Kühn and Osthus: For every integer \( s \), there is an integer \( r_s \) such that Hadwiger Conjecture holds for all graphs \( G \nsubseteq K_{s,s} \) and \( r \geq r_s \).
There is a constant $g$ such that all graphs $G$ of girth at least $g$ satisfy the implication $\chi(G) \geq r \rightarrow G \supseteq TK_r$ for all $r$. 
There is a constant $c \in R$ such that for $r \in N$, every graph $G$ of average degree $d(G) \geq cr^2$ contains $K_r$ as a topological minor.
Kostochka, 1982: There exists a constant $c \in R$ such that for every $r \in N$, every graph $G$ of average degree $d(G) \geq cr \sqrt{\log r}$ contains $K_r$ as a minor. Up to the value of $c$, this bound is best possible as a function of $r$. 
Let $d, k \in \mathbb{N}$ with $d \geq 3$ and let $G$ be a graph of minimum degree $\delta(G) \geq d$ and girth $g(G) \geq 8k + 3$. Then $G$ has a minor $H$ of minimum degree $\delta(H) \geq d(d - 1)^k$. 
Thomassen, 1983: There exists a function $f : \mathbb{N} \rightarrow \mathbb{N}$, such that every graph of minimum degree at least 3 and girth at least $f(r)$ has a $K_r$ minor, for all $r \in \mathbb{N}$. 
Take $f(r) = 8 \log r + 4 \log \log r + c$ for some constant $c \in \mathbb{R}$. Take $k = k(r)$ minimal with $3.2^k \geq c'r\sqrt{\log r}$, where $c'$ is the constant from Kostochka’s Lemma.
There exists a constant $g$ such that $G \supseteq TK_r$ for every graph $G$ satisfying $\delta(G) \geq r - 1$ and girth $\geq g$. 
Let $G$ be a graph, $T$ a tree, and let $\nu = (V_t)_{t \in T}$ be a family of vertex sets $V_t \subseteq V(G)$ indexed by the vertices $t$ of $T$. The pair $(T, \nu)$ is called a tree decomposition of $G$ if it satisfies the following 3 conditions.

1. $V(G) = \bigcup_{t \in T} V_t$
2. for every edge $e \in G$, there exists a $t \in T$, such that both ends of $e$ lie in $V_t$.
3. $V_{t_1} \cap V_{t_2} \subseteq V_{t_3}$ whenever $t_3$ belongs to the unique path between $t_1$ and $t_2$ in $T$. 
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