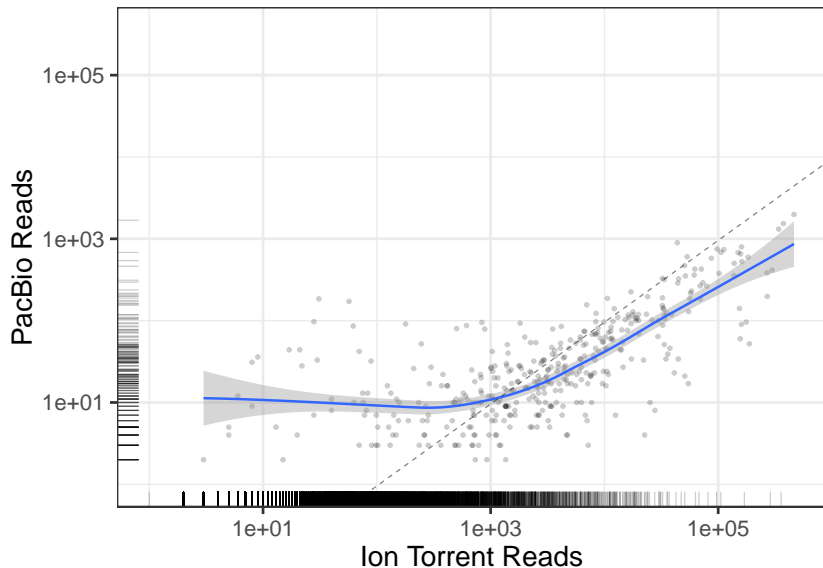


# Comparison of ASVs and OTUs between PacBio and Ion Torrent

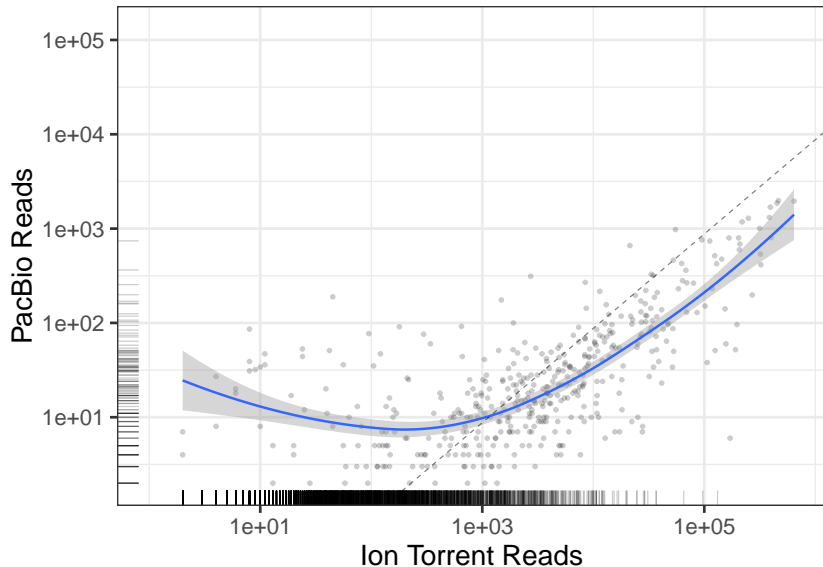
Brendan Furneaux

10 June 2019

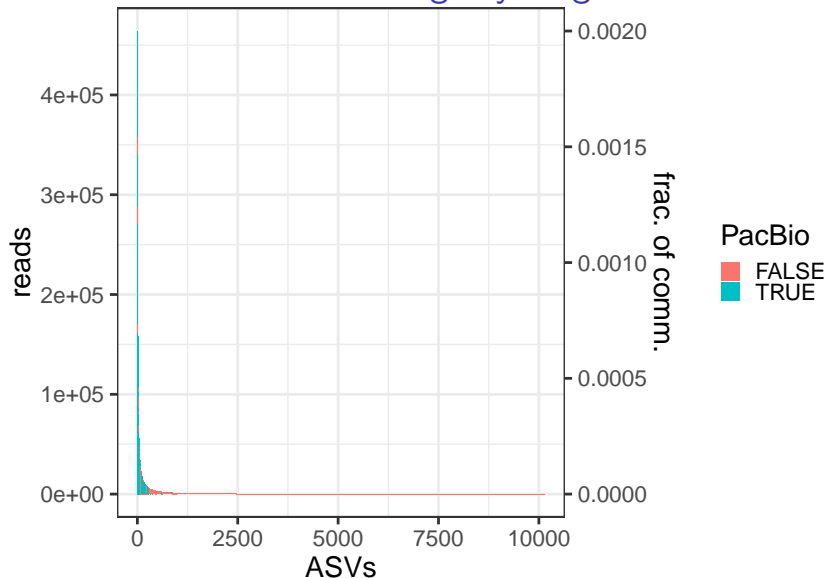
# Read number from PacBio vs. IonTorrent ASVs (ITS2)



