



FIGURE 13.14. Evolution of channel patterns from growth of alternate bars, bank erosion, and channel widening. Modified from Bridge (2003). Image (A) shows the formation of a single row of alternate (unit) bars in a straight channel. The crestlines of unit bars (indicated by solid or dashed lines) may, but need not, be associated with angle-of-repose lee faces. Arrows represent the flow direction and stippled areas are topographic highs. With bank erosion and channel widening, the single row of alternate bars evolves into point (side) bars composed of bar-head lobes and bar-tail scrolls (i.e., compound bars). Continued growth of point bars is by episodic accretion of unit bars, although such discrete features are not always present. From Bridge (1993), and based on numerous laboratory experiments and river studies. (B) An experimental single row of alternate bars evolving into point bars. Flow is towards the observer. (C) A view of bar-tail scroll in the foreground looking downstream towards the riffle and bar head of the next side bar downstream. River Feshie, Scotland. (D) A point bar on Madison River, Montana, showing bar-head lobes, bar-tail scrolls, and cross-bar channels. Flow is to the right. (E) As for (A), but with cross-bar channels and associated channel-mouth bars. (F) A view looking upstream of a chute channel and chute bar (on the right). The vegetated island is the bar head. The cut bank is on the left. Calamus River, Nebraska. (G) A bar-tail scroll with a cross-bar channel and mouth bar (foreground). The main channel is in the background. The cross-bar channel has its own point