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Nathan Pflueger* (npflueger@amherst.edu). *Underwater Brill-Noether theory.*

We consider the moduli space $\mathcal{G}_{g,d}^r$ of genus g curves with a linear series of rank r and degree d . The forgetful map to \mathcal{M}_g has expected relative dimension given by the Brill-Noether number $\rho = g - (r + 1)(g - d + r)$. Classical Brill-Noether theory concerns the situation where $\rho \geq 0$, but strange, often unexpectedly large, and hard-to-classify creatures are observed when we dip below the surface to cases where $\rho < 0$. I will discuss a proof that, provided that $\rho \geq -g + 3$, $\mathcal{G}_{g,d}^r$ has at least one irreducible component of the expected dimension, and a stronger asymptotic result under the hypothesis $\rho \geq -C_r g + \mathcal{O}(g^{5/6})$, where $C_r \rightarrow 3$ as $r \rightarrow \infty$. (Received January 14, 2022)