

FIB Characterization: Portrush

September 17, 2018

Intro

- This workbook characterizes the observed FIB values for the entire record of sampled data.

Data Setup

- Intestinal Enterococci (cfu/100ml)
 - Values below detection limit of 2 set to 1
- E-Coli (cfu/100ml)
 - Values below detection limit of 10 set to 1
- All values which were below the detection limit were treated as NAs, regardless if an actual value was given, to keep the record consistent.

Summary of Observed FIB

Distribution

```
##      date          EC          IE          EC_log10
## Min.   :1997-05-12  Min.   :    1.0  Min.   :    1.0  Min.   :0.000
## 1st Qu.:2002-06-15  1st Qu.:    1.0  1st Qu.:    4.0  1st Qu.:0.000
## Median :2007-06-30  Median :   15.2  Median :   10.0  Median :1.182
## Mean   :2007-06-11  Mean   :  209.7  Mean   :  133.2  Mean   :1.151
## 3rd Qu.:2012-07-27  3rd Qu.:   53.8  3rd Qu.:   33.0  3rd Qu.:1.731
## Max.   :2017-09-11  Max.   :29000.0  Max.   :10000.0  Max.   :4.462
## NA's   :3
##      IE_log10      sample
## Min.   :0.0000  Min.   :    1.0
## 1st Qu.:0.6021  1st Qu.:115.5
## Median :1.0000  Median :230.0
## Mean   :1.0747  Mean   :230.0
## 3rd Qu.:1.5185  3rd Qu.:344.5
## Max.   :4.0000  Max.   :459.0
##
```

Percentage Failure

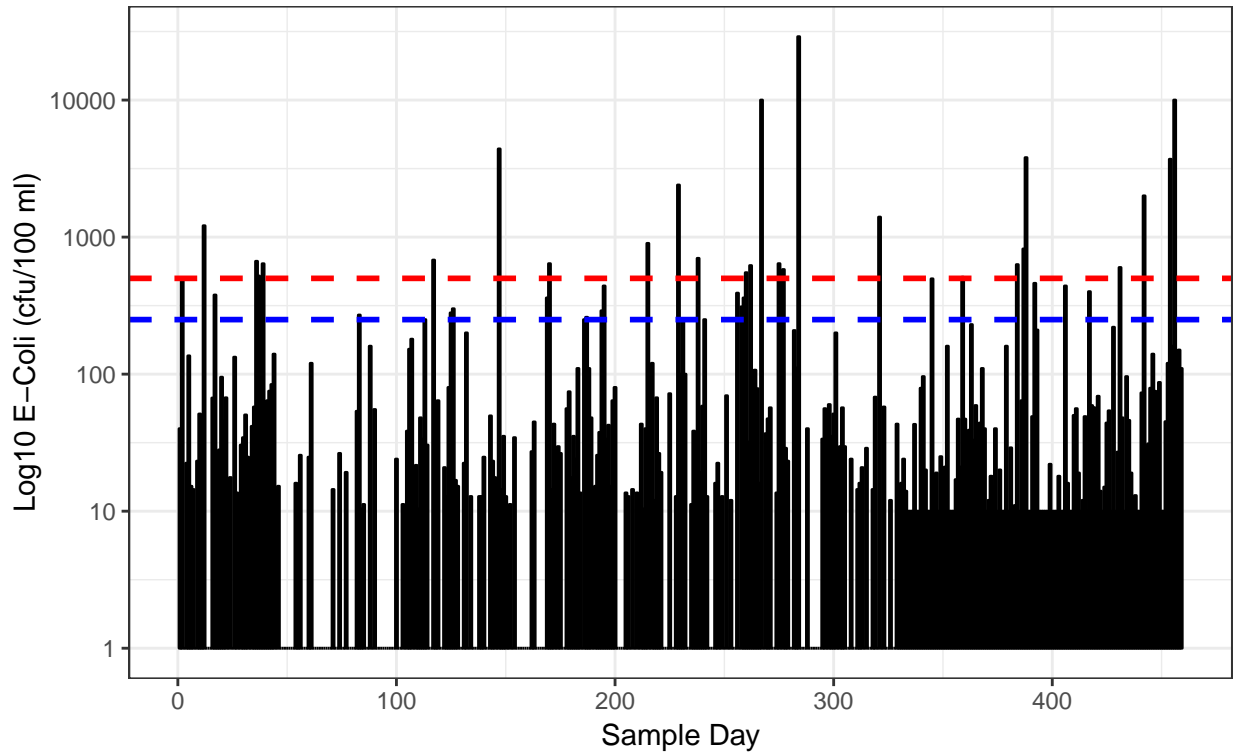
```
##      EC_excel  EC_good  IE_excel  IE_good
## 1 0.08932462 0.05446623 0.09150327 0.06971678
```

