

The Secret life of Tux the Penguin

Richard Neill



You'll be glad to hear that I'm not going to talk about PulseBlaster programming. Instead, I'm going to talk about...



```
parse.php - KWrite
File Edit View Bookmarks Tools Settings Help

if (preg_match("/^[0-9]+$/",$input)){ //What kind of number do
    $number=intval($input); // base 10 integer
}elseif (preg_match("/^0x[0-9a-f]+$/",$input)){
    $number=intval(substr($input,2),16); // base 16 integer (s
}elseif (preg_match("/^0b[01]+$/",$input)){
    $number=intval(substr($input,2),2); // base 2 integer (st
}elseif (preg_match("/^[0-9]+\.[0-9]+$/",$input)){
    $number=$input; // base 10 decimal
}else{
    fatal_error("' $complicated_string' cannot be recognised as a num
}

$number*=$multiplier; // * multiplier
$output=round($number); //make this an integer.

if ($output!=$number){
    if ((abs($output-$number))<0.01){ //Warn if output had to
        $degree='slightly'; //other than multiples o
    }elseif ((abs(($output-$number)/$number))>0.1){ // 'slightly' means round
        $degree='SUBSTANTIALLY';
    }else{
        $degree='';
    }
    print_warning ("number '$complicated_string' was$degree rounded
}
#echo "\$complicated_string is $complicated_string and \multiplier is $

return ($output); //return the value. Hope
```


...Penguins! And some of the science I learned in **Antarctica**.
I shall tell you a little about penguins, and about conservation.



Before I went, I believed that penguins ate **herring**, that they could move at speeds of **100 mph**, and that **Linus** was actually an authoritative source of penguin information:

Now, when you think about penguins, first take a deep calming breath, and then think "cuddly". Take another breath, and think "cute". Go back to "cuddly" for a while (and go on breathing), then think "contented". With me so far? Good..

Now, with penguins, (cuddly such), "contented" means it has either just gotten laid, or it's **stuffed on herring**. Take it from me, I'm an expert on penguins, those are really the only two options.

Now, working on that angle, we don't really want to be associated with a randy penguin (well, we do, but it's not politic, so we won't), so we should be looking at the "stuffed to its brim with **herring**" angle here.

So when you think "penguin", you should be imagining a slightly overweight penguin, sitting down after having gorged itself, and having just burped. It's sitting there with a beatific smile - the world is a good place to be when you have just eaten a few gallons of raw fish and you can feel another "burp" coming.

"Some people have told me they don't think a fat penguin really embodies the grace of Linux, which just tells me they have never seen an **angry penguin charging at them in excess of 100mph**. They'd be a lot more careful about what they say if they had."

Adelie Penguin

(black and white)



Gentoo Penguin

(orange beak, feet)

