

Why the ISC Continues to Search for "Unreported" Events

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Since 1974 the International Seismological Centre has searched its unassociated phase readings to find events not reported by other agencies. About 100 to 200 such events are found each month, and while the number of events published by the ISC has risen dramatically over the decades, the number of "new" events has remained steady. Many are genuine new events located in remote areas, such as oceanic ridges, where instrumental coverage by national agencies is poor, or situated near national boundaries, where no single country can obtain a solution with its own stations alone. One example of a new event was the first earthquake to be confirmed as occurring in continental Antarctica, in 1982. Many new events are already known to local agencies, but their origins are not reported to ISC because they are too small, or are known to be of non-seismic origin, such as mining explosions. In early years the distribution of new events was widespread, but recent improved global location capability of agencies such as the Prototype International Data Center has greatly reduced their number in remote areas. A few are still found, however, in Hindu Kush, Myanmar, and around the Pacific Rim. Many more events are now being found in areas with good local coverage, such as Alaska, Mexico, Andean South America and New Zealand, where for various reasons not all locally determined origins are reported to ISC. Also, the new events seldom have teleseismic amplitude and period readings for ISC to determine a magnitude, and locally determined values of ML are rarely available. Reviewing these events takes a considerable proportion of ISC's analysis effort, and ISC plans to review the procedure to ensure that genuine new events, particularly in remote areas, continue to be discovered without devoting undue effort to rediscovering events already known. We report on regional variation in the proportion of new events not in local catalogues, particularly those requiring data from two or more networks.