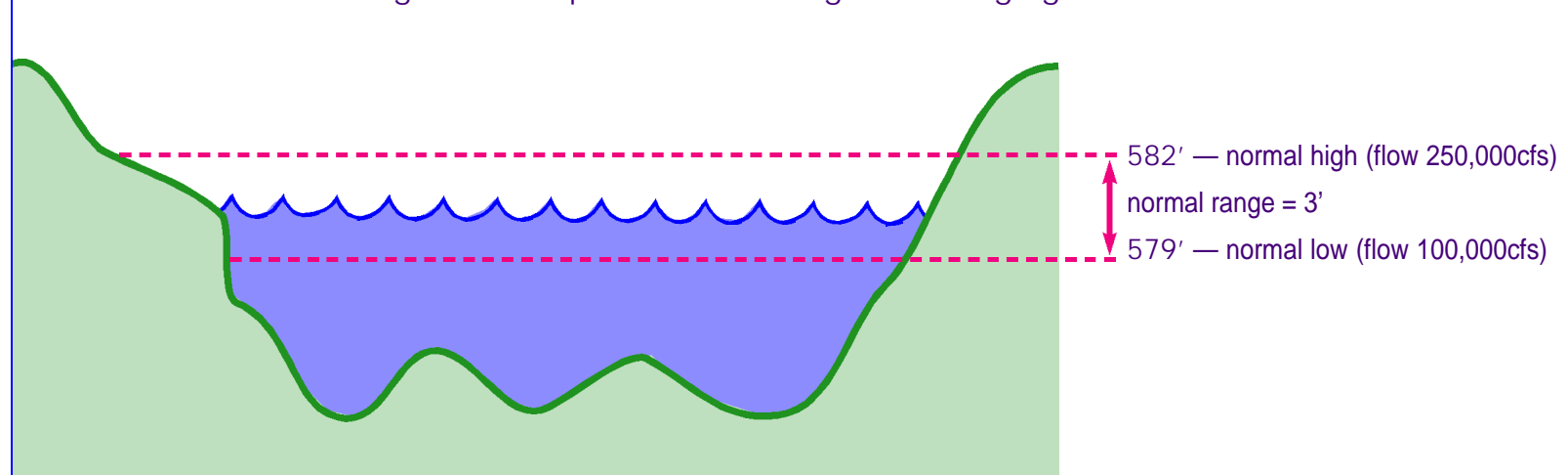


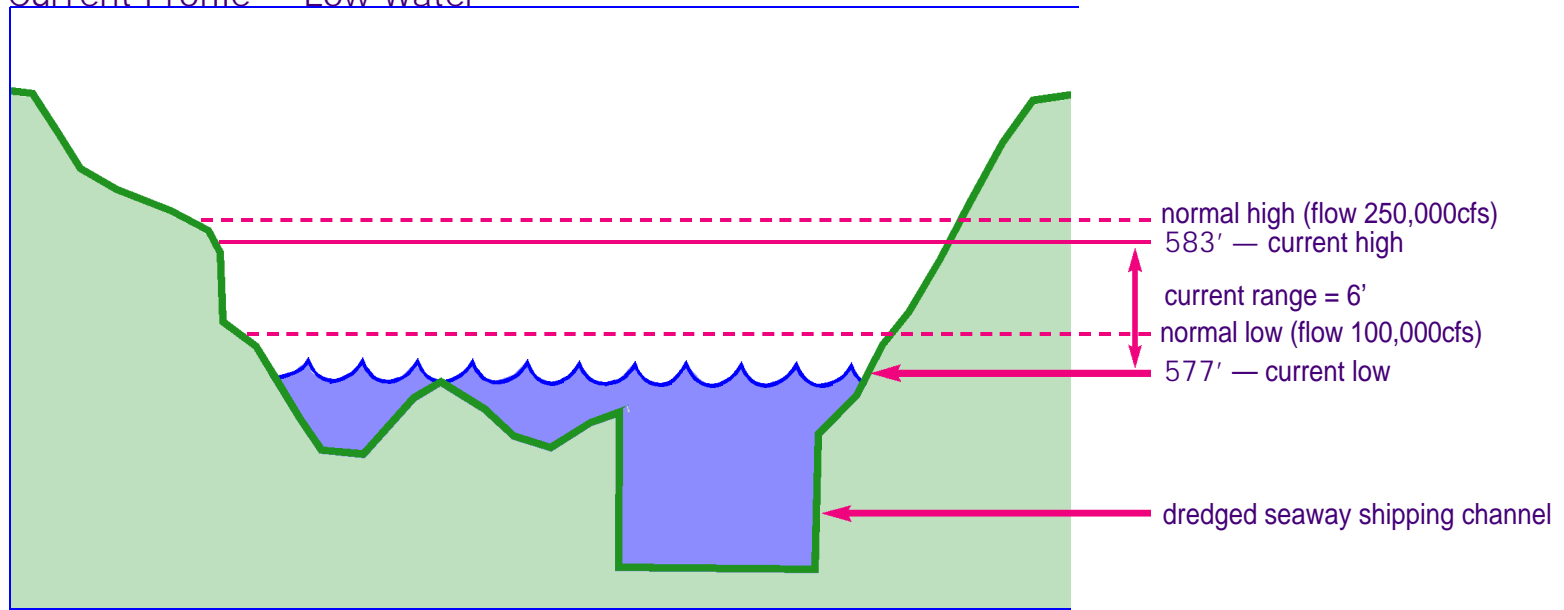
# Restoring Lake Levels on Lakes Michigan-Huron