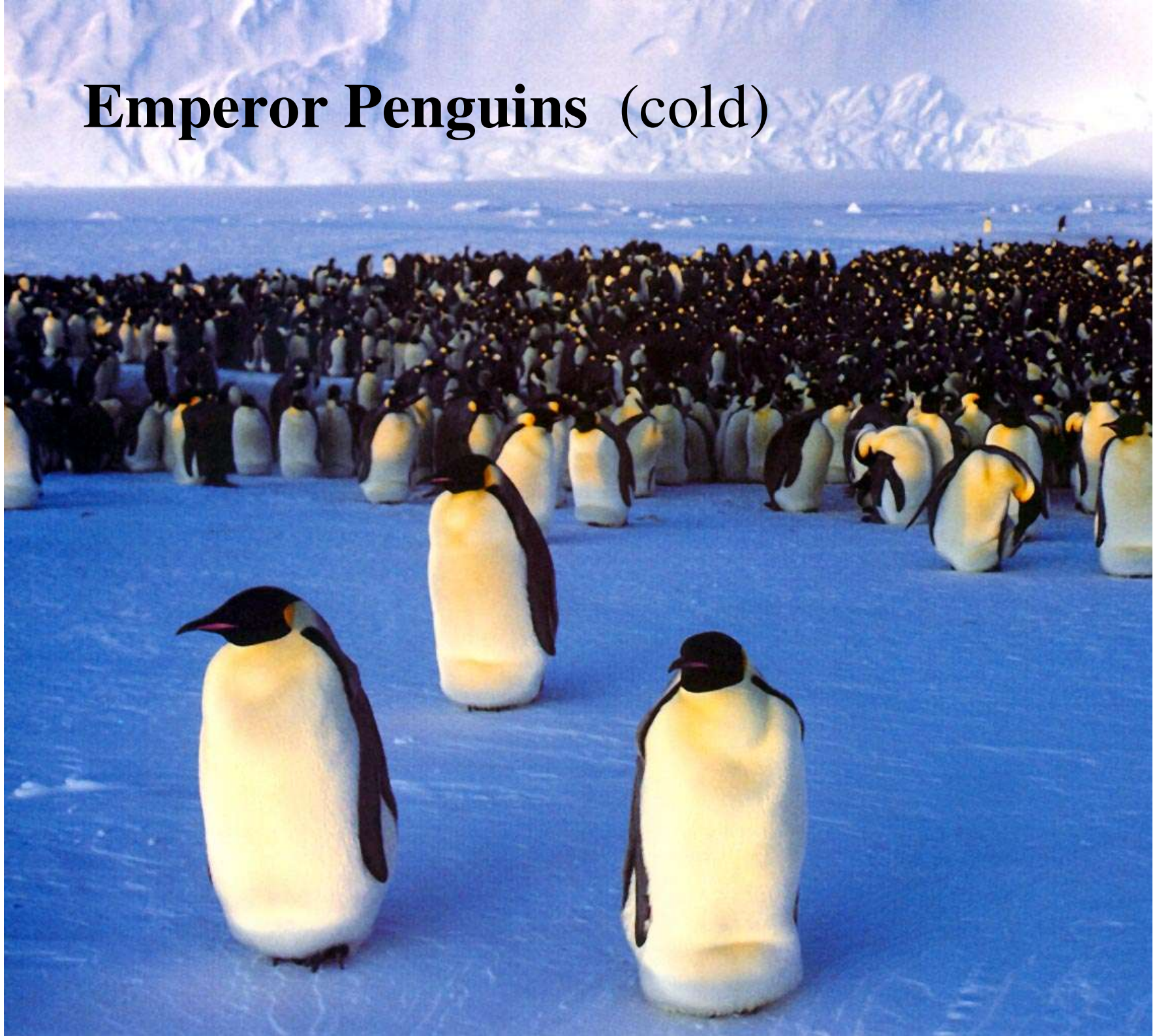


Chinstrap Penguin

:-)



Emperor Penguins (cold)





Penguins eat mainly **krill**. They also eat some other fish, but *not herring* (which are present only in the northern seas.)

Krill are small shrimp, and present in **vast** numbers.

The krill in their turn, eat plankton.

Krill are fished quite heavily and fishing in Antarctica is set to increase.



Krill taste “a bit like prawns, and are good with garlic and butter”.

They are often found in “generic” fish pies. (The shells contain a large amount of fluoride, which would be toxic if they were not de-shelled; the de-shelling is fiddly, and must be done by hand.)

Krill farming is a topic of current research – they are difficult to breed in captivity!

Penguins nest very close together on rocky outcrops.



Pebbles are precious. Some penguins use them as “currency”.



Penguins stay **warm** with lots of insulation.

They stop their feet from freezing by having a **heat exchanger** in each leg. This means that they don't lose much heat, despite standing barefoot on the snow.

In the deep south, Emperor penguins have no rocks. So they keep their eggs balanced on their feet until they hatch!



Penguins are very clumsy on land...



...but are very **elegant** in water. As birds, they evolved wings for flight. Then they decided they didn't want to be airborne after all, and so have lost the ability. They “fly” spectacularly under water – it must be fun!



The Antarctic has a rich biodiversity. Seals include the **Crabeater seal** (which actually eats krill), the **Leopard seal**, the **Elephant seal** (up to 4 tonnes) , and the **Weddell seal** (here).



