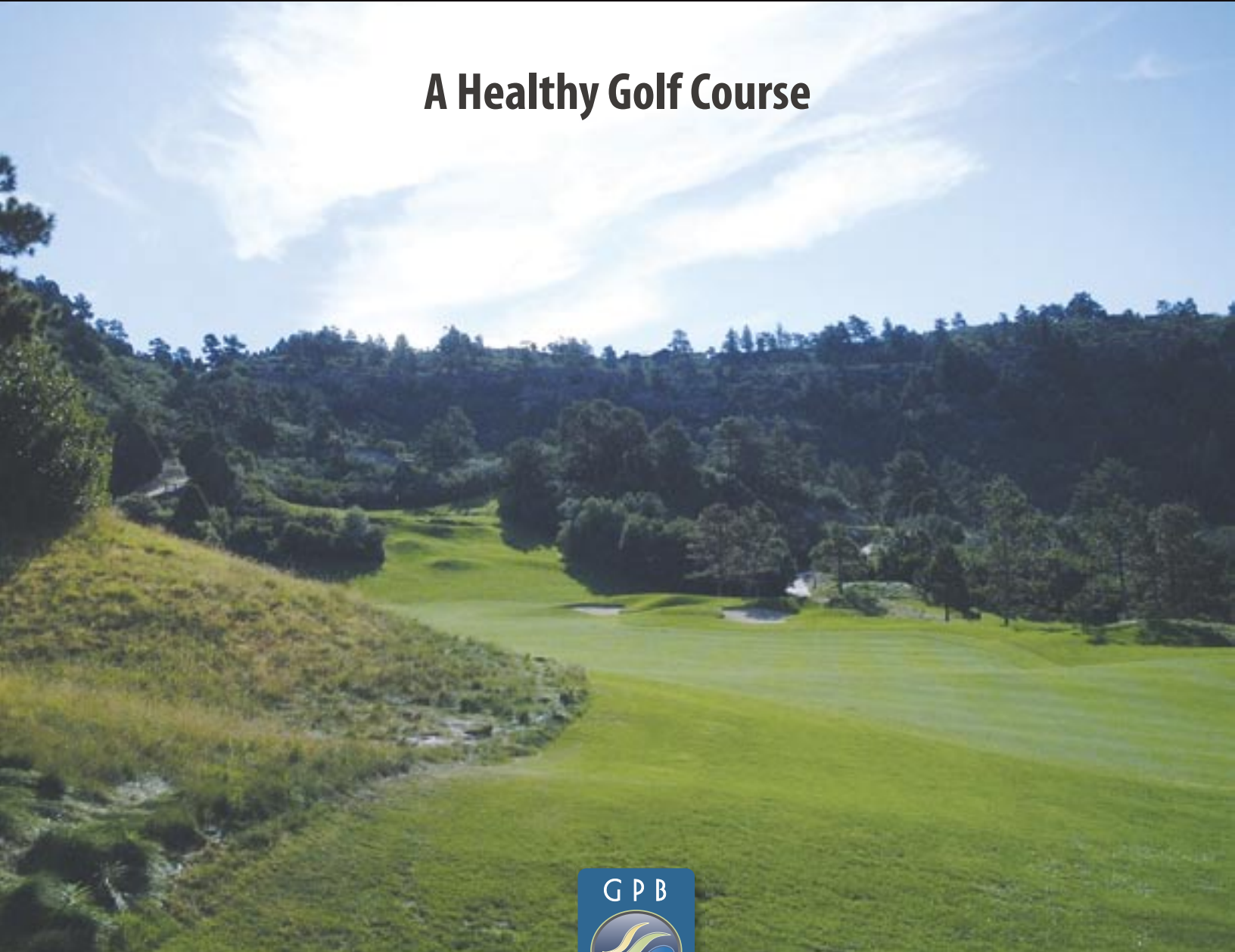


# *Pacific Natural*

*nutrients from the sea*

## **A Healthy Golf Course**



# A Healthy Golf Course

Health is directly linked to diet. Common sense? Yes, but that doesn't mean we always follow it. Golfers and other athletes know that good health provides a competitive advantage. Eating a healthy and natural diet is an important part. A golf course can gain a competitive advantage in the same way.

Pacific Natural is a wholesome diet for soil microbial life. When these microorganisms thrive, your turf is healthier—above and below ground. Applied to turf or soil, Pacific Natural's oil content coats and protects turf, while natural enzymes and nutrients are delivered to the soil. The results are a healthy microbial layer that feeds the plant producing a positive and controlled growth response.

Whether the challenge is making a 30 foot putt, or maintaining a 400 yard fairway, it's good to have nature working for you.

## Product Overview

- Pacific Natural (PN) fish fertilizer is made from fresh fish. It provides a rich nutrition source of 'fresh-made' beneficial soil and plant proteins, amino acids, minerals and many other nutrients. By combining fish fertilizer with other course fertility program components, chemical inputs can be reduced leading to improved water quality on the course while making the environment safer for wildlife, players and neighbours.



- The use of fish fertilizer is not a new idea—an old Native American technique involved placing fish heads under or next to newly planted crops to promote healthier harvests, the fish heads acting as a fertilizer and compost accelerator.

