



# NDSF 2015 Vehicle Operations Summary

## Alvin Operations



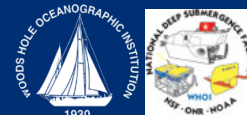
- 46 operating days
- 3 cruises completed  
*Off Chile, GoM, Atlantic Seaboard*
- 31 dives, 225 hrs submerged
- Longest: 8.8 hrs
- Average: 7.3 hrs
- Average bottom time: 5.3 hrs
- No dives lost





# NDSF 2015 Vehicle Operations Summary

## *Alvin* Highlights



### **AT26-27 *Alvin* 4500m Certification Series, 25-29 Jan, Chilean shelf**

- Three dives, including US Navy participation
- *Alvin* officially certified to 4,500m on second dive
- Third dive with Rob Munier, visited epicenter of 1877 Chilean earthquake

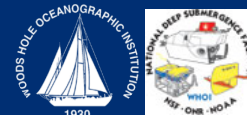
### **AT29-02 David Valentine Cruise, 15-29 Jun, Gulf of Mexico**

- Joint operations with *Sentry*
- 10 dives with no dives lost
- 1 engineering dive
- Two new *Alvin* pilots begin regular operations
- PATZ cameras returned from dome repair, operational
- Installation of new *Alvin* CTD
- Successful installation and use of new CO<sub>2</sub> scrubber



# NDSF 2015 Vehicle Operations Summary

## *Alvin* Highlights (cont.)



### AT29-04 Cindy Van Dover Cruise, 8-28 Jul, Atlantic Seaboard

- Joint operations with *Sentry*
- 18 dives with no dives lost
- 1 engineering dive
- Reson sonar installed for initial testing
- First opportunity to evaluate *Alvin* nav post processing software
- Installation of AIVL 4K video camera system
- Dives included in-water footage obtained by AIVL (launch/recovery)
- Support of Van Dover/Dukes 3-D *Alvin* in-hull imaging (Google Glass)

# NDSF 2015 Vehicle Operations Summary

## Jason Operations

- **126 operating days**
- **6 cruises completed**  
*Havre Volcano, Lau Basin,  
JdF, Cascadia Margin  
Cascadia Subduction Zone*
- **70 dives, 966 total hrs**
- **On bottom: 730 hrs**
- **Longest: 102 hrs**
- **Average: 14 hrs**
- **Vessels used:** *Revelle, Thompson*





# NDSF 2015 Vehicle Operations Summary

## Jason Highlights

- New LARS hydraulic power unit provides improved crane performance with added feature to deck-test *Jason's* manipulators
- New Rochester steel tube FO cable has been successfully integrated; protects fibers from compression loads on direct-drive Rapp winch
- CSDS (and team) load-tested the *Jason* sample drawer



# NDSF 2015 Vehicle Operations Summary

## Sentry Operations

- **196 operating days**
- **8 cruises (1 underway)**  
*Hawaiian Jurassic Basin, NZ, Havre Volcano, GoM, Atlantic Seaboard, JdF, Emperor Seamounts, Mariana Back-Arc*
- **67 dives, 1,118 hrs in water**
- **Total survey time: 1,011 hrs**
- **Average dive time: 15.3 hr**
- **2,490 km of survey**
- **Vessels used:** *Sikuliaq, Wellington, Revelle, Atlantis, Thompson, Kilo Moana, Falkor*





# *NDSF 2015 Vehicle Operations Summary*

## **Sentry Highlights**



- **High volume larval sampling**
  - 11 dives, 132 morphotypes
  - 800+ individual samples divided 2:1 or 4:1 before analysis so actual total is much higher
- **New batteries**
  - 28-hour multibeam missions
  - 50 to 60-hour photo missions
  - Same turnaround time
- **700km straight line survey at 5,500-6,000m**
- **440,000 photos and 18TB of data on one cruise**
- **New Expedition Leader**
  - Sean Kelley (3 successful trips complete)