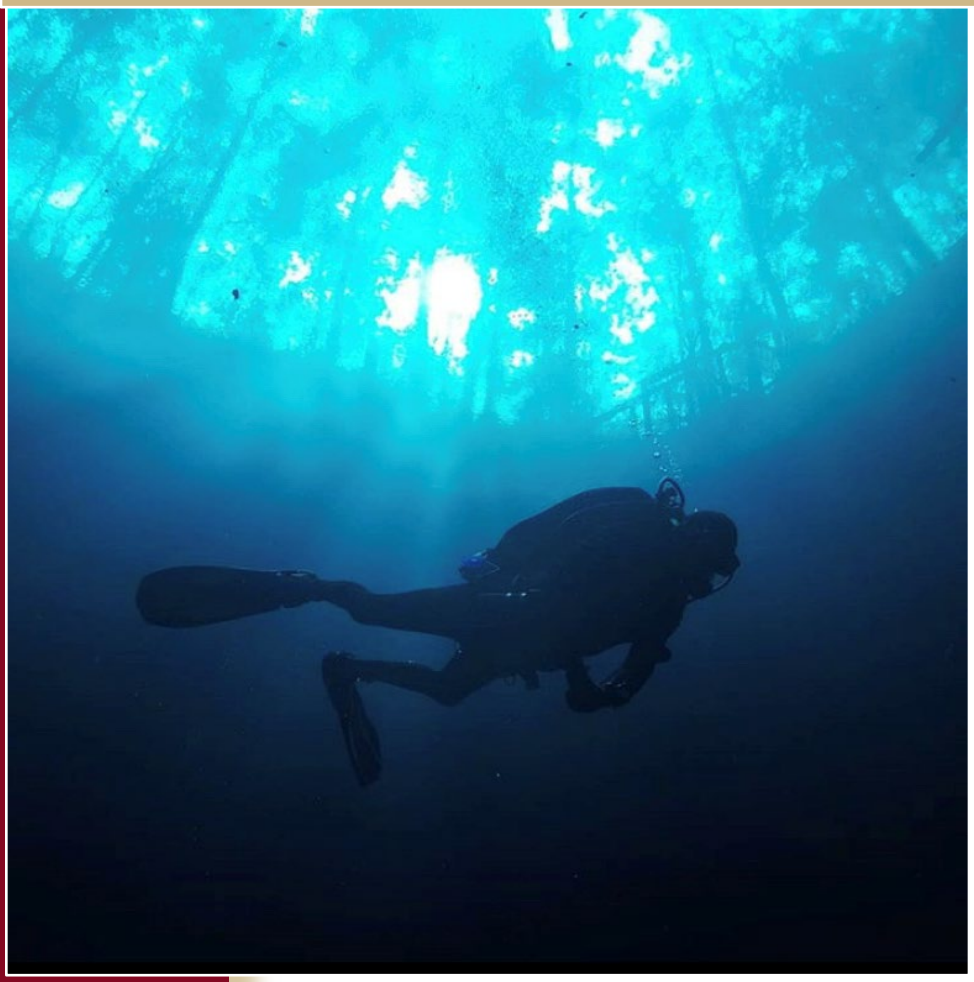
The Florida State University Academic Diving Program

ACTIVITY REPORT FY 2021



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Overview

The FSU Academic Diving Program (ADP) oversees and supports underwater research conducted by FSU faculty, students, and staff, and visiting scientists. The FSU Diving Control Board governs scientific diving operations with representative members from each invested department of the University. Day-to-day operations are managed by the Diving Safety Officer, with assistance provided by the staff of the Florida State University Coastal and Marine Laboratory (FSUCML). This report summarizes the activity of ADP in fiscal year (FY) 2021, between July 1, 2020 and June 30, 2021.

Operation Highlights

Diving activity in FY 2021 was significantly limited by the COVID-19 pandemic. With growing concerns over community spread and increased risk of infection, the Diving Control Board suspended diving operations on Monday, March 30, 2020. State and University action followed shortly thereafter, and only essential diving operations were authorized until mid-August 2020.