<b>Product:</b>	<b>Pacific Natural Liquid Fresh Fish Organic Fertilizer</b>
<b>Use:</b>	Pacific Natural can be used as the primary source of Nitrogen (N) for greens and as a key ingredient on fairway and landscape fertilization and conditioning programs.
<b>Analysis:</b>	Total Nitrogen (N) – 2%; 1.82% Organic slowly available N, 0.18% Ammoniacal N; < 0.1% Nitrate N Available Phosphoric Acid (P205) – 3% Potassium (K) – 0%

## Observed benefits of Pacific Natural

- Is a slow release product
- Is a soil enhancer that provides the soil with needed organic nutrients, protein, oils and minerals
- Use of PN can reduce the use of chemical based fertilizers and other soil amendments
- Is non-burning
- Its natural oil content creates a natural 'spreader/sticker' effect and helps the product to adhere to the plant and root system, resulting in less surface area available for the plant to be exposed to disease and pest pressures
- It's oil content also reduces leaching of ingredients
- Can save on water usage—healthier soil can produce healthier deep rooted plants requiring less watering
- Is a natural compost accelerator (e.g. grass clippings and thatch)
- Easy to apply and mixes well with other products (fungicides, growth regulators etc.) making any application more flexible
- Is produced through low temperature enzymatic digestion with only fresh fish ingredients and a fast process—characteristic 'fishy odour' of other products is reduced and quickly dissipates, particularly if water is applied after application.



### Comments from the Country Club at Castle Pines, Denver, Colorado

*The Country Club at Castle Pines, located near Denver, Colorado, is a premier private championship-play course. Sean McCue, their Golf Course Superintendent, has been using Pacific Natural for several years as an integral part of his course fertilization program. Sean says: "Pacific Natural has helped me achieve results beyond my expectations. PN is superior to other organic products used in the past."*



## Greens:

**Pacific Natural is the primary source of Nitrogen (N) for greens at Castle Pines.**



## Application Rates:

General suggested application rate is 6oz/1000sq.ft. per week during active growing season (approx. 2 gallon/acre).

- It is recommended that application rates be at 6oz/1000sq.ft. for all applications

except when the turf needs a boost, for example after heavy or tournament play.

- In such instances the application rate should be increased—rates as high as 18oz/M have been used with positive results for color and growth and no negative effects.

*Castle Pines has 2.2 total acres of greens – they are fertilized once every 7 days during growing season (spring through to early fall) at the rates indicated above.*





**Fairways:**

**Pacific Natural is a component of the fairway fertilization program at Castle Pines.**

*The course has approximately 22 acres of fairways – they are fertilized every 2 weeks during the growing season, alternating between Pacific Natural and a granular organic fertilizer.*

## Application Notes for PN

- The recommended dilution rate for PN is 50 part water to 1 part PN to obtain appropriate coverage of product to leaf surfaces for foliar spray rig and irrigation system applications. Direct soil drench applications on old or nutrient deficient soils can be diluted at 10:1.
- Because PN is natural and has many complex ingredient constituents, the contents of containers will stratify over a short period of time. Product must be mixed well, mechanically if possible, prior to dilution and/or mixing with other fertility and control products.
- PN is acidified during processing to a target pH of 3.8 to 'suspend' the organic nutrients. Addition of water (at least 10:1) brings the pH up to neutral, which activates the product. Container lids and ports of PN containers must be kept sealed and water should not be allowed to enter containers until ready for dilution and use.
- Do not store diluted PN in a sealed container or sprayer for more than a few days—try to use all diluted contents during an application or remove unused diluted product from container and perform normal clean-up. Otherwise, discard diluted material.



## Company and Product Background



Great Pacific BioProducts Ltd. was established in 2004 to take over the bioproducts business of Bella Coola Fisheries Ltd., a 25 year old fishing and processing company located near Vancouver, BC Canada.

Bella Coola began making fish fertilizer about 5 years ago when they invested in the technology that would allow them to produce this high quality fertilizer and other bioproducts from components of fish processing that had previously been treated as waste. The fertilizer is sold under the Pacific Natural brand or can be packaged under buyers' label.

Sales of PN have increased each year with new sectors and product uses emerging due to beneficial results. Most of PN's customers are commercial growers of a wide variety of crops: wine and table grapes, hops, fruits (trees, shrubs and canes), nurseries, grass crops and many row crops. Being organic and listed by the Organic Materials Review Institute (OMRI), PN is gaining popularity with a broad range of organic crop producers. Other growing segments are golf course and turf management and the home and garden sector.

## PN functions as:

- An organic nutrient and soil food
- A compost accelerator (crop residue and thatch decomposer)
- A slow release fertilizer requiring fewer applications
- A non-leaching product due to its natural oil content which causes the beneficial organic nutrients and elements to stay available to plants longer.
- A free flowing liquid 'carrier' that can be mixed with other fertility and control products making for a cost effective program coupled with a nutrient booster.

## Why PN is better than other types of fish fertilizer:

- PN's use of low temperature enzymatic digestion in its production process enables the natural proteins, nutrients and minerals to stay in their natural form so they are immediately available to both soil microbial life, plant root systems and to leaf surfaces.
- Most other fish fertilizers are made with high heat processing techniques—nutrients and oils are typically stripped and/or denatured (e.g. fish emulsions, powders and granulars are generally made by traditional rendering processes, resulting in degradation or complete removal of many beneficial ingredients). PN retains them all!

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