Greetings from your ACUA Graduate Student Liaisons!

Hopefully you have been busy with field work or catching up on the latest news in underwater archaeology. We have been diligently searching for some of the newest student research and projects to share with everyone! This issue covers a prehistoric submerged site, East Carolina University’s Field school, and submerged airplanes.

We are always looking to highlight student research and projects! Simply email gradrep@acuaonline.org. We will be more than happy to share your photos and stories on the ACUA Facebook and Instagram. Hope to hear from you soon!

Page-Ladson 2018 Excavations by Morgan Smith

Graduate students from Florida State University are getting some hands submerged in prehistoric archaeological experience this summer at the Page-Ladson site in the Aucilla River of North Florida. This season, the project directed by Drs. Jessi Halligan and Michael Waters, is aimed at better understanding the pre-Clovis archaeological component discovered at the site in 2013 and published in 2016. In addition to five Masters students and one undergraduate student from FSU, a Masters student from the University of West Florida, and two PhD candidates from Texas A&M University returning for their 4th seasons are also working at the site.

Page-Ladson is a submerged prehistoric site located ~30ft underwater in a karst...
Looking at the tropical foliage of Saipan, it’s hard to imagine the picturesque island as the setting of one of the bloodiest battles of World War II in the Pacific. The Japanese Empire was granted control of the island under the Treaty of Versailles in 1914. Following the onset of World War II, Saipan fell under the gaze of the United States military. After three weeks of merciless fighting, fiery jungles, and 55,000 civilian and military casualties, the Battle of Saipan officially ended. Gaining control of the island allowed the United States their first real foot-hold in the Pacific, eventually leading to the surrender of Japan in 1945.

Seventy-four years after the Battle of Saipan, graduate students from East Carolina University (ECU) found themselves diving in Tanapag Lagoon in search of missing aircraft. Partnering with Defense POW/MIA Accounting Agency (DPAA) and the Space and Naval War Systems Command (SPAWAR), the 2018 ECU field school focused on assisting with DPAA’s mission to account for as many lost service members as possible. Current research estimates there are almost 73,000 missing service personnel from World War II alone, out of a total of 83,000 from previous conflicts. Students prepared for this project by learning to identify aircraft parts, becoming familiar with the history of the island, and consulting previous magnetometer surveys and local divers to identify potential crash sites. Once on the island, the students practiced the archaeological methods they learned in class the previous semester, including underwater search methods, metal detecting, and remote sensing methods with side-scan sonar and ROV. Even after work on the water had ended for the day, students worked well into the evening digitizing the survey findings, writing up survey descriptions, and keeping field notebooks.

While the water was warm and on many days crystal clear, the students endured morning and afternoon rain storms, high humidity, and plenty of bruises and sunburn. Despite these obstacles, the students remained steadfast, flexible, and at many times high-spirited and smiling. The outcome of the field school resulted in over 100 magnetometer anomalies being checked using snorkel, scuba, and remote sensing surveys. Not only did this project help students hone their skills as divers and archaeologists, but many connected to the project on a personal level; several of the students had prior military service, family and friends currently in the military, or were descendants of World War II service personnel. All of the students understood the importance of this mission and their attitude during the entire project was what propelled it to be a success.

Even on their days off, the students chose to learn more about the island and the Battle of Saipan. Students drove up and down the coast, stopping at Banzai Cliff and Suicide Cliff, the Last Japanese Command Post, Obyan Beach pillbox, American Memorial Park, and other sites off the beaten path. It also allowed for personal research, as a small group of the graduate students have chosen thesis topics addressing Saipan history and associated archaeological sites. Overall, the ECU field school proved a successful partnership; ECU students and faculty look forward to continuing collaboration with the DPAA and furthering their mission.

—Stephanie Soder, Eastern Carolina University, M.A. Candidate
Archaeological investigations of Pensacola, Florida’s submerged naval aircraft began in 2014 when University of West Florida (UWF) archaeologists assessed two F6F Hellcats and two F8F Bearcats. No previous scientific documentation has occurred on aircraft in the area, however, local SCUBA divers have located and dived the sites for several decades. Some have provided UWF archaeologists with a significant list of potential aircraft wreck locations. Ten of these sites have been confirmed, with plans to explore the other provided targets. The aircraft assessed thus far include: F6F Hellcats, F8F Bearcats, a TBM Avenger, an F4U Corsair, an A-7 Corsair, and other unidentified naval trainers.