After drafting and implementing exposure control guidelines, the FSU Diving Control Board began authorizing training and scientific diving operations in late summer 2020. Limited scientific endeavors continued, and the previously suspended spring 2020 Scientific Diver training course successfully concluded in December. The spring 2021 Scientific Diver training was able to proceed as scheduled with in-person classroom sessions, pool and field trainings after receiving permission from the Provost and careful adherence to the exposure control guidelines. Precautions included mandatory weekly COVID testing for all participants. The course became the first class to be taught as a credit course since 2017.

There were two Incident Reports filed with the Diving Control Board in FY 2021, including a regulator malfunction that required an emergency ascent, and a medical event that required one diver to be briefly hospitalized. 120 equipment rental requests were made to ADP, with rentals ranging from one day to several months.

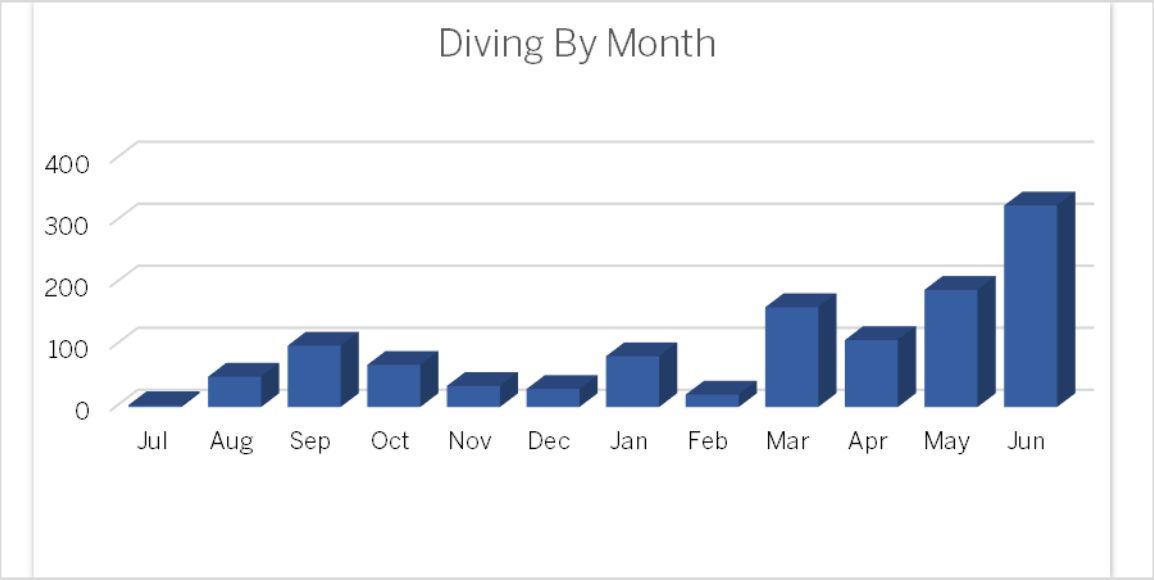


Figure 1. FY 2021 diving activity by month. In addition to the pandemic, diving activity was influenced by predictable seasonal trends in field research.

In FY 2021, ADP facilitated underwater research for 54 active FSU Scientific Divers (Figure 2). Active divers are individuals using SCUBA diving as a tool to train for, or contribute to, research at FSU. Divers include undergraduate students, graduate students, research staff, postdoctoral researchers, and faculty (Figure 3) from across campus, including the Coastal and Marine Laboratory and the departments of Anthropology, Biological Science, Earth, Ocean, and Atmospheric Science, and Geography. Biological Science consistently accounts for the largest portion of activity, with 28 divers logging 884 dives in FY 2021. Collectively, divers across FSU logged 1167 dives, spending over 922 hours in the field working underwater (Figure 4).

