DeSSC committee report
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2010 was a significant year at the NDSF. The facility saw about a 30% decrease in demand for the vehicles, *ABE* was lost at sea in Spring 2010, DSV *Alvin* was grounded in early summer due to subsurface indications, ROV *Jason* was asked to step in and do *Alvin*'s work at a moment's notice. The NDSF was also entrained in a great deal of work in the Gulf of Mexico, as a number of NSF RAPID proposals required the use of NDSF vehicles and assets.

Despite these and other challenges, the NDSF made significant advances in 2010. The sections below summarize our activities in 2010, and provide some insight into our future directions.

DESSC MEMBERS

In 2010, four members rotated off DESSC (Bill Chadwick, Jeff Karson, Craig Young, and Deb Kelley). We recently elected four outstanding scientists to DeSSC to succeed them. Vicki Ferrini (from Lamont Doherty), Samantha Joye (from the Univ of Georgia), Evan Solomon (from the Univ of Washington) and John Wiltshire (from the Univ of Hawaii).

AUV ABE

As previously mentioned, *ABE* was lost at sea, which prompted the NDSF and DeSSC to consider whether *Sentry* was ready for the NDSF. This was deliberated within DESSC, and we eventually produced a document that was provided to the NDSF, which outlines our enthusiasm for *Sentry* as well as requested improvements to insure that *Sentry*'s operations are not hindered by the availability of personnel or other resources. In particular, we were concerned about the capacity of the *Sentry* program to operate and advance given the current management structure. The management plan we laid out required that the *Sentry* team develop training plans to insure that more than one person is capable of managing and operating the vehicle. To date, *Sentry* has proven to be a most effective successor and the training of new management personnel appears to be working.

DSV Alvin

The DSV *Alvin*, as we know it, made its final dive in late 2010. Around the same time, the *Alvin* upgrade project passed its final design review. This was a major hurdle, and the NDSF management are to be congratulated for a job well done. Now that this major milestone has passed and the project is moving forward more rapidly, we set out to address a number of issues that have arisen within DeSSC as well as the broader scientific community regarding the capabilities of the new vehicle. In particular, there are concerns about bottom time and imagery (imagery is discussed in more detail below). Susan Humphris (WHOI *Alvin* upgrade project manager) gave an excellent presentation in 2010, which alleviated a number of the performance concerns that had been expressed by DeSSC. In particular, it is apparent that there are major advances in payload and science capacity. The vehicle will also be more ergonomic than the current vehicle. The remaining concerns

largely have to do with bottom time and maneuverability, but it is difficult to address these concerns at this time. As such, DeSSC will continue to monitor the project and provide feedback as needed to insure that community concerns are considered and, when possible, mitigated via changes in development.

ROV JASON

The ROV *Jason* is due for a new Launch and Recovery system. During DeSSC meeting in 2010, Matt Heinz (ROV Operations Manager) gave a presentation about some of the ideas they have been considering. The new system is designed to be much safer while enhancing science capacity (heavier lift capability). These proposed ideas were, by and large, very well received by DESSC. Conversations regarding the new LARS for *Jason* are ongoing .

Retention of copyright

For many years, questions have been raised about how to better represent the contributions of scientists to the imagery and video recovered from the vehicles and maintained by the NDSF. Two key issues have been raised: 1) the question of who retains copyright and 2) the question of attribution (photo accreditation). Over the past few months, I have been working with NDSF personnel on addressing these issues with the goal of developing a model to address each of these issues as needed. This summer, the issue of copyright came up during an OOI-related expedition, which led to the establishment of an agreement about how copyright will be handled between WHOI and the OOI. Moreover, we have been trying to develop an effective model for attribution that is not exceedingly difficult for either WHOI and the NDSF or the investigator. In the upcoming meeting, we will continue to address this issue, and we hope to engage legal council in better understanding the implications of retaining or change copyright policy at WHOI.

Proposal demand for NDSF assets

Finally, there's the issue of a decline in demand for ship and vehicle time. There are some clear trends from the last five years the show a marked decrease. We looked into who's submitting proposals for ship and vehicle time, and it's apparent that there are far fewer new investigators than is ideal. We have been having ongoing discussions about how to increase the user base, and have encouraged the community at large to identify mechanisms whereby we can engage new investigators.

In an effort to increase the scientific communities' interest in the NDSF -as well as public awareness- with generous support from the NSF we organized an NDSF booth at the 2010 annual AGU meeting. This booth featured all the NDSF vehicles, as well as video from recent expeditions to erupting volcanoes and erupting oil wells. We were able to get the *Alvin* upgrade mockup sphere shipped out for this exhibit. It was, by all accounts, an outstanding exhibit and we were able to acquire the contact information for a number of younger investigators who were interested in submitting proposal to use the NDSF vehicles. These investigators volunteered their information, and we are considering organizing a workshop about how one can become involved in deep sea research. To that end, we hope to have

training sessions on proposal writing, using the UNOLS shiptime and vehicle request system, and alternative means of requesting support for NDSF assets (e.g., NURP etc).