



# Deployment and Observer Effects as Evidenced from Alaskan Groundfish Landing Reports

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## TWO POTENTIAL SOURCES OF OBSERVER BIASES

### The deployment effect:

Observers are not randomly distributed among fishing trips (Fleet effect)

### The observer effect:

Observed trips do not represent unobserved trips (Individual vessel effect)

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Number of fisheries in which the ratio of observed trips was different from the expected ratio (given mandated coverage requirements in a calendar quarter) \*

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Number of fisheries examined with significant differences in the total weight landed due to the presence of an observer \*\*

Both effects are present in the the North Pacific Groundfish Observer Program, due largely to industry control over where and when observers are deployed. Efforts are underway to restructure the Program.

\*Fisheries determined by Fisheries Management Plan Area (Gulf of Alaska or Bering Sea and Aleutian Islands), gear type (trawl, or pot and hook and line combined), primary species landed, and quarter of calendar year. Pearson's chi-square tests of aggregated counts of trips from 2008 landing reports against an expected ratio of 0.3:0.7 observed: unobserved trips for catcher vessels under a 30% observer coverage per quarter requirement.

\*\*Fisheries determined by primary species landed, and gear type (trawl, or pot and hook and line combined). Linear mixed-effects models were run on landed pounds of fish from catcher vessels made to dockside processors during 2008. Model fixed effects included calendar year, FMP area, vessel length, and whether a trip was observed or not (significance interpreted as evidence of an observer effect). Vessel identification was used as a random effect to incorporate variance due to individual behavior.