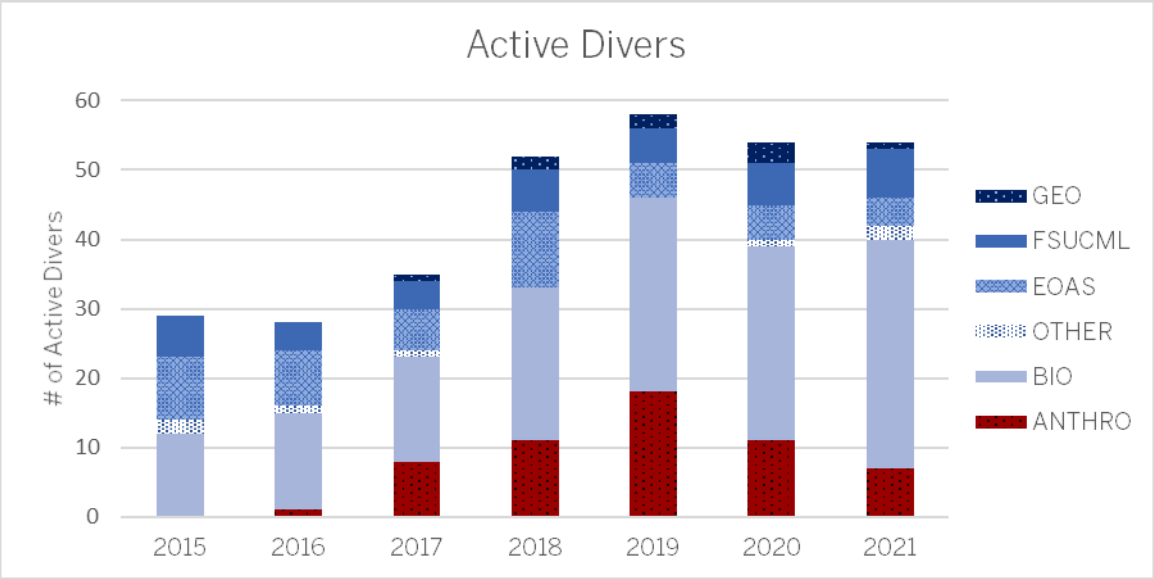


Figure 2. Annual changes in the number of active divers over time by department. ANTHRO = Anthropology; BIO = Biological Science, EOAS = Earth, Ocean, & Atmospheric Science, FSUCML = Coastal & Marine Laboratory, GEO = Geography, OTHER = All Other Departments

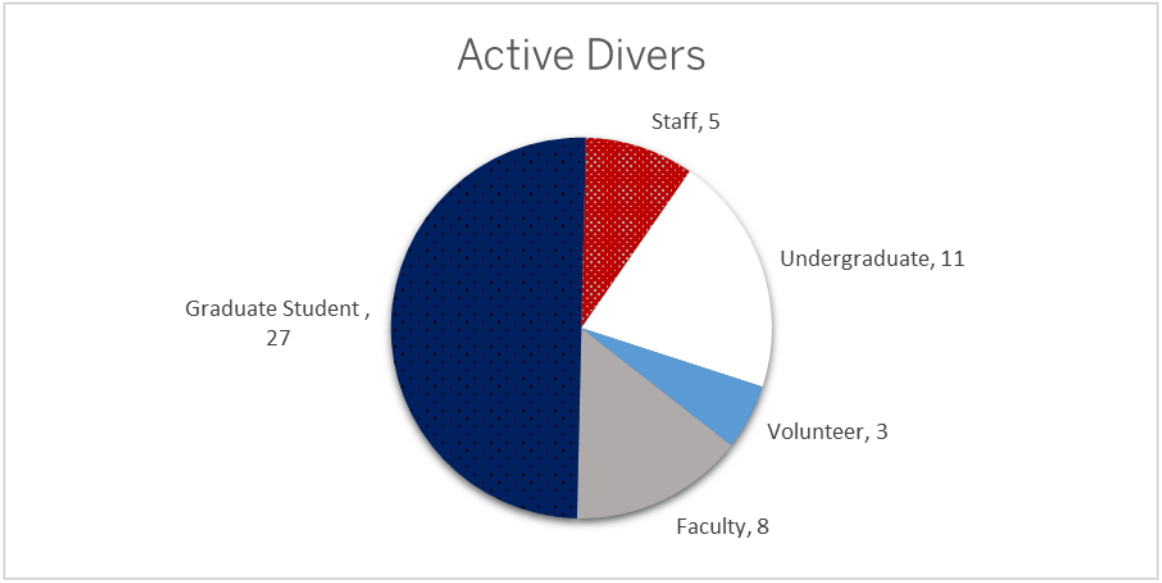


Figure 3. FY 2021 active divers by positon at FSU. Half of all scientific divers in FY 2021 were graduate students.

