



# SOUTH HARBOR SUBBASIN

## Elk & Johns Rivers, Alder, Charley, & Newskah Creeks

### LIMITING FACTORS

#### RIPARIAN

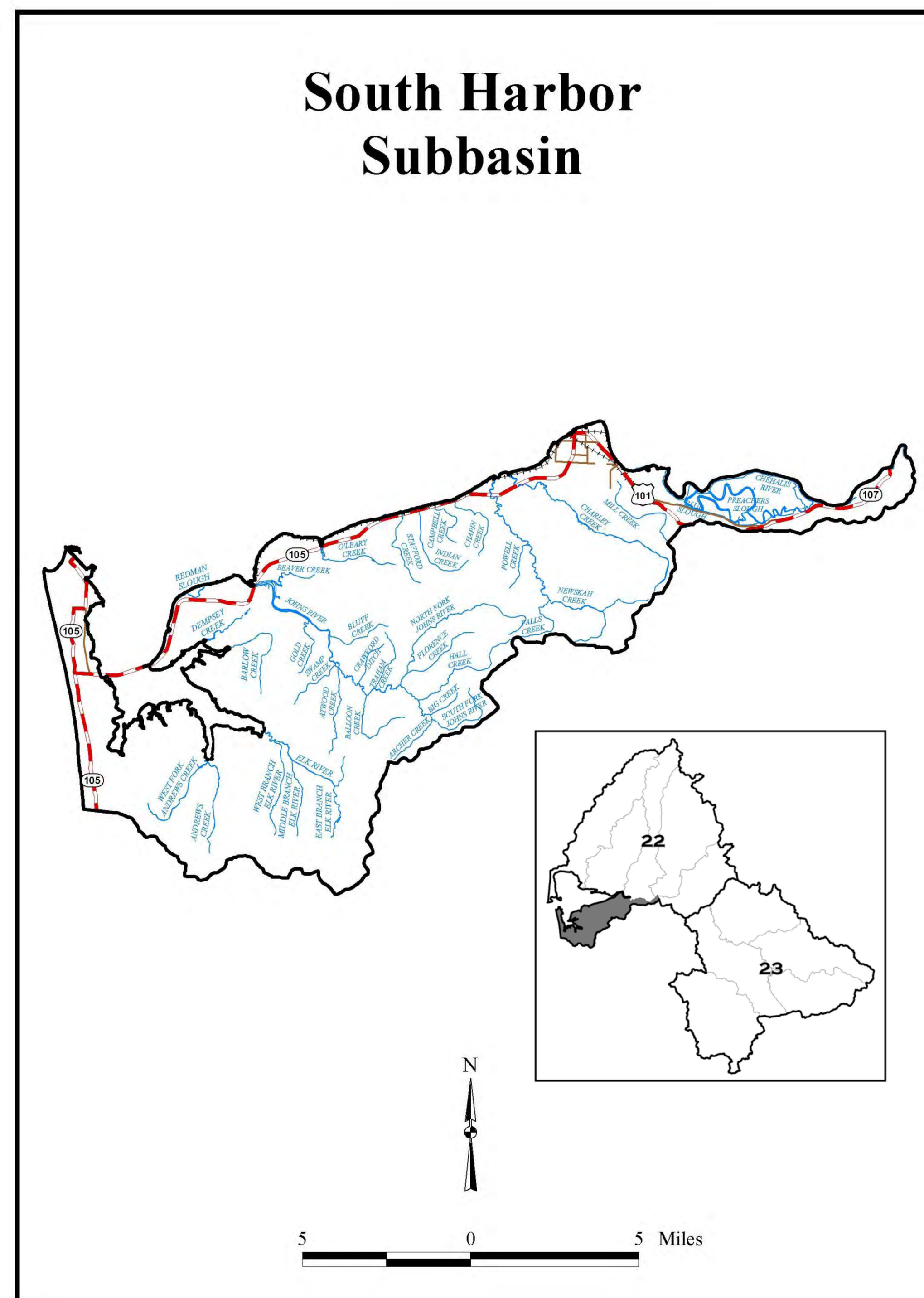
- Riparian areas in mid and lower reaches are comparatively well maintained and currently protected in the Elk River Natural Resources Conservation Area
- Riparian areas that are confined by steep hillsides have been most affected by timber harvest
- Elk and Johns River estuaries are among the most pristine estuaries on the west coast and thus, preservation of these estuaries is a high priority

#### FISH PASSAGE

- The South Bay watersheds have among the highest road densities in the Chehalis Basin. Many of these stream crossings are currently impassible to salmonids at all life stages. Many of the migration barriers are also present in the downstream of most reaches of the watersheds preventing all upstream migration and promoting sediment retention; this is particularly of concern for primary subbasins that directly discharge into mainstem or estuary habitat.

#### SEDIMENT

- There have been extensive timber harvests in the majority of the South Bay watersheds
- Runoff from logging roads that do not meet Forest Practices Act regulations
- Removal of riparian corridor and loss of LWD inputs



South Bay Harbor: Fall Chinook, coho, chum, cutthroat, and winter steelhead

### RESTORATION ACTIONS

#### RIPARIAN

- Interplant conifers in deciduous dominant areas
- Identify specific degraded riparian areas for restoration needs
- Remove invasive species

#### FISH PASSAGE

- Correct barrier culverts

#### SEDIMENT

- Reduce sediment loading by reducing road densities (abandon/decommission)
- Upgrade logging roads to comply with Forest Practices Act rules and regulations
- Revegetate streams/riverbanks for added protection from erosion
- See riparian actions
- Install log jams to improve in-stream channel structure and habitat diversity

