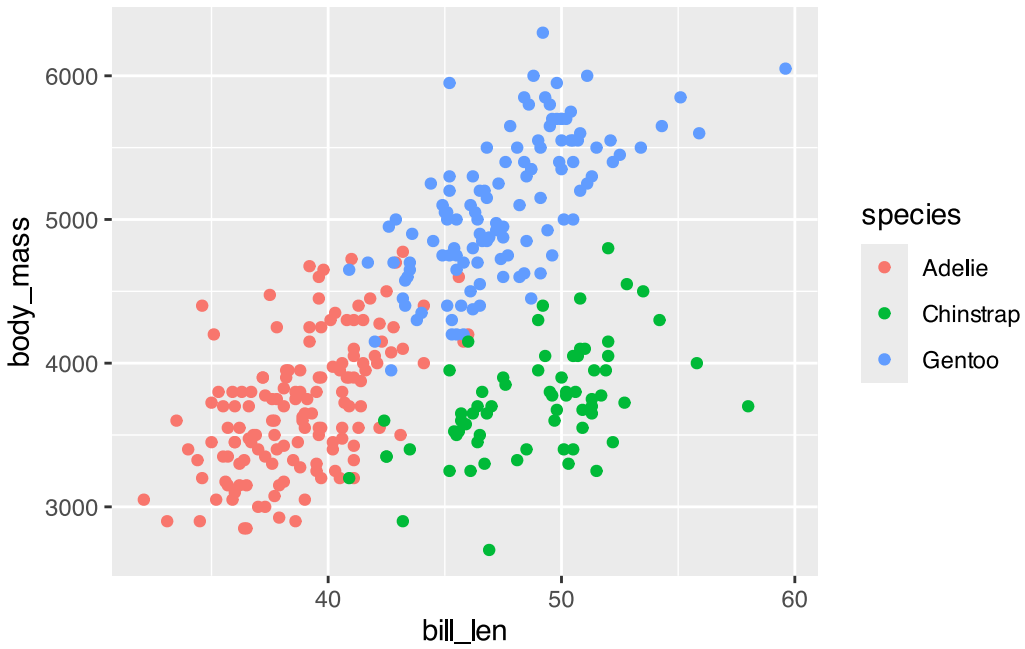
Analysis

```
library(tidyverse)
library(tidybayes)
library(targets)
library(marginaleffects)
library(modelsummary)
library(parameters)
library(patchwork)

tar_load(penguins)
tar_load(c(model1_bayes, model2_bayes))
```

Look at data

```
ggplot(penguins, aes(x = bill_len, y = body_mass, color = species)) +
  geom_point()
```



Look at models

Here is model 1

```
model_parameters(model1_bayes, verbose = FALSE)
```

```
# Fixed Effects

Parameter   | Median |            95% CI |     pd |  Rhat |  ESS
------------------------------------------------------------------
(Intercept) | 394.74 | [-203.64, 962.24] | 90.33% | 1.000 | 3888
bill_len    |  86.72 | [  73.86, 100.09] |   100% | 1.000 | 3907

# sigma Parameters

Parameter | Median |           95% CI |   pd |  Rhat |  ESS
-----------------------------------------------------------
sigma     | 653.05 | [604.48, 708.34] | 100% | 1.000 | 3630
```

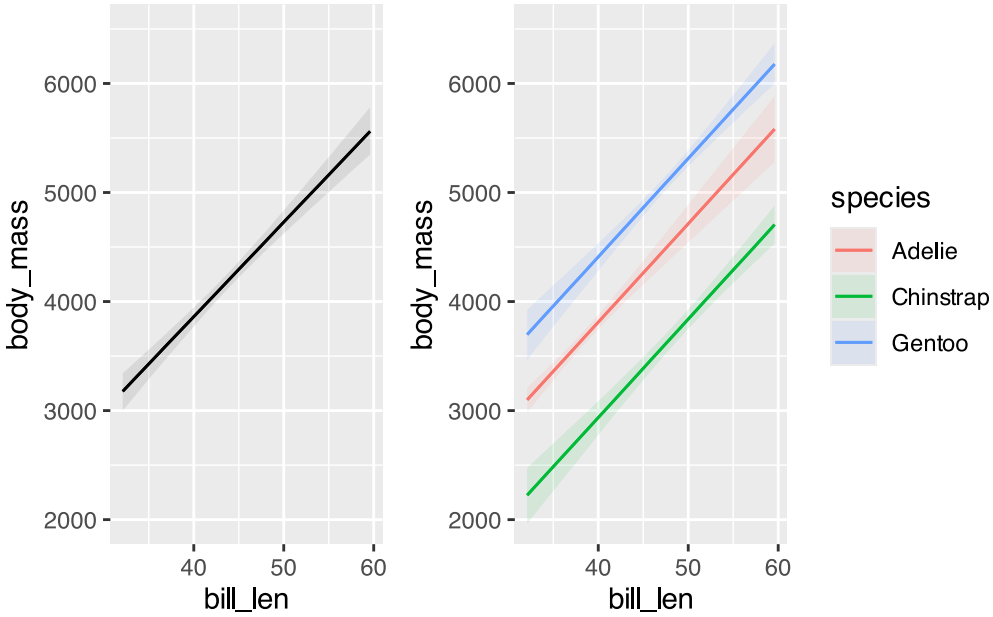
Here are both:

```
modelsummary(list(model1_bayes, model2_bayes), statistic = "[{conf.low},
{conf.high}]",
      ci_method = "hdi",
      metrics = c("R2"), fmt = 1)
```