The lack of prior documentation is surprising due to the early and lasting presence of naval aviation in Pensacola. Founded in 1914, Naval Air Station (NAS) Pensacola is known as the Cradle of Naval Aviation. Both WWI and WWII led to a great influx of prospective aviation cadets. This intense effort at training young naval aviators led to numerous training accidents, some of which resulted in the loss of naval aircraft in waters offshore of Pensacola. The station continues to serve as a naval aviation training facility, and is the home of the Navy’s world-renowned aerobatic team – the Navy Blue Angels.

Unfortunately, some of the aircraft wrecks have been heavily looted, and locals have reported some entirely disappearing after large storm events. Furthermore, the aluminum frames are quickly degrading in salt water. It is critical to record these underwater cultural heritage sites while they still exist. UWF archaeologists are digitally documenting each site with underwater cameras and using the images for the creation of 3d photogrammetric models. These models depict the sites as they lie on the seafloor, and allow an interactive interpretation for a cultural resource that is quickly disappearing.

An initial survey of the Aircraft Accident Reports held by the Naval History and Heritage Command revealed seventy aircraft lost off Pensacola in the Gulf of Mexico. These reports assist in identifying specific wrecking events and conveying the stories of naval aviators’ misfortunes. Many of the wrecks occurred during carrier qualification training, where cadets learned to take off from and land on aircraft carriers. The maneuver was only endeavored by those cadets who progressed to advanced training. Even so, many aircraft ‘splashed’ during the attempt.

UWF archaeologists are creating baseline data on what could be viewed as a naval aviation training landscape. Their research so far has consisted of site-specific analyses; however, with a growing database of submerged aircraft sites, a larger scale study is expected. Aluminum degradation studies will be necessary to determine the state of preservation of the range of aircraft. This will create Pensacola-specific comparable data that could be utilized to evaluate aircraft degradation around the world. Aviation archaeology is an emerging academic field of study, and Pensacola offers an overabundance of opportunities to establish a theoretical framework.

—Hunter Whitehead, University of West Florida, MA Student
sinkhole at the bottom of the Aucilla River, just south of Tallahassee, Florida. Page-Ladson contains one of the most intact Late Pleistocene to Early Holocene stratigraphic sequences in the Southeast United States, with an uninterupted radiocarbon record spanning ~17,000 to 9,000 years ago. In 2013, a bifacial stone knife and several flakes were found in-situ within sediment dated to 14,550 years ago. The sediment containing these artifacts is actually preserved excrement from American Mastodons intermixed with colluvium. Mastodons and other Pleistocene fauna relied on Page-Ladson as a freshwater source during the last Ice Age. The faunal remains of many Ice Age animals have been found thus far, including giant tortoise, paleollama, and mastodon. The recent excavations prove that humans were present as well.

In addition to a pre-Clovis archaeological component, Page-Ladson also contains a superb paleoenvironmental record. Recent pollen analysis shows that during the site occupation period, conditions were much cooler, drier, and windier than today. The area would have been far less vegetated also, with more open ground containing interspersed stands of trees and shrubs. Sporormiella, a fungus that grows on mega-herbivore dung, is also present in the sediments at Page-Ladson and was recently analyzed by Dr. Angelina Perrotti, a recent graduate of Texas A&M University, as a proxy for the disappearance of megamammals in the area. Spore evidence shows a rapid decline in dung fungus around 12,700 years ago, giving a secure age for the disappearance of Ice Age animals in the lower Southeast.

Excavation at Page-Ladson takes place in the blackwater river in 2-3 hour shifts. All sediment is hand excavated by trowel in 1x1m units and removed by water-induction dredge, which is then screened through ¼ and 1/16th-inch screen on the surface. Dive teams maintain vertical control with an underwater laser set at a precise elevation control point. Several sediment cores have also been collected for analysis by Florida State University students. This year’s field season is ongoing until late June, and the crew has been hard at work painstakingly excavating in search of evidence of the First Americans.

—Morgan Smith, Texas A&M, Ph.D. Student