

**Scope of Work and Budget**  
**Cosco Busan Auklet Box Restoration on Southeast Farallon Island**  
**Point Blue Conservation Science**

In 2014, Point Blue Conservation Science began designing and conducting trials on prototype new artificial nest structures for Cassin's and Rhinoceros Auklets. This project is being conducted to develop new nest structures for the auklets that will keep internal temperatures near natural burrow and crevice nest sites while being long lasting, cost effective, and permit for easy and low disturbance monitoring. In 2014-15, Pt. Blue biologists began investigating potential materials and building prototype nest structures while completing a study comparing air temperatures between natural nest sites, wooden artificial nest boxes (uncovered boxes), and wooden artificial nest boxes covered with shading to reduce solar penetration into the box (covered boxes). That study found that temperatures differed between the three study groups, with temperatures progressively warmer between uncovered boxes, covered boxes, and natural nest sites, respectively.

For artificial nest structure prototype development, Point Blue worked in close collaboration with Oikonos Ecosystem Knowledge, along with master ceramicist Nathan Lynch from More Lab and the California College of the Arts, to design test units using ceramic materials. After extensive research and development, we devised two prototype designs to test: a shielded ceramic nest box which approximated conventional designs, and a dome structure with a central ceramic tube and ventilation holes to help alleviate heat, along with an external ceramic dome shielding which rotates around the unit. Temperature testing and installation of concrete boxes was initiated in April 2015 and in ceramic test designs in October 2015.

Over the next year, Point Blue will assess temperature values in new prototype units, and analyze them relative to area specific controls and reference conventional nest boxes. They will evaluate prototype temperatures relative to previously established relationships. Also, they will complete a draft manuscript on our temperature logger studies and habitat evaluations.

**Deliverables and Timelines**

Assessment of prototypes (including temperature data): September 30, 2017

Temperature logger manuscript: January 31, 2018

**Project Budget:**

The budget includes funds for Oikonos Ecosystem Knowledge for assistance with research and development of test modules, salaries and benefits for Point Blue biologists for field work and manuscript preparation, and indirect expenses.

Oikonos R and D and test modules	\$5,500
2 weeks Warzybok, 1 week Bradley	\$3,840
Benefits Warzybok and Bradley	\$1,785
Subtotal	\$11,125
Indirect Expenses (35%)	\$3,893.75
<b>Total</b>	<b>\$15,019</b>