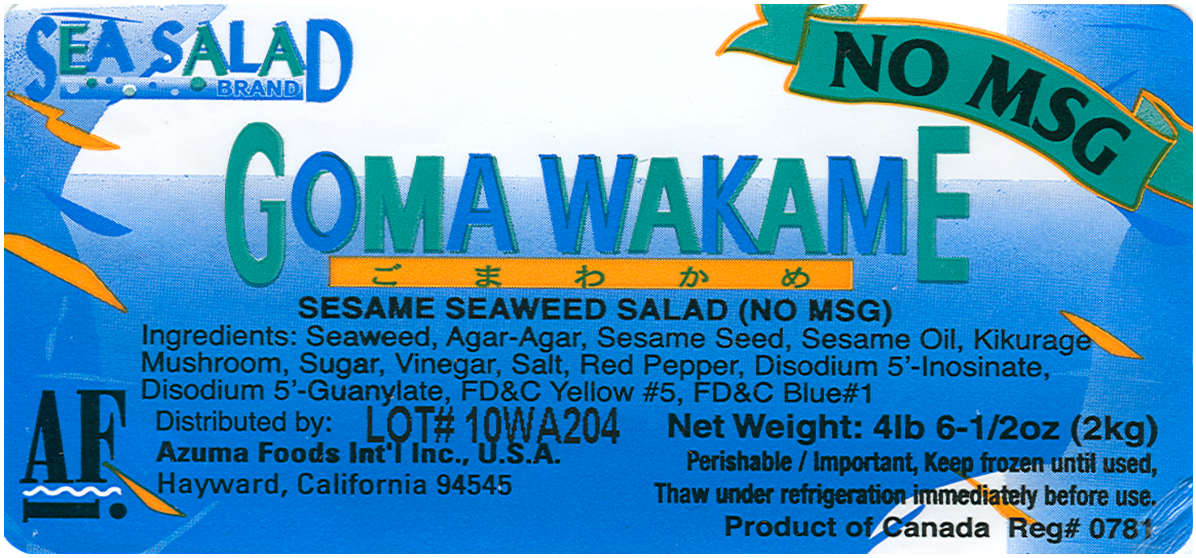


# Fast Food Super Food


Description: A Healthy Blend of Seaweed. Contains No MSG. (by Azuma Foods Int)
http://www.azumafoods.com/products/Goma_Wakame_No_MSG_18_26.html

FD&C Blue #1 **banned in Belgium, France, Germany, Switzerland, Sweden, Austria, Norway-**
FD&C Yellow #5 **banned in Norway and Austria- when you eat things with Yellow 5, you lose zinc through your urine and saliva. All the synthetic dyes are allowed to contain harmful contaminants like lead, mercury, arsenic, and benzidine.**
Disodium 5 – Guanylate *(sources: fish, seaweed) (Umami)*
Disodium 5 – Inosinate *(sources: primarily meat)*

Vinegar... Sugar... Salt...
Kikurage Mushroom, Red Pepper, Sesame Seeds, Sesame Oil, Agar-Agar, and Seaweed

International Standards - Quality Control & Country Of Origin Labeling (COOL) FDA, AMS,

Part 2 (pages 17-43)
Global Seaweed Farms Environment, Tainted Seas, Organic doesn't mean radiation free, China, Korea, Japan, The Irish Sea, Scotland, Denmark, Norway, Tc99 Technetium in Farmed Salmon, India Ship Breaking, Plutonium, fast food culture, loose labeling, unparalleled energy consumption (mega-investment production facilities, transportation, refrigeration), the lasting effects of Chernobyl Cesium in Dried Seaweed, Mafia Ocean dumping in the Mediterranean, oil slicks and seaweed farms... 2053, Hanford EARTH CIRCLE ECOCERT Organic Seaweed?

Good (?) News Comes From:
Dr K. Ekelman and Dr K. C. Raffaele, Additives Evaluation Branch, Division of Health Effects Evaluation - Center for Food Safety and Applied Nutrition Food and Drug Administration, Washington, DC, USA

"The Committee concluded that, on the basis of the available data, the combined total daily intake of disodium 5'-guanylate and disodium 5'-inosinate is not of toxicological significance, and re-confirmed the ADI "not specified" that was previously established. Because exposure to these substances from their use as flavor enhancers is low compared with daily intake of naturally occurring nucleotides in the diet, the Committee found no reason to recommend that foods to which these substances have been added should be labelled on the basis of safety, and withdrew its previous recommendation for labeling." But there are *frequent allergic reactions*.

*From the Codex Alimentarius:* This link provides information on the food additive provisions that are acceptable for use in foods conforming to the specific food category. Vegetables (including mushrooms and fungi, roots and tubers, pulses and legumes, and aloe vera), and seaweeds in vinegar, oil, brine, or soybean sauce

http://www.inchem.org/documents/jecfa/jecmono/v32je06.htm
Disodium 5'-guanylate and disodium 5'-inosinate are widely distributed in all animal and plant tissues. Their role in purine metabolism as well as their breakdown to uric acid and to allantoin (in most mammals, but not humans) is well documented. "Data presented at the 18th meeting as well as new data on the metabolism, reproductive effects, genotoxicity, and short-term and long-term toxicity of guanylate and inosinate were evaluated. No evidence of carcinogenicity, teratogenicity, or adverse effects on reproduction has been observed."

"Changes in dietary purine intake over the past decade resulting from the use of guanylate and inosinate as flavor enhancers are no greater than those due to variability in the consumption of the major dietary contributors of purines. Naturally occurring nucleotides in the diet (calculated to be up to 2 g/person/day) greatly exceeds their intake resulting from use as flavor enhancers (approximately 4 mg/person/day)."

Synonym(s) Disodium Guanosine-5'-Monophosphate, Sodium 5'-Guanylate, Sodium Guanylate
http://www.codexalimentarius.net/gsfaonline/additives/details.html?id=281

http://www.befoodsmart.com/ingredients/disodium-guanylate.php
A flavor enhancer/intensifier - almost always used in conjunction with MSG and sometimes disodium inosinate (the latter combination is known as disodium 5'-ribonucleotides). Disodium 5'-guanylate is a purine - a naturally occurring precursor to DNA and RNA - and can be isolated from certain mushrooms, dried fish, and dried seaweed.

Purines are found in such low abundance in foods that there are no recommendations on daily intake or need for labeling (although the need was discussed at one point in time). Disodium guanylate and MSG have a taste synergism which is very rare according to this study.

## Disodium Inosinate

It is a purine, a naturally occurring precursor to DNA and RNA, and is almost always derived from animal origin. Those who do not consume animal derived foods (such as vegetarians and vegans) should avoid this ingredient. http://www.befoodsmart.com/ingredients/disodium-inosinate.php

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The Vegetarian Resource Group spoke to three leading manufacturers of disodium guanylate and disodium inosinate about these common flavor enhancers. All of them reported that they produce I + G by microbial fermentation. Their growth media are all-vegetable, usually consisting mainly of tapioca starch. *(ed)* THE GROWTH MEDIA IS VEGETABLE, BUT THE SOURCE IS EITHER FISH, SEAWEED, OR MEAT.

## Disodium Guanylate

Disodium Guanylate is a natural salt derived from Guanosine Monophosphate (GMP). This ingredient is produced from dried fish, yeast extract, or dried seaweed. It produces an odorless, colorless, white crystal or crystalline powder that is soluble in water.

Excess consumption of this salt can result in higher blood pressure and swelling of the nerves in the brain. People suffering from gout and/or asthma should avoid this ingredient.
http://www.whatsinthisstuff.com/ingredient/Disodium-5-Guanylate

Disodium guanylate (E627), also known as sodium 5'-guanylate and disodium 5'-guanylate, is the disodium salt of the flavor enhancer guanosine monophosphate (GMP). Disodium guanylate is a food additive commonly used in conjunction with glutamic acid (monosodium glutamate, MSG). As it is a fairly expensive additive, it is not used independently of glutamic acid; if disodium guanylate is present in a list of ingredients but MSG does not appear to be, it is likely that glutamic acid is provided as part of another ingredient such as a processed soy protein complex. It is often added to foods in conjunction with disodium inosinate; the combination is known as disodium 5'-ribonucleotides.

Disodium guanylate is produced from dried fish or dried seaweed and is often added to instant noodles, potato chips and other snacks, savory rice, tinned vegetables, cured meats, and packaged soup. China Additives at Alibaba.com

Same basic information on disodium guanylate at Chem Europe.

Disodium Inosinate is found primarily in meat, whereas
Disodium guanylate is more abundant in plants.

Disodium 5'-guanylate is dephosphorylated to guanosine, hydrolyzed to guanine, deaminated to xanthine and oxidized to uric acid. Sodium guanylate is the umami component of dried shiitake mushrooms, and is found in many other mushrooms.
http://terms.steadyhealth.com/Guanylate

Scientists debated whether umami was indeed a basic taste ever since Kikunae Ikeda proposed its existence in 1908. Finally in 1985, at the first Umami International Symposium in Hawaii, the term umami was officially recognized as the scientific term to describe the taste of glutamates and nucleotides.

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Disodium guanylate also known as sodium 5'-guanylate and disodium 5'-guanylate, is the disodium salt of the flavor enhancer guanosine monophosphate (GMP). Disodium guanylate is produced from dried fish or dried seaweed and is often added to instant noodles, potato chips and snacks, savory rice, tinned vegetables, cured meats, packet soup.
http://www.upcfoodsearch.com/ingredients/disodium-guanylate/

Disodium Guanylate, or E628, is a flavor enhancer similar to Monosodium Glutamate (MSG) and Disodium Inosinate but more effective. It is about 50 to 100 times more potent than MSG. Disodium 5' guanylate is made from yeast ribonucleic acid, similar to genetic material. The savory taste of food becomes more developed without the disodium guanylate providing its own flavor. It is produced by microbial fermentation in vegetables and put in tapioca starch to make it a powder form. It is approved by the Food and Drug Administration but like MSG, is associated with certain allergic reactions after consumption. See Monosodium Glutamate. "DISODIUM GUANYLATE - OREGON STATE UNIVERSITY." Food Science, Cultural Foods, Glossary, Training, Education Food Resource [http://food.oregonstate.edu/], Oregon State University, Corvallis, OR. Web. 16 May 2011. . "The Vegetarian Resource Group Blog." The Vegetarian Resource Group (VRG). 21 Mar. 2011. Web. 16 May 2011.
http://www.foodfacts.com/food-ingredients/Disodium-Guanylate/601

Disodium guanylate is not a replacement for MSG, and TruthinLabeling.org says that using disodium guanylate is often not cost effective unless combined with MSG, because of its higher cost. If a food contains disodium guanylate, it most likely contains MSG in some amount, even if monosodium glutamate is not listed on the label. If you are interested in reducing consumption of MSG, looking for foods that contain disodium guanylate is not the right approach. http://www.livestrong.com/article/551058-disodium-guanylate-vs-monosodium-glutamate/

Among the most frequent allergic reactions to flavor enhancers such as disodium inosinate and MSG are a sensation of burning to the skin, especially around the mouth area accompanied by flushed or reddened skin areas. The facial areas are often affected by this sensation.

According to MedLine Plus, these flavor-boosting food additives are "chemically similar to one of the brain's most important neurotransmitters, glutamate." This is considered a possible cause of flushing and other effects to the consumer's body.

A lack of sensation, or numbness, is another reported side-effect of disodium inosinate consumption. Sufferers have reported numbness around the mouth area, and, in some cases, around the chest area and continuing down into the arm.

Incidences of tightness or pain to the chest area have also been reported by consumers of flavor enhancing food additives. The Food Intolerance Network Factsheet has described this sensation as "suspected heart attack." Migraine headaches have also been documented by users of disodium inosinate and MSG.

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According to Russell Blaylock, author of the book "Excitotoxins: The Taste That Kills," disodium inosinate and other flavor-enhancing additives have a chemical effect on the consumer's brain cells. This over-stimulation is considered a probable cause of negative side-effects associated with disodium inosinate. These effects can also include profuse sweating and a sense of swelling, usually accompanied by gastric discomfort.

While the U. S. Food and Drug Administration considers disodium inosinate, MSG and other flavor-enhancing additives to be GRAS (Generally Recognized as Safe), consumers may suffer allergic reactions to these substances. If you have concerns about potential reactions to disodium inosinate, consult your physician. Disodium Inosinate Side Effects  eHow.com

## Disodium 5' -inosinate, Sodium 5' -inosinate

A flavor enhancer/intensifier that is almost always used in conjunction with MSG and sometimes disodium guanylate (the latter combination is known as disodium 5'-ribonucleotides). It is a purine - a naturally occurring precursor to DNA and RNA - and is almost always derived from animal origin. Unlike disodium guanylate, disodium inosinate is completely ineffective without MSG.

Purines are found in such low abundance in foods that there are no recommendations on daily intake or need for labeling (although the need was discussed at one point in time). Those who do not consume animal derived foods (vegetarians & vegans) should avoid this ingredient.
http://www.befoodsmart.com/ingredients/disodium-inosinate.php

## FD&C Yellow #5

http://www.feingold.org/yellow5.php

Removing something like food dyes is an easy step to take, but it can have dramatic - and varied - effects. The widely-used dye, tartrazine, also called FD&C Yellow #5, is a good example, but keep in mind we could list similar "side effects" for any of the petroleum-based colorings. Yellow #5 is not particularly worse than Blue #1, Red #40, etc.

When you eat things with Yellow 5, you lose zinc through your urine and saliva. If you have ADHD, you lose it even faster than someone without ADHD (Ward 1990, 1997). Zinc, an essential trace mineral, is required by hundreds of your body's enzymes involved with the metabolism of protein, carbohydrate, fat and alcohol. Zinc is also critical for wound healing, sense of taste and smell, immune system function, bone strength, thyroid function, blood clotting, cognitive functions, prenatal development, and sperm production. Even a mild deficiency can produce a wide range of physical and mental problems.

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All the synthetic dyes are allowed to contain harmful contaminants like lead, mercury, arsenic, and benzidine (a carcinogen). Lead usually targets the oxygen-carrying protein in red blood cells first, eventually attacking your nervous system. The primary effects of mercury on infants and children is to damage neurological development. Arsenic can cause several kinds of cancer, as well as headaches and confusion. While it is true that colorings don't have large amounts of any of these contaminants, there is no good reason to consume them.

