Let E be an uncountable subset of $\mathbf{R}^n$ and let P the set of condensation points of E. Let $\mathcal{B}$ be a countable base for the topology of $\mathbf{R}^n$, let $\mathcal{B}_E$ denote the set of all $V \in \mathcal{B}$ such that $V \cap E$ is countable, and let $W := \bigcup \mathcal{B}_E$. Note first that if $V \in \mathcal{B}_E$, then for any $v \in V$, V is a neighborhood of v such that $V \cap E$ is countable, so v cannot be a condensation point of E. Thus $V \cap P = \emptyset$. Hence $W \cap P = \emptyset$, and hence $P \subseteq X \setminus W$. On the other hand, suppose $x \in X \setminus P$. Then x has a neighbhorhood which interects E in only countably many points, and this neighborhood will contain an element of B. Thus x belongs to some element of B_E. In other words, $X \setminus P \subseteq W$, so $X \setminus W \subseteq P$. Taken together, these statements show that P is exactly the complement of W. Hence $E'' := (X \setminus P) \cap E = W \cap E = \bigcup (V \cap E : V \in \mathcal{B}_E)$, which is a countable union of countably many sets, hence is countable. So if $E' := E \cap P$, $E = E' \cup E''$, where E'' is countable. Now for any $x \in X$ and any neighborhood U of x, $U \cap E$ is uncountable iff $U \cap E'$ is uncountable. In particular, if p is a condensation point, then for any U, $U \cap P$ is uncountable, hence p is a limit point of P (even a condensation point).