# Read number from PacBio vs. IonTorrent ASV-OTUs (ITS2)

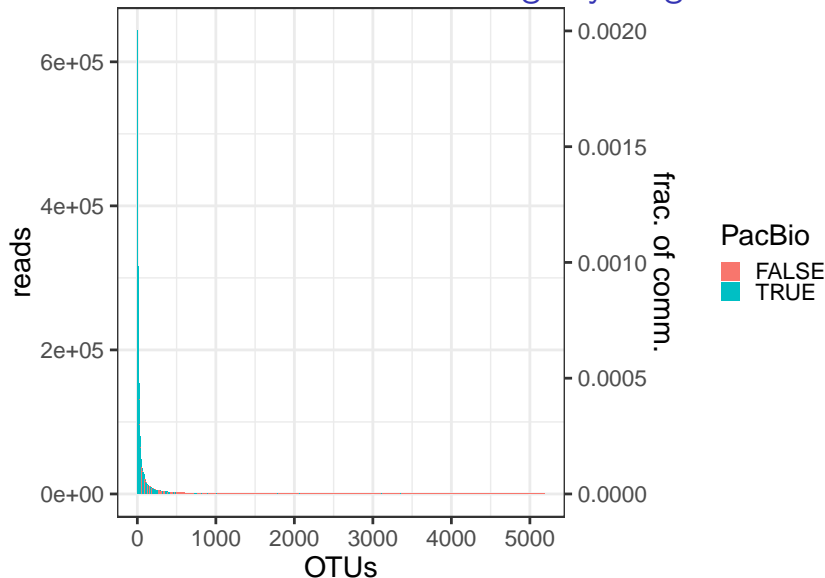


## IonTorrent ITS2 ASVs: coverage by long PacBio



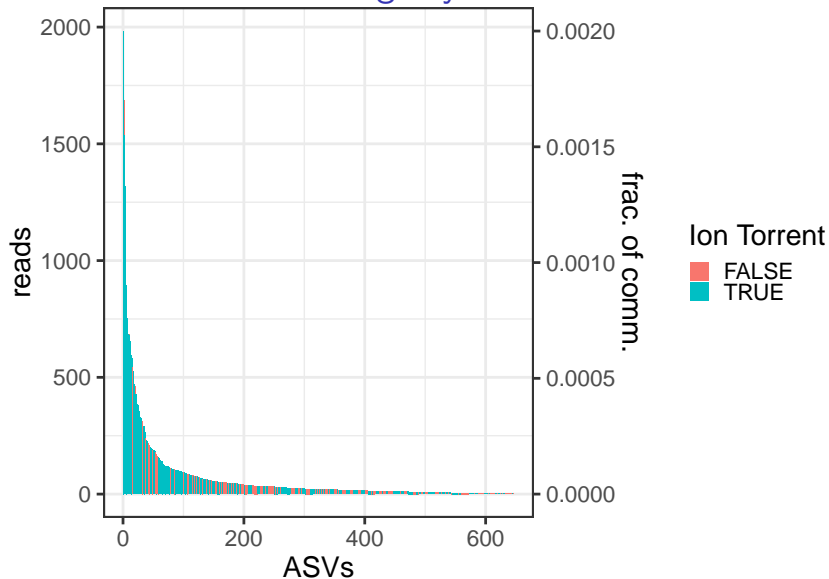
3.8% of IonTorrent ASVs (59.0% of reads) also include at least one PacBio read.

## IonTorrent ITS2 ASV-OTUs: coverage by long PacBio



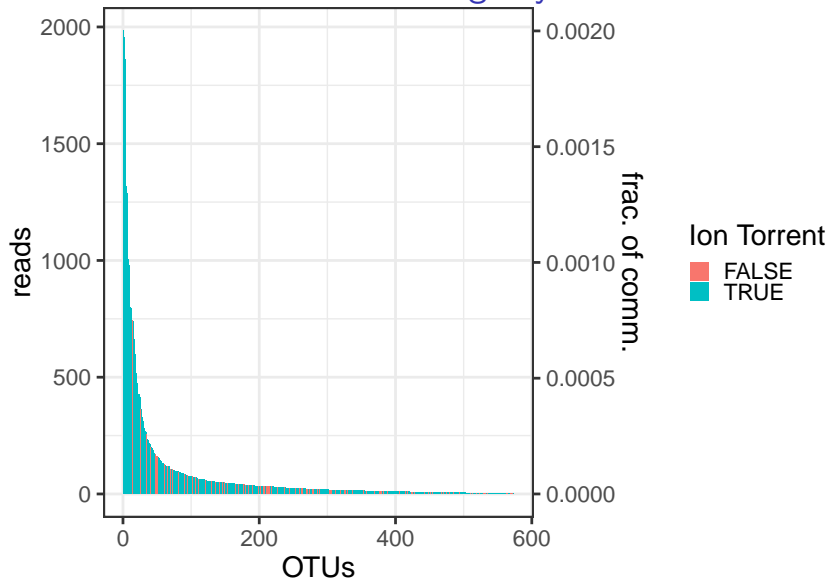
8.3% of IonTorrent OTUs (81.9% of reads) also include at least one PacBio ASV.