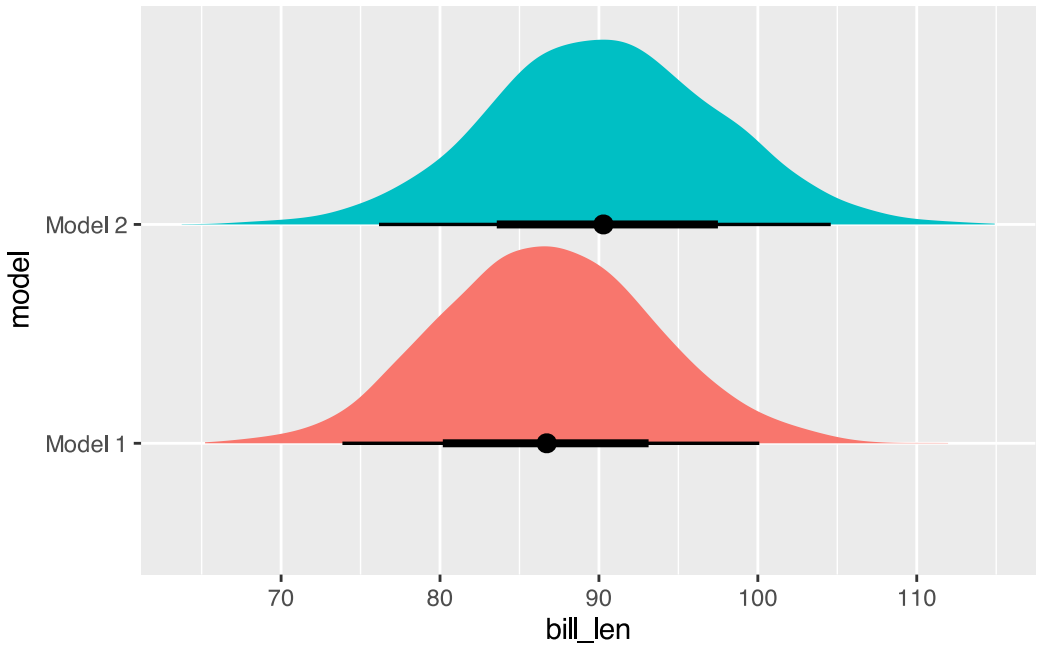
	(1)	(2)
b_Intercept	394.7	201.7
	[-209.7, 948.8]	[-332.1, 775.9]
b_bill_len	86.7	90.3
	[74.1, 100.2]	[76.0, 104.4]
sigma	653.1	375.5
	[601.1, 703.9]	[347.0, 404.5]
b_speciesChinstrap		-876.2
		[-1054.5, -700.1]
b_speciesGentoo		599.3
		[443.2, 753.3]
Num.Obs.	333	333
R2	0.347	0.784

```
p1 <- model1_bayes |>
  plot_predictions(condition = c("bill_len")) +
```

```
  coord_cartesian(ylim = c(2000, 6500))

p2 <- model2_bayes |>
  plot_predictions(condition = c("bill_len", "species")) +
  coord_cartesian(ylim = c(2000, 6500))

p1 | p2
```




```
bill_len_model_1 <- model1_bayes |>
  gather_draws(b_bill_len) |>
  mutate(model = "Model 1")

bill_len_model_2 <- model2_bayes |>
  gather_draws(b_bill_len) |>
  mutate(model = "Model 2")

bind_rows(bill_len_model_1, bill_len_model_2) |>
  ggplot(aes(x = .value, y = model, fill = model)) +
  stat_halfeye() +
  guides(fill = "none") +
  labs(x = "bill_len")
```


model
Model 2
Model 1
70
80
90
100
110
bill_len