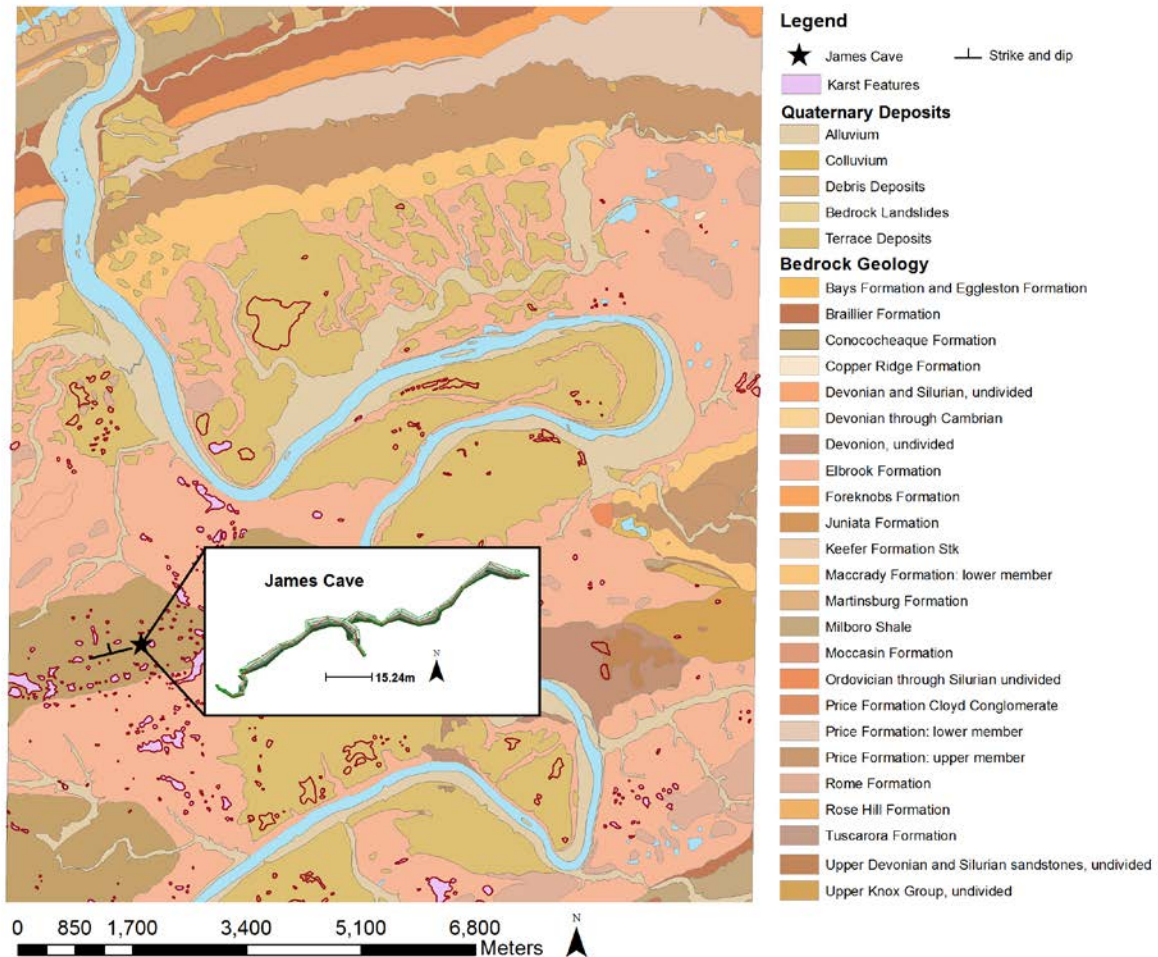


# READ ME File for Epikarst Drips and Precip

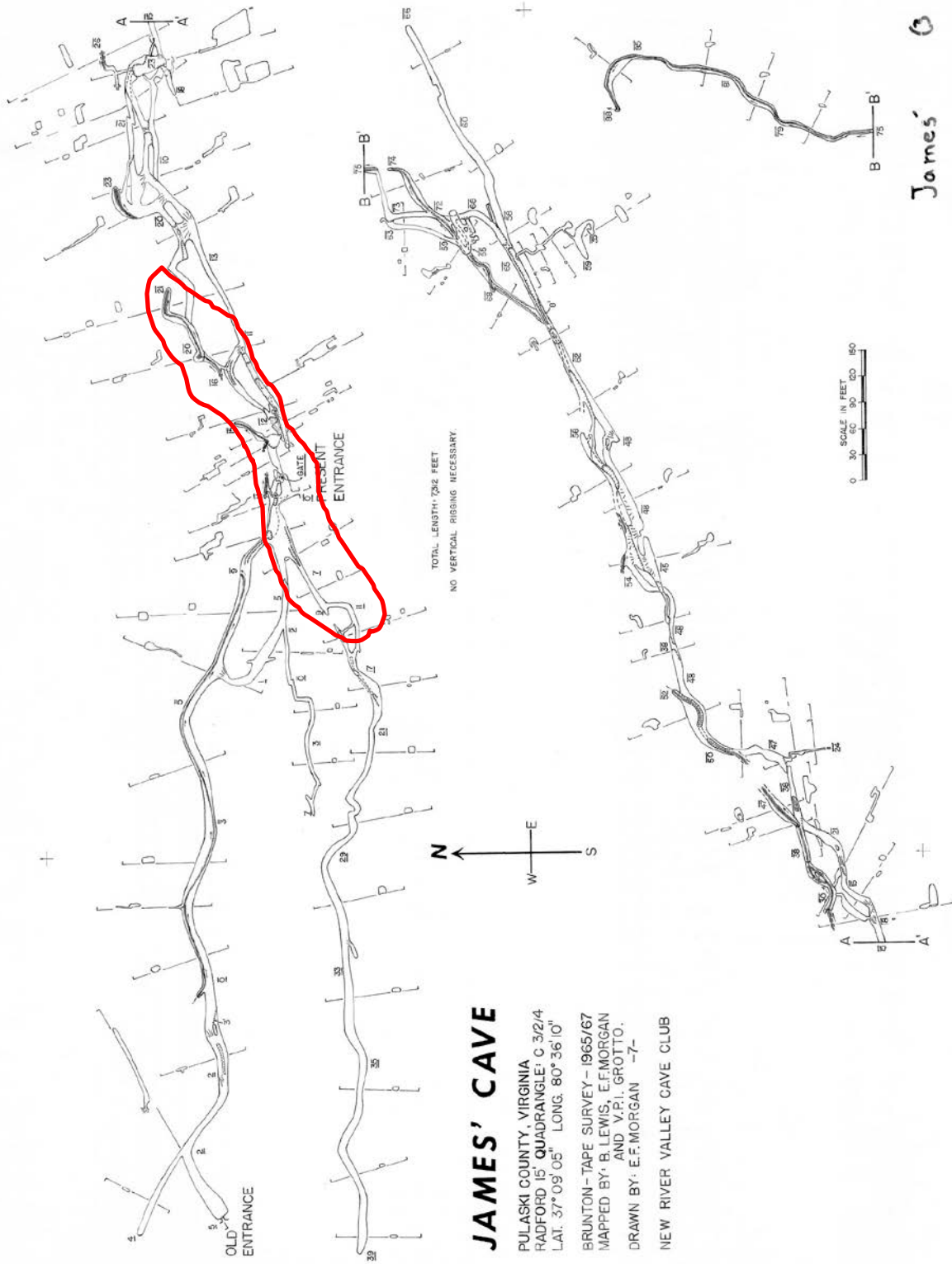
Site Setting:

## Local Geology and Survey of James Cave, Virginia



James Cave is located within Pulaski County, Virginia and is formed within the Cambro-Ordovician Conococheague formation.