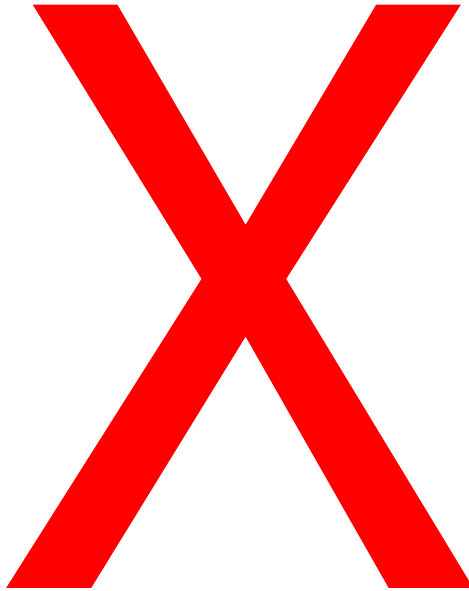
This is a
White Petrel



This is a **Skua**.
(It eats penguin eggs!)



3 **Minke whales** swam right under our boat...
...but it was so exciting, I mis-loaded the film!



The Antarctic is currently **endangered** by:

- **Overfishing**
- **Global Warming**
- **The Ozone Hole**
- **Long line fishing**
- **Tourism ?**

Overfishing

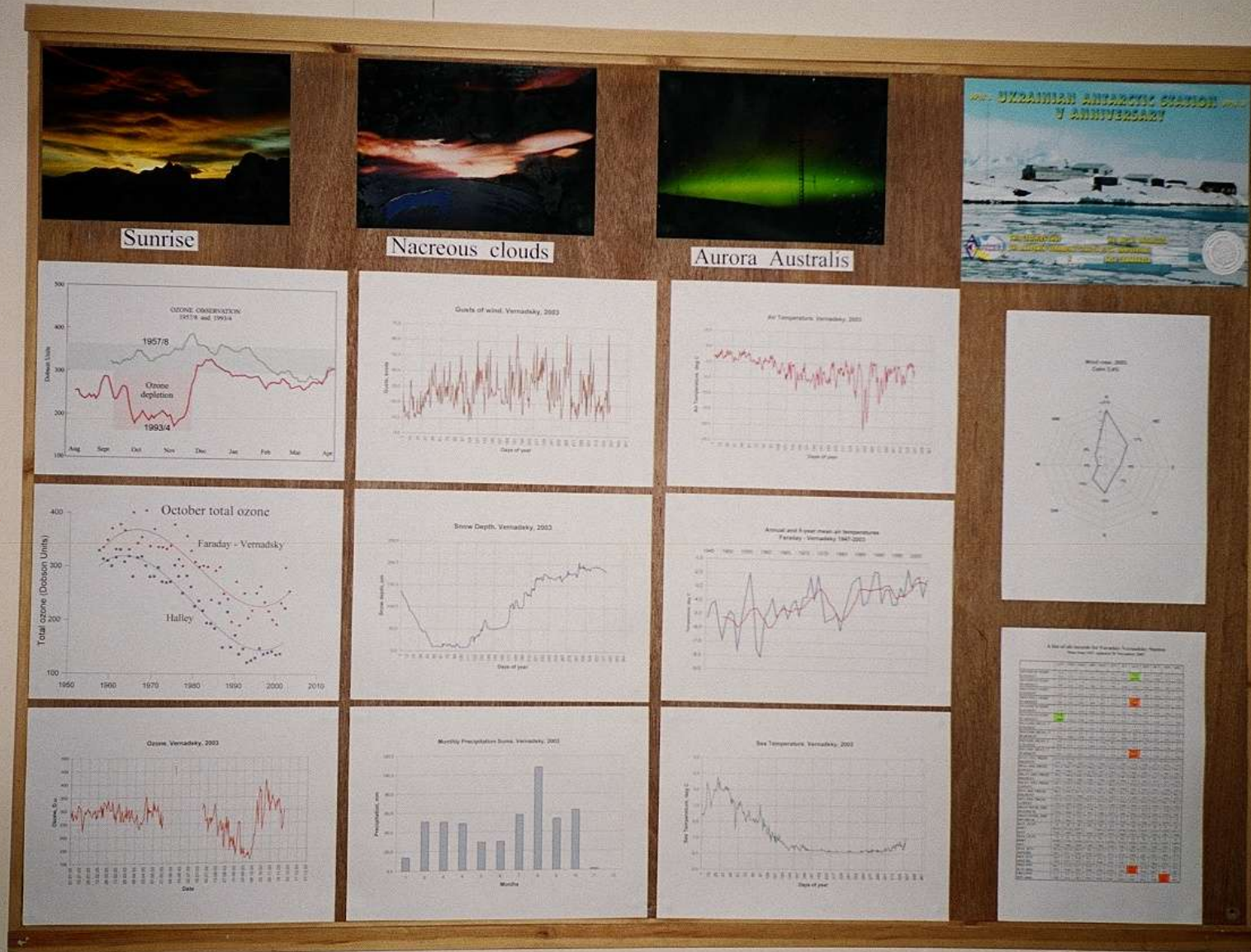
Currently, about **120,000** tonnes of krill are harvested annually. This is *well* below the sustainable limit. But, as other fisheries become exhausted, the pressure may increase.

