Fish Assemblages In The Powder And Tongue Rivers In Relation To Coalbed Natural Gas Development

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The Powder River Basin in Wyoming and Montana is currently undergoing one of the world's largest coalbed natural gas (CBNG) developments. Potential exists for substantial effects on aquatic ecosystems because CBNG development involves production and disposal of large quantities of coalbed ground water that differs from surface waters. We used four different approaches to determine the effects of coalbed natural gas development on fish assemblages in streams of the Powder River Basin in 2005 and 2006. First, we compared fish assemblages in streams with CBNG development and streams without development. Second, we compared the longitudinal distribution patterns of fish assemblages at multiple points above and below CBNG development. Third, we compared fish assemblages present in 2006 to fish survey data from the mid 1990s in areas with and without CBNG development. Finally, we compared growth and survival of native fish in streams with and without CBNG development. Several fish metrics and an index of biotic integrity were used to compare fish assembla CBNG relation to the status of development within a drainage area. Streams in drainages with CBNG development on average had lower species richness than those without development.