As long ago as 1985, Pediatrics - the journal of the American Academy of Pediatrics - described the following side effects of Yellow #5: allergies, thyroid tumors, lymphomas (cancer), chromosomal damage, asthma, and urticaria (hives). Even earlier, Cesarani (1978) described the bronchoconstriction of Yellow 5 as similar to aspirin in aspirin-sensitive asthmatics. The connection between this dye and asthma was the reason the Food and Drug Administration (FDA) first required it to be listed by name on ingredient labels.

Shaywitz in 1978 reported that "escape latency in the normal animals [rat pups] fed the food coloring mixture demonstrated markedly impaired performance in both the T-maze at 20 days of age and the shuttle box at 27 days." He further concluded, "Our results also suggest that hyperactivity should not be the sole factor investigated, and that measures of the effects of food coloring on cognitive function must be carefully evaluated in any future study." Although this appears to be the only published study comparing the ability of rats or mice to run mazes with and without having been fed food dyes, and Shaywitz' recommendations were ignored, a number of elementary and middle school students have been carrying on similar research. *See Taylor and his "fuzzy brained mice".*

In 1998, Koutsogeorgopoulou described the "clear immunosuppressive effects" of Yellow #5. Yellow 5 has been shown to damage the ability of nerve cells to send and receive signals. In order for our brains to work properly - to think, remember, reason and learn - the nerve cells must be able to communicate with each other. In a shocking toxicology study in 2006, Lau showed that a combination of yellow #5 plus aspartame in amounts likely to be found in a single snack, was toxic to developing neurites at a level far beyond that expected from the toxicity of each alone (see d in picture below. Perhaps even more shocking is the assumption by the researchers that that these additives are toxic to developing neurites at any level.

All the food colors tested by Reyes in 1996 (including Yellow #5) inhibited mitochondrial respiration in a dose-related manner. The mitochondria are the tiny energy factories inside the cells of your body. Indeed, in 2003, the FDA issued a warning to hospitals to stop using Blue #1 in tube feeding of patients because the patients were dying with a bright blue colon visible upon autopsy. The FDA admitted that Blue #1 was "a mitochondrial toxin."

Tartrazine, also known as FD&C Yellow #5 or E102, is one of these artificial coloring additives. This is one we don't want to give to our kids, so avoid it like it's the plague! Tartrazine doesn't even sound appetizing when you learn what it's made from! As with most artificial colors, it is manufactured from coal tar. http://www.stopkillingmykids.com/the-side-effects-of-tartrazine/

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http://www.foodreactions.org/allergy/additives/100.html
FD&C Yellow No.5; known to provoke asthma attacks (though the US FDA do not recognize this) and urticaria (nettle rash) in children (the US FDA estimates 1:10 000); also linked to thyroid tumours, chromosomal damage, urticaria (hives) and hyperactivity; tartrazine sensitivity is also linked to aspirin sensitivity; used to colour drinks, sweets, jams, cereals, snack foods, canned fish, packaged soups; **banned in Norway and Austria**

## FD&C Blue #1

http://www.ehow.com/info_7843461_blue-1-side-effects.html
Allergic reactions
Reactions to food dyes are often known as food intolerance instead of allergies because they are not IgE reactions. There is no specific allergy test for Blue 1 or other food dyes. Some reactions to Blue 1 include eczema, hives, puffy eyelids, dry skin, sneezing, recurring ear infections, congestion and wheezing. Severe reactions include anaphylaxis.

Cancer
According to an article by Laurel Curran at Food Safety News, "Evidence suggests, though does not prove, that Blue 1 ... causes cancer in animals."

Digestive upset
Those who have an intolerance to Blue 1 may experience symptoms such as constipation, vomiting, bloating, abdominal discomfort and diarrhea. Symptoms can show up within hours or days of ingesting Blue 1. While a small amount of Blue 1 may cause no problems, eating an entire bag of candy with Blue 1 may trigger a reaction.

Other side effects
Especially in those who have an intolerance, Blue 1 may affect behavior. Symptoms include headaches, migraines, anxiety, crying and fatigue. Blue 1 has also been linked to hyperactivity and behavior problems in children. According to the Feingold Association of the United States, Blue 1 can also cause chromosomal damage, which changes or breaks chromosomes of cells.
http://www.drugs.com/inactive/fd-c-blue-no-1-244.html

FDA has regulatory review for color additives used in foods, drugs, cosmetics, and medical devices. FD&C Blue No. 1, also known as Brillant Blue FCF ("for coloring food"), is a water-soluble artificial blue dye allowed by the FDA for use in foods, drugs and cosmetics. FD&C Blue No. 1 is widely used in food products (candies, confections, beverages, etc.) and there have been no reports of toxicity associated with this general food use.

In September of 2003, the FDA issued a Public Health Advisory to alert healthcare providers of toxicity associated with the use of FD&C Blue No. 1 in enteral feeding solutions. Toxicity, including death, has been reported only in association with FD&C Blue No. 1 tinting of enteral feedings, intended as a means of visually detecting pulmonary aspiration, although causality has not been established.[1] [2] *Next Page*
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[1] US Food and Drug Administration. Safety. FD&C Blue No. 1 (Blue 1) in enteral feeding solutions. Accessed 10/19/2011.
http://www.fda.gov/Safety/MedWatch/SafetyInformation/SafetyAlertsforHumanMedicalProducts/ucm169530.htm
[2] U.S. Food and Drug Administration. Color Additives: FDA's Regulatory Process and Historical Perspectives. Accessed 10/20/2011.
http://www.fda.gov/ForIndustry/ColorAdditives/RegulatoryProcessHistoricalPerspectives/default.htm

From the World Health Organization website:
Blue discoloration and death from FD&C Blue No. 1

The US Food and Drug Administration (FDA) has advised that several reports of toxicity, including death, have been associated with the use of FD&C Blue No. 1 (Blue 1) in enteral feeding solutions. In these reports, Blue 1 was intended to help in the detection and/or monitoring of pulmonary aspiration in patients being fed by an enteral feeding tube. Reported episodes were manifested by blue discoloration of the skin, urine, faeces, or serum and some were associated with serious complications such as refractory hypotension, metabolic acidosis and death. Case reports indicate that seriously ill patients, particularly those with a likely increase in gut permeability (e.g., patients with sepsis), may be at greater risk for these complications. Because these events were reported voluntarily from a population of unknown size, it is not possible to establish the incidence of these episodes.

A causal relationship between systemic absorption of Blue 1 and the reported serious and life-threatening patient outcomes (including death) has not been definitively established. It would be very difficult to establish a clear, causal relationship in the setting of complex medical issues often seen in patients receiving feedings via enteral tubes. However, in vitro evidence that Blue 1 can be a mitochondrial toxin lends plausibility to the idea that Blue 1 could cause these kinds of serious adverse effects if significant or persistent serum levels of the dye were to occur.

FD&C Blue No. 1 is a water-soluble dye allowed by the FDA for use in foods, drugs and cosmetics, based on numerous studies in animals. The dye is batch certified by the FDA and is widely used in food products. While there have been no reports of toxicity associated with general use, there has been no evaluation by the FDA of the sensitivity and specificity of its use in tinting of enteral feedings.

As of September, 2003, the FDA is aware of 20 cases from the scientific literature or in FDA post-marketing adverse event reports associating the use of blue dye in tube feedings with blue discoloration of body fluids and skin, as well as more serious complications. There have been 12 reported deaths and one case with an unknown outcome. In more than 75% of all reported cases, patients had a reported history of sepsis (and therefore likely altered gut permeability) before or during systemic absorption of Blue 1. Time of onset of toxicity from first use of Blue 1 varied from several hours to 20 days of continuous use in enteral feedings.

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At this time, the FDA believes practitioners should be aware of the following points:
• Use of Blue 1-tinted enteral feedings for detecting aspiration has been associated with several serious adverse events, including death, although a direct causal relationship has not been definitely established.

• The safety of Blue 1-tinted enteral feedings for detecting aspiration has not been documented. Based on the reports received to date, patients at risk for increased intestinal permeability, which includes those with sepsis, burns, trauma, shock, surgical interventions, renal failure, celiac sprue, or inflammatory bowel disease, appear to be at increased risk of absorbing Blue 1 from tinted enteral feedings.

• In addition to the possibility of systemic toxicity, Blue 1-tinted enteral feedings may interfere with diagnostic stool examinations, such as the hemoccult test.

• Other blue dyes, such as methylene blue and FD&C Blue No. 2, may have similar if not greater toxicity potential than Blue 1 and would not be appropriate replacements.

http://www.foodreactions.org/allergy/additives/100.html
FD&C Blue Dye No.1; used in dairy products, sweets and drinks, synthetic usually occurring as {a.k.a.} aluminium lake (solution) or ammonium salt; **banned in Belgium, France, Germany, Switzerland, Sweden, Austria, Norway.**

Packaged Food Culture Product INGREDIENTS: Vinegar... Sugar... Salt...
Adding salt to seaweed? Sugar is in the dressing with the vinegar. Is it GMO sugar? (Cane, Beets)

No mention of the “sesame oil blend”. Also no mention of Wakame, only the generic term “seaweed”. Goma means 'sesame'. Like in Gomasio, meaning 'sesame salt'.

Kikurage Mushroom, probably the best ingredient in the salad.
http://www1.nisiq.net/~machiko/english/kikurage.html

Dr. Shuichi Kimura
"Black fungus is the health mushroom containing the micronutrients that Japanese tend not to take enough of." Black fungus is a precious cooking ingredient that has long been prized in China for its anti-aging and longevital effects. We have known for some time that this is a mushroom with a great deal of calcium, but it is only recently that it has drawn attention for its nutritional value. We now know that it contains a great deal of iron and is a treasurehouse of vitamin D in particular. Considering that it contains vitamins B1 and B2, which Japanese tend not to take enough of, and considerable dietary fiber, black fungus should prove to be an extremely useful foodstuff in the diet of our age-ing society.
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Dr. Toshio Chiba
"No other foodstuff contains as much vitamin D and calcium as black fungus."
A succession of reports at recent international academic meetings have noted that taking sufficient vitamin D and calcium is effective in increasing bone density and decreasing the frequency of bone fractures, and is now beginning to draw attention as a preventative for osteoporosis. a.k.a. Cloud Ear Fungus, Bok Nee, Rats Ear, Tree Ear, Tree Jelly Fish

http://en.wikipedia.org/wiki/Cloud_ear_fungus

It is usually sold dried and needs to be soaked before use. While almost tasteless, it is prized for its slightly crunchy texture and potential medicinal properties, including its newly discovered anticoagulant properties. Of note, the slight crunchiness persists despite most cooking processes. It may be effective in reducing LDL cholesterol and aortic atherosclerotic plaque.

Japanese Name - Kikurage Chinese Name - Mu Er / (Wood Ear) English Name - Jews Ear / Judas' Ear http://www.mushroomnutrition.com/auricularia-auricula

*A. auricula* grows throughout Europe, Asia and the United States and is highly valued in Asian cooking for its crunchy, rubbery texture. A type of jelly fungus, it produces fruit bodies that are translucent, brown in colour and 'ear' shaped, hence its Chinese name 'Wood Ear'. Both the *A. auricula* and *A. polytricha* are considered as species of Mu Er in Chinese medicine and today are used interchangeably.

In common with other jelly fungi, *A. auricula* fruiting bodies contain high levels of polysaccharides and these are the main bioactive component, although phenols have also been shown to contribute to the total antioxidant capacity. *A. auricula* is primarily of interest as a functional food for the elderly, with polysaccharide extracts showing particular promise and having been developed as functional food additives for bread.

**Anti-inflammatory** - *A. auricula* polysaccharides have anti-inflammatory activity, which correlates with *A. auricula*'s traditional use for soothing irritated or inflamed mucous membranes.

**Anti-oxidant** - *A. auricula* extracts show strong anti-oxidant properties with a positive correlation between levels of phenols and anti-oxidant capacity.

**Anti-thromobotic** - Polysaccharide extracts of *A. auricula* inhibit platelet aggregation and increase clotting times *in-vitro* and *in-vivo*. Its anticoagulant activity was due to catalysis of thrombin inhibition by antithrombin but not by heparin cofactor.

**Anti-cholesterol** - *A. auricula* polysaccharides have been shown to lower blood total cholesterol (TC), triglycerides and LDL levels and enhance the level of blood HDL, as well as HDL /TC and HDL/LDL ratios, at 5% of feed in rats suffering from hyperlipidemia.

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**Cardio-protective** - Together with *A. auricula*'s general anti-oxidant properties, *A. auricula* polysaccharides shows a strong cardio protective effect, especially in aged mice, enhancing the activity of superoxide dismutase and reducing lipid peroxidation.

CLINICAL SUMMARY Main Therapeutic application - Cardiovascular support
Key Component - Polysaccharides Dose - 2-3g/day polysaccharide extract
Caution - Patients on anti-coagulant medication. Owing to possible anti-fertility effects it is recommended that *A. auricula* not be taken by pregnant or lactating women or those planning to conceive.

Both *A. auricula* and *A. polytricha* are considered as species of Wood Ear in Chinese medicine and today are used interchangeably. In common with other jelly fungi, they contain high levels of polysaccharides, which are the main active components.

There is also a white "Tree Ear" called the 'Snow Fungus'
http://www.ehow.com/facts_5885681_snow-fungus.html

Habitat
The snow fungus grows in subtropical regions, mostly on different species of hardwood trees and on decomposing logs. At one time it was thought that the snow fungus got its nutrients directly from the wood, but it was later discovered that it eats wood decay fungi, such as Daldinia concentrica (commonly called "carbon balls"), that eat the wood. ref 2

Culinary Uses
Snow fungus is sometimes used in savory dishes, but it is usually prepared as a sweet, dessert-style soup. One such recipe involves boiling, draining and then soaking the snow fungus in a sugary solution, such as the heavy syrup from canned peaches. The fungus is almost tasteless on its own, with a gelatin-like texture. If purchased dried, you must rehydrate before using it.