The **Patagonian Toothfish** (Chilean Seabass) is very desirable, and is being overfished by unlicensed pirates. However, at least the Australian Fisheries Patrol is taking action, and has had some success in catching them.

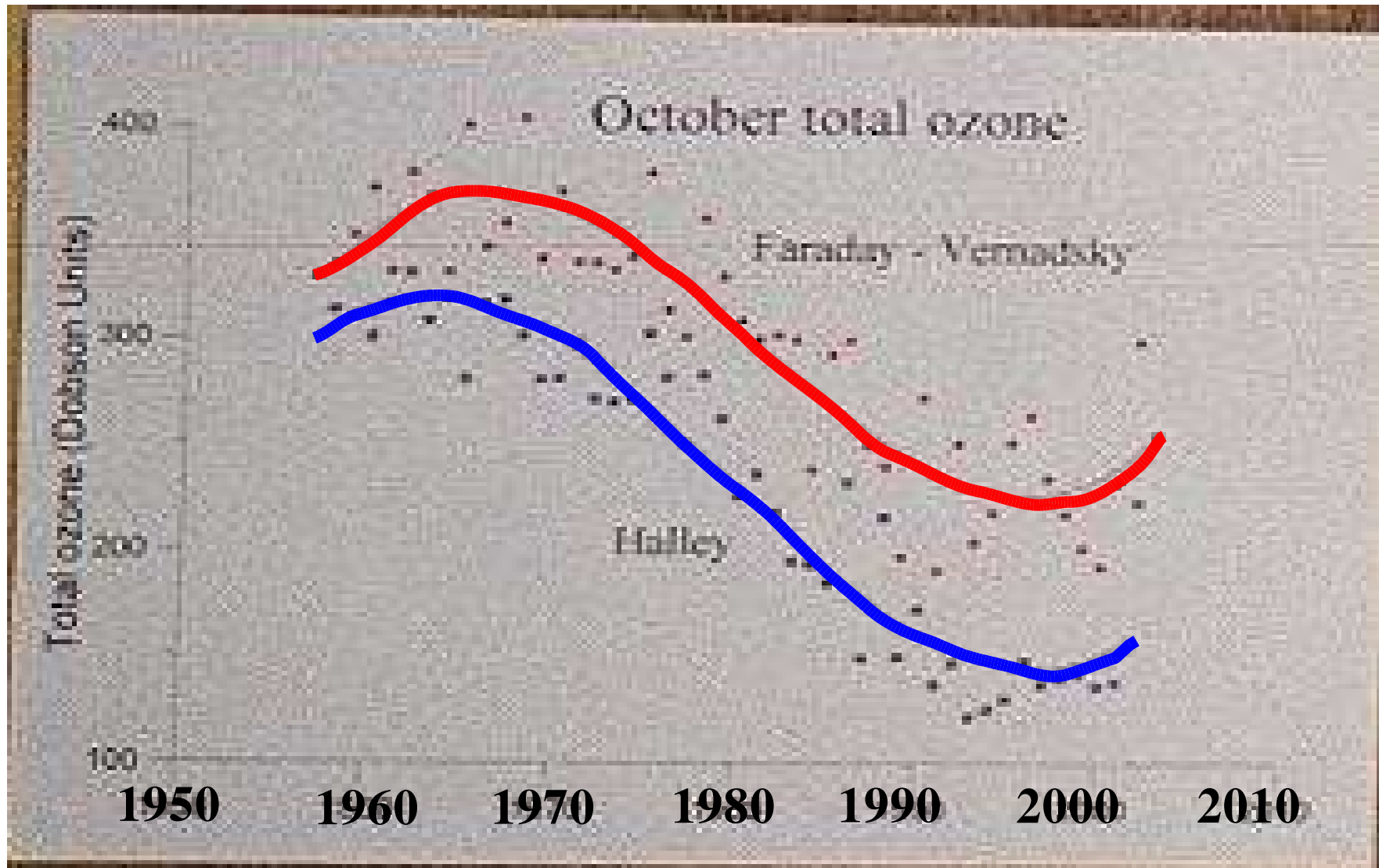
Global Warming: the icebergs are melting, penguins move south.



