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Funk, F. C., G. A. Borstad, and S. A. Akenhead. 2000. Imaging spectrometer detects and measures the surface area of Pacific herring schools in the Bering Sea. Pages 833-844 [In] Proceedings of the third thematic conference on remote sensing for marine and coastal environments, Seattle, Washington, 18-20 September, 1995. Environmental Research Institute of Michigan, Ann Arbor.

Abstract: In May, 1991, we studied the feasibility of using a Compact Airborne Spectrographic Imager (CASI) to detect Pacific herring (*Clupea pallasii*) schools in Bristol Bay, Alaska, and measure the surface areas of the schools. CASI was easily deployed for nominal costs from a light aircraft and readily discriminated herring from background water and submerged vegetation. Image enhancement provided readily recognizable herring schools, allowing calculation of surface areas, perimeter shapes, and relative densities. The numerous small schools collectively constitute only a minor part of the stock and the occasional large, irregularly shaped schools (>100,000 m²) contained most of the biomass. A limited selection of comparisons between CASI-measured surface areas and human observers showed good correlation, but CASI always detected more schools than the observer, perhaps explaining why observer estimates do not track abundance trends very well. Spectrographic imaging appears to provide a reliable method of assessing herring abundance for a reasonable cost.

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