

How Should NACSN Respond to Proposals for Incorporation of Sequence-Stratigraphic Units into the North American Stratigraphic Code?

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NACSN has been gathering information and considering the influence of sequence stratigraphy on stratigraphic nomenclature since 1993 through its Committee on Sequence Stratigraphy and Allostratigraphy and at NACSN annual meetings. Allostratigraphic units were formally included in the 1983 Code (NACSN, 1983) to serve the needs of both stratigraphers of the Quaternary System and sequence stratigraphers for a stratigraphic unit defined by its boundaries rather than its content or age. An allostratigraphic unit was defined as "a mappable stratiform body of sedimentary rock that is defined and identified on the basis of its bounding discontinuities". Discontinuities include unconformities as well as other surfaces such as the top of buried soils. Provision was made for extending bounding discontinuities into other geographic areas by other criteria including relative and numerical ages.

Allostratigraphic units have been used mostly in Quaternary strata and rarely in sub-Quaternary strata. Instead, stratigraphers have used informal depositional and other sequences in overwhelming numbers for sub-Quaternary strata. Synthems, the unconformity-bounded units recommended by the ISSC, have been used even less frequently than allostratigraphic units.

Sequence stratigraphy has dominated stratigraphic studies since 1983. Therefore, many questions have been asked about classification of stratigraphic units bounded by unconformities. Are three sets of categories for similar, though not identical, units desirable, or should they be consolidated into one? Should the most popular term, sequence, prevail? Which of the various usages of sequence should be adopted, or should we have several kinds of sequences? Should sequences be defined solely by the unconformable boundaries or should correlative conformities be included in the definition? Are sequences descriptive units or interpretive units, or should both kinds be recognized? Is the genesis of the bounding unconformities (subaerial or submarine erosion; relative fall or rise of sea level; eustatic or tectonic control; etc.) a necessary or desirable part of sequence definition?

If both descriptive and interpretive sequences are to be incorporated in the Code, an interesting parallel already exists in that descriptive Magnetopolarity Units and interpretive Polarity-Chronostratigraphic Units, both included in the 1983 Code, may have the same boundaries. Polarity-Chronostratigraphic Units are based on Magnetopolarity Units. Similarly, interpretive sequences might be defined by descriptive sequences.

NACSN considers proposals for incorporation into the North American Stratigraphic Code from any individual geoscientist, geological organization, or NACSN Commissioner. The ISSC Working Group on Sequence Stratigraphy has been debating definition and usage of sequence-stratigraphic terminology for five years and is preparing final recommendations during May, 2001. These recommendations should be considered at the August, 2001 Hedberg Conference. NACSN should act on recommendations coming from this Hedberg Conference at its November, 2001 Annual Meeting in Boston.

Reference

NACSN, 1983, North American Stratigraphic Code: AAPG Bulletin, v. 67, p. 841-875.