The Ozone Hole – Measured at Vernadsky (Faraday) Station



The Ozone Hole. This is measured from 1950 - 2003
We can be *slightly* optimistic that it is improving.

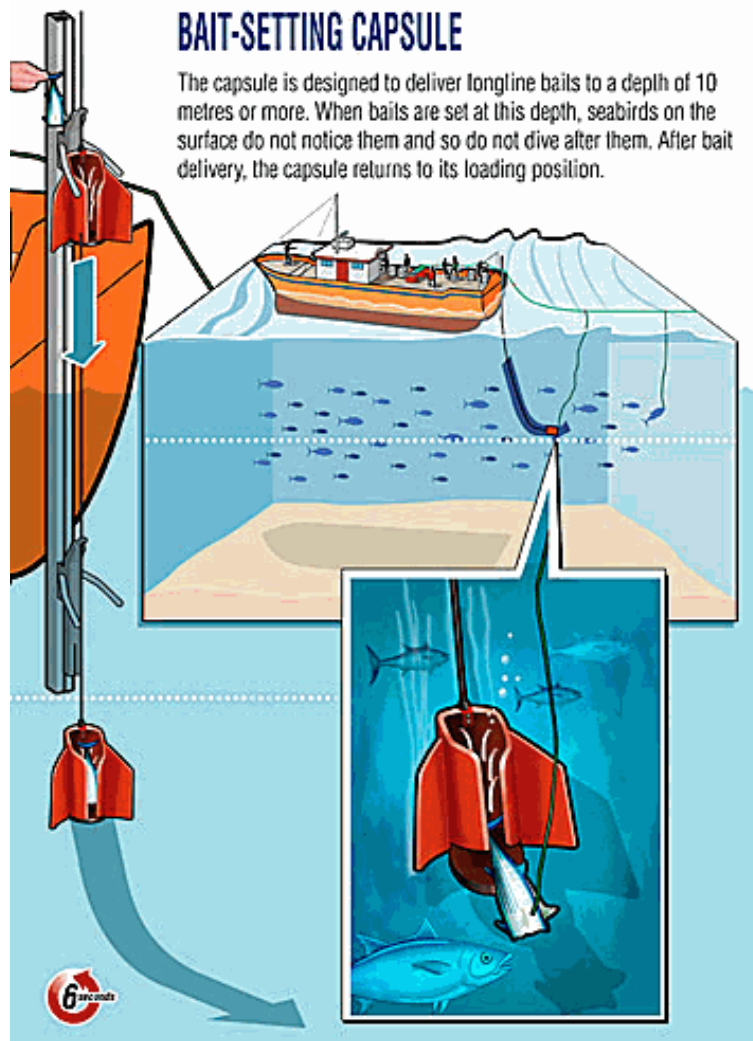


Long line fishing puts birds at risk. The ship puts out 10 km of fishing line, automatically baited every 10 m. When this is reeled in, it has caught many fish. Unfortunately, many seabirds go for the bait, and 30 000 die every year *per ship* as an accidental consequence.

The **wandering albatross** is particularly hard hit by this.



