

Using Raven's band-limited energy detector (BLED, aka the "BLOB" detector)

Things to keep in mind

- **The detector operates on the spectrogram.** If you change the spectrogram parameters, the detector results will change.
- **Use diagnostic mode to start.** It will save you a lot of time and keep you from wanting to hit the computer.
- **Don't expect good results to start;** getting good results is an iterative process. You just need to get *some* results, then you can refine them.
- **Understand the limitations of the detector and have realistic expectations.** Remember it's not paying attention to the shape of the sound; it's just looking at the energy in a rectangular box. If you expect to detect every target with no false alarms, you may need to cancel plans for the rest of your life to work on this.

What you need to start

Target tab

1. **Minimum and Maximum Frequency.**
2. **Minimum and Maximum Duration** of target events: It is simplest to measure these and configure the detector using time units of *frames*, rather than seconds. If they are all extremely similar, just measure one, then choose limits a couple of frames shorter and longer. If they vary a lot in length, measure a short one and a long one.
3. **Minimum Separation:** This should be small, probably much smaller than the typical separation between events. What is the longest gap you would expect *within* an event?

Noise tab

4. **Minimum Occupancy and SNR:** Start with the defaults, and fine-tune these later.
5. **Block Size:** Around 4x the Max Duration of your targets. This is usually not a very sensitive parameter, and you will rarely need to change it.
6. **Hop Size:** $\frac{1}{2}$ the Block Size.
7. **Percentile:** 20% (the default) usually works well.

Tuning / troubleshooting

- **Targets not identified as candidates:** lower the SNR threshold.
- **Reverberation after end of a target gets included in the candidate detection:** raise the SNR threshold; alternatively, use a lower percentile for the noise estimate.
- **A non-target sound overlaps beginning or end of targets, making them too long:** Consider whether you can exclude the non-target by adjusting the Min or Max Frequency parameter.