- ▶ Current low lake levels are caused by human intervention and can easily be repaired.
- ▶ All major sources of water into Lakes Michigan-Huron have been dammed.
- ▶ The only major outlet has been deepened and a new one created.
- ▶ The result of this has been a long-term lowering of the lakes by 15 inches and perhaps 30 inches in lower water years.
- ▶ Repairing the damage we inflicted can be easily accomplished by constructing a weir in the St. Clair River. This has been done on the St. Lawrence, St. Mary's and the Niagara Rivers. Surely, the millions of residents, boaters and cottagers on Lakes Huron-Michigan will be well served by a minor investment to solve the problem.

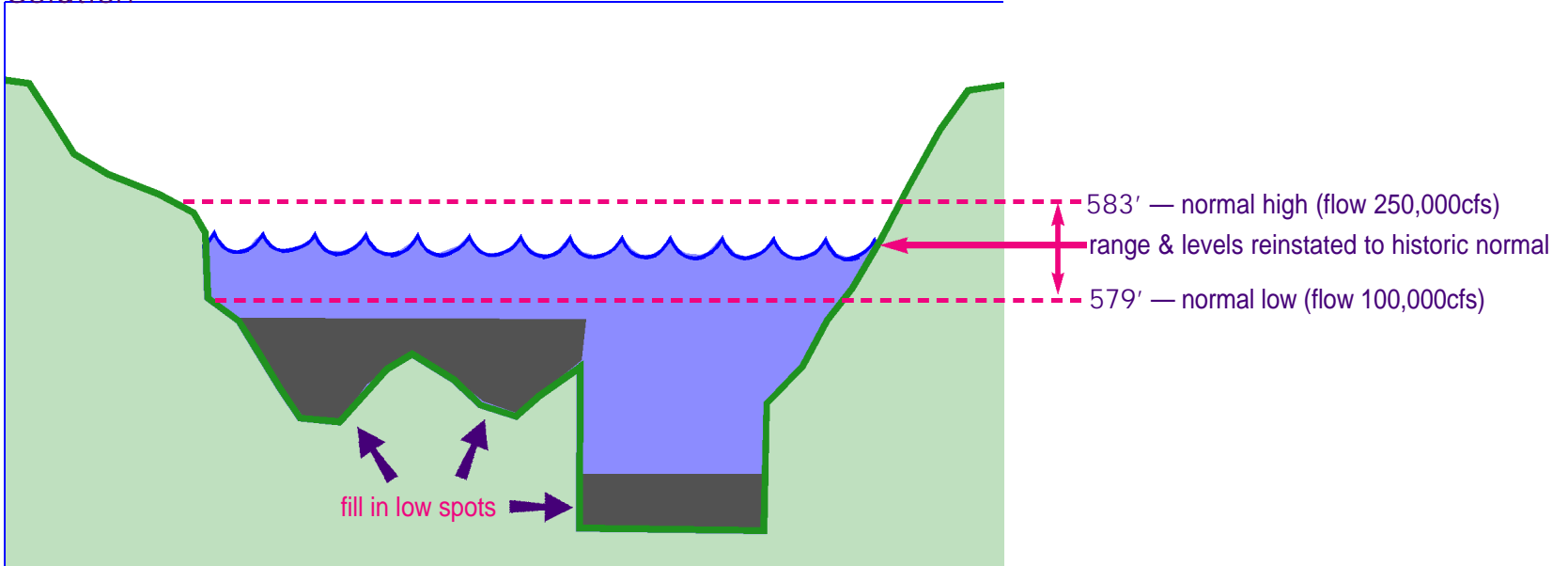
Profile of Huron — Michigan Outlet prior to Damming and Dredging



### Current Profile — Low Water



### Solution



- ▶ The cost of small scale remedies to individual and local problems (such as the costs associated with marina dredging, dock extensions, beach repairs, boating accidents and lost property values) far outweighs the cost of fixing the problem at its source.
- ▶ As shown in the preceding profile, building a weir at the head of the St. Clair River would be the simplest solution. In addition, a lock structure at the shipping lanes would effectively restore the river to its original profile.

