="200"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:element>  
 <xs:element name="Line2" minOccurs="0" maxOccurs="1">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:maxLength value="200"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:element>  
 <xs:element name="Town" minOccurs="1" maxOccurs="1">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:maxLength value="200"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:element>  
 <xs:element name="County" minOccurs="0" maxOccurs="1">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:minLength value="3"/>  
 <xs:maxLength value="40"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:element>  
 <xs:element name="State" type="StateCodeType" minOccurs="1" maxOccurs="1"/>  
 <xs:element name="ZIP" minOccurs="1" maxOccurs="1">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:pattern value="[0-9]{5}"/>  
 <xs:pattern value="[0-9]{5}-[0-9]{4}"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:element>  
 <xs:element name="Country" minOccurs="0" maxOccurs="1">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:enumeration value="USA"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:element>  
 <xs:element name="GeoPoint" minOccurs="0" maxOccurs="1">  
 <xs:complexType>  
 <xs:attribute name="lat" type="xs:decimal" use="required"/>  
 <xs:attribute name="lng" type="xs:decimal" use="required"/>  
 </xs:complexType>  
 </xs:element>  
 </xs:sequence>  
 </xs:complexType>  
  
 <xs:complexType name="TestType">  
 <xs:sequence>  
 <xs:element name="Result" minOccurs="1" maxOccurs="unbounded">  
 <xs:complexType>  
 <xs:choice>  
 <xs:element name="ResultInteger" type="xs:integer" minOccurs="0" maxOccurs="1"/>  
 <xs:element name="ResultString" type="xs:string" minOccurs="0" maxOccurs="1"/>  
 <xs:element name="ResultFloat" type="xs:float" minOccurs="0" maxOccurs="1"/>  
 </xs:choice>  
 <xs:attribute name="ResultName" use="required">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:enumeration value="RESULT"/>  
 <xs:enumeration value="COMMENT"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:attribute>  
 </xs:complexType>  
 </xs:element>  
 </xs:sequence>  
 <xs:attribute name="idref" type="xs:IDREF" use="required"/> <!-- Points to ID in Accession element -->  
 <xs:attribute name="TestCode" type="xs:string" use="required"/>  
 </xs:complexType>  
   
 <!-- This is a jumble of type of ID with the type of device holding the ID. "Tags" is a misnomer. -->  
 <xs:element name="AnimalTags">  
 <xs:complexType>  
 <xs:sequence minOccurs="1" maxOccurs="6">  
 <xs:choice>  
 <!-- Unknown: No restrictions -->  
 <xs:element name="UN">  
 <xs:complexType>  
 <xs:attribute name="Number" use="required">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <!-- This could just use xs:string but left for consistency -->  
 <xs:pattern value=".\*"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:attribute>  
 </xs:complexType>  
 </xs:element>  
 <!-- 840 RFID: 840 followed by 12 digits -->  
 <xs:element name="AIN">  
 <xs:complexType>  
 <xs:attribute name="Number" use="required">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:pattern value="(840)\d{12}"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:attribute>  
 </xs:complexType>  
 </xs:element>  
 <!-- American ID: USA followed by 12 digits, sometimes truncated to 8 or 9 digits,  
 or some specific patterns of just the digits part (shows how hard validation is currently) -->  
 <xs:element name="AMID">  
 <xs:complexType>  
 <xs:attribute name="Number" use="required">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:pattern value="(USA)(\d{8,9}|\d{12})"/>  
 <xs:pattern value="[5-9]\d{7}"/>  
 <xs:pattern value="[1-3]\d{8}"/>  
 <xs:pattern value="4[0-6]\d{7}"/>  
 <xs:pattern value="470\d{6}"/>  
 <xs:pattern value="4710\d{5}"/>  