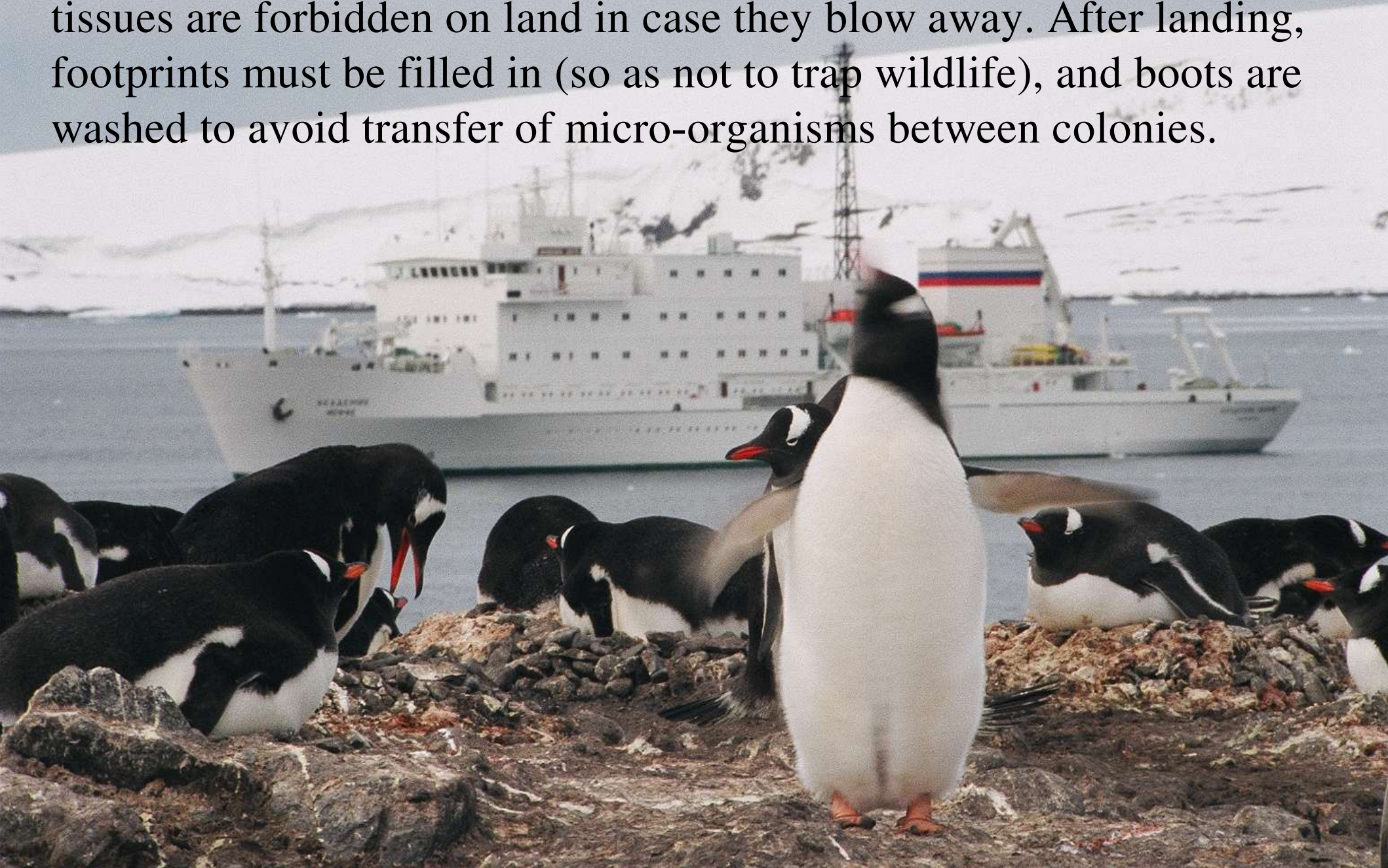
There are some **simple solutions**, which, if implemented, can reduce the accidental by-catch to 2 or 3 birds per year. These are:



- Set the bait below the waterline
- Use streamers to scare away birds
- Don't set bait at night with lights on.

Unfortunately, the **pirate** ships, which make the largest catches, have no incentive for conservation.

