Quick-guide to common filamentous green algae New Zealand fresh waters
(All genera belong within the Chlorophyta, except for two within Ochrophyta: Xanthophyceae)

**Part A**

1. **Filaments branched**
   - **YES**
   - Central filaments very much wider than end branches
     - **YES**
     - In green gelatinous masses (up to 5 cm); under the microscope, densely branched
       - **YES**
       - Cross walls present
         - **YES**
         - Spine-like structures (setae) attached to cells
           - **YES**
           - Irregular branching, filaments narrow tapering at ends
             - **YES**
             - Wide filaments
               - **YES**
               - Long cells, dense chloroplasts
                 - **YES**
                 - Cells irregular lengths and widths, branching at right angles
                   - **YES**
                   - Protoderma stage of bryophyte (moss) (not a green alga, but easily confused)
                     - **YES**
                     - Filaments made up of rows of cells, very variable width, up to 100 µm diameter
                       - **YES**
                       - Ulva (formerly Enteromorpha)

   - **YES**
   - No cross walls
     - Unbranched filaments

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Unbranched filaments

Branched filaments, no cross walls

NO

VAUCHERIA
Ochrophyta: Xanthophyceae

Branched filaments, yes

YES

Cylindrocapsa

Ochrophyta: Xanthophyceae

Unbranched filaments

NO

Geminella

Spherical, with distinctive red pigmentation and mucilage sheath.

In wetlands and lake edges.

Cells separated within the filament

NO

Multiple small chloroplasts

Microspora

Ochrophyta: Xanthophyceae

Dense parietal chloroplasts (lying flat against the cell wall)

H-shaped sections not present

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Part C

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Filaments not branched
Cells arranged end to end
No H-shaped sections in cell walls

Chloroplast clearly spiral

Chloroplast a lengthwise sheet

Chloroplast a distinct ring or near-complete ring

Chloroplast covering a small portion of the cell wall

Chloroplast large, reticulate (like a net)
Scarring (concentric rings) on some cells

YES

Spirogyra
Mougeotia
Ulothrix
Klebsormidium
Oedogonium
Zygnema
Rhizoclonium

Chloroplast parietal (lying flat against the cell wall)

Chloroplasts otherwise

Chloroplasts in pairs

Dense reticulate chloroplasts

Very long cells

For short cells, check Melosira (see diatom key)