Appendix A - XML Schema Document

<?xml version = "1.0" encoding = "UTF-8"?>

<!-- This header information defines the xml version used and the unicode character format -->

<xs:schema xmlns:xs = "http://www.w3.org/2001/XMLSchema"
    targetNamespace = "http://beexml.appstate.edu/xml/Pollination_and_Bee_Flora"
    xmlns = "http://beexml.appstate.edu/Pollination_and_Bee_Flora">

    <!-- This links to the W3 consortium schema website that hosts information useful for data validation and formats. Next it sets up a namespace to avoid confusion among similar tags used for other bee data by linking it to one of seven Apimondia Scientific Commissions -->

    <!-- Define elements here -->

    <!-- Root Element -->

    <xs:element name = "BC_Hive_Strength" type = "xs:string"/>

    <xs:attribute name = "ID" type = "xs:string"/>

    <!-- Raw Data Elements -->

    <xs:element name = "BCHS_Raw_Data" type = "xs:string"/>

    <xs:element name = "BCHS_Frame_Count" type = "xs:integer"/>

    <xs:attribute = "Hive_Type" type = "xs:string"/>

    <!-- Note that for now we are listing Hive_Type as a string. Strongly suggest that as soon as one of our teams works to standardize names for common hive types that this attribute is updated to match -->

    <xs:element name = "BCHS_Location" type = "xs:string"/>

    <!-- The code below sets up the two ways to record GIS data, it is restricted to these two enumerated values for quality control -->

    <xs:attribute name = "Degree_Type" use = "required">
        <xs:complexType>
            <xs:restriction base = "xs:string">
                <xs:enumeration value = "DMS"/>
                <xs:enumeration value = "DMM"/>
            </xs:restriction>
        </xs:complexType>
    </xs:attribute>

</xs:schema>
<xs:restriction>
  <xs:complexType>
    <xs:attribute>
      <xs:element name = “BCHS_TagID” type = “xs:string”/>
      <xs:element name = “BCHS_Hives_Rented type = “xs:integer””/>
      <xs:element name = “BCHS_Hives_Graded” type = “xs:integer””/>
      <xs:element name = “BCHS_Time” type = “xs:dateTime””/>
        <xs:attribute name = “GMT” type = “xs:integer””/>
      </xs:attribute>
      <!-- Note that we could have included the UTC or GMT indicator in the time value itself with a timecode. However, since we are dealing with nature both absolute time and relative time matter and will likely be used for different types of analysis, therefore an attribute seemed to make more sense so the data can more easily be stored separately and merged when needed. -->
    </xs:complexType>
  </xs:restriction>
</xs:schema>

<xs:element name = “BCHS_Computed””/>
  <xs:attribute name = “Grouping” type = “xs:string””/>
  <xs:element name = “BCHS_Avg_Fr_Str” type = “xs:decimal””/>
  <xs:element name = “BCHS_Avg_Sea_Str” type = “xs:decimal””/>
  <xs:element name = “BCHS_HS_Dist” type = “xs:string””/>
  <xs:element name = “BCHS_Min_Max” type = “xs:string””/>
  <xs:element name = “BCHS_Pct_Grade” type = “xs:decimal””>
</xs:element>