

<https://github.com/matplotlib/matplotlib/issues/16482>

Issue #16482:

Pyplot hlines and vlines do not use the 'lines.color' property in rcParams by default

Branch with fix: https://github.com/RiazCharania/matplotlib/tree/issue_16482

Description:

The issue was that hlines and vlines would not always default to the 'lines.color' property in rcParams. This was fixed by changing the default argument parameter for colors in the respective functions to None instead of 'k' (black). This decision means that regardless of whether colors=None or is unspecified, the default behaviour will now use the default color cycle instead of black.

Issues encountered:

The first attempt was to set the default parameter directly to the rcParams value. But this didn't fit with how other arguments were handled and lead to unexpected results.

The second idea was to leave the default behaviour how it was and only set it to the rcParams property if that had been changed. But the current behaviour is not clearly documented in the documentation and though it might work as intended, it doesn't seem to. We could've just edited the documentation but instead chose a solution where the behaviour worked consistently regardless of whether colors=None or unspecified, even when the rcParams value hasn't been changed and edited the documentation accordingly. This shouldn't impact experienced users and the functionality will be clear and correct for newer or casual users.

Modified files (From the root directory):

- lib/matplotlib/axes/_axes.py
- lib/matplotlib/pyplot.py
- lib/matplotlib/tests/test_pyplot.py
 - unit tests were added

Unit Tests:

1. Install pytest package

On Linux or macOS:

- a. `pip install -U pip`
- b. `pip install -U pytest`

On Windows

- a. `python -m pip install -U pip`
- b. `python -m pip install -U pytest`

2. Clone the branch with the bug fixed

- a. `git clone https://github.com/RiazCharania/matplotlib.git --branch=issue_16482`

3. Change the terminal directory to the root of the cloned directory

- a. `cd matplotlib`

4. Run the unit test

- a. `python -m pytest lib/matplotlib/tests/test_pyplot.py::test_default_line_colors`
- b. `python -m pytest lib/matplotlib/tests/test_pyplot.py::test_white_line_colors`