Medicinal Uses
The Chinese have used snow fungus as a traditional medicine for centuries. It has been used to treat high blood pressure and tuberculosis and to relieve symptoms of the common cold. Modern research in Israel and the Ukraine suggests that snow fungus also shows potential as an immune system booster.

At one time snow fungus was only found in the wild and was so rare that only the very rich or those of royal blood could afford it. Now that it is cultivated commercially, it can be found on the shelves of Asian food stores in many countries.

*Salad ingredients continued...*
Red Pepper, a little color somewhere in the salad.

Sesame Seeds and Sesame Oil: Could be GMO

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China Leads the world in production of GMO Sesame seeds and GMO Sesame Oil.

| | | |
|---|---|---|
| Type: Sesame Seeds | Style: Hulled | Cultivation Type: Gmo |
| Purity: 90 | Moisture: 16 | Place Of Origin: Hainan China (Mainland) |
| Brand Name: Oem | Model Number: Oem | Hybrid: No |

China Sky - Also listed on the Alibaba dot com Global Trade site (Food).

*More salad ingredients continued...* Agar-Agar, and Seaweed:
Agar-agar is approximately 80% fiber, so it can serve as an intestinal regulator. Its bulk quality is behind one of the latest fad diets in Asia, the *kanten* (the Japanese word for agar-agar[2]) diet. Once ingested, *kanten* triples in size and absorbs water. This results in the consumer's feeling more full. This diet has recently received some press coverage in the United States as well. The diet has shown promise in obesity studies.

*Synonyms:* Japanese Isinglass. *Part Used:* The mucilage dried, after boiling the seaweed. *Habitat:* Japan, best variety; Ceylon and Macassar - Ceylon Agar-Agar, or Agal Agal, which is the native name of *Gracillaria lichenoides*, is largely used in the East for making soups and jellies. Macassar Agar-Agar comes from the straits between Borneo and Celebes and consists of impure *Euchema Spinolum* incrusted with salt.
http://www.botanical.com/botanical/mgmh/a/agara012.html

Composed of fibers, it acts on intestinal transit so be careful it would be a laxative. The advantage of the agar is that it is antibacterial so the microbes can not develop, so you can keep longer the dishes you have prepared. In the food industry, it is much used as an additive in ice creams, candies, for example under the designation E406. http://www.agar-agar.org/en/

Agar-agar is extracted from marine red algae that are 100% natural. These chemical properties allow it to swell on contact with water. It gels below 40°. It is an ingredient completely odorless and tasteless, which has only 3 calories per gram and contains trace elements and minerals. Agar Agar is also a very good ally for dieters because it is a food rich in soluble fiber with slight laxative properties. But how does it work? It's very simple, in addition to cut your appetite quickly swelling in the body, before being evacuated by the body, Agar Agar will capture the sugars, fats and toxins. Hence its huge success among people who desire to follow an effective regime. 40% of world production is consumed in Japan.

The eight varieties of wild sea vegetables used in EDEN FOODS Agar Agar Flakes are hand harvested from pristine temperate waters in the autumn then spread out on beaches to naturally sun dry. In the winter...

Agar Agar comes from Malaysian and Indonesian regions. It's a food additive under the designation E406. The Agar Agar is a gelling product which is obtained from red algae. The Agar Agar can be used in many applications in molecular biology. For this, Agar Agar is highly purified. This new element is called "agarose". To get the Agar Agar from these algae, we must
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extract it from the mucilage, then dehydrate, purify and finally crush the mucilage. This powder is mainly used to gel a large number of dishes and desserts, but also in the culture of micro-organisms. In Japan, Agar Agar is called "kanten", it is widely used in the preparation of pastries, traditionally "Tokoroten". We can find in two forms Agar Agar in powder (most easily found) or long bars of transparent colors. It is a natural element that is perfect for change from animal gelatin and therefore is very appreciated among vegetarians. For this product to freeze, it must be heated to 90 ° C, but does not "take" until a temperature of 40 C.

What part of the Agar-Agar is used in the seaweed salad? The fiber leftover after the extraction process? Or a very small amount for that gelatinous look and feel on the palate?
See the many uses for Agar.

Seaweed (and Sea Vegetables) are very generic terms - What kinds? Harvested from where? How was it harvested, dried, and then shipped to the Azuma Foods Group (Canadian Province of BC) facilities on Mitchell Island where the seaweed salad is produced?

Azuma Foods Corporation is a Japanese company headquartered in Mie Prefecture, Japan. Azuma Foods International Inc., U.S.A., operates and produces Japanese food products in Haywood, California. In 2010, Azuma Foods Corporation lost a British Columbia lawsuit of wrongful termination of it's QUALITY CONTROL OFFICER. Presented evidence shows the companies were referred to as the Azuma Foods Group. Azuma Foods was referred to as “the Canadian branch”, or subsidiary of Azuma Foods International, or “the U.S. Branch”. Azuma Foods (Canada) Co., Ltd. was incorporated in British Columbia on March 14, 2003. In September 2005 facilities on Mitchell Island, Richmond. were complete. Shortly afterwards the company began producing its “core” Japanese ready-to-eat frozen food products: capelin roe, flying fish roe, and seaweed salad.

> The seaweed salad product, requires freezing for long-term storage (up to one year) and refrigeration lasts only 6 - 10 days. Most food websites (Amazon, etc) advertise the product by stating that it originates in Canada or that this product originates in the US. This is redundant, unnecessary and confusing. Country Of Origin Labeling requirements do not apply to processed foods. COOL

http://www.brighthub.com/environment/science-environmental/articles/14964.aspx
What is the Country-of Origin Labeling Law? *Passed in Congress 2008-2009*

The Country-of-Origin Labeling requirement (COOL) is a new congress mandated labeling system for food products sold in the United States. It is designed to let consumers know what countries their food products originated from. Unprocessed food products sold in retail stores to consumers are required to be labeled in a clear manner that consumers can view. Products can be labeled directly on the packaging or on signs displayed near the food items.

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Restaurants are not required to exhibit labeling for their food products. Labeling is required on unprocessed meats, fruits, vegetables and some nuts. Foods that are processed do not require labeling. The term processed in regards to the labeling law, means any item that has been cooked or altered. Raw items are considered not processed. Cooked items and items that have combined ingredients are considered processed. A package of carrots would be considered unprocessed, but a package of carrots with dipping sauce would be considered processed.

*"Current worldwide trends toward healthy, more natural foods, for example, are reflected in the catalog of products Azuma Foods International has to offer" but...*

Azuma Foods Quality Control and Quality Assurance are limited to product development technologies, batch monitoring, in house operations and safety, hygiene, and response time to retail claims, etc. The "Other Food Safety Concerns" webpage remains blank. "Sorry, we are currently updating this section of our Website. Please come back soon for the most-up-to-date information. Thank you very much for your visit." http://www.azumafoods.com/assurance/other.html

As its operations involve the processing of fish and other seafood food products, the company is subject to the *Fish Inspection Regulations*, C.R.C., c. 802, and the *Canadian Food Inspection Agency* ("CFIA") acts and regulations. *"It was completely different in Canada, Canadian regulations were much more strict than those in California".* As described on the CFIA's website: The Quality Management Program (QMP) is a regulatory-based system that requires all federally registered fish processing plants in Canada to develop and implement an in-plant quality control program. As set out in the *Fish Inspection Regulations*, all establishments in Canada that process fish and seafood for export or inter-provincial trade must be registered with the Government of Canada. To become federally registered, a fish processor is legally required to develop a QMP plan of their own, following the "QMP Reference Standard"; submit it to the CFIA for review and acceptance; and apply it to their processing operations.

The QMP uses the principles of "HACCP" (Hazard Analysis Critical Control Point), an internationally recognized system for ensuring safe food production, to provide a high level of assurance that fish and seafood products produced in Canada are safe and wholesome to eat.

However, the QMP also deals with non-safety issues, including fish quality and federal regulatory requirements such as labeling. The CFIA's Fish and Seafood Facilities Inspection Manual refers to the roles and responsibilities of the CFIA, fish processing establishments such as Azuma, and the QMP. The CFIA assesses the fish processing industry's compliance through regulatory verification. Regulatory verification focuses on assessing the adequacy of an establishment's QMP plan and verifying that the establishment applies the system as described and that it is effective in maintaining compliance with the regulatory requirements.

The QMP Model
There are three basic control components to a QMP plan: the Prerequisite Plan, the Regulatory Action Point (RAP) Plan, and the HACCP (Hazard Analysis Critical Control Point) Plan. A section of the CFIA QMP Reference Standard and Compliance Guidelines states as follows:
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Compliance Guidelines:

The CFIA regulations require a QMP plan for each product or process. The *Fish Inspection Regulations* require an annual internal audit for each QMP plan. For example, Azuma processes fresh Atlantic salmon fillets and must conduct an annual internal audit to ensure compliance with the applicable QMP plan for that product. CFIA statutory and regulatory requirements are stringent, detailed, onerous, and technical. The QMP and Azuma's QMP plan impact not only all aspects of the company's fish processing facility on Mitchell Island, but also on its suppliers. All of its suppliers are required to comply with Azuma's suppliers' quality assurance ("SQA") plan.

AZUMA Natural? Seaweed Salad – Goma Wakame
Headquarters
Main Factory 20201 Mack Street, Hayward, California 94545
TEL: (510) 782-1112 / FAX: (510) 782-1188
URL: http://www.azumafoods.com
E-mail: general@azumafoods.com

July 1990 Azuma Foods International Inc., USA (AFI) is established in Mill Valley, CA, USA.
March 2003 Azuma Foods (Canada) Co., Ltd. (AFCC) established in Richmond, B.C., Canada.
June 2005 AFCC acquires approval by Canadian Food Inspection Agency (CFIA) for EU exporting.
AFCC starts manufacturing operations in Richmond, B.C., Canada.
October 2009 AFI moved to the new facility in Hayward, CA, USA.

"Taking advantage of the abundant natural agricultural and fisheries resources that Canada is blessed with, we use the latest technology and our many years of experience developing products to manufacture our food products."

"Food culture" has become much more diversified in Canada as well as the rest of the world. Azuma Foods is responding to our customers' diverse needs in a variety of ways. Located in Richmond, B.C., a convenient gateway to Asia and the United States, the 31,000 sq. ft. manufacturing facility of Azuma Foods (Canada) Co., Ltd. is surrounded by the great natural beauty of our country, which strives to protect and ensure a bountiful supply of seafood resources. http://www.amazon.com/Frozen-Original-Seaweed-Salad-Wakame/dp/B0043XEL14

Any ethnic diaspora of economic importance can be targeted, food traditions and habits are comparatively portable and adaptability assures that food habits are usually maintained (even while they are transformed) among diasporic groups.

At Amazon dot com, the *Important Information - Legal Disclaimer goes like this*:
Actual product packaging and materials may contain more and different information than what is shown on our website. We recommend that you do not rely solely on the information presented and that you always read labels, warnings, and directions before using or consuming a product. Please see our full disclaimer below.

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At 21food.com, and bizrate, hardware wholesale, shopzilla, there also is no mention of dyes and 'flavor enhancers' in the Product Description: Our original seaweed salad is a perfect side dish to go with other sushi items. It is a product of Azuma foods and originates in the United States. This container holds 6 oz of original seaweed salad.

Frozen Original Sesame Seaweed Salad (Goma Wakame) 2 kg
http://www.amazon.com/Frozen-Original-Sesame-Seaweed-Wakame/dp/B0044395BO
by Azuma Foods
2kg frozen bag
Ingredients: Includes seaweed, agar-agar, sesame seed, sesame oil, kikurage mushroom, sugar, vinegar, salt, red pepper, and more.

http://www.markys.com/caviar/customer/goma-wakame-seasoned-seaweed-salad-1-lb..html
Markys is reputable and lists all ingredients.

http://www.catalinaop.com/Original_Seaweed_Salad_6_oz_p/sushi_5a2.htm
Doesn't list the dyes or 'flavor enhancers'.

Azuma's many China competitors most often list Shandong Peninsula as the 'place of origin' (harvest) for raw material. Interestingly, on China Quality Shoes the same Azuma brand Seaweed Salad Product Details lists China as the place of origin for raw materials.

| | |
|---|---|
| Country/Region | China |
| Company | Azuma Foods (Canada) Co., Ltd. |
| Update | 2011-02-28 15:49:22 |

Raw materials use non-polluting waters of Shandong Peninsula.
ALL ARE FARMED SEAWEEDS

From a processor-distributor:
Once again- my company produce frozen seaweed salad, raw material use non-polluting waters of Shandong Peninsula - select the middle part of the stalk of Qingdao local seaweed, after drawn selection, washing then add seasonings: lemon yellow, bright blue, sugar, salt, malic acid, sodium glutamate, spices, sorbitol, vinegar, pepper, sesame seeds and so on. cold formed, its unique taste, deeply welcomed by domestic and foreign persons.