 <xs:pattern value="471100000"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:attribute>  
 </xs:complexType>  
 </xs:element>  
 <!-- Brand Description: Again, any string-->  
 <xs:element name="BRAND">  
 <xs:complexType>  
 <xs:attribute name="Number" use="required">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:pattern value=".\*"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:attribute>  
 </xs:complexType>  
 </xs:element>  
 <!-- Brand Image: This should be PNG/JPEG/GIF/PDF format and  
 must be provided if the TagType is  
 BRAND-IMAGE,  
 Or provide IDREF to ID on an attachment-->  
 <xs:element name="BRAND-IMAGE">  
 <xs:complexType>  
 <xs:attribute name="BrandImage" type="xs:base64Binary" use="optional"/>  
 <xs:attribute name="BrandImageIDRef" type="xs:IDREF" use="optional"/>  
 </xs:complexType>  
 </xs:element>  
 <!-- Cattle Backtag: Two digits + two letters + four digits (optional additional character?) -->  
 <xs:element name="BT">  
 <xs:complexType>  
 <xs:attribute name="Number" use="required">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:pattern value="\d{2}[A-Z]{2}\d{4}.?"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:attribute>  
 </xs:complexType>  
 </xs:element>  
 <!-- Implant RFID Chip: Either 840 or a company prefix followed by 12 digits  
 Excludes 999 prefix (Note, XPATH does not support (?!pattern) negative look ahead.) -->  
 <xs:element name="IMP">  
 <xs:complexType>  
 <xs:attribute name="Number" use="required">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:pattern value="((840)|(9[0-8]\d)|(9\d[0-8])|(124)|(484))\d{12}"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:attribute>  
 </xs:complexType>  
 </xs:element>  
 <!-- Management Tag: Any string -->  
 <xs:element name="MGT">  
 <xs:complexType>  
 <xs:attribute name="Number" use="required">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:pattern value=".\*"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:attribute>  
 </xs:complexType>  
 </xs:element>  
 <!-- Non 840 RFID: Company prefix (not 999) followed by 12 digits -->  
 <xs:element name="N840RFID">  
 <xs:complexType>  
 <xs:attribute name="Number" use="required">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:pattern value="((9[0-8]\d)|(9\d[0-8])|(124)|(484))\d{12}"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:attribute>  
 </xs:complexType>  
 </xs:element>  
 <!-- NUES 8 Character: Two digits + two letters + four digits

(Note: matches cattle backtag pattern.) -->  
 <xs:element name="NUES8">  
 <xs:complexType>  
 <xs:attribute name="Number" use="required">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:pattern value="\d{2}[A-Z]{2}\d{4}"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:attribute>  
 </xs:complexType>  
 </xs:element>  
 <!-- NUES 9 Character: Two digits + three letters + four digits  
 or some state's alpha codes followed by three more letters and four digits -->  
 <xs:element name="NUES9">  
 <xs:complexType>  
 <xs:attribute name="Number" use="required">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:pattern value="(\d{2}|MD|MN|NM|NY|US|WY)[A-Z]{3}\d{4}"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:attribute>  
 </xs:complexType>  
 </xs:element>  
 <!-- Official foreign ID: Any string -->  
 <xs:element name="OFORID">  
 <xs:complexType>  
 <xs:attribute name="Number" use="required">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:pattern value=".\*"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:attribute>  
 </xs:complexType>  
 </xs:element>  
 <!-- Other: Any string -->  
 <xs:element name="OTH">  
 <xs:complexType>  
 <xs:attribute name="Number" use="required">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:pattern value=".\*"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:attribute>  
 </xs:complexType>  
 </xs:element>  
 <!-- Name: Any string -->  