The section of study is a small portion James Cave. This section of study is outlined in the figure below.



# JAMES' CAVE

PULASKI COUNTY, VIRGINIA  
 RADFORD 15' QUADRANGLE: C.3/2/4  
 LAT. 37° 09' 05" LONG. 80° 36' 10"

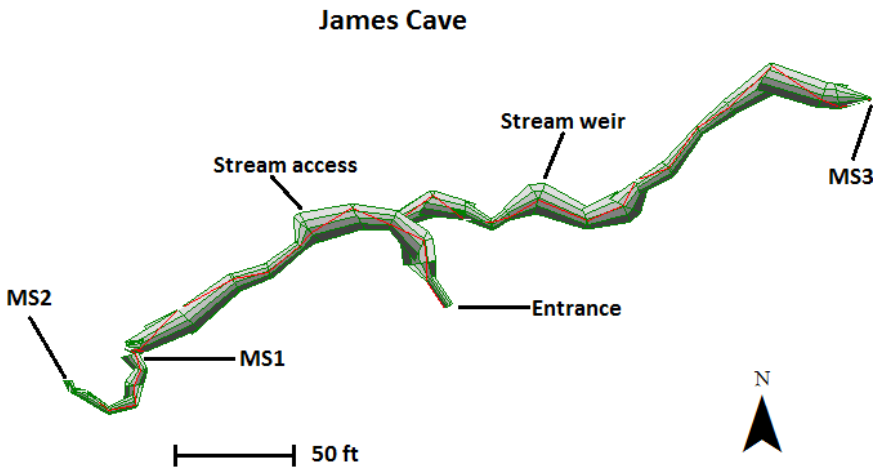
BRUNTON-TAPE SURVEY - 1965/67  
 MAPPED BY: B. LEWIS, E. F. MORGAN  
 AND V. P. I. GROTTO.  
 DRAWN BY: E. F. MORGAN -7-

