

## Observed Effects of Temperature on Southern Flounder Recruitment in Texas

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*Abstract:* Fishery-dependent and fishery-independent surveys indicate the southern flounder (*Paralichthys lethostigma*) population along the Texas coast is declining. An analysis of water temperature indicates a negative correlation between flounder recruitment and winter temperatures. Years with warmer winter water temperatures result in low flounder recruitment, while years with cooler winter water temperatures yield higher recruitment. This effect is pronounced on the lower coast of Texas, from San Antonio Bay to the lower Laguna Madre, where higher water temperatures occur, and after 1991, when winter water temperatures increased up to 5 C above average. Possible explanations include direct effects, such as a decrease in hatching success as temperatures rise, and indirect effects, such as increased predation on flounder larvae and early juveniles when higher temperatures are present. The southern flounder resource represents a fishery that is in decline, but where fishing is not the sole cause for decline.

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