Lemon Yellow and Bright Blue are code names for FD&C Yellow #5 and FD&C Blue #1

Part 2
ORGANIC SEAWEED, CHINA, GLOBAL MARKETING, LABELING, OCEAN DUMPING, RADIATION IN KOREA AND CHINA from Fukushima, S Korean Intel Service Cover-up Lasting effects of Chernobyl Irish Sea the most radioactively contaminated in the world Scotland & Norway Seaweed & Salmon Farms, Denmark, Plutonium, La Hague, 2053 30 years of Ship Breaking Toxins From India and Bangladesh

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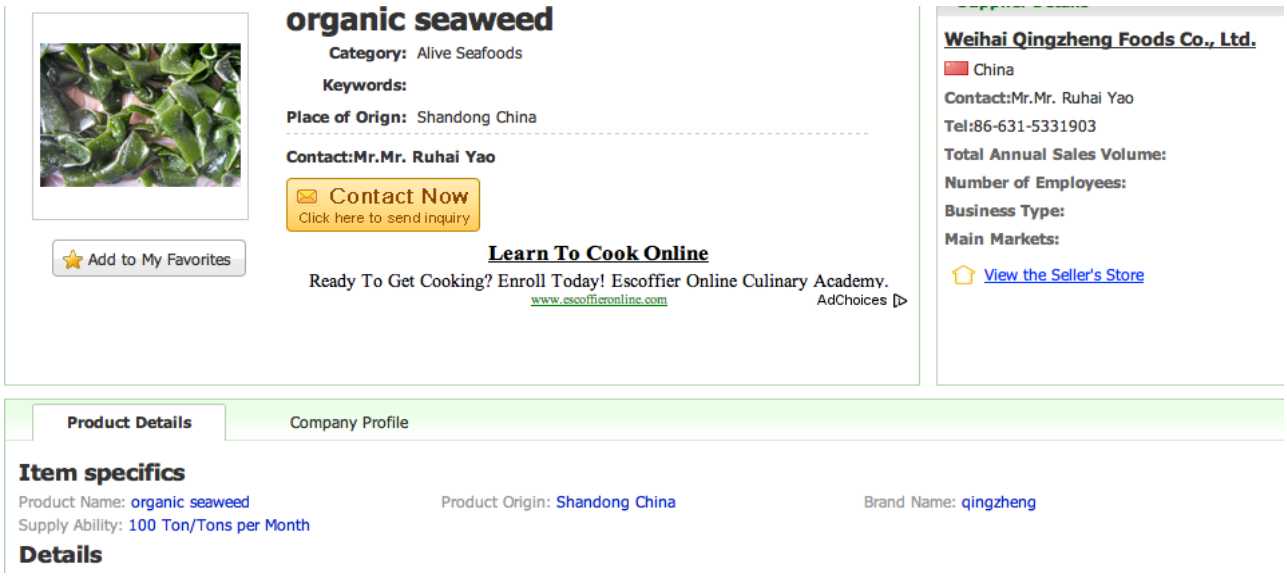


Shandong Province, China, is called Lu for short. Shandong is a key production area of grain, cotton and oil crops. It usually ranks first or second in production output. Shandong is also well known for its tobacco, fruit, peanuts, tussah silks, meat, and marine products. Its major mineral deposits include coal, petroleum, iron, aluminium, and gold. The coastal area is abundant in fish and salt. Shandong's industry covers oil extraction, processing, machinery, electric power, chemicals, foodstuff, textile, arts and crafts, and papermaking, etc.

With railway as its mainstay of transport, Shandong is one of the provinces with the most dense highway network. It has seaports like Qingdao, Yantai, Weihai, and Rizhao, etc. Major cities are Jinan, Qufu, Qingdao, Yantai, Weifang, and Zib.
http://www.china-club.de/english/provinces/shandong.htm

Its economic zone is the first regional zone of its kind to get State Council (China's cabinet) backing. It covers 64,000 square kilometers of land.
http://www.china.org.cn/china/shandong/2011-11/07/content_23844622.htm

China's Shandong Peninsula, just across the Yellow Sea from South Korea and Japan, has seen rapid growth in marine-related industries; these include marine organisms, equipment manufacturing, mineral and resource exploration, fishing, transportation, tourism, engineering, and environmental protection.

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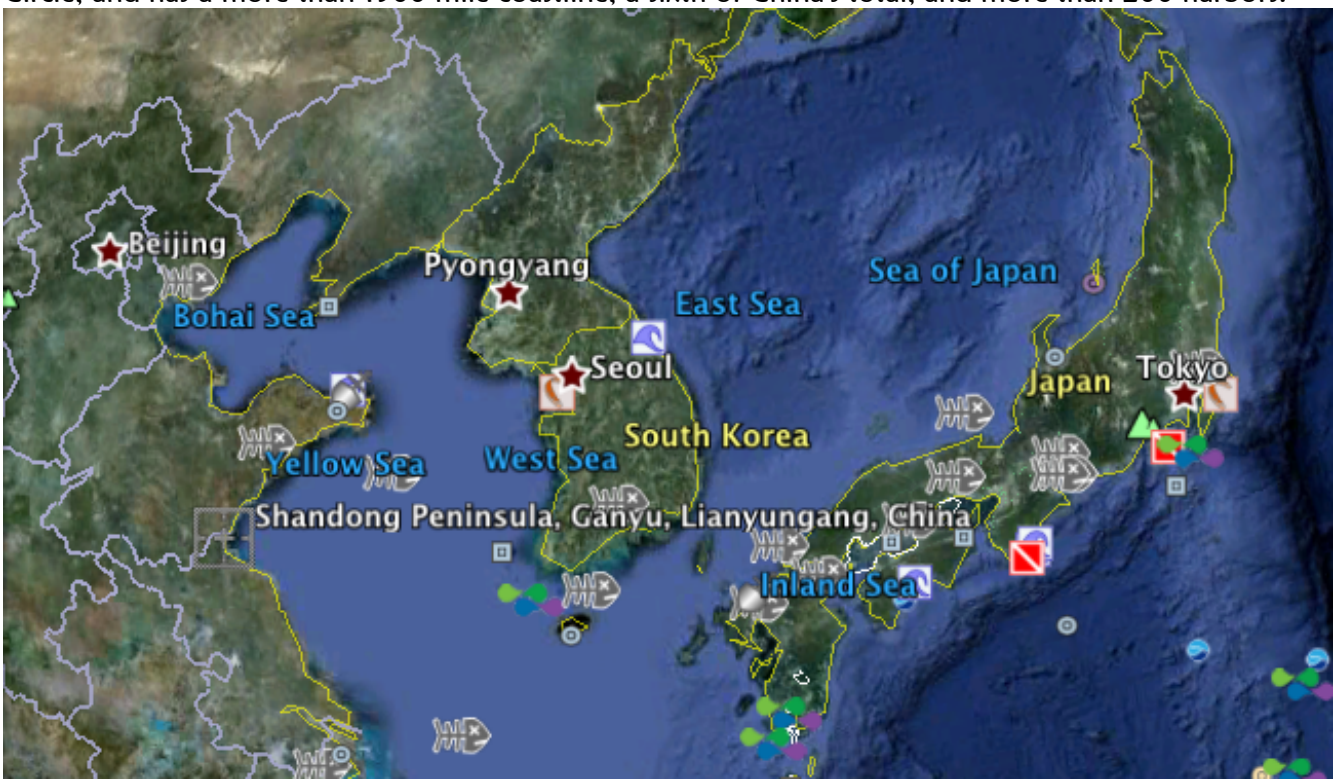
Shandong peninsula is at a key juncture of the rim of the Bohai Sea and the Northeast Asia Economic Circle, and has a more-than 1900 mile coastline, a sixth of China's total, and more than 200 harbors.




The province has at least 40 percent of China's marine scientists, more than a third of its ocean research institutes, and half of its oceanic scientific research programs. All of these are in Qingdao, which has the vision of becoming China's "Blue Silicon Valley" (an international center for marine science and technology and technological innovation). By 2015, Shandong plans to have eight more model marine scientific and technological bases and 10 alliances for strategic industrial innovation to provide technological support for the zone. "Shandong's Blue Economic Zone is set to become an international leader in modern marine industry and the center of international marine science and technological development, in five to 10 years.

http://www.europe1china.com/en/observe/2010102801612466.htm
55 year plan - Shandong has formed seven industrial belts such as automobile, ship, petrochemical industry, electronic information, clothing and textile, home appliance, and food, becoming the engine of regional economic development and the booster of Peninsula manufacturing base.

http://www.chinadaily.com.cn/m/shandong/e/2010-06/30/content_10038186.htm
The local government plans to prioritize eight modern marine industries, including the marine-based organism industry, equipment manufacturing, resources and mineral exploration, fishing, transportation, tourism, engineering and environmental protection. There are 44 rivers longer than 10 kilometers in Weihai with a drainage area of 2,884 square kilometers. Weihai boasts rich natural resources 33 kinds of mines including more than 10 kinds of metal mines. With a wide area of sea, Weihai has rich aquatic resources. Annual output of aquatic products constitutes 60% of Shandong Province total.

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Shandong provincial government has initialized 322 projects to drive the development of the economic zone - involving ports, airports, railways, highways, energy, hydraulic projects and electronic technology, and are expected to be finished within five years.

The map above, shows the almost constant latitude of Fukushima and Tokyo, Seoul, and the Shandong Peninsula. Tokyo to Seoul - about 700 miles and S. Korea to Shandong - 114 miles.

Yet you can buy Shandong ORGANIC Nori
http://www.21food.com/products/organic-seaweed-171496.html

Currently in the USA-
USDA's National Organic Program regulates the standards for any farm, wild crop harvesting, or handling operation that wants to sell an agricultural product as organically produced. The NOP mission: Ensuring the integrity of USDA organic products in the U.S. and throughout the world.

Marine environment products labeled "organic" may be either wild harvested (wild crafted) or they may be farmed. As of March 2012 there are no "organic" standards for wild harvested sea vegetables, only the farmed varieties (currently undergoing discussion). For both seaweed and orange pulp, the NOP law now reads, if the amount required in commercial production is greater than that which can be supplied by 'Certified' Organic producers... then any variety can be used and the label need not reflect the change. Wildcrafted foods have strict certification rules by 'certifiers' (the current discussion is to merge the two).

www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELPRDC5097523 [PDF] 18k
Non-organic Pacific kombu **seaweed** (in multi-ingredient organic products), if organic Pacific kombu **seaweed** is not commercially available. **...**

www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELPRDC5092174 [ZIP] 29k
Do the certification body's standards and/or procedures require them to verify that the waters utilized for the collection of **wild seaweed** and the **...**

USDA March 2012
Ten years have passed since USDA launched its National Organic Program (NOP).
Beginning June 1, 2012, organic products certified in Europe or in the United States that meet the terms of the equivalency arrangement may be sold as organic in either region.

The following limitations apply to organic agricultural products traded under the arrangement:
The following U.S. organic products may not be exported to the EU:
•Crops produced using antibiotics (e.g. streptomycin for fire blight control in apples & pears).

The following EU organic products may not be exported to the U.S.:
•Agricultural products derived from animals treated with antibiotics.
•Aquatic animals (e.g. fish, shellfish).
Access all petitions and technical reports at www.ams.usda.gov/NOPNationalList

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NOP discussion:

"Sedentary or fixed aquatic crop species may be considered for certification as organic under the wild-crop harvesting standard. For example, kelp and seaweed are listed on the National List of Allowed and Prohibited Substances (National List) at § 205.606 of the NOP regulations."

"Due to the listing at § 205.606, kelp and seaweed are agricultural products allowed as ingredients in processed products labeled as "organic." Organic kelp and seaweed is commercially available in the marketplace as certified organic by certifying agents. Given their placement on the National List, we cannot declare that kelp and seaweed are not agricultural and disqualify them from certification as organic."

"In the absence of specific mushroom standards under the NOP, many species of cultivated mushrooms are routinely certified and sold as organic under the crop practice standards. By extension, wild mushrooms should also be eligible for certification as a wild-crop."

*Seems to be market driven and not nature driven by natural design and kept safe by pre-cautionary Environmental Protection measures.*

Oil spills have claimed thousands of seaweed farms on the coastlines of the Philippines, South Korea, Timor, Indonesia Islands and Australia.

Timor Sea
In August 2009, an oil platform in the Montara oil field in the Timor Sea exploded, leaking oil into the waters off the northwest coast of Australia and into Indonesian fishing grounds. Estimates range from 1.2 to 9 million gallons of oil spilled. The spill has been catastrophic for Indonesian fishermen and seaweed farms and will take years to clean up. Both Indonesia and Australia have called for the rig's operator, the Thai company PTTEP Australasia, to be held responsible.

Broadcast: 12/08/2010
Reporter: Kirrin McKechnie
http://www.abc.net.au/lateline/content/2010/s2981585.htm
Last August the rig in the Montara oil field leaked uncontrollably for 74 days before exploding. Fish stocks were decimated and seaweed farms in West Timor, set up with money from the Australian government, were wiped out.

http://www.underwatertimes.com/news.php?article_id=18503671024
GUIMARA, Philippines -- The island province of Guimaras has declared a "state of calamity" following what authorities have called the country's worst oil spill, as international lobby group Greenpeace urged the government to hold petroleum firm Petron and its partners "accountable" for the disaster. 2006

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Roughly 26,000 people who rely on fishing have lost their livelihood. More than 1,100 hectares (2,400 acres) of marine reserve has been destroyed - along with beach resorts, seaweed farms and mangrove forests. Regional environment chief Julian Amador said 1,128 hectares (2,787 acres) of mangrove in Nueva Valencia and another 26 hectares (64.25 acres) on an island marine reserve have been damaged. The oil was about 10 centimeters (four inches) thick at the Taklong Island marine sanctuary.
http://www.msnbc.msn.com/id/22184244/ns/world_news-world_environment/t/coastline-dead-after-s-korean-oil-spill/

SHINDURI BEACH, South Korea Chung Hwan-hyang surveyed the damage from South Korea's worst oil spill, saddened by the knowledge that the oyster farm she and her husband ran for 30 years was lost. Some 2.7 million gallons of crude gushed into the ocean after a collision Friday between a barge and a supertanker carrying more than 260,000 tons of crude oil.For Chung and other residents of Taean County, nearly 100 miles southwest of Seoul, the spill brought despair and shock at how the pollution shattered lives and businesses.

The spill now threatens the livelihood of an area that includes beaches like Shinduri and better-known Mallipo, which is considered one of South Korea's most scenic areas and serves as an important stopover for mallards, great crested grebes and others migrating birds.

More than 20 million tourists a year visit the area, providing an economic boost to the area's 63,800 residents heavily dependent on fishing and seafood farming."This ocean is dead." Among those affected by the slick were 181 aquatic farms producing abalone, seaweed, littleneck clams and sea cucumbers, according to Lee Seung-yop, a Taean County official. There are about 4,000 aquatic farmers.

Ku Bon-chun, chief of a local fishermen's association at Mohang Port near Mallipo, said 32 acres of aquatic farms raising abalone, oysters and other marine life there were all submerged by oil-coated waters. About 6,325 acres of aquatic seafood farms had been either destroyed or severely damaged,
http://www.usatoday.com/news/world/environment/2007-12-11-s-korea-oil-spill_N.htm

Where does your seaweed come from?
Has it been tested for heavy metals and radiation?