 <xs:element name="name">  
 <xs:complexType>  
 <xs:attribute name="Number" use="required">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:pattern value=".\*"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:attribute>  
 </xs:complexType>  
 </xs:element>  
 <!-- Sheep/goat - flock ID tag: Two letters + one to 20 upper case letters or digits  
 + a space and one to 20 more upper case letters or digits -->  
 <xs:element name="SGFLID">  
 <xs:complexType>  
 <xs:attribute name="Number" use="required">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:pattern value="[A-Z]{2}[A-Z0-9]{1,20}[ ][A-Z0-9]{1,20}"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:attribute>  
 </xs:complexType>  
 </xs:element>  
 <!-- Sheep/goat National PIN tag: Seven upper case letters or digts (a PIN)  
 + a space and one to 20 more upper case letters or digits -->  
 <xs:element name="NPIN">  
 <xs:complexType>  
 <xs:attribute name="Number" use="required">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:pattern value="[A-Z0-9]{7}[ ][A-Z0-9]{1,20}"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:attribute>  
 </xs:complexType>  
 </xs:element>  
 <!-- Tattoo: Any string -->  
 <xs:element name="TAT">  
 <xs:complexType>  
 <xs:attribute name="Number" use="required">  
 <xs:simpleType>  
 <xs:restriction base="xs:string">  
 <xs:pattern value=".\*"/>  
 </xs:restriction>  
 </xs:simpleType>  
 </xs:attribute>  
 </xs:complexType>  
 </xs:element>  
<!-- Tag Types not Included in version 1  
FPT Feeder Pig Tag  
RSSS RSSS Tag  
SGFLMEAT Sheep/goat - flock ID tag - MEAT  
SGSMEAT Sheep/goat - serial tag - MEAT  
SGST Sheep/goat - serial tag - plastic  
SGSTM Sheep/goat - serial tag - metal  
TATFL Tattoo - flock ID/PIN/LID  
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 <xs:enumeration value="BOV"> <!-- Bovine (Bison and Cattle)--> </xs:enumeration>  
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 <xs:enumeration value="CAN"> <!-- Canine--> </xs:enumeration>  
 <xs:enumeration value="CAP"> <!-- Caprine (Goats)--> </xs:enumeration>  
 <xs:enumeration value="CER"> <!-- Cervids--> </xs:enumeration>  
 <xs:enumeration value="CHI"> <!-- Chickens--> </xs:enumeration>  
 <xs:enumeration value="CLM"> <!-- Clams--> </xs:enumeration>  
 <xs:enumeration value="CRA"> <!-- Crawfish--> </xs:enumeration>  
 <xs:enumeration value="CTF"> <!-- Catfish--> </xs:enumeration>  
 <xs:enumeration value="DAI"> <!-- Dairy--> </xs:enumeration>  
 <xs:enumeration value="DEE"> <!-- Deer--> </xs:enumeration>  
 <xs:enumeration value="DUC"> <!-- Ducks--> </xs:enumeration>  
 <xs:enumeration value="ELK"> <!-- Elk--> </xs:enumeration>  
 <xs:enumeration value="EQU"> <!-- Equine (Horses, Mules, Donkeys, Burros)--> </xs:enumeration>  
 <xs:enumeration value="FEL"> <!-- Feline--> </xs:enumeration>  
 <xs:enumeration value="GEE"> <!-- Geese--> </xs:enumeration>  
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 <xs:enumeration value="MSL"> <!-- Mussels--> </xs:enumeration>  
 <xs:enumeration value="OTH"> <!-- Other--> </xs:enumeration>  
 <xs:enumeration value="OVI"> <!-- Ovine (Sheep)--> </xs:enumeration>  
 <xs:enumeration value="OYS"> <!-- Oysters--> </xs:enumeration>  
 <xs:enumeration value="PGN"> <!-- Pigeon--> </xs:enumeration>  
 <xs:enumeration value="POR"> <!-- Porcine (Swine)--> </xs:enumeration>  
 <xs:enumeration value="QUA"> <!-- Quail--> </xs:enumeration>  
 <xs:enumeration value="RTT"> <!-- Ratites (Emus, Ostriches, etc.)--> </xs:enumeration>  
 <xs:enumeration value="SAL"> <!-- Salmon--> </xs:enumeration>  
 <xs:enumeration value="SBA"> <!-- Striped Bass--> </xs:enumeration>  
 <xs:enumeration value="SHR"> <!-- Shrimp--> </xs:enumeration>  
 <xs:enumeration value="SLP"> <!-- Scallops--> </xs:enumeration>  
 <xs:enumeration value="TIL"> <!-- Tilapia--> </xs:enumeration>  
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