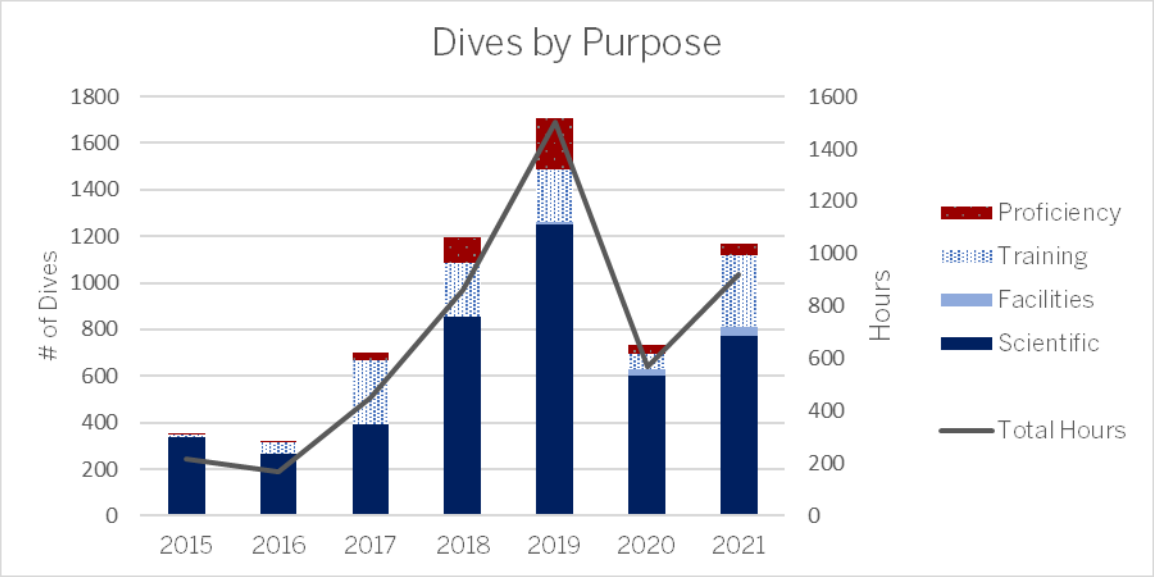


Figure 4. Annual changes in the total number of dives in four categories: proficiency, training to become Scientific Divers, scientific dives and facilities dives. The line represents total bottom time (surface to surface) in hours.

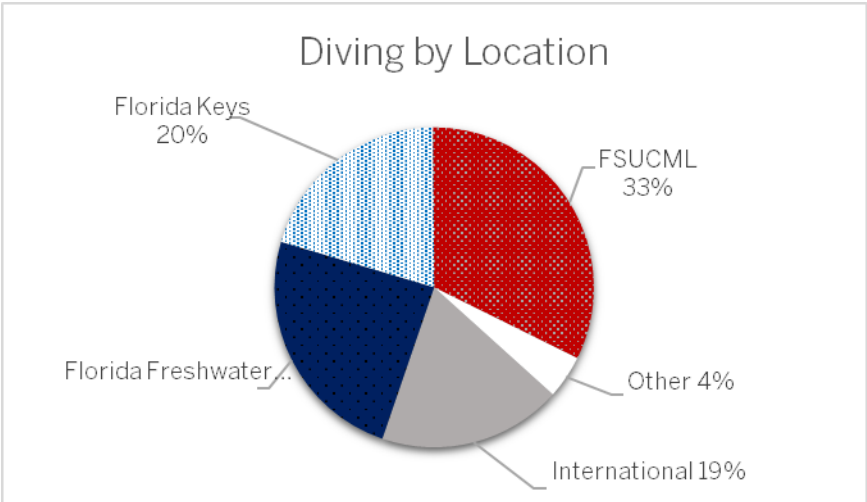
Research Location and Subject Matter

The majority of diving operations continue to be concentrated in Florida. Morcom Aquatics Center in Tallahassee serves as an outstanding site for training dives and watermanship evaluations. Various north Florida karst features also serve as important training sites, particularly Cherokee Sink, a karst window located inside Wakulla Springs State Park. Boat diving and marine training operations are centered at FSUCML. All facilities dives are also located at and in support of FSUCML.