Emerald Cove Silver Grade Pacific Kombu is an edible ocean plant. Emerald Cove's Silver Grade Pacific Kombu is harvested from the cold waters off the north shore of the Shandong Peninsula of China, near Korea. Emerald Cove's Silver Grade Pacific Kombu is cultivated on rope nets spread between posts planted in shallow areas of the sea bed, where it naturally attaches itself directly from the sea water. After harvest, Emerald Cove's Silver Grade Pacific Kombu is laid out to dry slowly and naturally in the sun, and is then packaged. Emerald Cove's Silver Grade Pacific Kombu is a nutritious brown algae.
http://www.luckyvitamin.com/p-31961-emerald-cove-pacific-kombu-silver-grade-176-oz-daily-deal

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Statistics from the administration shows that by 2005, China had 98 dumping sites and the major dumping wastes were dredged materials. The SOA carried out surveys on 24 dumping sites and their surroundings last year. It has also listed seven wastes or other matter which are not considered dumping, including dredged material, sewage sludge, fish waste, vessels and platforms, inert, organic material of natural origin and bulky items primarily comprising iron, steel, concrete and similarly non-harmful materials. The survey shows that the benthic environment of most dumping sites are quite stable and the benthic diversity is not significantly affected by the dumping, while some dumping sites show unusual benthic environment and the benthic diversity is obviously decreasing.

Dumping waste into the ocean attracted global concern in the latter half of the 20th century. In 1972, the Convention on the Prevention of Marine Pollution by Dumping of Waste and Other Matter, known as the London Convention, was passed and came into force in 1975. The 1996 Protocol is intended to replace the 1972 Convention as it is much more restrictive and included a reverse list – basically, if it's not listed, it can't be dumped.

A good idea can take 10 years...
http://www.gc.noaa.gov/documents/gcil_lp.pdf

The 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (the "London Convention"), was done in London on November 7, 1996. *The Protocol was signed by the United States on March 31, 1998, and it entered into force on March 24, 2006*. (IMO link) In 2007, President Bush sought ratification. A list of signees along with accession and ratification dates can be viewed at:
https://imo.amsa.gov.au/public/parties/lc72prot96.html

October 2010: The Land-Based Sources (LBS) Protocol entered into force. (EPA link) This International Treaty covers that which flows into the ocean.

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ENENews March 1, 2012
Update:
"While at first sight it seemed fortunate that westerly winds prevailed most of the time during the accident, a different picture emerges from our detailed analysis. Exactly during and following the period of the strongest 137Cs emissions on 14 and 15 March" "The plume covered large parts of centraleastern Honshu and crossed over Tokyo and other major population centers before it left Japan"
http://enenews.com/just-published-worst-radiation-plume-from-fukushima-was-blown-over-tokyo-on-march-14-15-this-was-the-main-deposition-event-over-japan-for-the-entire-disaster

Map
*http://enenews.com/wind-blowing-from-fukushima-to-tokyo-when-reactor-no-3-exploded-on-march-14-radiation-cloud-reached-south-of-shizuoka-map*

A critical factor was wind direction. This Greenpeace simulation shows the potential radiation plume based on weather forecast data and a worst case scenario. Unit 3 exploded on a Saturday. The following Monday, Japanese officials admitted that Unit 3 had exploded. The exclusion zone was 20km. "It will fall down to earth inside that exclusion zone."

At first reports: Wind now blowing towards Tokyo, to shift to Pacific *Reuters*
http://www.reuters.com/article/2011/03/15/japan-quake-winds-idUSLDE72E16720110315

Exactly during and following the period of the strongest 137Cs emissions on 14 and 15 March as well as after another period with strong emissions on 19 March, the radioactive plume was advected over Eastern Honshu Island, where precipitation deposited a large fraction of 137Cs. The Westerlies generally drive pollution from China to Seoul, Tokyo, and even L.A. Cyclones and Typhoons change it regularly and quickly.

Typhoon Aere, the first of the season formed on May 7, and Typhoon Songda on May 27, both have passed near the South of Japan, away from Korea. "In the event of a typhoon, the possibility of radiation from Fukushima spreading to Tokyo and other regions of Japan is high, and cannot exclude the possibility that it will spread towards the Korean Peninsula.
http://www.asiaone.com/News/Latest+News/Asia/Story/A1Story20110530-281354.html
BACK TO EARTH CIRCLE

http://voices.yahoo.com/low-levels-fukushima-radiation-fallout-detected-8166767.html
China Contaminated
Over the March 25-27 weekend, China announced food and water contamination checks for 14 provinces in the northeastern and southeastern coastal areas. Low levels of Iodine-131 contamination was detected in the northeastern Heilongjiang province, but it is so little that Chinese Ministry of Health officials says it "is harmless," and residents of the affected counties are "staying calm."

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The southeastern coastal areas also show small amounts of Iodine-131; however, National Nuclear Emergency Coordination Committee officials state that no extra protection is needed, as it is "not harmful to humans.

South Korea Contaminated
The Korean Institute of Nuclear Safety (KINS) reported today that it had detected trace amounts of radiation in Gangwon the week before and had traced it to Fukushima. A detection center in the northeastern region of South Korea found the Xenon 133 contaminants, but officials stated that it would not harm humans because the amount was so little. However, because of the findings, KINS stated that it would initiate daily contamination testing of the nation's air and water.

In Korea: Oct. 3, 2012
Research from Mar. 2011 showed radiation coming towards Korea, but was muzzled
By Lee Keun-young, senior staff writer
http://nuclear-news.net/2012/10/03/breaking-korea-government-body-pressured-to-withhold-info-on-fukushima-radiation/
The inspector's office examination took place in the immediate wake of March reports from the Hankyoreh and other news outlets alleging NIS involvement in the decision to suspend NIER research indicating that trace amounts of radiation were reaching the Korean Peninsula.

Posted on : Oct. 3, 2012
The National Institute of Environmental Research (NIER) abruptly halted its inquiry last year into the dispersion of radiation from Japan's Fukushima nuclear power plant disaster after contacting the National Intelligence Service (NIS), it was belatedly revealed on Oct. 2.

Democratic United Party lawmaker Chang Ha-na, a member of the National Assembly's Environment and Labor Committee, said on Oct. 2 that an examination by the Ministry of Environment inspector's office showed NIER research to predict the spread of radiation from Fukushima, and its effects on South Korea, was halted immediately after a report to the NIS.

According to a confidential inspector's office report acquired by Chang, then-NIER director Yoon Seung-joon (now head of the Korea Environmental Industry and Technology Institute) had sent a report on radiation leaks from Fukushima to the NIS some time between March 25 and 31, 2011, after being asked about modeling findings for radiation from the accident.

As South Korea adds five nuclear reactors to the 21 it already has and builds its first four reactors for export, the need for enhanced safety assumes paramount importance. Since putting its first reactor on line in 1978, Korea has come to rely on nuclear energy for 40 percent of its electrical needs and aims to have nearly 60 percent of its electrical power come from nuclear energy by 2020.

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How long does it take to act responsibly?

November 11, 2011
http://enenews.com/cesium-137-hotspot-detected-in-seoul-south-korea-emitting-1000-normal-background-radiation
Cesium-137 hotspot detected in Seoul, South Korea - 1,000% normal background radiation.

In March of 2012,
Detection of radiation in Japanese fishery imports on rise
Source: YONHAP NEWS
Date: 2012/03/08 09:19 KST
South Korea is more frequently finding radioactive materials in fishery products from Japan but has no immediate plans to ban imports [...]
In the first two months of the year, the country has detected traces of radioactive materials, such as cesium, in 32 separate shipments of fisheries products from Japan, according to the Animal, Plant and Fisheries Quarantine and Inspection Agency.

And in June 2012:
'Breaking News': South Korea bans 35 Japanese seafood products due to Fukushima radiation fears. South Korea placed a temporary import ban on 35 Japanese seafood products because of fears of lingering radiation contamination from last year's devastating nuclear disaster.

Prior to 2011, research from S. Korea shows the presence of Cesium (normal levels in seaweed).
http://www.oecd-nea.org/nsd/fukushima/documents/Korea_2011_08Policy00GovernmentResponsetoFukushimaAccident.pdf

Following the Fukushiima Daiichi accident, detailed analysis of radioactive nuclides (i.e., gamma radionuclides) was carried out after collecting samples of airborne dust in the atmosphere of 12 regional radioactivity monitoring stations throughout the country on a a daily basis, and rainwater samples after every rainfall. Minute amounts of I-131, 137Cs, 134Cs, etc. were detected, presumably due to the consequence of the Fukushima nuclear accident. However, those radioactive nuclides have not been detected since April 26, and as a result, there appears to be no more impact of the nuclear accident on Korea.

According to the results of radioactivity analysis for soil, 1-311 was not detected, but Cs137 and Pu239 and Pu240 were detected at very low level that had normally been detected and originated from atmospheric nuclear tests mainly 1950's-1960's.

In the case of rainwater I-131 was detected in Jeju City on April 7 with a maximum concentration of 2.81 Bq/L, and Cs134 and Cs137 were detected in Jeju City on April 11.

By June 2011, the Korean Government had made a quick wrap of the situation in their report titled: Report of the Korean Government Response to the Fukushima Daiichi Nuclear Accident. Lots of assurances, that all was well in Korea, "Unnecessary to feel concern about domestic inflow of the radioactivity from Japan".

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But buried deep on page 24 is the Table of the: Analysis Status of Radioactivity Concentrations in the Domestic Environmental Samples in Response to the Fukushima Daiichi Nuclear Accident (as of May 31, 2011)

After the column for *Investigation Results* is a column titled *Remark* (Normal Level)*
The normal levels for seaweed are known to show the presence of Cesium.
Seaweed
I : ND~1.76 Bq/kg
Cs : ND~0.107 Bq/kg

One Bq/m3 is equivalent to approximately pCi/L x 37

Seaweed (I-131): Environmental and Evaluation Report for Areas Surrounding Nuclear Power Utilization Facilities (2008-2009)

What is interesting is how near Jeju is located to Shandong.

Located in a southern part of Korea, apart from the peninsula, the weather is mild and warm throughout the year. The city is a well-known resort, with prestigious hotels and public casino facilities. In 2011, 9.9 million passengers flew between the two cities of Seoul and Jeju, making it the world's busiest passenger air route. Jeju welcomes over four million visitors from mainland Japan, and China every year. Another 6% of total travelers come in and out of Jeju by sea. Jeju Island, also known as the "Island of the Gods," is a popular vacation spot for Koreans and foreigners. It remains the top honeymoon destination for Korean newlyweds, and is regarded as one of the top honeymoon destinations in the world. Tourism is one of the main industries on the island, many of the hotels and tourist areas are run by mainland companies.

Over 15 million tourists each year, and a government policy called Policy 00; add to that the Oct. 2, 2012 admission of a coverup ordered by the S Korean National Intelligence Service, and the value of Marine Aquatic Commerce,.. kind of makes one wonder.

55% of aquaculture production in South Korea, is produced by seaweed. Seaweed culture is mainly concentrated on the South western coast where almost 90% of cultivation of seaweed in South Korea takes place. Cultured seaweed species include sea mustard (Caulerpa sp.), laver (Porphyra spp.), kelp (Laminaria spp.), fusiform (Hizikia fusiformis), green laver (Monostroma sp.) and codium (Codium sp.). The brown seaweed Undaria dominates algal aquaculture production constituting 42% of the total wet weight. Laver production is however the most valuable, totaling 65% of overall value. The production is estimated to be 217,559 tonnes (wet wt.) which is equivalent to more than 10 billion sheets of dried laver.
http://en.wikipedia.org/wiki/Aquaculture_in_South_Korea

The major direct use of these sea vegetables is as food in Japan, China and Korea. In the Indian Ocean - seaweed cultivation has become a major coastal industry. http://www.seaweed.ie/

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What of the lasting effects of Chernobyl?

Research done on dried (off the shelf) seaweed products in Canada in 1999 led to a report: "Elemental and Radioactive Analysis of Commercially Available Seaweed" by C. Netten et al. *The Science of the Total Environment 255pgs year 2000*

*(*on p. 174) "Although potassium-40 concentrations in the different algae varied widely these levels are considered to be of no health consequence because of the low activity associated with this isotope."

"Locally (Canada) derived edible algae samples were generally much lower in their heavy metal content specifically mercury. The mercury content of some samples could prove to be a significant source of mercury exposure. Speciation and bioavailability of arsenic needs to be determined to assess the exposure to this metal. The iodine content of algae was found to vary widely with the highest concentrations in wakame from Japan. Some samples showed traces of cesium-137 and radium- 226. The former is likely related to the Chernobyl accident whereas the latter could be a reflection of naturally occurring uranium decay."

Ireland, Scotland, England, France
'Radioactive seaweed' concern
http://news.bbc.co.uk/2/hi/uk_news/scotland/2855859.stm

Concern is growing that potatoes growing on Scottish islands might have been contaminated by radioactive seaweed. Western Isles Council is calling for urgent tests to be conducted on seaweed which is used as fertilizer on crops. It fears the water may have radioactive traces from Sellafield nuclear power station. International testing has shown contamination from Sellafield nuclear processing plant in Cumbria to be found as far away as Norway.

Scandinavia shares the same tidal chain as Scotland's west coast islands.
Fears over the cancer-causing chemical Technetium-99 have also been expressed by farmers on the east coast of Ireland.

Irish Sea
http://www.corecumbria.co.uk/tour/irishsea.htm
Sellafield discharges two million gallons of radioactive water into the Irish Sea every day at high tide. This includes a cocktail of over 30 alpha, beta and gamma radionuclides. BNFL admits that radioactive discharges in the 1970's were 100 times those of today. As a result of these discharges, which include around half a tonne of plutonium, the Irish Sea has become the most radioactively contaminated sea in the world. Cesium-137 and Iodine-129 from Sellafield have spread through the Arctic Ocean into the waters of northern Canada and are having a bigger impact on the Arctic than the Chernobyl accident. Sellafield's gas discharges of Krypton can be measured in Miami.

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La Hague is a French nuclear reprocessing complex operated by the government-owned Compagnie Générale des Matières Nucléaires (Cogema) and is situated on the tip of the Cotentin Peninsula in Normandy, France. It is the largest importer of foreign spent fuel in the world. Its client countries are Germany, Japan, Belgium, the Netherlands and Switzerland, as well as French spent fuel.