## PacBio ITS2 ASVs: coverage by Ion Torrent



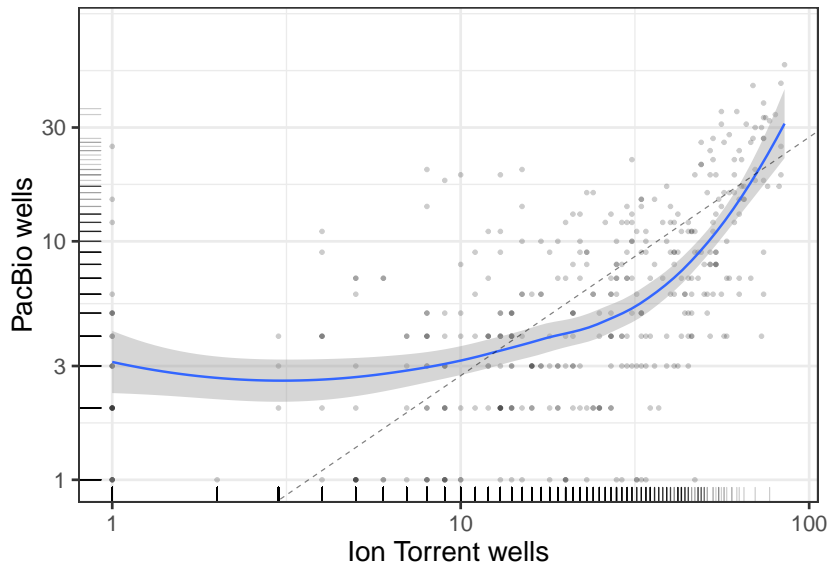
60.2% of PacBio ASVs (73.0% of reads) also include at least one IonTorrent read

## PacBio ITS2 ASV-OTUs: coverage by Ion Torrent



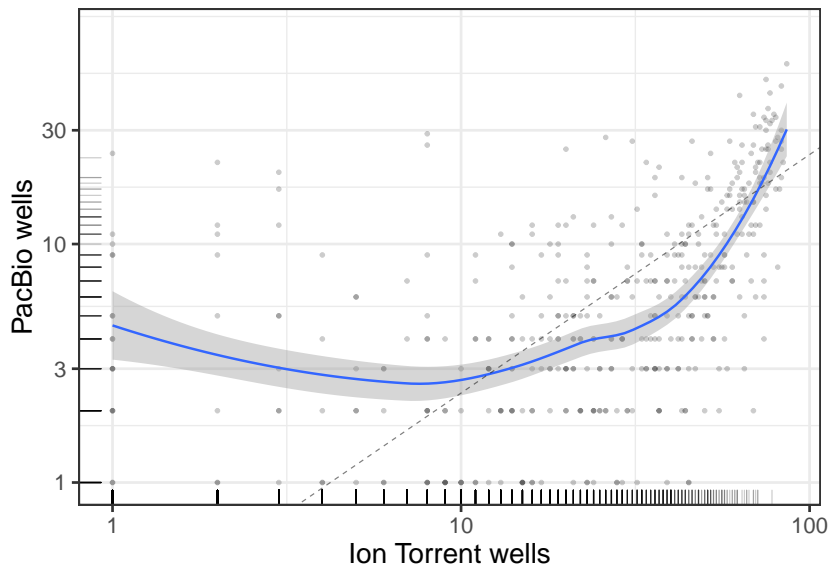
75.2% of PacBio OTUs (87.9% of reads) also include at least one IonTorrent ASV.

## ASV sample coverage





## OTU Sample coverage



## Costs going forward

- ▶ SciLife still has the short amplicon libraries for Ion Torrent
- ▶ Alternative 1: So we can resequence them on two Ion Torrent S5 530 chips and demultiplex
  - ▶ Cost (my best guess)  $2 \text{ runs} \times 14000 \frac{\text{sek}}{\text{run}} = 28000 \text{ sek}$
- ▶ Alternative 2: Pool these two libraries (total ~150 samples) with ITS2 library from spatial paper (same primers, ~100 samples), sequence on one Illumina MiSeq 2×300bp lane (~18M read pairs)
  - ▶ Compare total community recovered from PacBio, Ion Torrent, and Illumina on the transect samples
  - ▶ Cost (best guess)
$$3 \text{ libraries} \times 1000 \frac{\text{sek}}{\text{library}} + 1 \text{ run} \times 17000 \frac{\text{sek}}{\text{run}} = 20000 \text{ sek}$$
- ▶ Alternative 3: Forget the libraries from the transect paper and sequence a long amplicon library for the spatial paper on Sequel
  - ▶ We currently have 18 pools of 5 samples each. But not demultiplexed yet!
  - ▶ Cost - ask Anna about Peter's sequencing cost.