CLAIMS

1. ~~(Amended)~~ A protective film for a magnetic recording medium, ~~wherein the protective film contains~~ comprising amorphous carbon containing fluorine and nitrogen, the fluorine is present in a region 0.5 nm deep from a surface of the protective film, the nitrogen is present in a region 0.5 nm deep from the surface of the protective film~~, and the protective film is made from amorphous carbon~~.

~~2. (Deleted)~~

~~3. (Deleted)~~

~~4~~ 2. The protective film according to claim 1, wherein the protective film has a film thickness of equal to or greater than 1.7 nm but equal to or less than 2.3 nm.

~~5. (Deleted)~~

~~6~~ 3. The protective film according to claim 1, wherein the fluorine and nitrogen are each added in an amount of 5 to 20 at.%.

~~7~~ 4. A magnetic recording medium, comprising a substrate, a metal film layer placed on the substrate, and a protective film according to claim 1 placed on the metal film layer~~, wherein the protective film is the protective film described in claim 1~~.

~~8~~ 5. The magnetic recording medium according to claim ~~7~~ 4, wherein a lubricating film is placed on the protective film

and has a film thickness of equal to or greater than 0.6 nm but equal to or less than 1.0 nm.

~~9~~ 6. A method for producing a protective film for a magnetic recording medium, comprising:

a step of forming the protective film on a stacked body containing a substrate and a metal film layer formed on the substrate; and

a step of plasma-processing the protective film in a fluorine-containing gas and a nitrogen-containing gas,

wherein the fluorine is present in a region 0.5 nm deep from a surface of the protective film, the nitrogen is present in a region 0.5 nm deep from the surface of the protective film, and the protective film is made from amorphous carbon.