Each year hundreds of millions of litres of radioactive waste are pumped into the English Channel from La Hague. The contamination spreads northwards along the North Sea coasts of Europe and can be measured in Nordic and even Arctic waters. The leukaemia risk for children living near the plant is three times higher than the French average.

NUCLEAR SEAWEED; Warning over plant poisoned by Sellafield. Byline: Donna Carton
RADIOACTIVE SEAWEED, poisoned by leaks from the Sellafield nuclear plant, has sparked a major health scare along the Irish coast.

There are fears that seaweed, contaminated by the cancer causing chemical Technetium-99, is finding its way into crops, fertilized by seaweed or is being eaten directly in some parts of Ireland where it is bought for cooking purposes. Technetium-99 has been pouring into the Irish Sea for years from the Sellafield Nuclear Reprocessing plant in Cumbria.

Greenpeace has urged anyone in Ireland using seaweed, especially those eating it as a local delicacy, to demand that tests are carried out to measure its contamination. A spokesman said even vegetables grown on a seaweed fertilizer are at risk from contamination if the seaweed itself is contaminated. "A few years ago tests done on a vegetable plot near Sellafield revealed very high levels of radiation in the spinach grown using seaweed fertiliser.

"The safety level of radioactive contamination after a nuclear accident is 1,250 bequerals per kilogram, as laid down by the authorities. "The spinach had 8,400 per kg, grown on seaweed that had 13,000 per kg. "I am also worried about the potential risk to the seaweed collectors and the farmers who are handling it."

The health scare comes after Technetium-99 was discovered in seaweed in Norway. The substance is known to be a by-product of reprocessing nuclear fuel rods and Sellafield is the most likely source of the contamination.

BNFL
British Nuclear Fuels Limited, which runs Sellafield, has already been accused of contaminating the Irish Sea with Technetium-99. The firm has admitted accidental leaks of the chemical into groundwater and it has also been found in high levels in lobsters. Once in the human body, Technetium-99 accumulates in the thyroid gland and intestinal tract and greatly increases the risk of cancer.

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http://www.sepa.org.uk/about_us/news/2009/radioactivity_in_the_environme.aspx
Radioactivity in the environment reports published EXT01 – B04 16 November 2009
Two comprehensive reports on radioactivity in Scotland's food chain and environment will be published today (Monday, 16 November).

The study was commissioned in response to public concern that a specific radionuclide (Tc-99) discharged from Sellafield, under authorization from the Environment Agency, was routinely being detected in seaweed around Scotland. As seaweed had been reported as being used as a soil conditioner for growing crops and as an animal feed, there was a possibility that individuals who consume foods produced using seaweed could receive higher doses from this radionuclide in their diet.

The study found that potential doses from Tc-99 from using seaweed to produce foodstuffs were extremely small, much lower than the 1 mSv limit.

Yet it persists in the marine environment.

Sellafield's radioactive salmon
Radioactive waste from Sellafield has been found in Scottish farmed salmon sold in major British supermarkets. Tests commissioned by Greenpeace revealed traces of radioactive waste in packets of fresh and smoked salmon.

The tests conducted independently by Southampton University's oceanography centre, found low levels Technetium-99 (Tc-99) in farmed Scottish salmon sold at Sainsbury's, Tesco, Asda, Safeway, Waitrose and Marks & Spencer. Tc-99 is a byproduct of Magnox fuel reprocessing.

Sellafield, the British Nuclear Fuels Company (BNFC) owned reprocessing facility in Cumbria, is responsible for Tc-99 found in lobsters, seaweed and cod off the coast. Tc-99 from the facility has been washed as far as Norway, which has one of the largest salmon industries in the world. Scotland's west coast salmon farms feed their stock on pellets made from fish caught off Chile or in the North Sea.

In 1998, the Government promised OSPAR that Sellafield's emissions would be reduced - but since then, the emissions have increased.

RADIATION DANGER TO ISLANDERS; Seaweed may be contaminated. Byline: Susie Boniface
In 2003 a string of Scottish islands were at the centre of a potentially lethal radiation health scare. Health chiefs fear cancer-causing chemical Technetium-99 could have passed from the seaweed - commonly used as a fertilizer - into the potato crop.

Is Danish plutonium from Sellafield?
More than 200 kilograms of plutonium were discharged into a bank of sediment in the Irish Sea by the UK's Sellafield nuclear re-processing plant. It appeared that they did not stay there, as scientists predicted, but were washed round the north of Scotland into the North Sea.
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Concentrations of plutonium found off the west coast of Denmark had an isotope ratio which pointed the finger at Sellafield. Justin Brown, a senior scientist from the Norwegian Radiation Protection Authority (NRPA) said, "If these sediments (at the bottom of the Irish Sea) are confirmed to be the source, plutonium will be detectable in these waters for the foreseeable future". (5721) Rob Edwards. New Scientist

Technetium 99 from the Sellafield site:
Technetium 99 (a radioactive substance with a half life of 215,000 years) has been found in the Irish Sea since the mid-90s. The highest levels are found in lobster and seaweed. Sellafield had been routinely dumping radioactive waste into the sea. Later it was also found in the North Sea and in Norwegian lobsters.

In 2001 British Nuclear Fuels Ltd. (BNFL) admitted that technetium had been found in groundwater both on and off the Sellafield site and accepted that it was the probable cause of the Irish and Norwegian contamination: "Building B241's sludge storage tanks have been suspected of leaking for some years". (9104) Cumbrians Opposed to a Radioactive Environment
http://www10.antenna.nl/wise/index.html?http://www10.antenna.nl/wise/398/3876.html

1993
In its June meeting the Paris Commission sent a clear message to the UK government that its other 12 member states considered any increase in Britain's radioactive discharges into the northeast Atlantic unacceptable (WISE NC 393.3831).

1998
"One of the principal and, I believe, the most effective methods of carrying out these investigations is indeed to use radioactivity and discharge it and find out what happens to it." "This leads to information a great deal more sound than that which can be obtained by small-scale and laboratory experiments." According to a 1958 government memo leaked to the Galloway Gazette, discharges from Sellafield reprocessing plant were deliberately kept high as part of an 'organized and deliberate scientific experiment".

"In general terms the intention has been to discharge fairly substantial amounts of radioactivity as part of an organized and deliberate experiment and the aims of this experiment would in fact have been defeated if the level of activity had been kept to a minimum."

*Sources:*
Safe Energy (Scotland), Aug/Sept 1993, pp. 2, 4 ,7 & 16.
New Scientist (UK), 4 Sept., p.6.
*Contact: Scottish Campaign to Resist the Atomic Menace (SCRAM), 11 Forth Street, Edinburgh EH1 3LE, Scotland.*

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## The Polluting Plutonium Plants:

La Hague
The La Hague nuclear site is situated on the Northwest corner of France, in Normandy, on the Atlantic coast near the port of Cherbourg.

COGEMA has recently opened two new plants, UP2-800 in 1994, and UP3 in 1989, increasing La Hague's reprocessing capacity from 400 tonnes per year to a total of 1600. Between 1989 and 1995, radiation in La Hague's discharges increased five-fold-making it the largest single contributor of radiation in the region. La Hague dumps an estimated 230 million litres of radioactive waste into the Atlantic each year.

While tritium, strontium-90 and cesium-137 dominate la Hague's marine discharges, the facility releases many other radioactive isotopes, as well. The 1995 release levels of iodine-129, for example, soared to 10 times higher than those of 1980. In a single year, La Hague discharged five times more iodine-129 than was released by fifty years of global nuclear weapons testing, dumping an estimated 40 to 60% of its iodine-129 into the sea.

Contamination from La Hague shows up at significant levels in seafood and seaweed near the plant, but strong currents also disperse the contamination northward through the English Channel and the North Sea, and its traces are found as far north as Norway and the Arctic. Studies suggest that radioactive contamination from La Hague may travel to southwest Norway in as little as 15 months.

Sellafield
The Sellafield nuclear site, situated in Cumbria on England's Northwest coast, near the Irish Sea port of Barrow-in-Furness, is operated by British Nuclear Fuels (BNFL), which is wholly owned by the UK government. Reprocessing began at Sellafield (then known as "Windscale") in 1952, as part of Britain's drive to develop nuclear weapons.

Two reprocessing plants now operate there. The first, called B205, has operated since 1964, serving both military and civil purposes. The second, the Thermal Oxide Reprocessing Plant (THORP), went under construction in the 1970s, but national and international opposition delayed its opening until 1994. The two plants have a maximum reprocessing capacity of 1200 tonnes of spent fuel per year and can therefore separate some 15 tonnes of weapons-usable plutonium annually.

Even before the 1990s, Sellafield's radioactive discharges had severely contaminated the Irish Sea. So much plutonium had poured from the plant that a 1985 U.K. government report stated that, as a result of sea spray, concentrations of plutonium in house dust around Sellafield were up to 6,000 times higher than in houses in the South of England. Another study found cesium contamination around Sellafield 5 to 12 times higher than on Bikini Atoll, where the U.S. exploded 23 nuclear weapons tests.

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Sellafield's liquid discharges are now estimated at some 9 million litres a day. Under new authorization, liquid discharge levels of many dangerous radionuclides have risen steeply; between 1993 and 1995, beta radiation in Sellafield's discharges doubled. To cite one example, levels of Technetium-99 (Tc-99) discharged in that period increased by more than 27 times. In late 1996, U.K. government research revealed that seafood harvested near Sellafield contained levels of Tc-99 more than forty times 1993 levels. Lobsters caught in the Irish Sea were laced with Tc-99-at levels as much as 13 times higher than the point at which the European Commission must notify citizens of foodstuff contamination following a nuclear accident.

Undeterred by growing controversy over the new discharges, in 1996, BNFL applied for massive increases in the limits for gaseous discharges of Tritium, Iodine-129, and Carbon-14 from its chimneys. That request was granted by the U.K. government in 1997.

Increased contamination from Sellafield pervades the marine ecosystem of the Irish Sea and is swept by ocean currents northward into the North, Baltic, Norwegian, Barent and Greenland Seas. Studies suggest that contamination from Sellafield can reach the North Sea in as little as 9 months, and a recent paper revealed contamination from Sellafield in the waters of the Canadian Arctic.

Douneray
The Dounreay nuclear site is located on the North Sea, on the Northern tip of Scotland, near the port of Scrabster. Dounreay is owned and operated by the government-controlled United Kingdom Atomic Energy Authority (UKAEA).

Established in 1955, Dounreay now has two reprocessing plants: one for plutonium fuels from Breeder reactors, and one for Highly Enriched Uranium (HEU) fuels from research reactors. The Prototype Fast Reactor reprocessing plant (PFR) was shut down for repairs in September 1996 following an accidental release of radioactivity.

In 1995, UKAEA applied to increase "actual" discharges at Dounreay. Although requesting lower authorized limits for many radionuclides, Dounreay seeks to increase its discharges of Krypton-85, Strontium-90, Iodine 131, Cesium 134 and 137, Cerium 144 and Plutonium 242. Krypton-85 discharges, for example, would rise by 300%.

If the new authorization is granted, UKAEA will also use a higher percentage of the discharges permitted. Whereas it previously released on average 10% of its annual limits, discharges would soon average 49%.

In its application, UKAEA failed to even mention its plan to discharge two potent and long-lived radionuclides in its collective public dose calculations: Carbon-14 and Iodine-129. To put this omission in perspective, consider that at Sellafield, Carbon-14 accounted for 85% of the collective dose received by the public in 1991.

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Inputs of radionuclides into the environment from Dounreay
Following the discovery of 34 fragments of irradiated nuclear fuel on the seabed near Dounreay in 1997, an order was made under the Food and Environment Protection Act 1985 to ban the harvesting of seafood within a 2 km radius of the discharge pipeline. Regular annual monitoring of Sandside Bay and the Dounreay foreshore has led to the discovery and removal of radioactive particles from these areas. In 2005 Radioactive contamination at other sites in Scotland.

Radioactivity beyond 12 nautical miles
Monitoring in deeper waters outside of 12 nm is carried out by Cefas and is reported at a UK level as part of the commitment under the OSPAR Radioactive Substances strategy. Particular attention was paid to cesium 137, the bulk of which stems from historic discharges from Sellafield in Cumbria going back to the 1970s. Although these levels have dramatically fallen with time, concentrations measured off the west coast of Scotland were still around one hundred times higher than the global fallout level found in North Atlantic surface waters.

The deposition of plutonium within 20 km of Sellafield attributable to aerial emissions has been estimated at 160-280 GBq (billion becquerels), that is two or three times plutonium fallout from all atmospheric nuclear weapons testing. In addition, significant quantities of radionuclides can become airborne in sea spray and be transported inland by the wind.

Added to that, it has been estimated that over 40,000 TBq (trillion becquerels) of caesium-137, 113,000 TBq of beta emitters and 1,600 TBq of alpha emitters have been discharged into the Irish Sea since the inception of reprocessing at Sellafield. This means that between 250 and 500 kilograms of plutonium from Sellafield is now adsorbed on sediments on the bed of the Irish Sea. The migration of undersea deposits of actinides to coastal environments represents a long-term hazard of largely unknown proportions.

Technetium-99 (half-life 214,000 years) discharges have led to particular concern. In 1997, technetium concentrations in crustacean - particularly in lobster - reached 13 times the European Council Food Intervention Level (CFIL) in the vicinity of Sellafield. Some technetium concentrations above CFIL limits have also been found in molluscs (winkles, mussels, limpets and whelks). Recent environmental surveys along the Norwegian coast indicate a six-fold increase in technetium concentrations in seaweed since 1996. Concentration factors are greater than 1,000 for some biota such as macrophytic brown algae, worms and lobsters and are particularly high for some seaweeds (around 100,000).

In 1999, a number of high concentrations of various radionuclides were also recorded in fish, shellfish, sediments and aquatic plants, some exceeding CFILs several times. Large uncertainties remain in the field of transfer of technetium in the biosphere. During the 1970s and 1980s, peak doses to critical groups in the Sellafield region possibly reached 2.5 to 3.0 mSv per year (as compared to a dose constraint of 0.3 mSv in the UK and 1 mSv in the EU).