Most domestic scientific work is launched from FSUCML. Routine underwater maintenance of the FSUCML seawater system and the research vessel (R/V) Apalachee was undertaken by ADP beginning in FY 2019 and classified as essential maintenance during the pandemic. Diving in support of FSUCML facilities operations increased in FY 2021 by 39% year-over-year to provide more frequent cleanings of the seawater intake boxes in the hope to improve water quality in the system.

International research was especially impacted by the pandemic as travel restrictions limited access to study sites. However, a research team was able to travel to Bonaire, Dutch Caribbean in May to continue a study on ecological processes in coral reefs. Expeditions to British Columbia, Canada, and Moorea, French Polynesia, were canceled due to travel restrictions.

Figure 5. Percent of total FY 2021 dives by location. 100% of international dives were in Bonaire, Dutch Caribbean.



Financial Summary

Due to spending freezes in FY 2020, ADP entered FY 2021 with residual budgets totaling $9.1k from the previous year. At year's end, ADP had a total residual budget of $8.2k. All ADP funds are accounted for by the FSUCML Office Manager with day-to-day expenditures managed by the Program Manager.

ADP expenditures are processed through one of four accounts: (1) Education and General (E&G) fund, (2) the E&G carryforward fund, (3) workshop and equipment auxiliary fund and (4) and an FSUCML fund used OVPR funded proposals.

1) A general operations allotment provided by the Coastal and Marine Laboratory through the Office of Research (OVPR) is retained in the E&G Funds budget #224001-110. This account provides $7k annually for essential supplies, training and travel expenses.
2) E&G residual funds from the previous year are retained in E&G budget #224001-140. In FY 2021, this included $2,033.24.
3) Revenue generated through workshop and credit course fees, and equipment rentals are processed through the auxiliary budget #224003-320. Workshops and equipment rentals fees provide variable revenue each year that offsets the costs of programmatic activity. In FY 2021, fees generated $9.2k in revenue.
4) OVPR funds various proposals for personnel support, training, and equipment. In FY 2021, proposals were funded to support the Introduction to Scientific Diving Class, a temporary diving technician, and $24.8k was provided replace old and worn SCUBA equipment.

Additionally, $5.5k was raised through donations in support of the FSU Diving Scholarship, which provides funding for deserving FSU students to become Scientific Divers.

Expenditures for FY 2021 totaled $41,756 (Figure 6), not including salary for full-time employees. The majority of funds were spent on SCUBA equipment replacement and included the purchase of 20 new regulator systems, 10 buoyancy control devices and 3 dry suits. Equipment replacement was completed as part of a 5-year plan. A similar but demand-adjusted equipment replacement is projected for FY 2025.