NEW RIVER VALLEY CAVE CLUB

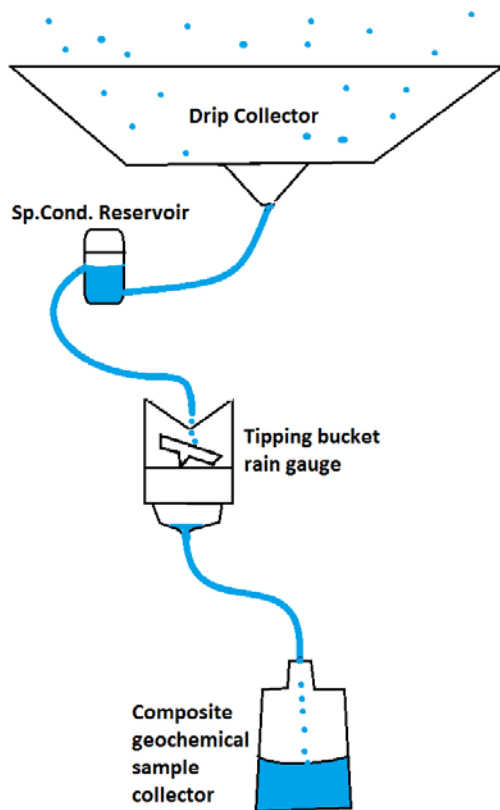
James' 

## Instrumentation and monitoring locations

James Cave is instrumented at several sites. There are three drip sites (MS1, MS2, and MS3) shown in the figure below. At the surface projection MS2 and MS3 and near the cave entrance there are soil lysimeters. There is cave stream access at two locations, with a v-notch weir at one location. Additionally, near the cave entrance there is a precipitation monitoring station.



Drip monitoring set-up and instrumentation as of January 2011 is shown in the schematic below.



### **Previous instrumentation chronology and instrumentation specifics**

In the tables below the instrumentation changes are detailed through time and the specifics of instrumentation are outlined.

<b>Date</b>	<b>Site(s) Impacted</b>	<b>Description</b>
<b>09/2007</b>	Surface	Rain gauge with temperature, relative humidity sensor installed
<b>09/2007</b>	MS1, MS2	Suspended tarps and rain gauges installed; HANNA multiparameter sondes installed.
<b>02/2008</b>	MS3	Suspended tarp and rain gauge installed; HANNA multiparameter sonde installed.
<b>08/2008</b>	Surface	Precipitation collector installed
<b>03/2009</b>	Stream weir	Stream weir installed
<b>03/2009</b>	Stream weir	Solinst pressure transducers (level and barometric loggers) installed
<b>06-07/2009</b>	Soil2, Soil3, Soil Entrance	Tension lysimeters installed at 3ft depth
<b>04/2010</b>	Stream	HANNA multiparameter sonde installed
<b>01/2011</b>	Stream	HANNA moved upstream from weir to near entrance
<b>01/2011</b>	MS1, MS2, MS3	Sondes removed; specific conductance loggers installed
<b>01/2011</b>	Stream weir	Stream weir replaced with concrete V-notch weir
<b>06/2011</b>	Stream	Sonde removed; specific conductance logger installed
<b>02/2012</b>	All sites	Cease composite geochemical sampling
<b>05/2012</b>	MS1, MS2, MS3	Replaced microstation and smart sensor rain gauge with reed switch and pendant logger combination
<b>05/2012</b>	Stream weir	Replaced Solinst level and baro loggers with Onset
<b>06/2012</b>	Surface	Replace smart sensor rain gauge with reed switch and pendant logger combination
<b>07/2012</b>	MS1, MS2, MS3	Replaced pendant logger with pulse adaptor and microstation combination

<b>Item</b>	<b>Manufacturer</b>	<b>Part/Model Number</b>
<b>HANNA multiparameter sonde</b>	HANNA Instruments	HI9828
<b>Smart sensor rain gauge</b>	Onset	RGB-M002
<b>Microstation data logger</b>	Onset HOBO	H21-002
<b>Level logger</b>	Solinst	3001
<b>Barometric pressure logger</b>	Solinst	3001
<b>Water level logger</b>	Onset HOBO	U20-001-01
<b>Barometric pressure logger</b>	Onset HOBO	U20-001-01
<b>Specific conductance logger</b>	Onset HOBO	U24-001
<b>Reed switch</b>	Texas Electronics	120-0018
<b>Terminal Block</b>	Texas Electronics	009-0059
<b>Pendant logger</b>	Onset HOBO	UA-003-64
<b>Pulse adaptor</b>	Onset HOBO	S-UCD-M001

### **Data Collection and Management**

Continuous time series data were offloaded from sites on a monthly or bimonthly basis. These data were stored on a variety of hard and virtual data storage locations and were aggregated for this project starting in fall of 2011. Units for cave drips and precipitation are in mm/10min or mm/day.