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A recent study commissioned by the German Federal Office for Radiation Protection, using German statutory dose assessment assumptions, calculated that annual doses from consumption of contaminated foodstuffs were more than 5 times the annual limit imposed by the European legislation and about 20 times the annual dose constraint used in the UK and Germany. Most of the dose was received via the technetium contaminated seaweed fertilizer/animal feed/meat consumption pathway. The conclusion of the German study was that the Sellafield reprocessing facilities would not be "licensable" in Germany.

Higher incidences of childhood leukemia than expected were first identified near Sellafield in 1983. More than fifteen years of research has established that the excess incidence of childhood leukemia around Sellafield is statistically significant and is continuing.

Case Study La Hague
Between 1966 and the end of 2000, about 21,000 tonnes of spent fuel have been reprocessed at La Hague. Most waste generated at La Hague has remained unconditioned - in other words they were not stabilized and packaged for long term or permanent storage - for many years, and some is stored under very unsatisfactory safety conditions, including over 9,000 m 3 (or 39,000 containers equivalent) of plutonium contaminated sludge.

In 1999, the total radioactivity released by La Hague to the environment was 15,000 times higher than that released by a nearby nuclear reactor. While releases of some radionuclides (e.g. technetium-99, plutonium) have decreased or remained constant, releases of other radionuclides from La Hague have significantly increased over the past decade.

These include liquid discharges (iodine-129 x 5; tritium x 3) as well as gaseous releases (carbon-14 x 8; krypton-85 x 5; tritium x 3). Also, some important radionuclides are not measured at all, including chlorine-36, technetium-99, and strontium-90 aerial emissions.

Conclusions on La Hague Releases
Releases of radioactivity from La Hague to the environment are several orders of magnitude larger than releases from a nuclear reactor. Releases of some radionuclides have decreased in the past while liquid and gaseous discharges of other key radionuclides have increased significantly. A further group of radionuclides is not being measured in effluents. Increases of radioactive releases from La Hague in the 1990s and expected future discharges are in violation of obligations under the OSPAR Convention.

Concentrations of most of the nuclides measured in samples taken in the La Hague environment reached their peak during the 1980s. Nuclide concentrations have decreased on average unequally, depending on nuclides and samples, if compared to 1997 levels. These developments do not reflect the large increases in releases of some radionuclides (in particular tritium, iodine-129 and carbon-14).

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Until 1992, Sellafield and La Hague released a total of some 1.2 tonnes of iodine-129 to the environment. This is several hundred times that released at Chernobyl. In the period 1993-1998, a further 1.7 tonnes of iodine-129 were discharged (of which 80% from La Hague). Iodine-129 discharged from La Hague and Sellafield in 1999 alone was eight times greater than that released by the fallout from all nuclear weapons testing.

Conclusions on Comparative and Cumulative Analysis
In 1999, radioactive releases to the environment from La Hague and Sellafield were broadly comparable. Iodine-129 discharged from La Hague and Sellafield that year was eight times greater than the total iodine-129 released by the fallout from all nuclear weapons testing. The estimated global collective dose of a decade of radioactive releases from Sellafield and La Hague (77,000 manSv) corresponds to about 1/7 of the collective dose from the Chernobyl accident. This raises the question of the justification of these releases as required under the radiological principles of the International Commission on Radiological Protection.

General Conclusions
Reprocessing of spent nuclear fuel at Sellafield and La Hague constitute the world's largest man-made releases of radioactivity into the environment, corresponding to a large-scale nuclear accident every year. Some of the radionuclides released in great quantities have half-lives of millions of years. Concentrations identified in recent years in the environment repeatedly exceeded EU Community Food Intervention Levels (CFILs).

The 1990's trend to large increases in the discharge of certain key radionuclides at Sellafield and La Hague and planned increases in releases constitute a violation of the letter and spirit of the OSPAR Convention. Accidental radionuclide releases from Sellafield and La Hague could be two orders of magnitude larger than the Chernobyl disaster releases and could lead globally in both cases to over one million fatal cancers in the long term.

Every uranium-fuelled nuclear reactor creates plutonium during routine operation. Every 12-18 months the reactor is shut down, and one quarter of the fuel is discharged, and fresh fuel loaded. The so-called spent fuel consists of plutonium (around 1 percent), uranium (around 96 percent) and so called fission products (highly radioactive waste). Originally developed for chemically extracting the plutonium for use in nuclear weapons, reprocessing facilities were constructed in the US, Soviet Union, the UK and France.

The Irish Sea is one of the most radioactively contaminated seas in the world. In the vicinity of the complex, groundwater, estuaries and soil are contaminated, with levels in the area around Sellafield exceeding contamination inside the Chernobyl exclusion zone. Compared to the British average, there has been a ten-fold increase of childhood leukemia around Sellafield. Plutonium dust has been found in the houses of residents living along the Irish Sea coast.

Sellafield; before March 2011, Japan was Sellafield's biggest client.

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In the State of Washington
Hanford has a history of leaking toxic waste. The barrels there are ready to burst and fears are that it will reach the Columbia River. Guess who recently got the contract to "Glassify" them. BNFL - British Nuclear Fuels Limited. BNFL runs Sellafield.

MAFIA TOXINS
Nuclear and Toxic Waste in the Mediterranean Sea
Kurt Sansone - Times of Malta Sun, 20 Sep 2009 09:23 CDT
Italian authorities have found a wreck with over 120 barrels of radioactive waste around 28 kilometres from the coast of Calabria in southern Italy. A local prosecutor said the Cunsky was one of 32 toxic ships sunk by the mafia in the Mediterranean.

Sebastiano Venneri, vice president of the environmental group Legambiente, said former members of the 'Ndrangheta mafia have said that the crime syndicate was paid to sink ships with radioactive material for the last 20 years.

Mafia accused of sinking ship full of radioactive waste off Italy (Telegraph.co.uk)
Not only is this an environmental disaster on an unprecedented scale for Europe (worse than Chernobyl), even if measures are taken right away it might already cause cancer in millions of people who have bathed in the Mediterranean over the last 20 years (surely over half of all Europeans). This is bad news indeed. We are not talking about a minor leakage at a nuclear plant here, but radioactive waste travelling freely in our most popular holiday spot.

Authorities find radioactive waste ship sunk by mafia (France 24)
A former mobster, Francesco Fonti, claimed that the 360ft-long ship is just one of dozens sunk by the Calabria-based 'Ndrangheta syndicate, and told authorities the vessel's name is Cunsky and that he used explosives to sink it about 20 miles off Calabria in the south-west in 1992.

http://rt.com/news/italy-toxic-waste-mediterranean/
In his testimony to police Fonti said he was personally involved in the sinking of three ships containing radioactive waste in the Calabria region, and knows of at least 30 other vessels that were sunk in the sea over the last 20 years, one of which is located off the coast of Tuscany.

According to Fonti, the vessels contained toxic wastes from pharmaceutical companies that paid members of the ‘Ndrangheta mafia between 1.5 and 15 million euros per ship to deliberately sink them.

On September 12, Italian authorities discovered one of the ships some 17 miles off the coast, near the town of Cetraro in Calabria. Days later, regional authorities sent robotic divers to about 1,000 meters below sea level to investigate the presence of radioactive or toxic waste. The robots revealed some 120 sealed containers and two human skulls inside the ship.
The turncoat’s testimony and the initial search effort was enough to sound environmental and health alarms across Italy, especially in the Calabria region where Fonti says most of the vessels
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were deliberately sunk. Regional officials in Calabria are now calling on officials from the Italian State to take immediate action to verify the contents of the containers and investigate further into the other 40 toxic ships that are said to line the Mediterranean seabed. Italy's WWF recently joined these calls for action.

Scientific tests and satellite images carried out in the region reveal high levels of toxins and radioactive substances in areas along the Oliva River, located near the seaside town of Cetraro. Doctors and politicians have recently noted a sharp increase in the incidence of tumors and other pollution-related diseases among people living in these areas.

Bruno Giornado, the public prosecutor in the nearby town of Paola, recently told Italian media that this rise in tumors may be caused by the toxic contents of a ship that was sunk near the mouth of the Oliva River back in the 1990s.

http://www.sott.net/articles/show/210733-Nuclear-and-Toxic-Waste-in-the-Mediterranean-Sea
Investigators have long looked into claims that Italy's southern-based crime syndicates, including the Naples-area Camorra and the 'ndrangheta ran illegal rackets disposing of toxic wastes, including in clandestine land dumps.

By BBC
Updated August 25, 2011 14:34:00
http://www.abc.net.au/4corners/stories/2011/08/08/3288174.htm
An investigation exposing how Italy's most ruthless organised crime syndicate has taken over one of the country's most beautiful cities, killing its citizens and poisoning its water, making massive amounts of money and effectively operating an alternative government.

http://www.guardian.co.uk/world/2007/oct/09/italy.nuclearpower
Authorities in Italy are investigating a mafia clan accused of trafficking nuclear waste and trying to make plutonium. The 'Ndrangheta mafia, which gained notoriety in August for its blood feud killings of six men in Germany, is alleged to have made illegal shipments of radioactive waste to Somalia, as well as seeking the "clandestine production" of other nuclear material.

14 September 09 - Naples
Italian inconvenient truths emerge with the retrieval of a sunken ship  After 20 years of investigations upon sunken ships filled with toxic waste, an Italian public prosecutor makes the first move in a naval combat against the organised crime.

It has finally been found, thanks to the confession of Francesco Fonti, a pentito (Mafioso turned informant), a ship loaded with barrels of radioactive waste that was sunk off the coast of Cetraro, in Calabria, south of Italy.

Some of these stories are of public domain.
There is the story of the motor vessel Nikos that in 1985, during its trip from La Spezia (Italy) to Lomè (Togo), disappears possibly half way between Lebanon and Greece. In the same year

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the German boat Koraline sinks off the coast of Ustica (Italy). A year after, in 1986, is the ship Mikigan, which left from Marina di Carrara in Tuscany, to sink further down in the Tirreno sea, facing Calabria. Only a year after the boat Rigel shipwrecks. In 1989 the Maltese motor vessel Anni drowns in international waters off the coast of Ravenna. In 1990 the boat Jolly Rosso strands along the coast in the province of Caserta. In 1993 it's the turn of Marco Polo ship, which simply disappears in the Channel of Sicily.

What emerges is an international business of huge scope, orchestrated by the organised crime, but which immense profit has been divided between more people, individuals which do not belong to the Mafia itself, but are rather enterpreuners and politicians that have either operated in the darkness to cover the whole thing or simply collaborated. (as the L'Espresso has already unveiled in 2005).

A perfect example is that of Giorgio Comerio and its disposal company, the Odm (Oceanic Disposal Management), which since 1987 has been offering ways of getting rid of toxic waste by shooting steel torpedo down the sea until they would get stuck 50 metres under the ocean floor.

He believes not to breach the London Convention that forbids the disposal of radioactive material in the sea, and maybe he is right since the law may not be accurate enough. But still, it sounds incredible that one man can pollute even his own land or sea for profit.
*written by Cecilia Anesi*

http://www.minesandcommunities.org/article.php?a=1233

September 7, 2004
Iskenderun, Turkey - A ship holding a cargo of toxic fly ash from Spain for more than four years, sank Monday off Turkey's southeast Mediterranean coast. The vessel, MV Ulla, had been anchored near the port of Iskenderun since 2000 while authorities from the two countries sorted out what to do about the hazardous cargo.

A COURT FOR ENVIRONMENTAL CRIMES
By Uli Schmetzer
www.uli-schmetzer.com
VENICE, October 4, 2009 – Inside the Doge's Palace in a city that is in the frontline of global warming a group of crime busters, lawyers and experts tried to kick-start this weekend the idea of an International Environmental Criminal Court that would bring to justice those culprits deliberately polluting our planet. The idea is no novelty but the meeting of the 'World Venice Forum 2009' was given impetus by the recent revelation that organized crime syndicates have been 'dumping' toxic waste, some of it radioactive, into the oceans, close to coastlines frequented by tourists.

Also see: http://en.wikipedia.org/wiki/Radioactive_waste_dumping_by_the_%27Ndrangheta

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Alang, India, is in southeastern Bhavnagar, on the coast of the state of Gujarat in western India. Known once for its pristine beach line, Alang became a ship-breaking yard in 1983. Its beach sands are home to former supertankers, warships, container vessels, car ferries and other craft brought to Alang from all over the world to be consigned to the scrapheap.

http://www.uss-bennington.org/shipbreakers/shipbreakers-1.html
Shipbreaking was performed with cranes and heavy equipment at salvage docks by the big shipyards of the United States and Europe until the 1970s, when labor costs and environmental regulations drove most of the business to the docksides of Korea and Taiwan. Eventually, however, even these entrepreneurial countries started losing interest in the business and gradually decided they had better uses for their shipyards. This meant that the world's shipbreaking business was again up for grabs. In the 1980s enterprising businessmen in India, Bangladesh, and Pakistan seized the initiative with a simple, transforming idea: to break a ship they did not need expensive docks and tools; they could just wreck the thing -- drive the ship up onto a beach as they might a fishing boat, and tear it apart by hand.

Natural Resources
As India's largest ship-breaking yard, Alang has the distinction of unusual high tides reaching more than 30 feet and a sloping beach profile. This combination of natural resources allows for craft to be beached at high tide by ramming their hulls onto the beach. At low tide, workers anchor the craft to the shore. This basic process eliminates the need for the construction of dry docks and other costs normally associated with salvaging ships.

http://www.shipbreakingplatform.org/voice-of-america-reports-focus-on-indian-shipbreaking/
Gopal Krishna, an Indian environmental activist, says the industry is hazardous not only to laborers, but to the entire ecosystem and people whose livelihoods depend on it.
“Most of the ships, which are 25-30 years old, are asbestos-laden. They are laden with persistent organic pollutants like PCBs, polychlorinated biphenyls; with waste oil; with ballast water,” he says, none of which is managed in an environmentally sound manner.
Prying eyes of industry observers, he adds, are shielded by local mafias driving the enterprise.