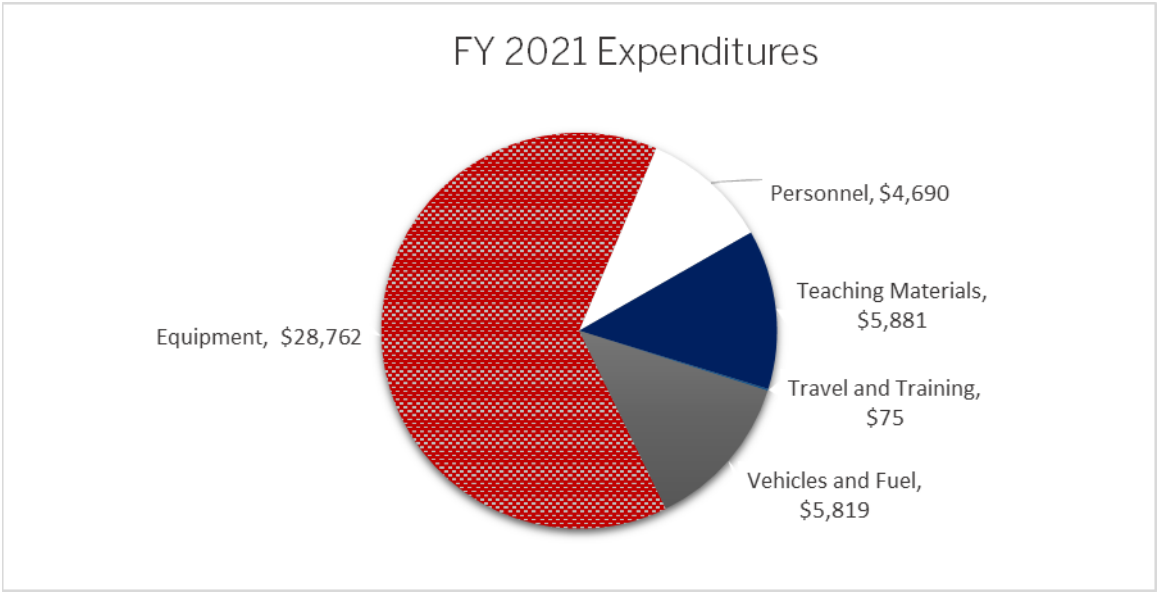


Figure 6. FY 2021 expenditures for the Academic Diving Program. Expenditures were classified into five categories. The single largest expense was $18.5k for the purchase of Aqualung SCUBA equipment to replace aged and worn inventory.

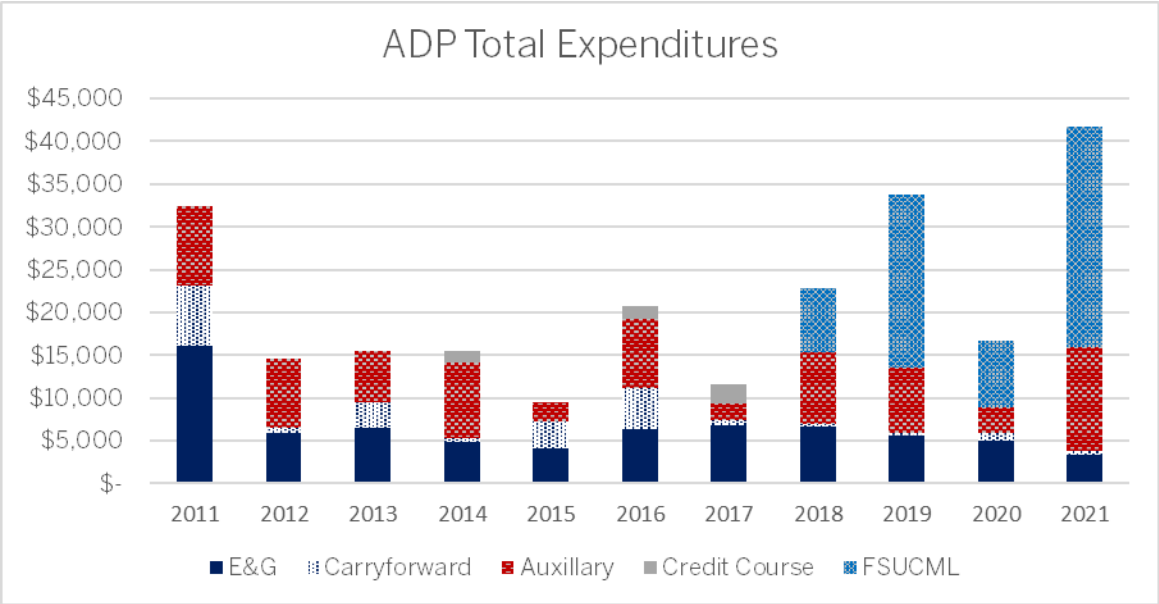


Figure 7. Total ADP Expenditures by year. Expenses are projected to decline in FY 2022.

Looking Ahead

In spite of the interruption caused by the COVID-19 pandemic, ADP anticipates diving activity to increase over the next several years. The projected increase would follow suit with the years 2017-2019 and is reflective of burgeoning underwater research at FSUCML and research labs in Tallahassee. Thanks to recent and strategic investment in equipment, ADP is well positioned to support growth while also reducing expenditures. Most importantly, ADP is prepared to continue its mission: "to provide excellence in underwater research support at Florida State University, including quality instructional and operational assistance using optimal technologies, while ensuring that scientific diving is performed safely following the standards of the American Academy of Underwater Sciences."

Figure 8. An FSU Scientific Diver at work on a limestone reef offshore of the FSU Coastal and Marine Laboratory in May 2021.