

carbon_model.rb

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sabshere 2/10/11 pulled from Species.fallback kg CO2 / joule

```
require 'weighted_average'

module BrighterPlanet
  module Pet
    module CarbonModel
      def self.included(base)
        base.decide :emission, :with => :characteristics do
          committee :emission do
            quorum 'from diet size', :needs => [:diet_size,
:diet_emission_intensity, :active_subtimeframe] do |characteristics,
timeframe|
              characteristics[:active_subtimeframe].days *
characteristics[:diet_size] * characteristics[:diet_emission_intensity] +
ANNUAL_VETERINARY_EMISSION * (characteristics[:active_subtimeframe] /
timeframe.year)
            end
          end

          committee :diet_emission_intensity do # kg/joule
            quorum 'from species', :needs => :species do |characteristics|
              characteristics[:species].diet_emission_intensity
            end

            quorum 'default' do

              Species.weighted_average :diet_emission_intensity,
:weighted_by => :population
            end
          end

          committee :diet_size do # joules
            quorum 'from weight', :needs => [:weight,
:marginal_dietary_requirement, :fixed_dietary_requirement] do
|characteristics|
              characteristics[:weight] *
characteristics[:marginal_dietary_requirement] +
characteristics[:fixed_dietary_requirement]
            end
          end
        end
      end
    end
  end
end
```

sabshere 2/10/11 pulled from Species.fallback

sabshere 2/10/11 pulled from Species.fallback force a zero intercept to be respectful of our tiny tiny animal friends

```
end

committee :marginal_dietary_requirement do # joules/kg
  quorum 'from species', :needs => :species do |characteristics|
    characteristics[:species].marginal_dietary_requirement
  end

  quorum 'default' do

    Species.marginal_dietary_requirement_fallback
  end
end

committee :fixed_dietary_requirement do # joules
  quorum 'from species', :needs => :species do |characteristics|
    characteristics[:species].fixed_dietary_requirement
  end

  quorum 'default' do

    0.0
  end
end

committee :weight do # kg
  quorum 'from breed and gender', :needs => [:breed, :gender] do
|characteristics|
    if breed_gender =
BreedGender.find_by_breed_name_and_gender_name(characteristics[:breed].name,
characteristics[:gender].name)
      breed_gender.weight
    end
  end

  quorum 'from breed', :needs => :breed do |characteristics|
    characteristics[:breed].weight
  end

  quorum 'from species', :needs => :species do |characteristics|
    characteristics[:species].weight
  end

  quorum 'default' do
```

sabshere 2/10/11 pulled from Species.fallback kg

```
        Species.weighted_average :weight, :weighted_by => :population
      end
    end

    committee :active_subtimeframe do
      quorum 'from acquisition and retirement', :needs =>
[:acquisition, :retirement] do |characteristics, timeframe|
        Timeframe.constrained_new
characteristics[:acquisition].to_date, characteristics[:retirement].to_date,
timeframe
      end
    end

    committee :acquisition do
      quorum 'from retirement', :appreciates => :retirement do
|characteristics, timeframe|
        [ timeframe.from, characteristics[:retirement] ].compact.min
      end
    end

    committee :retirement do
      quorum 'from acquisition', :appreciates => :acquisition do
|characteristics, timeframe|
        [ timeframe.to, characteristics[:acquisition] ].compact.max
      end
    end
  end

  ANNUAL_VETERINARY_EMISSION = 0.00437.tons.to :kilograms # kg CO2e per
https://brighterplanet.sifterapp.com/projects/30/issues/846/comments
end
end
end
```