ENVIRONMENTAL & LABOUR GROUPS DENOUNCE IMO’S TREATY & FTAS
http://www.pierretorset.com/stories/shipbreaking/

2009 : Rizwanna Hassan wins the Goldman Prize (Nobel Prize for Environment) for her legal battle against shipbreaking activities in Bangladesh.

2011-2012 : A record total of cargo ships and oil tankers have to be decomissionned. A big part of them is expected on the open beaches of Bangladesh... Shipbreaking is a controversial industry. It used to be considered as a highly mechanized operation, concentrated in industrialized countries. But in order to reduce costs, vessels were sent in the eighties to the scrap yards of India (on Alang Beach), Pakistan, Bangladesh (in Chittagong), etc. where salary, health, safety and working standards are minimal, and workers desperate for work.

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The positive economic and recycling impacts are then counterbalanced by the Human and Labor rights violations and Environmental pollution happening in those ship breaking yards on Alang beach (India) and in Chittagong (Bangladesh).

About the shipbreakers : Bangladesh has the largest shipbreaking area, directly settled on an open beach (no dry dock, as in Alang - India). Children working barefoot on sheet metal, workers breathing asbestos all day long or risking an explosion from fuel residues on the ships, huge amounts of toxic materials dumped directly to the sea on the open beach, etc. are some examples of the everyday life on the shipbreaking yards in Bangladesh (Chittagong) or in India (Alang Beach).

Shipbreaking yards are clearly violating international and national laws (Basel Convention, requirements for environmental clearance, Labour Act, etc.) but western governments which are providing the ships ending their life in those ship graveyards, seem to remain deaf and blind at the time more ships have to be decommissioned in the next years, and the Bangladeshi government is mostly adopting a status quo on such a delicate issue. In this way, a legal battle is now going on thanks to both international and local environmental/social NGOs to contribute implementing rules on how to scrap those ships in a fair way.

http://imowatch.blogspot.com/2011/06/alang-beach-gujarat-wary-of-notorious.html
It is a matter if fact that "The multiplicity of private structures intervening in trade and maritime transport (flag, owner, ship owner, charterer, manager, consignee, emptier, etc) and the vagueness presiding voluntarily or involuntarily in the allocation of roles and responsibilities meant that a huge amount of time was wasted in investigations. Nowadays, maritime activity is increasingly an activity where opacity in actions remains significant, in particular in the high seas, outside the territorial waters of each State." (Report of Committee on Toxic Waste in Abidjan, Ivory Coast).

New Delhi: After Clemenceau, another toxic ship is headed towards Alang for dismantling. The Technical Committee of the Supreme Court has given Blue Lady, a Norwegian Cruise Liner permission to beach in Alang and it is expected to arrive at Alang by the next two days. The ship was alleged to have been ladened with hundreds of tones of cancer causing asbestos and poly chlorinated biphenyls, a nutrotoxin.

Environmentalists have been shocked by the decision of the Supreme Court."The beaching permission is in contempt of Court," says activist and petitioner Gopal Krishna. Activists also say that this is a violation of the 2003 Supreme Court order that says that any ship that comes to India for dismantling must be decontaminated, there should be a third party audit and there should be a list of materials on board, but none of the conditions have been complied with. They have expressed concern for the health workers who will dismantle the ship. "India does not have any facility to handle with PCB and this one of the banned items according to the Indian law and the International law.

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The Stockholm Convention basically banned the movement of PCB," says green peace activist Ramapati.

*But o*n June 5, Blue Lady was allowed to enter Indian waters on humanitarian grounds, but there were arguments regarding issues including, the onset of monsoon and the fate of the 13 Indians on board. The ship waited in the seas till a change in its ownership.

Finally on July 29 the Technical Committee chaired by Environment Secretary Prodipto Ghosh gave it permission to beach in Alang, just two days before the term expired.

US ship will not be allowed to break at Alang port
Published: Tuesday, Nov 10, 2009, 3:47 IST
By Rakesh Bhatnagar | Place: New Delhi | Agency: DNA

Platinum-II, the 682-ft long US ship anchored off Alang port in Gujarat, won't be allowed to beach and break because it has high levels of toxic material and radioactive substances. The Union environment ministry on Monday denied her access to ship breaking yards because the ministry said the ship had falsified the flag and falsified its registration papers to enter the Indian coastline. "Platinum II entered the Indian coastline near Alang in Gujarat carrying 'falsified flag' and 'false registry papers', a government panel that examined the anchored ship last month said.

Environment minister Jairam Ramesh had last month ordered an enquiry to check her antecedents and health. A five-member team examined her and found that she was a threat to the environment. The ship had hazardous waste like asbestos-containing material (ACM) and polychlorinated biphenyl (PCB) and radioactive material.

It is reported that the ship contains 238 tonnes of asbestos-containing material, 126 used lead batteries and an estimated 210 tons of PCBs, said Gopal Krishna, who heads an environment protection group. These substances are banned in the US.

Like Krishna, lawyer Sanjay Parekh who has been arguing for the ban of parking contaminated ships in the Indian coastline, says Ramesh's order is an "exemplary precedent". "It's an order to send the ship back because fraudulent documents were produced to get itself dismantling in Gujarat,"

Hundreds are scrapped yearly! A fourfold increase in world steel prices, to hundreds of dollars a ton, has boosted the industry. Hundreds of ships are scrapped annually, and thousands of single-hulled tankers are being retired in the coming years. The heightened environmental pressure and negative publicity, though, has made the industry secretive and defensive. The Gujarat Maritime Board refused The Associated Press' repeated requests to visit a yard. The ships are run ashore at high tide and laborers clamber up the anchor chains to strip it of everything from furniture to engines, using blowtorches and bare hands.

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With the world's focus on India, Indian ship-breakers say activists exaggerate the dangers, and claim accidents have dropped significantly. But so has their business. They say their competitors in Bangladesh offer higher prices for vessels and don't have to deal with tough regulations. That means far fewer ships are coming to Alang. An industry that supported 40,000 workers five years ago in Alang now only employs 3,500, the ship-breakers said, and all but 26 of the 173 Indian ship-breaking sites sit idle.


And finally: View #2053
Multimedia artwork "2053" - This is the number of nuclear explosions conducted in various parts of the globe 1945-1998
Run time: 14:25
http://www.youtube.com/watch?v=LLCF7vPanrY

Japanese artist Isao Hashimoto has created a beautiful, undeniably scary time-lapse map of the 2053 nuclear explosions which have taken place between 1945 and 1998, beginning with the Manhattan Project's "Trinity" test near Los Alamos and concluding with Pakistan's nuclear tests in May of 1998. "This piece of work is a bird's eye view of this history by scaling down a month length of time into one second."

Where do your sea vegetables come from?

Tomas DiFiore POB 612 Little River CA 95456 seahorse@mcn.org

*Azuma Foods is a world leader in Marketing 'food culture commodities'. While they shouldn't be singled out, they are a good example of current trends in petro-chemical energy intensive fast food additives and production facilities, with processed seafood commodities marketed globally, and production facilities on the continents of Canada, US, & China.



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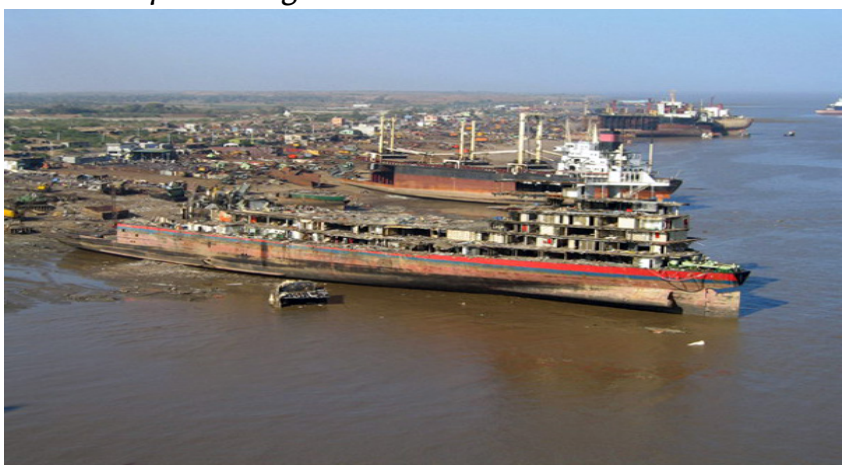
*Sellafield*

*Ship Breaking*

http://www.luckyvitamin.com/buy/products/66820-earth-circle-organics-raw-certified-organic-sushi-nori-sheets-50-sheet-s.html

**"How can Seaweed be Organic?** Aquaculture can be certified Organic by following the rules and regulations of the U.S. National Organic Plan (NOP) of the USDA."
(ed) But there aren't any rules or regulations in the (NOP) as of June 2012. It is the current discussion after having been Petitioned in March of 2012.

"The rules require testing of the wild areas for "banned" contaminants before harvest and the products themselves after harvest. The regulations also require all processing be done according to the NOP standards and in USDA Organic certified facilities."

"There are no specific requirements or guidance on seaweeds in the FDA standards. Each certifying agency has drawn up specifications that must be met to receive their certification."

For example Earth Circle Organic Nori is certified by EcoCert, "one of the largest and respected agencies. Where are these Organic Nori Sheets harvested? Earth Circle Organic Nori is harvested in the Sea of Japan. This area is to the north of Japan and is not affected by the recent nuclear accident."

The official time period of the Nuclear Accident at Fukushima was March 11, 2011 to sometime in April 2011. What of the continuing Nuclear CATASTROPHE? Each year, the typhoon season *begins* in May! And the winds over Tokyo didn't shift to an eastward flow until March 14-15th. Arnie Gundersen covers this in depth. For three to four days, winds blew from Fukushima towards the Island's interior.

Also consider the fact that - Nori has an affiliation with fresh water outflows (rivers) mixed with saline content (nearshore ocean waters) *and in it's wild state, grows on rocks on the beach, which may be underwater at high tide, but not somewhere in the open ocean (Sea).*

Think about the rains, and the concentrations of radioactive fallout from atmospheric debris, (nuclear reactor smoke stack venting, allowed releases, 'accidents' and catastrophes) - and as raindrops become drops from leaves of trees, and trickles of rivulets become the headwaters of tributaries feeding the maternal lateral forks becoming rivers flowing to the sea....

To grasp the significance please visit the:

UC Berkeley Nuclear Engineering Air Monitoring Station  Department of Nuclear Engineering

Food Chain Sampling Results (grass, spinach, etc.)  Department of Nuclear Engineering

Seawater Measurement  Department of Nuclear Engineering

http://www.nuc.berkeley.edu/UCBAirSampling

Back to Organic Aquatic Plant Certification:
The Porphyra (Nori) is popularly farmed globally, with select preferential species on ropes fastened to stakes, and obviously also very near shore, and not out in the open ocean of the "Sea of Japan".

Most the Nori labeled 'Organic' comes from 'The Sea of Japan' or 'Shandong Peninsula'.

Visiting the ECOCERT STANDARDS page, it is revealed that there are no ECOCERT Organic Aquatic Plants Standards! http://www.ecocert.in/standards.php

ECOCERT is a certification agency for organic, fair trade and good agricultural practices (GAP) standards. We are a family of companies with our presence in all the continents. Our Principal and Managing Office is at L'Isle, Jourdain, France. In India, ECOCERT operates from Aurangabad, Maharashtra State.
National Standards for Organic Production under (NPOP) – Indian Organic Standards. EC 834/2007 and 889/2008 – European Organic Standards.
EC 710/2009 – European Organic Aquaculture Standards.
NOP of USDA – US Organic Standards.
Japanese Agriculture Standards (JAS) for Organic Production.
ECOCERT Fair Trade Standards (EFT)
GLOBALGAP Organic Textile Standards - GOTS and OE
ECOCERT – Cosmetic Standards
ECOCERT – Organic Aquatic Plants Standards
ECOCERT - Non GMO Certification Programs
In addition to the inspection and certification services, we are providing inspection services to the following certification agencies:
*Demeter (Bio-Dynamic Certification Agency)* * *BioSuisse* * *Naturland*

## GLOBAL TESTING:

A third company, FFDS or First Fisheries Development Services, located in San Diego, CA also tests seaweed for Radiation and heavy metals using EMSL Analytical Services labs.

Seagate (FFDS) was established in 1981, and based in San Diego. The Seagate trademark and symbol have become better known than the name of the parent company, and have taken over as the identity of this company's business. "Seagate is unusual in the health food industry because we harvest and process our own raw materials, including sharks, grapes and olive leaves. Our most recent project, freeze-dried sweet organic carrot powder has even required that we operate our own organic farm in order to produce carrots that are 100% free of chemicals and pesticides. This company evolved from the experience of its founder, Richard Lentz, from his years building and operating food processing plants and fishing boats in Central America, Mexico, and the U.S. with a multinational company. A primary lesson that he learned was how to build factories in remote regions, where there were no roads, electricity, or even water, just to be as close as possible to the source of the raw materials, which is the key in order to produce the highest quality food products.

http://www.seagateproducts.com/about-us.html
Seagate has been producing a diversity of products for over 18 years. The design and installation of our freeze-dryers, concentrators, pulverizers, and other vacuum equipment, that were necessary in order to process the shark cartilage byproduct from our own fishing operations in 1993, has also provided the capability to process, dry, and grind most other raw materials. Whether we are working as the fisherman for our marine products or as the farmer for our herbs and vegetable products, we respect these gifts provided by Nature, which when properly processed and correctly used, will actively support your good health. Company Founder and President: Richard Lentz

From San Diego to the Mendocino Coast, California seaweeds have been tested at EMSL Analytical Labs and UCB Nuclear Engineering Labs and found to be RADIATION FREE for 2 years now. The North Coast Edible Seaweed season begins in June, though samples are collected throughout the year for testing.

Only one college study showed high levels of I-131 in March 2011 from Macrocystis fronds near San Diego... well of course. But the study stopped there. That was the only radioactive element that was tested for in the Kelp fronds.

Known companies that test and sustainably hand harvest edible seaweeds and sea vegetables, the results of which should be good for lengths of coastline are:

Ocean Harvest Sea Vegetables
Rising Tide Sea Vegetables, and
Seagate Products, (FFDS) First Fisheries Development Services
There is another company in B.C. that is testing this year!

Tomas DiFiore
seahorse@mcn.org

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