## DAMMING

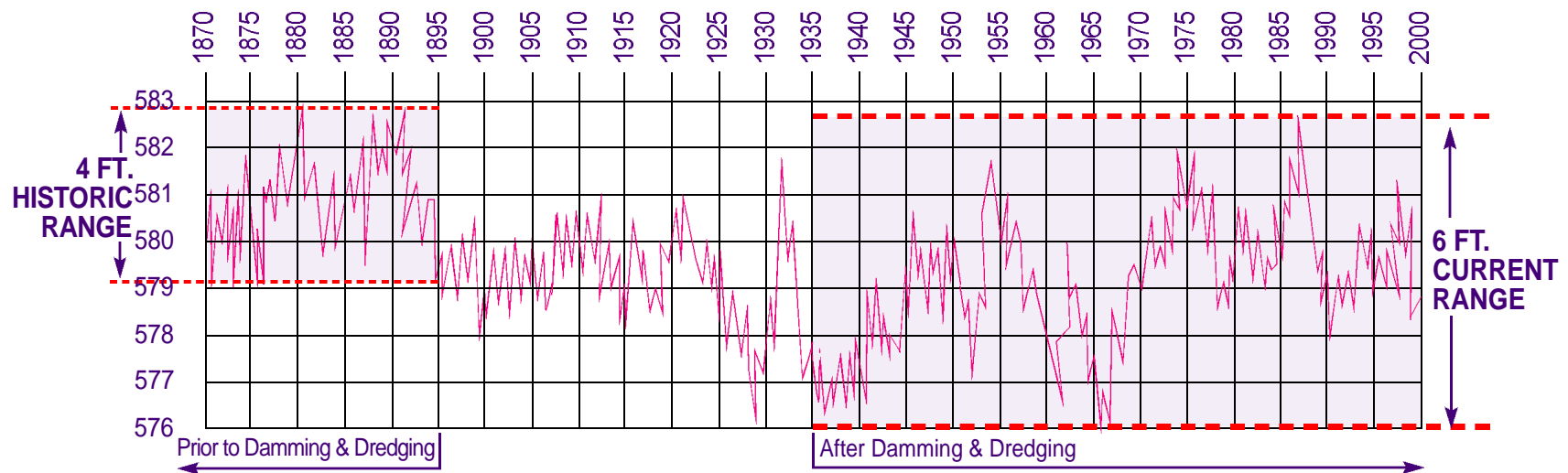
- ▶ The quoted material are excerpts from the report Living With the Lakes, published by the *Great Lakes Commission* and the *United States Army Corps of Engineers*.
- ▶ “The outflow from Lake Superior is controlled near the twin cities of Sault Ste. Marie, Ontario and Michigan. The outflow began to be changed as early as 1822, when water was diverted from above the St. Mary’s rapids for operation of a sawmill. A ship canal was constructed in 1855. Subsequently, various expansions to the facilities took place.”
- ▶ Lake Superior is the largest source to Lakes Michigan-Huron; however many other sources have also been dammed. Without dams, lakes and rivers rise and fall according to their rates of flow. The Great lakes act as a shock absorber, evening out the downstream flow. When dams are in place, upstream reservoirs fluctuate much less and downstream flows fluctuate much more. This is why Michigan-Huron, with no dam at its outlet and highly fluctuating sources upstream, has the extreme lake-level changes that we have recently witnessed.

## DREDGING

- ▶ “A rock ledge at the head of the St. Mary’s Rapids provided a natural control for Lake Superior out flows. The rock ledge acted like a weir permitting the flows to increase and decrease as Lake Superior’s level rose or fell.”

- ▶ Such a rock ledge used to exist at the head of the St. Clair River. However dredging destroyed this natural control, dropping the lake level at low flow periods. At the same time, upstream damming raises the lake level at high flow periods.
- ▶ “Dredging in the St. Clair-Detroit system began in the 1930s and continued through the 1950s to deepen navigation channels. Dredging is the enlarging or deepening of navigation channels to allow ships to enter or leave ports more efficiently, quickly and safely. Without dredging, most rivers and harbours would be inaccessible for commercial navigation. Dredging has increased to flow capacity of these rivers and, as a result, has permanently lowered the levels of lakes Michigan and Huron by nearly 15 inches.”

## LAKE LEVEL HISTORY



## Lakes Michigan-Huron