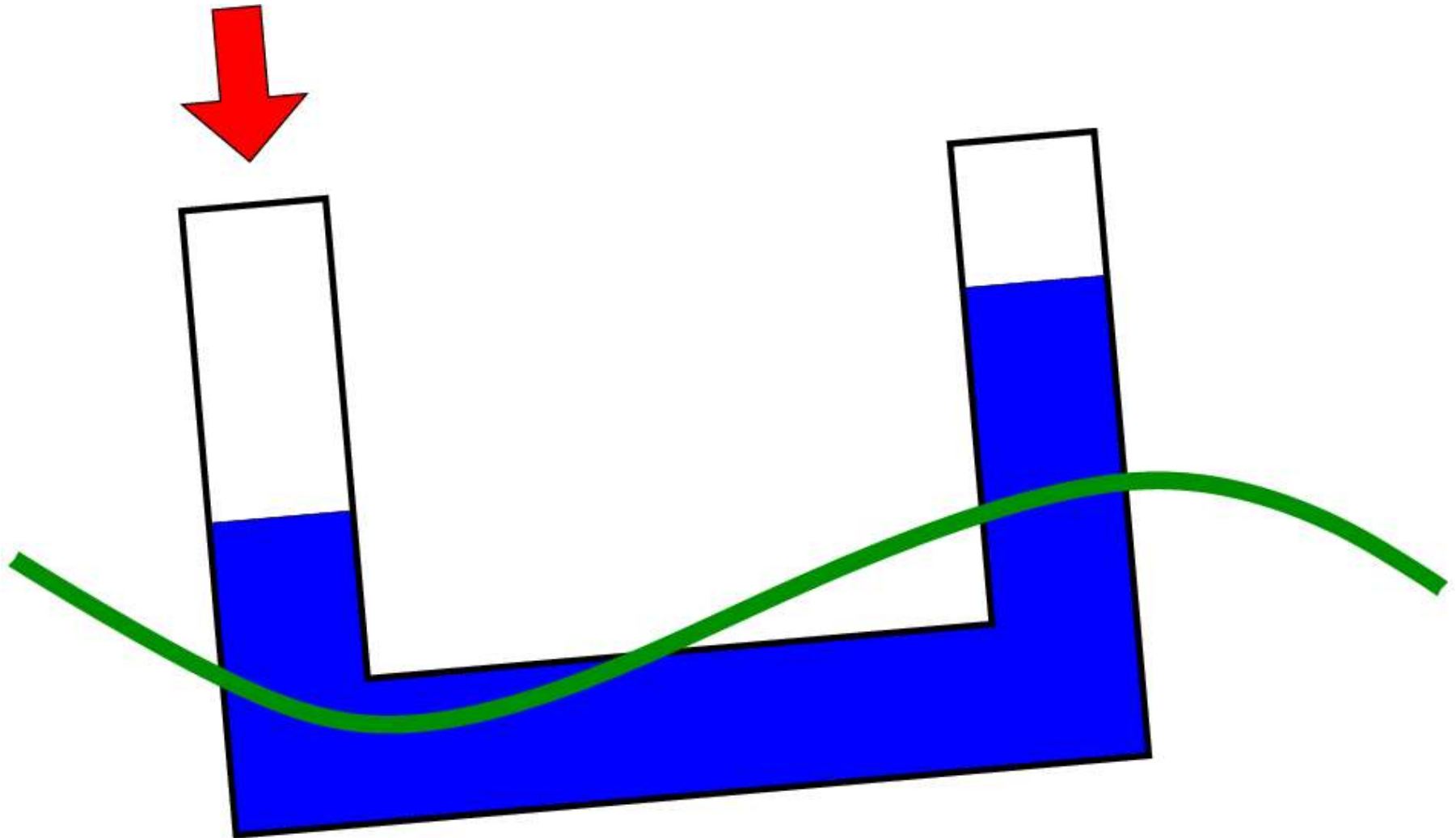
Tourism is probably **not** a threat. The numbers are limited, and very great care is taken by IAATO. Everything is taken home – even paper tissues are forbidden on land in case they blow away. After landing, footprints must be filled in (so as not to trap wildlife), and boots are washed to avoid transfer of micro-organisms between colonies.



Antarctica is still pristine. All we added was some CO₂



The Akademik Ioffe is equipped with **stabilisers**. The rolling motion is damped by hydraulics: these predictively pump water between tanks out of phase with the ocean swell.



The Constellations
are **upside down!**



[image from Stellarium]

**22 hours
daylight**



Any Questions?



? ?
? ?



? ?
? ?
?

-- The End