Bar-Charts

E-Coli

- These plots show the record of the observed E-Coli values.
- Bathing Water Quality Limits
 - blue = upper limit for “Excellent” water quality (250 cfu/100ml)
 - red = upper limit for “Good” water quality (500 cfu/100ml)

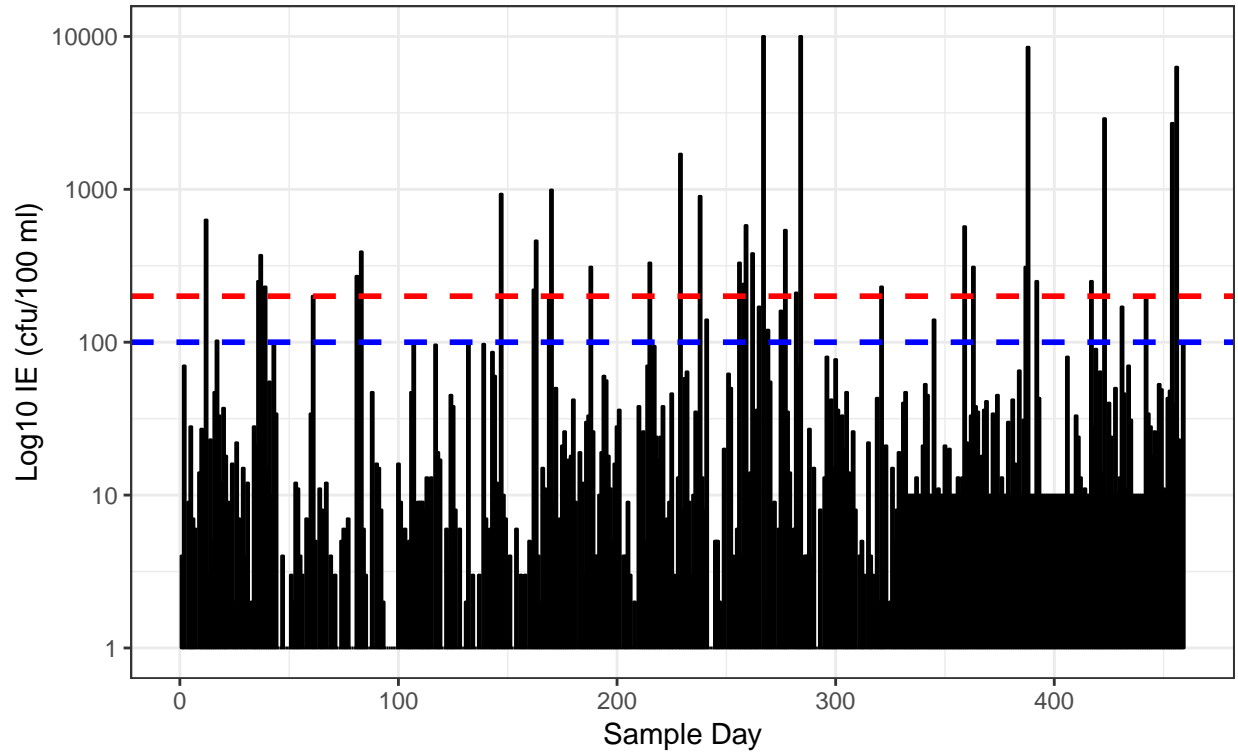
Observed E-Coli @ portrush
1997 – 2017



IE

- These plots show the record of the observed IE values.
- Bathing Water Quality Limits
 - blue = upper limit for “Excellent” water quality (100 cfu/100ml)
 - red = upper limit for “Good” water quality (200 cfu/100ml)

Observed IE @ portrush
1997 – 2017



FIB Relationship

- Same water quality limits as previous
- R-Squared is for the logged correlation

Observed Intestinal Enterococci & E-Coli @ portrush
1997 - 2017

